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THE DOCTOR'S FUTURE.*

By Charles L. Dana, M. D.,
New York.

About the year 1280, A. D., a noted physician, Arnaldus of Villa Nova, was imprisoned, expelled from Paris, and nearly burned at the stake for making predictions not agreeable to the savants of his time. I do not suppose I am in any such danger, but the position of a prophet is one of much delicacy, and I do not pretend to have the qualifications of a sound and competent soothsayer. So I hasten to say that I am not looking very far ahead.

There are certain present conditions and tendencies which are very much in evidence. They are not guesses, but facts, and one can, by recognizing and interpreting them, make inferences as to the more immediate medical future which should have greater value than the guess of a Roman augur or the verses of a Delphic priestess. Let me begin, then, with a statement of some of the facts in the present medical situation.

STATISTICAL.

In the last thirty years the number of physicians has increased, but not so fast as our population, and in the last seven years the number has actually decreased both absolutely and relatively.

The number of our medical colleges gradually increased until in 1900 there were 151. Since then they have decreased in number to 128 and have been immensely improved in quality. There are about 5,000 fewer medical students than there were ten years ago. The number of physicians is still much higher than in European countries. It is about one to 2,000 of the population in Germany; it has been about one to 500 in the United States.

There is no doubt going to be a further decrease of students and graduates, for the community is waking to the fact that it must have really educated and well trained medical men, and these are expensive; besides, as I will presently show, disease and the mortality rate have been and are still steadily decreasing; and there will be less need of so many. It is obedience to the law of supply and demand.

The decrease of physicians will stop very likely before it gets to the German ratio, because we Americans like to be doctored, especially if it does not cost much. Perhaps we find also that the American doctor is on the whole an important and useful citizen, more esteemed personally and ranking higher socially than in other countries. The people will not give up what they find to be a genuinely valuable thing.

As the number of doctors is decreasing, it would be reasonable to infer that those left will have more to do and will be in a better economic position. This will be to some extent the case. There are, however, some disturbing factors in the economic adjustment. One of these is, that charlatanry thrives. It seems to be a kind of immortal fungus that clings to every plane of civilization. Then there are the patent medicines and the drug counter practice; and there are the various obsessive and commercial cults of medicine. There are about 5,000 Christian Scientists and 5,000 osteopaths, besides chiropractics and other fancy breeds of modern healing. These perhaps hurt honest art for a time, but not eventually. Fooling with disease brings disaster in the end, and Christian Science is one of the doctor's best economic assets. But there is another feature to consider. In the last thirty years the death rate has dropped from ten to fourteen points, i. e., it is one third to one half as great as it was thirty years ago. Incidentally, let me say that the fact of this simultaneous decrease in death rate and in doctors should not be seized upon by the misiatric press as a phenomenon of cause and effect. It is not the case, because the decrease in physicians began only five years ago, while the death rate has been falling steadily since 1880.

Together with this decrease in sickness and mortality there have developed certain forces which are acting with ever increasing energy. They are the fuller knowledge of personal hygiene, which people possess, and the organization of agencies to control disease and promote health, by private societies, by cities, States, and the Federal Government. These all now combine to form a powerful and irresistible force for the diminution of disease and the uplifting of the physical well being of the race.

In order to avoid the depressing effect of reading statistics, I have had a table prepared which shows some of the conditions and activities at the present time, as just indicated.

TABLE: Showing A. Educated medical activities.
B. Noneducated, and outside medical activities.
C. Population.
D. Mortality rate.

	1880.	1890.	1900.	1910.	1912.
A. Medical students...	11,826	15,404	25,171	21,520	18,412
Medical graduates...	3,241	4,454	5,214	4,440	4,483
Medical colleges	90	116	151	133	116
Physicians	85,671	104,805	132,002	131,622	......

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*Address at the Anniversary Meeting of the New York Academy of Medicine, November 27, 1912.

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		1880.	1890.	1900.	1910.
B.	Nurses	15,601	47,586	120,956	*200,000
	Midwives	*1,000	......	......	5,000
	Christian Scientists	......	......	......	5,300
	Osteopaths	......	......	......	5,000
	Druggists	*25,000	?	......	75,000
C.	Population	50,155,783	62,947,714	75,994,575	91,972,266
D.	Mortality rate per 1,000 per annum	25[1]	......	......	15

[1] Approximate.

This, then, is the situation before us, a sure decline in the numbers of medical men, and a sure increase in the quality and equipment of medical men; a more enlightened community in respect to the laws of health and the prevention of disease, and in consequence a steadily diminishing mortality and sickness-rate.

Along with these obvious things, then, is developing already a change in our methods of treatment. Drugs will be given more, but more wisely, and they will not be exactly drugs, but chemical and mental foods, the glandular extracts and the immunizing and protective sera. We will surely make more cures than have been made in older times, and thus there will be shorter periods of illness.

There is a definite tendency also to a larger use of institutional and colonization treatment of certain classes of the chronically sick. But the most important of any single agency in modifying the doctor's future will be the adoption of some kind of State medical insurance for the working classes, on which subject Doctor Bristow will speak.

THE PROPER MEDICAL ATTITUDE AND POLICY.

Now, this situation, which certainly merits attention, is one for which the medical profession more than any other body is responsible. From the time of Hippocrates every great name in medicine has been identified with some work in hygiene. This kind of work is the finest jewel in the medical crown, and some day, no doubt, mankind will pay a tribute to an altruism which is perhaps forced upon us by the demands of sympathy and the impulses of enlightenment, but is nevertheless a very honorable thing.

We, having been so instrumental in starting these forces for our own apparent submergence, can by no possibility now draw back or change our attitude. The doctor of the present and of the future must take hold and help the movement still more. This is his necessity. If he does not he will be justly held the enemy of his kind. But it is also wise. Any improvement in the social and economic condition of the doctor of the future can be secured only by continuing to lead and guide the struggle for hygienic progress. By this he will be made a more important man in the community; he will be called into public as well as private affairs. And as one who can manage the health of a nation, or of a community, he has a greater function than is that of prescribing for an individual. Medicine will become a part of statecraft; doctors will direct affairs more, and lawyers less—I hope. So we need not feel alarm for the doctor of the future; the progress of prophylaxis is going to be very slow, probably now slower than ever. Besides, he may if he wishes, take hope that new diseases may spring up; that the conservation of so much life will increase the numbers of the feeble, of the chronic invalid and the presenile. The duration of life has been prolonged from thirty-five to forty-five years, and it can be made to reach fifty-five. This long middle age may be dolorous to those saved for it, but economically helpful to the doctor, at least, until eugenics arrives.

Meanwhile, we are all not to leave our clinics and plunge into a crusade. The ideal hygienic state is a long way ahead. The doctor can show active sympathy, he can render assistance by daily personal teaching and by the evincing of a genuine public spirit.

His cue is also, in so far as possible and wise, to oppose institutionalism. We do not want to become as a profession lodge doctors, government doctors, institutional doctors. There must be opportunity for high individual effort, there must be opportunity for talent to rise, and genius to reach its proper level. We cannot conceive of this if we are a body of civil servants at so much per annum. But this is the trend and we must help to guide it wisely.

I do not expect that I shall arouse at once a general and active zeal in our work of prophylaxis. We appear, though we are not, to be committing by such proposed activity for public health an honorable hari-kari and the operation is one that achieves merit but arouses only sporadic enthusiasm. As individuals doctors contribute immensely to hygiene, as a body they do not flock to public health discourses and discussions. But it is sufficient if they give their individual help and their cooperative approval, that they suggest and advise and do their indispensable share of the work.

SPECIFIC PROPHECIES; MEDICAL EDUCATION.

But let me now, having prophesied and exhorted on a general theme, lay out a horoscope for some particular conditions. It goes without saying that our medical colleges will steadily improve and be brought up to uniform conditions. This change is already rapidly taking place. I venture to predict that our institutions for graduate study will be placed also under regent's or some equivalent State control. In this way the doctor who comes for postgraduate study will be obliged to show some qualifications for the work. And on the other hand the kind of and amount of teaching will be supervised so that he will be compelled to do definite tasks and will receive adequate courses of instruction. The day of the casual teaching of medicine will pass, or else my vision is a hallucinosis.

The greater hospitals and all the really great hospitals will become allied with universities or teaching bodies. The hospitals will be used to cure the sick and also to teach the growing generation how to cure. They already have as adjunct forces well equipped laboratories, but there will develop also a new factor, a thoroughly organized system of social service. This social work will be recognized as part of the hospital and outpatient system, one quite as important in a way as the medical work proper. By it the efficiency of the hospital will be increased, its admissions controlled and those discharged receive proper aftercare. Here, too, will be a rich field for trained workers and assistants to us, the children of Apollo.

The hospitals will be under the medical direction of fewer doctors. They will give to them a definite part of their time and will I hope be paid for such service. They will have many assistants and associates who will be trained to be hospital men. But I doubt if we adopt in this country the German method altogether. The American physician is too much of an individualist to become an institutional man,—at least, this is not his highest ideal or ambition. There are things to be learnt by contact with the world which make for medical skill more than do laboratories, and besides, the best of the doctors of the future are needed also in the community at large. The poor and indigent have no right to *all* of our best energies, and some must be given to the home and the invalid in his own environment. People will continue to get well in their own houses and to adjust their lives so that they will stay well amidst the environment in which the duties of their lives are to be carried out. Still there is already a growing hospital habit.

THE OLD FASHIONED GENERAL PRACTITIONER.

There has been much said about the disappearance of the old fashioned family physician and general practitioner. He was a splendid figure and useful person in his day; but he was badly trained, he was often ignorant, he made many mistakes, for one cannot by force of character and geniality of person make a diagnosis of appendicitis, or recognize a streptococcus infection. I think the ill educated old family doctor, idealized perhaps less by our memories than in our story books, is going, and it is a good riddance.

THE NEW TYPE.

There is going to be and there is already developing a general practitioner of a higher type. Soundly educated at the start, he is trained in college and hospital and laboratory until he knows the human body. He has had enough contact with special medicine and surgery to recognize rare as well as common diseases, and he knows, if he is a real man, that he has his limitations. He can be also of the human and benignant type; though there he has yet to grow. This new practitioner, the internist,—will be vastly safer and more useful not only as a doctor but as a member of the community. That is he can be such. Here is where my prophecy limps, my hope and belief begin. Always there must be honesty, of work and purpose, or all will fail.

This new type of family doctor is not going to be swept aside by groups of specialists. These latter will but adorn and enrich his progress. With the mellowing years the specialist will either creep into a little narrower, more difficult, perhaps sometimes more brilliant niche, or his line of work become so small that he will disappear. Every year the real creative specialist organizes his knowledge, puts it into a practical form, and turns this and his inventions and discoveries over to general medicine and surgery. He tills his little field. The internist gathers in a tithe of the crop and encroaches a little more upon the specialist's working ground. So I see the practitioner of internal medicine, the stateliest figure in the procession of our successors who fill the prophetic vision.

So much for the medical side. It is very obvious already that the surgeon of the large centres is going to become not exactly a specialist but more and more specialized. There will be those who devote themselves more particularly to the different organs and systems of the body from brain to bones. This is a wise and proper tendency, and will secure for the community better technical work and in the end a more conservative attitude to the patient. All over the country there will be small hospitals where the general practitioner and surgeon will do the traumatic and emergency work. But he will, I believe, learn to recognize his limitations and that to remove a tumor from the brain, to deal with an aneurysm, or a serious chest or abdominal condition means years of special practice and experience. And I am hoping that as the surgeon learns to take a keener range of view he will become perhaps, if I may say it, a little less appropriative, objective, and technical, less amazed at his own resources, more thoughtful, sympathetic, and, touched finally by an awakening of social consciousness, become beloved for the things he will not do, as well as for what he does.

MEDICAL WOMEN.

It is with timid and uncertain note, that I utter a vaticination concerning medical women. Who is going to measure the possibilities of woman's intellectual and economic achievements now that the shackles are dropping from her enticing but long enslaved person? However, we have data regarding the past. These show that women physicians have been decreasing in numbers, more proportionately than men, in late years. They have done good but not much brilliant or constructive work. They have so to speak "made good"; they have shown that there is a distinct field for them and so there will continue a supply of women physicians. Their best work has been done and probably will be done in laboratories and as institutional physicians, where they fill a genuine need. But women physicians have also been quick to see the need of social reforms and the value of preventive medicine and have proved themselves eager to work for its promotion. The woman doctor of the future will achieve perhaps her great results in these fields and in all the lines that lead to social betterment.

SCHOOL DOCTORS.

The doctor of the future will be a schoolhouse doctor. Every school board or authority which controls the education of children in a town or city will have its bureau of child hygiene and the doctor will watch over the methods of education of the child, examine and sort out the sick and unfit and prevent the tremendous waste that comes from forcing the retarded or handicapped into the same lines of work as those of sound and well balanced physique.

The doctor will make the teacher's work easier,—and the neurasthenia of school teachers fills sad pages in my history books. He will make the teacher's work better. He will be very useful, very expensive, but much beloved, whereas now, I may say *quoad* the school, he is none of these things.

DOCTORS AND MARRIAGE.

The doctor of the future will not marry,—I mean he will not be the official who performs this function. But he is going to be a person whom lovesick maids and men will have to take seriously into account. He will not approve of the love story that makes the best seller.

The earlier flames of love are often a form of attraction or a phase of cohesion which would probably be classed by biologists as a gynetropism or androtropism (like "the desire of the moth for the star"). The phenomena are most interesting, but not necessarily racially valuable. Love is sometimes only an obsession; in all cases it needs a coefficient in the sobriety of a well composed germ plasm. Really even the truest love cannot make a family happy which has damaged goods as the parental product. So the doctor of the future will appear in all true and realistic love stories. He will also perhaps mitigate the climaxes, and even lessen the triangular banalities of the drama. "Eugenics driving Cupid" or "Venus at the feet of Æsculapius" will make future masterpieces for the mural decorations of the National Hall of Health. But this is so very far ahead that I feel I am getting into the fringe of cloudland.

THE DOCTOR AND ECONOMICS.

I would like to inject a word regarding the so to say personal economics of the future medical man. We hear criticisms of the doctor's—and especially of the surgeon's fees, and we are told that the present sliding scale of charging is wrong. We are told that, like Robin Hood, we rob the rich to pay the poor.

The present methods of paying for medical service will no doubt be somewhat changed. A practice already exists in Germany by which the head of a family engages the services of his family doctor for a certain definite sum per year. There are conditions in which this plan may be a good one and it will obtain some supporters. The plan of medical insurance for the working man in some form should and will, Doctor Bristow believes, also be developed, and the need of sparing the poor will be lessened. There will be a larger number of institutional and salaried physicians. Still the present custom of paying a fee will also continue and largely prevail. People want to choose their advisers as they need them; and special talent will always command special prices as it does in other arts and professions. Meanwhile it must be said that the present "sliding scale" is by no means a widespread or general thing. The vast number of practising physicians the country over get just about the same amounts a visit day by day. Furthermore, while there are individual cases of extortion, these are only exceptions. There is no real amount of what may be called "graft" or dishonesty in the profession here. The system in vogue cannot be radically bad for the sick or economically bad for the community, because doctors rarely get rich and never get wealthy through their practice. Doctor Bristow states that perhaps ten to twenty per cent. of physicians may be called prosperous. The rest just get a living or less. I hope the doctor of the future will give better service and charge more for it. After all health is man's best asset, and a life is sometimes worth more than the highest professional fee—whether architect's, lawyer's, or doctor's.

PUBLICITY MEDICAL COUNCILS.

The profession of medicine is a very personal kind of occupation, dealing intimately and confidentially with the lives of people. Our "business" is in a degree a private affair, and hence perhaps the disposition of the profession as a whole not to take the public and press easily into its confidence. It is often difficult or impossible to make the laity get at our point of view.

The profession, however, owes it to the public to give salutary information and advice on matters pertaining to public health, the prevention of diseases, and also something of its aims, its accomplishments, and ideals.

There should be and will be some kind of authoritative body in all large communities which should act as intermediary between the public and the medical profession, a body which should advise, inform, interpret, warn, defend, and if necessary apologize. When medical or sanitary questions of public interest and importance arise, such bodies should be called on to speak, instead of individual doctors. This kind of interpretative and educational work is done now to an extent, by medical journals, through the resolutions of medical societies and the official health boards. But this is not definite or always authoritative enough. There is need of, and there will develop more personal representative and authoritative councils.

The New York Academy of Medicine has a Council and committee which will, it is hoped, in time amply fulfil this function of a Publicity Medical Council; and I trust the method will grow with the coming years.

DOCTOR AND STATE.

In an organized and still more intensive way than now, the doctor and the State will look after the food supply, the water supply, the cleanliness of towns and homes, and the proper disposal of their waste. He will indirectly help in seeing that workers are protected from the effects of too long hours, bad sanitary conditions, dangerous trades, and the accidents incurred in this work.

I hope he will help the poor as well as those not poor to have better means for recreation. The wise employment of the leisure hours is sadly needed for men and still more for women. The most people get ill during leisure hours. Work is healthful; leisure is the dangerous time.[1] This sentiment was immortalized by the poet of holy memory, Watts, but sometimes the sentiment that is immortal makes no impression. A healthy nation is wise and liberal in its recreations,—if there are none it is better to go back to work. I would like to see the recreation doctor, the play doctor, loom large in the future.

All these lines of activity are being carried on now in a way, but the people do not yet impose due emphasis upon them; the work is perhaps too obvious and undramatic. How sensible, how important, and how relatively easy it would be to accept and adopt the principles of hygiene as the leading things for a community and a party to interest itself in.

We worry and talk and quarrel over tariffs and the high price of living, big trusts, and armored cruisers. We dig canals, erect high buildings, and build long railroads, and proclaim the tremendous need of being progressive—this is very fine. But we can really do without so much transportation and bigger business. We do not need progress so much as we do wisdom—a sense of proportion. Why need we put the greatest emphasis in life on having more railroads and factories, more populous towns, and more extensive export trade? All this brings simply more hungry people to our shores to reap the advantages and multiply our social problems, obliging us to do the work all over of providing for more and more business. If a company makes a million it must double its plant and make two. If one store does well, there must be a chain of stores. This is the dominant note and compelling force of our country.

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[1] The poor of New York play in 12,500 saloons, 800 dance halls, and 600 motion picture shows. Into them they pour $70,000,000 a year. We arrest one person out of every twenty-nine each year. We spend $21,457,000 on policing and protection, and only $650,000 on recreation for the poor.

But we say, we the doctors of the future: Take to your hearts a saner policy and warm your souls with more useful fires; guard the child, bring it up to be healthy and morally sound; guard the home and the individual so that he will not be fed on poisons, or live in foul conditions; keep the community from disease, from insanity, weakmindedness, depravity, infections, poisons; make them breed healthy children and live long, sane and healthy lives; also keep the commandments. And remember, greed and dishonesty will spoil every one of my visions.

This is our point of view, and in promoting it the doctor of the future will, I am sure, win for himself a place higher in the hearts of the individual than he does to-day, or than any group of workers ever has done from the dawn of time.

Two thousand years ago a Roman poet prayed to "the gods who love the sevenfold hills of Rome." We should like to predict that the doctor yet to be may help to bring about for us that state of things for which this poet eloquently sang:

> Ye gods! if Rome be yours: to placid age
> Give timely rest, to docile youth
> Grant the rich heritage
> Of morals, modesty, and truth
> On Rome herself bestow a teeming race,
> Wealth, Empire, faith, and all befitting grace.

53 EAST FIFTY-THIRD STREET.

NATIONAL MEDICAL INSURANCE AS AFFECTING THE FUTURE OF THE DOCTOR.*

By A. T. BRISTOW, M. D.,
New York.

The medical profession has for years been trying the impossible experiment of getting blood out of a stone. It is very much astonished at its failure to accomplish the transfusion. It has blamed the superabundance of hospitals, dispensaries, and the numerous undoubted abuses of these public charities for the sterility of its experiment. It has never seemed to occur to us that we have been endeavoring to accomplish the impossible. We have passed all sorts of wise and futile resolutions against all sorts of economic conditions, which have sprung from causes quite beyond our control, and then we have stood around in open mouthed wonder at our failure to accomplish a miracle.

The science of medicine differs from the other learned professions in this respect, that it is a necessity to the public. It may, it is true, become a luxury to the rich, especially when the high priced specialist sends in his bill, but medicine is a necessity to the poor man. He can die without the intervention of the clergy. This I say with humble apologies to the cloth. As he has little property, the lawyer has no interest in him. If, however, he falls ill of pneumonia or any other of the ills which escaped from Pandora's box, the doctor is a necessity. He cannot even die without a doctor, except with the kind assistance of the coroner. The service of the medical man is, therefore, compulsory on both sides, a fact not to be lost sight of in considering the problems which surround and embarrass the future of the doctor.

If our prospective patients averaged incomes as high as $2,500 per annum our financial problems would be relatively easy and there would be no dispensary problems, no lodge nor contract practice; but the fact is that the income of the average citizen and wage earner is far below this sum. It is almost impossible to get any statistics which would even approximate accuracy, since in this country we have no income tax, but it must be evident to the careful observer that the great army of clerks, bookkeepers, small tradesmen, small manufacturers, artisans, factory hands, and farmers engaged in cultivating holdings under 200 acres will not average even $1,500 a year. Add to this the immense army of unskilled labor and the average income will be pulled down below $1,000. This average will not be much increased by the united income of millionaires, and the well-to-do with incomes of from $5,000 per annum upward.

The Macmillan Company published a work last spring entitled *Wages in the United States*. The author, Scott Nearing, Ph. D., having made an investigation of the annual income of adult males in the United States, finds that ninety per cent. earn less than $800, seventy-five per cent. less than $600, and fully fifty per cent. less than $500 per annum. Nearing says that twenty per cent. earn as low as $200 per annum. Professor Chapin's estimate of the sum necessary in New York for a man, wife, and three children to maintain a normal standard of living is $900 per annum. More recently, Mr. John A. Kingsbury, general agent of the New York Association for Improving the Condition of the Poor, says that at present $1,200 is essential to the maintenance of a normal standard. This seems to be nearer the truth than Professor Chapin's estimate. He further states: "An income of $900 a year, as indicated by our investigations, will provide only the minimum of nourishment and comfort and will not meet any extra demands that may at any time be made on the family. A family living on such an income in New York must economize in every way, especially in clothing, and must depend upon free dispensaries in times of sickness." How many families have incomes as low as $900 per annum? Mr. Kingsbury states that in the tall office buildings, the employees classified as elevator men, hall men, watchmen, firemen, porters, and general utility men averaged from $10 to $15 a week. In the *Evening Sun* for November 16, 1912, appeared an announcement that the street cleaners were dissatisfied with their annual wage of $780 per annum, both on account of the high cost of living and because the expenses of uniforms, rubber boots, implements of their work, and the like averaged $125 per annum, leaving them but $655 to support their families.

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*Address delivered at the Anniversary Exercises of the New York Academy of Medicine, November 21, 1912.

Again, consider the wages of the mill worker at Lawrence. Investigation showed that the beneficent Schedule K produced for these people the most meagre returns. Men and women do not riot on full stomachs. It is the lean belly that rebels. What is to happen to all this multitude when sickness comes? It is not difficult to make answer. We must also remember that it is not the people with comfortable incomes who rejoice, or otherwise, in large families. It is not on Fifth Avenue or Murray Hill that you will have to pick your steps to avoid running into children. Compare a photograph of Rivington Street at midday with one of any of the fashionable residential streets and note the difference. The smaller the income the larger the family.

Another matter worthy of consideration is the fact that the fixed charges of living bear a steadily increasing ratio to the total income in inverse proportion to its size. A man with an income of $5,000 a year will not greatly suffer if his income is cut down by sickness as much as twenty per cent., yet that would be a percentage which would mean privation to the wage earner of $1,000 a year and would come dangerously near semistarvation to the street cleaner with his present income of $780 per annum, less his overhead expenses of $125 for essentials necessary to his occupation.

It is also to be noted that when any of these wage earners of the class we are considering is laid up with sickness, pneumonia, it may be, or typhoid fever or the white plague, his little income immediately stops, and if he has any savings laid up in the savings bank, these dwindle like snow before a hot sun, and soon the pawnbroker is his banker at the expense of his poor household gods, gods no longer, but poor broken clay to stop the cracks through which the biting bitter wind of poverty is blowing.

The fact is that the vast majority of city dwellers have the narrowest possible margin between their fixed charges and their total incomes, and the same is true of the dwellers on the land, with this difference, that for them it is possible to live off the soil, at least in favorable years, so they are not quite as badly off in time of sickness as the dweller in the large city whose income stops when he takes to his bed, and who has no farm products stored in his cellar to feed hungry mouths.

What has been the result of this state of affairs so far as the people are concerned? They have flocked to the free dispensaries. They have filled the hospital wards and have become pauperized, not from choice but necessity. What else was there to do. Needs must, when the Devil drives.

What has been the result of this play of cause and effect on the medical profession? A few men with wealthy and fashionable clients have grown rich. A somewhat larger proportion, with clients of the well-to-do middle class and those of moderate but adequate means, have made comfortable though not large incomes; but the vast majority of medical men are as poor as their patients. When I have said this in public before, my critics have reminded me of the automobiles which line the street for a block at our medical meetings in Brooklyn. They, however, forget that of the total census of doctors in Kings County, less than half are in the county society, and of these never more than twenty per cent. ever attend the meetings, and the average is less than that. The attendance at the meetings of the State society is less than seven per cent.; of the American Medical Association, between ten and fifteen per cent. This would, in my opinion, represent about the proportion of the fairly prosperous members of our profession.

What, then, is the condition which presents itself? On the one hand, we have the greatest number of our citizens with fixed charges almost equal to their incomes; for this reason they are unable to bear the financial strain of illness and disability combined, and are compelled to seek charity. On the other hand, we have a body of men whose education is the most costly of any of the learned professions who are compelled to contemplate with such calmness as may be, the curtailment of their incomes by the advances in prophylactic medicine, while not alone are their living expenses steadily increasing, but the cost of their education in both time and money.

The people need medical attention for which they are unable to pay the regular rates, and the medical profession needs some relief from the inroads which science and the State are making on the incomes of its members.

For a number of years in this country, and for a much longer period in Europe, the people have been combining in associations of sick benefit lodges in order to get medical attention which was within their means. I have already shown that with our present system of charges the doctor is a luxury quite beyond the means of the average citizen, unless we except very short illnesses.

Thus the resort to lodge and contract practice has been the answer of the class of citizens to which I have alluded, to the query, "How are we to get medical attendance in our homes when we need it?" I hear some one say that such people ought to go to the hospital. Such a solution of the problem does not help the finances of the medical man at all. Moreover, it would often involve domestic perplexity in the family of the sick person. It is not always feasible to lug the mother of a family of five or six children off to the hospital. Even though ill, she can exercise a certain amount of control and supervision over her family, whereas a sojourn in the hospital means that the children and the family management are dependent on the kind offices of neighbors. Fortunate is it that the poor are good to the poor, otherwise doubly unhappy would be their lot. It is not unnatural, therefore, that the poor man has endeavored to find some means of making his necessities fit together with his income.

Through the kindness of medical friends I am enabled to give you some idea of the extent to which this lodge practice is carried, among the Italians and Hebrews. An Italian physician writes as follows:

> There are over 275 mutual benefit societies in greater New York. This is exclusive of the Chapters of the order known as *Figli d'Italia* of which there are over forty-five in New York; also six or eight of the Foresters Order. The total membership of all these societies is over 75,000, paying a weekly benefit from five to twelve dollars with free medical service. The physicians of these societies are under regular contract at one dollar yearly for each active member and three dollars yearly for the whole family. In some cases there are as many as ten or twelve members in the family. A few societies pay $1.25 for each member. A member is supposed to receive free medical services even when he is in arrears as much as three months with his dues, although other benefits are cut off. There are physicians who make a specialty of society work and attend as many as ten or more such organizations. In such cases, however, the physician is usually more conspicuous by his absence than by his attendance.
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> There are a good many of these societies which make contracts with drug stores for prescriptions at a reduced rate. These drug stores often belong to the society doctor and the charge for the prescription is far from being reduced.
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> Membership in these societies is not limited locally. Some have members living as far as fifteen miles away from the place of meeting and these members are entitled to free medical and surgical services. Some of these societies require the physician to do obstetric work at greatly reduced rates although obstetrics with the Italian is largely done by midwives.

From one of the high offices of the Federation of of Jewish Orders comes the following information:

> There are two thousand Jewish lodges in the State of New York, and these are divided approximately into three lodges to each physician engaged in this form of practice. This does not include small benevolent societies in the smaller towns of the State. In the city of New York there are about 500 physicians (Jewish) engaged in lodge practice. These 500 men get from one to two dollars a year to attend about 500 or 600 members; that is, they get paid so much a member a year. In addition, many of them must look after the members' families, consisting of wife and any number of children from two to eight in number. Some of the lodges pay the doctor one dollar extra a year for looking after the family of the member. The average number of calls made a day by men engaged in lodge practice is from ten to fifteen house calls, and they average at their office in office visits, from twenty to forty. This form of practice is not controlled by our medical societies, nor is there a form or code of ethics regarding the same. That the practice itself is poor, that the services rendered are second rate, is obvious from the amount of work at low pay which this lodge practice entails.

This is a mere sketch of the extent and methods of lodge and contract practice in New York State. It will readily be seen that in these two nationalities alone there are at least 300,000 members participating in the benefits of medical attendance at low rates. In making this calculation, I have figured the 2,000 Jewish lodges in New York State as having an average membership of 100. The fact is that the lodges in New York city exceed this amount many times over, so that the true figures would probably be nearer the half million mark. Nor is lodge practice in this country confined to these two nationalities. Many native Americans, in our rural districts particularly, belong to the Foresters, and there are countless other organizations with fanciful names and similar purposes.

Various county societies have at times issued pronunciamentos against these societies and have even threatened with expulsion any of their members who were under contract to a lodge or benefit society. On a threat to bring a physician of Kings county before the council for lodge practice, the reply was made, "If it is a question between my wife and children and the county society, I shall choose my family every time." Nothing was done in this case. The reply seemed convincing. We have lodge practice with us. It is here to stay. Nothing that this body can do, nor the county society nor the State society, will change the situation one hair's breadth so far as the continued existence of these societies is concerned.

We have all of us, the writer included, condemned these benefit societies by wholesale, and this, I am afraid, without much real consideration of the circumstances which have brought them into being and made them prosperous. What, after all, is lodge practice from the standpoint of the people? It is nothing more than a system of medical insurance. The poor man realizes that there is no margin between his income and his fixed charges. He must have medical attendance. He and his have crowded our dispensaries, but the dispensary fails to care for the poor man in his home, so he has invoked the insurance principle, which is to-day, if not the cornerstone of our social system, at least a highly important part thereof. No one thinks it wrong to take out an accident policy, a liability policy, a sick benefit policy, or a life insurance policy in an old line company. Why should it be right and proper for the members of this academy to hold sick benefit policies and wrong for the poor man to do the same thing according to his needs and means? What is the difference between the two cases? Briefly, it is a difference of method. The old line company pays its beneficiaries a weekly indemnity for a specified time and the insured employs his own physician and pays him. There is no question that this is the better way, both for the patient and the physician. Is it possible to apply the same principle to the poor man? His policy, remember, must apply, not only to himself, but to his family. But an old line health policy alone used to cost $35 per annum, and the companies now no longer write an exclusive health policy, but accident and health combined, for which the charge is $60 per annum, restricted to one beneficiary. It must be evident to all fair minded men that any such insurance is an impossibility to the poor man. It is just as much out of his reach as a physician's attendance at rates of two dollars or even one dollar a visit for a continued illness. Is the poor man, therefore, to be debarred from taking advantage of the principle of insurance against sickness because the shallowness of his purse prevents his adopting the same methods of insurance of which many of us avail ourselves? Surely not, if we believe in social justice. It seems to me that we must concede that the principle of medical insurance is correct.

If, contrary to our beliefs and expressed opinions, we can bring ourselves with fair mindedness to admit the necessity of medical insurance for the large mass of our people, I believe we shall have taken a long step in the direction of the solution of the problems which have been vexing us. The people need our help, but we have persisted in holding our services at prices which are prohibitory. It is my opinion that the future of the doctor is going to be largely influenced by the view which we as medical men take of medical insurance. We can either recognize facts as they are and meet them with advantage to ourselves as well as the people whom we serve, or we may blindly shut our eyes to the facts and cry that it is unethical to attend the poor man for a price within his means. Do not deceive yourselves. We must reckon with this principle of insurance against sickness. When the English government incorporates the principle into law and creates a system of national insurance against sickness we may be certain that ultimately the same principle will gain State recognition in this country.

The British Medical Association will fight in vain against the English government, except in the matter of details. It has succeeded already in securing concessions by way of increase of the per capita payments to the amount of fifty per cent. I beg those of you who are interested in this most important subject to read the supplements to the *British Medical Journal* entitled National Insurance, which have been appearing through the current year. All phases of this question are discussed with elaboration and fairness. The British Medical Association is setting our own organizations a magnificent example of what it is possible to accomplish by loyalty and unanimity of purpose when the interests of the medical profession are involved.

We must then recognize, at least so it seems to me, that the principle of medical insurance is correct. What the medical profession must accomplish is a reform in the methods of administration.

I am perfectly willing to concede all that may be said concerning the abuses of lodge practice. They are manifold and are unfair not alone to the medical man but retroactive on the beneficiaries of the system.

It ought to be possible so to reform these methods as to make the system a real blessing to the common people and productive of an honorable remuneration to the medical man. A full consideration of this part of my subject would require more time than could possibly be available here. Nevertheless, an abstract of the resolutions passed at various meetings of sections of the British Medical Association will serve to give direction to our thoughts. There should be:

1. An income limit (put at $10 a week in England).
2. Free choice of doctor by patient, subject to consent of doctor to act. (It is premised that the doctor is one of those under contract.)
3. Medical and maternity benefits to be administered by local health committees and not by friendly societies. (That is to say, the medical profession is to be in control—not the lodges.)
4. Medical remuneration to be what the profession considers adequate, (8s. 6d. in England).
5. The method of remuneration of medical practitioners adopted by each local health committee to be according to the preference of the majority of the medical profession in that locality.

The most important points in these resolutions are the income limit, the choice of doctor, and the passing of the control of the insurance from the hands of the friendly societies to the doctors.

This is in accordance with sound economic principles. No insurance company could exist for a year if its rates were determined by the insured. These are subject to the calculation of the actuaries and somewhat similar methods would have to be adopted in any scheme of State or National insurance.

CONCLUSION.

A system of national or State medical insurance may be the solution of some of the problems which confront us, both as citizens and medical men. The principle of insurance, with proper limitations, seems to be sound. Some method of providing medical attendance for the people will have to be devised which takes cognizance of their necessities.

Of one thing we may be sure. The medical profession will never shirk its responsibilities and will ever consent to suffer wrong rather than withhold a helping hand. The motto of this academy was not inscribed on its great seal in vain:

Homines Deos Accedunt Hominibus Dando Salutem.

234 Clinton Street, Brooklyn.

CANCER OF THE UTERUS.*

Which Is the Preferable Operation?

By H. J. Boldt, M. D.,
New York.

There is no subject in gynecological surgery that has received more attention from leading gynecologists the world over than that which I now purpose, without statistical citations, to place before you for consideration.

I believe that all gynecological surgeons are agreed that the vaginal extirpation of a carcinomatous uterus, particularly by the method generally used, gives a much lower primary mortality than the extensive abdominal operation. But we are also agreed, that when the disease has its origin in the cervix, even though it is still in seemingly the beginning stage (the early stage of epithelioma of the *vaginal portion* of the cervix is not included), the percentage of recurrence is very large. Then, as to ultimate cure—that is, no recurrence within five years after operation—we should bear in mind that a question sometimes arises whether a particular specimen that was submitted for microscopical examination was really carcinoma. Such differences of opinion among pathologists even of good reputation are not unusual. Such questions, however, arise only over specimens that present atypical features under the microscope. Just as numerous instances of reported benign conditions proving subsequently malignant are known to us, so the reverse is not infrequent.

But even at this time there is no unanimity of opinion as to which is the best technic or the best method to follow when operating for cancer of the uterus.

My old friend, Hofrat Professor Schauta, told me, during the past summer, that with the technic of vaginal hysterectomy devised by him, and practised in his clinic, the ultimate results are equal to those of his confrère, Professor Wertheim, of the second gynecological clinic at Vienna; whereas the primary results are far superior. In that clinic, it is true, the chief and his assistants, particularly Doctor Cristofoletti, are artists and masters of the technic, and, undoubtedly, any one who has seen the work there will acquiesce in the assertion that the parametria are more extensively removed by them than is generally done in vaginal hysterectomies. This is, in my opinion, the only proper method of doing a vaginal hysterectomy for cancer of the uterus. And while I myself have done vaginal hysterectomies somewhat similarly, I did not remove the parametria so extensively as do Schauta and his pupils. The features of importance are these: An extensive paravaginal section must be made; and it should extend about two to three cm. behind the anus. The vaginal cuff, which is next made, takes as much of the upper part of the vagina as is thought to be necessary—usually the upper third. By such an extensive paravaginal section, one makes for oneself an adequate approach to the field of work. The bladder must be well pushed off, particular care being given to the lateral attachments, so that the ureters can be fully exposed to permit tying the uterine artery outside of them. Only in this way can we get the parametria free enough to extirpate extensively.

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*Read at the meeting of the Southern Surgical and Gynecological Society at Old Point Comfort, Va., December 18, 1912.

But does that method really permit one to do as satisfactory an operation as the abdominal route? Formerly I thought that it did; but in spite of what Schauta asserts for it, despite indeed the excellent ultimate and primary results, I would limit its field of application to women who are very obese; to the very early stages of epithelioma of the vaginal part of the cervix; and to cancer of the body of the uterus. But particularly would I give preference to the vaginal operation in the varieties mentioned, should the patient's age be past fifty years, since at that age, and beyond it, the disease is not so likely to have affected the glands. Although I included early epithelioma of the *portio vaginalis* as an indication for vaginal hysterectomy, still, if the condition of the patient is in every way favorable, the abdominal route is, I believe, the more desirable.

The abdominal route undoubtedly does permit the parametria to be extirpated more extensively. Moreover, one has a better view of the field of work, and enlarged glands may be extirpated. While careful investigation has proved that the glands are but rarely affected in still operable instances of carcinoma of the uterus, nevertheless I myself have seen a carcinomatous gland at the iliac bifurcation in an early and easily operable case.

The fact that there are on record several cases of women still living without recurrence after five years from whom carcinomatous glands were removed, is, it seems to me, sufficient argument in favor of the abdominal operation, if done radically. But an abdominal operation, to be of value for the cure of the disease, must be extensive. It must be really a radical operation, and not only called a radical operation. The simple exposure of the ureters when operating, and otherwise doing no more than an ordinary panhysterectomy, is not technic that will give one iota better remote results than would that which was employed twenty-five or thirty years ago.

When doing the operation we must see that we have free access to the field of work; and the abdominal incision must be sufficiently extensive to permit this. Of the different kinds of incisions used to open the abdomen, none gives better nor, it seems to me, equally good access, as the transverse incision employed by Mackenrodt, of Berlin. It differs from the ordinary transverse incision, usually called the Pfannenstiel incision, in that the recti muscles are cut close to their bony attachment, instead of only cutting the fascia transversely and then separating the muscles lengthwise, as in the old and generally practised abdominal section.

The next and a most important point, is: Control all bleeding. This should be done as one proceeds with the operation. It is impossible to work in the pelvis without great danger of injuring the ureters unless one can work in a field free of blood. The parametria must be excised extensively, and any enlarged glands should be removed. There should be no oozing anywhere. The field must be dry before the pelvic peritoneum is closed over the raw surface. The question of pelvic drainage after such operations is still a moot point. The greater number of surgeons make use of it; I do not see the necessity if the precaution has been taken to control even the slightest oozing, and if one has done clean work.

It must, I believe, be obvious, that with the exceptions mentioned, the abdominal extirpation, done radically, should be the method of choice. And to better the primary results the employment of lumbar analgesia should find preference.

39 East Sixty-first Street.

A CONTRIBUTION TO THE STUDY OF APHASIA.

By Alfred Gordon, M. D.,
Philadelphia.

For a period of over forty years, the doctrine concerning motor aphasia reigned without being contested and thus became classical. Although Broca, in his original and subsequent presentations of the subject, was invariably exceedingly careful as to the exact localization of aphasia, nevertheless the observers that followed him, in the spirit of enthusiasm deviated from his doctrine and became too absolute in their interpretations of it. In his first clinicoanatomical case presented before the Anthropological Society, April 18, 1861, Broca observed that a softening involved the largest part of the frontal lobe in the left hemisphere. A few years later, after having accumulated a large number of pathological data, he expressed himself as follows: "Among so many diverse lesions, it is difficult to discover the one that produces aphasia, as almost always several convolutions are found diseased. However, one is authorized by exclusion to assume that the seat of aphasic lesion is in the third frontal convolution. At the same time it must also be admitted that the intensity of a lesion of this convolution is not always in direct relation to the alteration of the language. One sees, for example, a lesion of eight or ten mm. produce an almost complete loss of speech, while in other cases lesions ten times greater cause a very slight alteration of articulate speech."

As to the individual features of motor aphasia or aphemia Broca defines it thus: "The patient's intelligence remains intact, the phonation is easy, the tongue and lips produce normal movements, and still the speech is reduced to a limited number of articulated sounds, the entire vocabulary is composed of a brief series of syllables or sometimes of a monosyllable, or else there is no vestige of articulated language. The inner language is always preserved."

The difficulty of a precise localization did not escape Broca. Several years later he insisted that the insula and the lenticular nucleus are almost always involved together with the third frontal convolution. It is therefore evident that Broca himself was very cautious in his endeavors to localize aphemia. The discovery was so attractive to the investigators who followed him, that in their enthusiasm they departed from Broca's own views and accepted the third frontal convolution as the exclusive seat of motor aphasia. This exclusivism continued to exist in its entirety up to 1906, when Marie first dared challenge the scientific accuracy of the generally adapted doctrine, which up to his time had been considered incontrovertible and therefore classical.

Marie's formula is now universally familiar and too well known to dwell upon. His assertion is that Broca's aphasia is anarthria plus aphasia. Etymologically, anarthria consists of an impossibility or difficulty of articulating words; this is the former pure or subcortical motor aphasia. An anarthric understands, reads, and writes. His thoughts are intact, he can express himself by any other means except speech; his inner language is not altered. The aphasia itself is, according to Marie, the Wernicke's aphasia which, as is well known, is characterized by a disturbance of the inner language. There is but one aphasia that is an intrinsic aphasia, and that is Wernicke's aphasia. All aphasics present invariably an intellectual deficit, which may vary from a simple slowness of normal functions to a total suppression of all the faculties. The old Broca's aphasia is a mixed aphasia composed in various degrees of anarthria and of disturbances in the inner language.

Anatomically, according to Marie, the third frontal convolution may and may not be found involved in cases of aphasia, but it plays no part whatever in the function of language. The real lesion is found simultaneously in Wernicke's zone, and in the lenticular zone, so designated by Marie.

It is evident, and subsequent events proved it, that similarly to Broca, and more so to his followers, Marie himself entered a field of exclusivism. Numerous facts are gradually being brought to light which make one hesitate to accept the new conception of aphasia *in toto*. As in the case of the classical doctrine, the new one possesses certain features which are debatable and contestable, but an impartial appreciation of the acceptable and inacceptable elements of both can be decided only by carefully gathered clinicoanatomical observations.

As a modest contribution to this important subject the following three cases are offered for consideration. It will be seen that they are only an additional proof of the chaos into which the problem of aphasia has been thrown since its revision in 1906.

Case I. An Italian boy, sixteen years old, right handed, suffered for a period of six months before he died from headache, vomiting, and gradual loss of sight. At the time of the examination, viz., two weeks before death, the following symptoms were found: The gait was ataxic with a tendency to walk toward the left side. Besides, asynergia, characteristic of cerebellar diseases, was distinct: the trunk did not follow the forward projection of the legs while walking and if not supported the boy would fall backward and to the left. The knee jerks and Achilles tendon reflexes were abolished on both sides. Babinski was present on the right and doubtful on the left. The paradoxical sign was present on both sides. The grip of both hands was equal and normal. The face was slightly deviated to the left. Sensations were slightly diminished on the entire right side to all three forms, touch, pain, and temperature. There was no astereognosis, no asymbolia, nor any other disturbance of the deep sensibilities, such as pressure position on both sides. The hearing on the right side was markedly deficient. Smell and taste were normal.

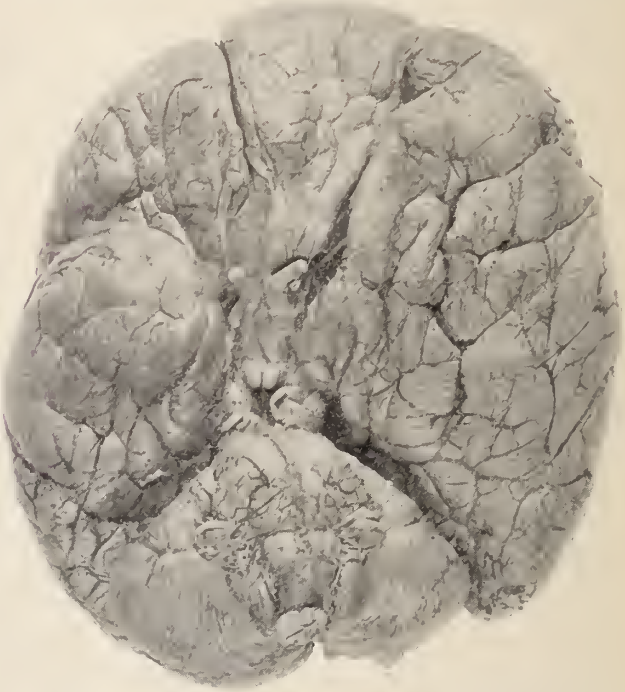

Fig. 1.—Base of brain. Tumor seen between temporal and orbital lobes in left hemisphere. The temporal lobe is very large and flattened (Case I).

The eyes presented the following condition (report of Dr. G. Friebis): Vision in both eyes is absolutely nil: there is an entire absence of light perception and of light projection. Pupils dilated *ad maximum*, indicating complete paralysis of accommodation. Partial paralysis of the extrinsic muscles of both eyes with decided protoptosis. The ophthalmoscope reveals a very high degree of papillitis or choked discs equalling 6 D in each eye.

The patient's speech was somewhat slow, but perfectly distinct as to pronunciation of letters, syllables, and words. He understood what was said to him and to each question he responded properly. The faculty of reading could not be tested because of the blindness, but there was no word deafness. He became easily fatigued at the least attempt to talk; would drop promptly in the chair whenever he was asked to get up and walk. He was somnolent and somewhat dull mentally, complaining of severe headache. In view of the condition of the eyegrounds associated with headache, vomiting, somnolence, and vertigo the diagnosis of an endocranial pressure, probably by a neoplasm, was made. As to the seat of the tumor, the cerebellar region was thought of because of the asynergia, of the tendency to walk toward one side, of the loss of the tendon reflexes in both lower extremities. A subtentorial decompression was advised and Dr. T. J. Schell performed the operation. Very great tension of the dura was discovered. The opening of the dura was followed by abundant hemorrhage. The bleeding at first could not be controlled in spite of all available means. Finally it was arrested, but the patient never rallied.

Autopsy was performed six hours later. The brain appeared large and wide. The left hemisphere was unusually large, long, flabby, and fluctuating at the base. The left temporal lobe was elongated in its anteroposterior diameter fluctuating upon the least pressure. Its anterior portion which was thin and flabby, was separated from the orbital portion of the brain by a cystic mass which apparently was continuous with the lobe itself. (Fig. 1.) The left optic tract, the part entering into the formation of the chiasm, was thickened and covered by a thick membrane which extended from the orbital portion of the brain back to the interpeduncular space. There was apparently a connection between the cystic mass and the third ventricle, as pressure upon the first produced fluctuation and elevation of the interpeduncular space. The cerebellum was apparently normal. Accidentally the cyst was punctured, and about two ounces of fluid escaped. After hardening the brain in ten per cent. formaldehyde solution for three days, an anteroposterior transverse section was made. In the left hemisphere a large mass was seen, wedged in between the frontal lobe and the insula, and extending into the lateral ventricle in its anterior and lateral horns, compressing, displacing, and destroying largely the surrounding tissue. Among the latter the white substance and the cortex of the insular region and of the lowest portions of the ascending convolutions, also the basal ganglia, especially the lenticular nucleus with the surrounding fibres, had all suffered considerably: all presented one uniformly softened mass extending back into the occipital lobe. The adjacent frontal portion of the brain being compressed by the tumor, was very much reduced in size. The cortical border of the occipital lobe was also reduced in size. The posterior horn of the occipital lobe was deformed in shape. In the median line of the section there was seen an enlarged and oblong cavity leading into the third ventricle. The entire temporal lobe was softened and enlarged (Fig. 1a).

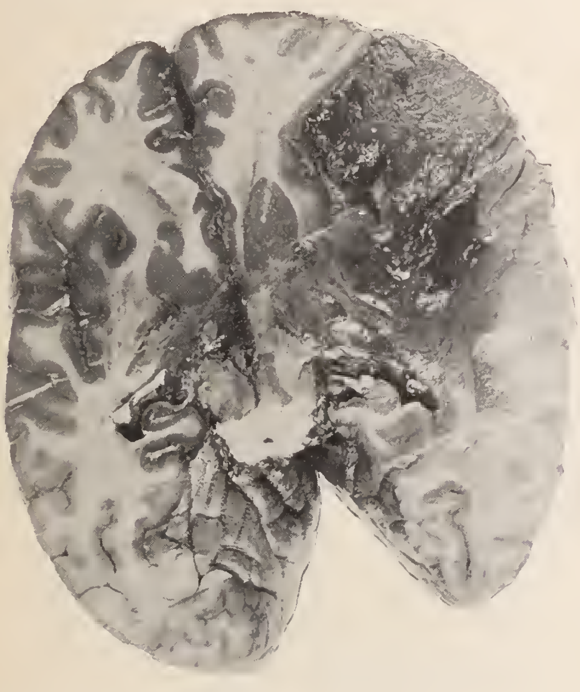

FIG. 1*a*.—Anteroposterior section. Tumor is seen wedged in between insula and frontal lobe. It extends into lateral ventricle, destroying surrounding tissue (Case I).

The tumor was hard in the centre, but soft at its periphery; its exterior portion underwent cystic degeneration. On the surface of the section multiple hemorrhagic foci were visible. Microscopically, the tumor was a round cell sarcoma. Microscopical sections of brain tissue lying close to anterior and posterior portions of the neoplasm, showed a mass of degenerated and deformed fibres.

CASE II. W. L., colored, forty-five years old, laborer, right handed, was seized, two years ago, with an apoplectic seizure consisting of complete loss of speech and a mild right hemiplegia. The speech rapidly improved, but remained somewhat indistinct. The weakness of the arm and leg gradually, but very imperceptibly, increased, and only at the end of a year a typical hemiplegia with its habitual signs developed. When two years later he came under my observation, the following phenomena were in evidence: The rigidity in the right arm and leg was distinct but only slight. Passive and active motions were possible. The leg was less active than the arm. The knee jerk was exaggerated. The Babinski and Gordon signs and ankle clonus were present. The right lower half of the face was somewhat deviated to the left. There was a very pronounced hemianalgesia on the entire paralyzed side. The senses of touch and temperature were only diminished. The patient complained continually of pain in his right arm and leg. The right hand was somewhat ataxic and frequently moved involuntarily upward. The fingers were animated with athetoid movements. There was no astereognosis, no asymbolia. The faculty of speaking was preserved, but some words, especially those containing labial letters, were not altogether distinct. He could, however, make himself understood and understand others There was no word blindness nor word deafness. The mentality was well preserved.

The eye examination was negative, with the exception of an inequality of the pupils, the right being the larger. The right ventricle was dilated and the aortic second sound much accentuated. The sphincters were intact. The urine contained traces of albumin, otherwise was negative. Wassermann test negative.

The patient's condition remained unaltered for a period of two months, when he suddenly became comatose and developed epileptic seizures. The convulsions were almost totally confined to the right arm and leg, and only occasionally were they seen on the left side. The eyes were constantly turned to the right side also during the intervals between the attacks. When the head would be forcibly drawn to the left side, the eyes would nevertheless remain turned to the right. Nystagmoid movements of the eye to the right were also evident. The convulsions were very frequent and lasted two days. Patient remained unconscious for six successive days, at the end of which time he expired.

Autopsy was performed six hours later. The brain was removed and after hardening in ten per cent formaldehyde solution, an anteroposterior transverse section was made. A very large recent hemorrhage was found in the right lateral ventricle, extending from the anterior end of the anterior horn and extending back to the posterior horn. The hemorrhage destroyed the basal ganglia and the surrounding white matter, also the internal capsule. It was evidently the immediate cause of the patient's comatose state and death. In the left hemisphere an old softened area was found, situated at the level of the beginning of the posterior cornu involving the lenticular nucleus, the internal capsule, and partly the optic thalamus, extending back at a short distance into the white matter of the occipital lobe (Fig. 2).

CASE III. O. A., colored, aged thirty-eight years, laborer, right handed, with a history of syphilis at the age of twenty-three years showed suddenly a right hemiplegia without loss of consciousness. The paralysis was typical (rigidity of arm and leg, toe phenomenon, etc.). For three consecutive months, until his death, the patient presented no motor aphasia, no dysarthria, but partial alexia and partial verbal amnesia. The mental condition was, on the whole, fairly good. He could converse with the nurse on the weather and his family, gave prompt and clear answers on the subject of his illness, on his comfort or discomfort; at times, however, there would be lapses of memory and in comprehending. (A detailed account of this case was given in *Archives of Internal Medicine,* December, 1910, vi, p. 709.)

The autopsy showed the following condition in the left hemisphere: The entire left internal capsule was totally softened. The anterior portion of it presented a shriveled folded mass. The lenticular nucleus, the external capsule, and the head and tail of the caudate nucleus were completely destroyed. The very posterior portion of the capsule and a part of the inferior longitudinal bundle surrounding the posterior cornu of the lateral ventricle were also involved. The left optic thalamus was found very much paler than the right, and the part of it adjacent to the capsule is also softened. A particularly deep destruction was seen in the portion of the softened area which was in contact with the subcortical tissue of the insula where a deep depression was seen. The softening also extended at a certain distance into the supramarginal gyrus, but the white matter of the angular gyrus was apparently intact. (Fig. 3.)

An analysis of the three cases with reference to the problem of aphasia irrespective of other interesting pathological features leads to the following thoughts. In Case I a large tumor is found on the left, between the frontal lobe and insular area, at the periphery of the brain, thus compressing considerably Broca's region and the insula, also extending into the substance of the brain, destroying the lateral ventricle and the neighboring tissue, particularly the lenticular and caudate nuclei, internal capsule, external capsule, and claustrum, in other words, destroying the square area designated by Marie as the lenticular zone. On the other hand, we find here a very pronounced softening and dilatation of the entire left temporal lobe. Wernicke's speech area was therefore to a great extent involved. Applying these pathological data to the clinical picture of the case from the standpoint of motor and sensory aphasia, one is struck with the total absence of speech disturbances which should have been expected. The classical Broca's convolution was seriously affected, and still the patient's motor speech was intact. Marie's lenticular zone was very seriously damaged if not totally destroyed, and still there was no dysarthria or anarthria. While the patient at times pronounced the words slowly, nevertheless there was no disturbance of phonation or of articulation of words. In the classical motor aphasia, not only the spoken language is altered, but also the inner language. In anarthria or dysarthria the inner language is perfectly preserved, and only the pronunciation is deficient. In our patient neither of the phenomena was observed. Moreover, the softened temporal lobe gave no sign of sensory aphasia: there was no word deafness. It is evident that the clinical facts and the pathological findings are not reconcilable in this case, and neither the partisans of the old classical view on aphasia nor those of Marie's school find here strong corroboration of their respective opinions.

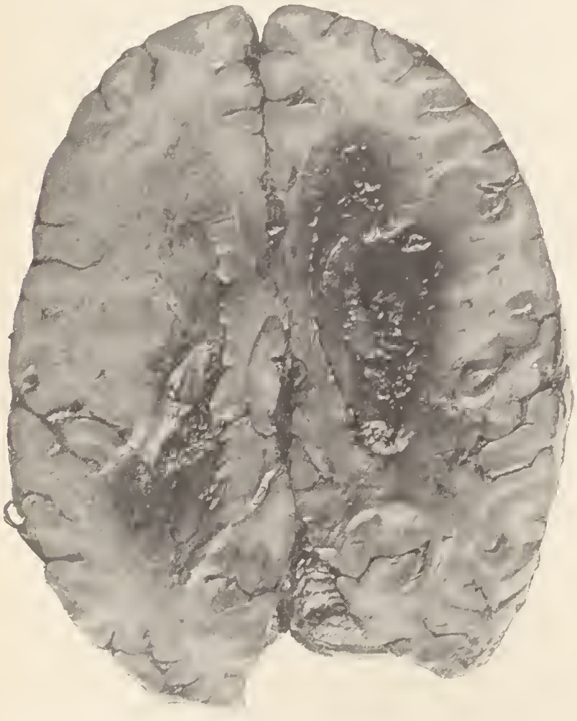

FIG. 2.—Recent large hemorrhage in right lateral ventricle. Old softened area in left hemisphere destroying lenticula, internal capsule, and posterior cornu of lateral ventricles (Case II).

In Case II, apart from the extensive recent hemorrhage in the right hemisphere, which was in all probability the immediate cause of the patient's sudden death, an old softened focus was found, beginning in the central portion of the left hemisphere and extending back into the white matter of the occipital lobe. It therefore occupied the posterior portion of Marie's lenticular zone, as the lenticular nucleus and the posterior part of the internal capsule were included in the softened area. The patient presented during life symptoms corresponding to the foregoing pathological findings, viz., hemiplegia and hemianesthesia with hemianalgesia. The hemiplegia was slight for a long time, but the hemianalgesia and hemianesthesia established themselves immediately after the apoplectic insult. If, in addition to this, we consider the paresthesia and pain on the same side, which also lasted through the entire illness of the patient, the picture of the thalamic syndrome is complete. The condition of the speech is the most important element in the case from the standpoint of the subject of aphasia. As we have seen, the patient presented during life no symptoms of Broca's or Wernicke's aphasia, but he had difficulty in pronouncing distinctly some words, especially those containing labial letters, in other words, he had a certain degree of dysarthria. The inner language was perfectly preserved, but the pronunciation of words and syllables was deficient.

This case therefore demonstrates, on one hand, absence of motor or sensory aphasia and, pathologically, the integrity of Broca's convolution, on the other hand, partial involvement of Marie's lenticular zone and clinically the disturbance of speech of a paralytic nature, namely dysarthria.

In Case III we find a total destruction of the left lenticular zone, including the inferior longitudinal bundle, otherwise speaking a condition which according to Marie should have produced dysarthria or anarthria. However, during life there was no trace of paralytic manifestations of speech. The patient's pronunciation was clear and distinct. But some word blindness and partial verbal amnesia were evident and still the angular gyrus, the supramarginal gyrus, the posterior portion of the first two temporal convolutions—all belonging to Wernicke's area, were found intact. Marie's view on anarthia cannot therefore be demonstrated by the present case, but his view on sensory aphasia, which is at variance with the old conception concerning Wernicke's zone, finds here its confirmation to a certain extent. The present case fails to weaken the validity of the old Broca's conception on motor aphasia, which, according to Marie, does no more play any rôle in aphasia. The third frontal convolution, as well as the insula, was found here intact macroscopically and microscopically.

To sum up, we observe that the first case is a strong demonstration of the untenability of the old Broca's conception, also it is against Marie's new view on aphasia, as there were no symptoms of disturbed speech, and still considerable involvement was found of the areas which are supposed to control it. On the other hand, part of Wernicke's zone being involved, nevertheless no symptoms of sensory aphasia were present.

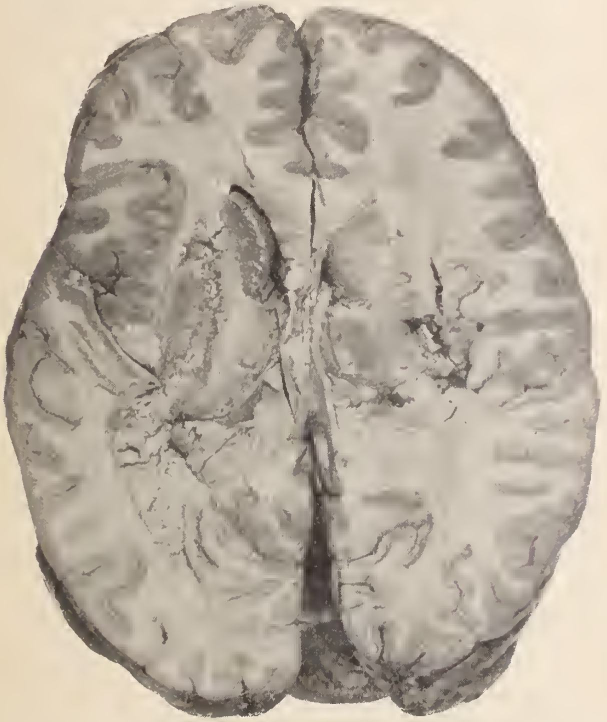

Fig. 3.—Left lenticular nucleus, internal capsule, external capsule head and tail of caudate nucleus, tissue in contact with insula—all softened (Case III).

The second case is unlike the first. It is a confirmation of the classical ideas on the third frontal convolution and on Marie's localization of anarthria. In the third case again there is nothing to invalidate the old conception of Broca's aphasia, but there is sufficient ground for not accepting Marie's views on anarthria. On the other hand, in spite of the integrity of Wernicke's zone, the patient presented, nevertheless, some symptoms of sensory aphasia.

The conclusion which naturally forces itself from the study of these three cases, as well as from other cases reported in the literature, is that since Marie's startling announcement, made in 1906, the subject of aphasia has been thrown into a state of confusion. As soon as the cases began to be more cautiously scrutinized, and the pathological findings more carefully examined than heretofore, it was found that some of them were characteristic of the old Broca's aphasia in every detail, while others only in part, still others were contradictory, and finally some cases answered Marie's requirements. As to Marie's new conception on aphasia and anarthria, the field of observers is again divided and subdivided. Indeed there can be no doubt that in a certain series of cases the findings correspond precisely to the distinguished French neurologist's contention, but this is unfortunately not always the case. There are now too many contradictory cases on record to permit us to accept his view *in toto.* But then Broca's classical aphasia also suffered a severe blow. Since Marie's work we must admit that the old localization can no more be admitted as invulnerable as there are now too many evidences to the contrary. A brief account of some of the most illustrative recently published cases will be of interest.

I. Cases invalidating absolutely the classical localization of aphasia are published by:

1. Vigouroux and Naudascher, *Bulletin de la Société anatomique de Paris,* 1908, p. 86; Motor aphasia and agraphia, but integrity of Broca region and of zone of language; softening of both temporal lobes, right more than left were found.
2. Ladame and Monakow, *Encéphale,* 1908. Apoplexy, mutism, Broca's convolution destroyed. Inner language preserved in spite of degeneration of fibres going to auditory and visual centres.
3. Mahaim, *Bulletin de l'Académie de médecine de Belgique,* 1909, p. 943. A case of aphasia with complete recovery in spite of a focus in Broca's convolution and operculum.
4. Dupérié, *Journal de médecine de Bordeaux,* 1909, p. 119. A case of total aphasia in spite of integrity of the third frontal convolution. A focus was found in temporal and angular gyrus.

II. Cases invalidating Marie's conception of aphasia and anarthria:

1. Liepmann, *Monatsschrifte für Psychiatrie,* 1909, p. 189. Case of motor aphasia with complete integrity of the lenticular zone.
2. Mahaim, *Bulletin de l'Académie de médecine de Belgique,* 1910, p. 95. Case of lesion in the lenticular zone without aphasia or anarthria.
3. Van Gehuchten, *Le Névraxe,* 1910, p. 5. Softening of the entire lenticular zone without aphasia or anarthria.

Since Marie called attention to the faulty exclusivism of the old classical localization of aphasia, Wernicke's area of sensory aphasia has been found also deprived of its absoluteness. Among the most recent observations in this respect that of Briand's (*Revue de psychiatrie,* 1909, p. 507) is the most striking. It was a case of motor aphasia without a single manifestation of sensory aphasia, still Wernicke's zone was found greatly involved. An almost similar condition was observed in the case of Sabrazès and Dupérié (*Journal de médecine de Bordeaux,* 1908, pp. 86-91).

In my personal three cases I also find clinico-anatomical reasons invalidating Marie's new contention, as well as the generally adopted ideas concerning Broca's motor aphasia and Wernicke's sensory aphasia. On the other hand, a large number of observations have been published, showing the correctness of the classical and of the new views, more however of the former than of the latter. The conclusion to which one is naturally led to arrive, is that not one special area alone is involved in the faculty of speech and in the various manifestations of the latter, but very probably several anatomical elements are concerned simultaneously, as the multiplicity of lesions ordinarily encountered in cases of aphasia is certainly striking. Marie's great merit consists in calling attention to a chapter of pathological physiology which no longer could remain unchallenged. Although like his predecessors he advanced a view which is penetrated by absolutism, nevertheless his arguments for a revision of the study on aphasia awakened the curiosity of scientific minds in the problem of aphasia, so that no longer the former exclusivism can be maintained. If Marie did not solve the question of localization of aphasia, he nevertheless demonstrated the necessity of looking for pathological data other than Broca's and Wernicke's areas, and indeed he proved it beyond doubt. We are far from having solved the problem of aphasia, and the scientific impetus for further research given by Marie is all to his great credit. A very vast amount of material is necessary before we shall be able to draw final conclusions.

1430 PINE STREET.

AN UNUSUAL INDICATION FOR CÆSAREAN SECTION.

Ventrosuspension of the uterus (with linen thread) complicating pregnancy.

By J. DAWSON WHITALL, M. D.,
Philadelphia.

We are taught that ventrofixation of the uterus in a child bearing woman is a dangerous procedure unless both ovaries are removed or both tubes are ligated and divided. To go a step further, one may say that ventrosuspension with linen thread in a child bearing woman is just as dangerous a procedure as the former, being virtually a fixation, as in the case herein reported. It seems to the writer that too little weight is given to this very important point, for the operation is not an uncommon one.

CASE. E. S., aged twenty-nine years, had borne two children both living and well; the first normally, the second with forceps, during which confinement she had convulsions. Since that time she had been more or less of an invalid, suffering with terrific headache, backache, and chronic constipation. In January, 1911, she was operated upon in one of the large hospitals in Philadelphia, when she was curetted, the appendix removed, cysts in both ovaries were punctured, and the ventrosuspension with linen thread was done. No section of the tubes was done to obliterate their lumen. The patient was much better following the operation, but became pregnant in November of the same year. I first saw her in what was supposed to have been her sixth month, owing to a miscalculation of her menstrual history. From almost the beginning of her pregnancy she had abdominal pain, which progressively became worse, preventing her from standing in the erect position or walking at all. She had a great deal of bladder disturbance and was extremely constipated.

Physical examination revealed a fairly well nourished woman whose face showed pain. Marked thyroid enlargement (right lobe); heart and lungs negative; abdomen showed a small scar, about an inch in length, in the median line, which is retracted. Palpation was very painful over the lower quadrant of the abdomen. Uterus about the same size as in a seven month pregnancy. *Vaginal examination:* Cervix very difficult to find, being tilted directly backward in the posterior fornix; fundus was low and anterior. The posterior uterine segment could not be palpated.

She was watched carefully, and the possible dangers were pointed out to the husband. Three weeks before her expected confinement, the suspension stitch apparently released itself, as from this time she could walk about the house with comparative comfort. One week following examination the cervix was found to be dilated to the size of a half dollar, while the uterus was in tonic spasm. At this time the lower uterine segment could be outlined with ease, it being as thin as parchment so that the child's head could be easily outlined. There was little if any engagement.

The question then arose whether she would deliver herself or have forceps used. She had unquestionably been in labor for a number of hours with no engagement and very poor uterine contractions while the uterus was in chronic spasm. As there was danger of rupture of the womb (whether normally or instrumentally delivered) she was seen in consultation with Dr. H. P. Proctor, obstetrician to the Northwestern General Hospital, who concurred that less risk attended an immediate Cæsarean section than either normal or instrumental delivery. Accordingly she was admitted to the above named hospital and prepared for an immediate section. No vestige of the suspension stitch was found, but the uterus posteriorly was so thin and poor in musculature that the fetus could readily be outlined. After walling off the intestines from the field of operation the uterus was incised and, unfortunately, immediately over the placental site, so that hemorrhage was profuse, making a rapid extraction of the child imperative. The cord was clamped and cut, the child given to an assistant; all membranes and placental tissue were removed; the uterus was stimulated to contract with hot salt solution; interrupted No. 3 chromic gut sutures were passed through all structures except the mucous membrane. Next a second row of interrupted Lambert sutures, burying the first, were introduced. A quart of saline solution was left in the abdomen, which was closed in layers. The patient was twenty minutes under the anesthetic, which was the nitrous oxide ether sequence. Mother and baby left the hospital on the seventeenth day both in good condition.

SUMMARY.

1. Ventrosuspension of the uterus with linen thread in a child bearing woman is a dangerous procedure unless both ovaries are removed or the tubes obliterated, because it is virtually a fixation.

2. The lower uterine segment and posterior wall become so thinned in its effort to compensate for the enlarging fetus, that rupture of the uterus would be extremely easy, whether normally or instrumentally emptied.

3. If a ventrosuspension is done at all, use *catgut,* not linen, which will release itself later if the patient becomes pregnant.

4. As to treatment in a linen thread suspension, complicating pregnancy, one of three methods may be followed:

1. *Noninterference,* when, trusting to luck that "Nature will take care of the condition" the patient runs the chance of a ruptured uterus.
2. At the first sign of trouble with the suspension stitch (if linen) it should be released by abdominal section.
3. If the patient is seen too far along in her pregnancy (as in this case reported) when the damage has already been done to the growing uterus, she should go to full term and have an elective Cæsarean section done with less risk to herself than a normal (?) labor would entail.

2025 Chestnut Street.

THE ETIOLOGY OF RABIES.

By Frederick Proescher, M. D.,
Pittsburgh,
Pathologist, Allegheny General Hospital.

As previously reported (1), I found an antiformin resistant microorganism in the brain of twelve dogs infected with street virus and in three rabbits infected with fixed virus. The microorganisms were nonacid resistant, stained after Gram, and found in form of bacilli and cocci, either insolated or arranged in chains or groups. The bacilli were 0.5 to one μ. long and 0.3 μ. thick. They were similar to the microorganism found in one instance only, in a smear of freshly prepared fixed virus which was fixed in bichloride alcohol and stained after the modified Gram method. If these microorganisms bear any relation to rabies, they must be present in the salivary glands and the nerve ganglion, as well as the brain.

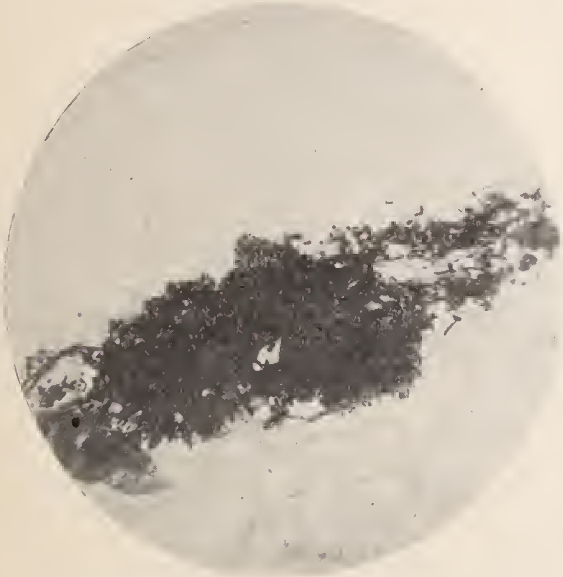

Fig. 1.—Fixed virus, Chicago; azur carbonate; oil immersion 1/12, ocular 4.

By dissolving the salivary glands of three dogs and the salivary glands and nerve ganglion of a cow, all of which were proved hydrophobic by animal inoculations, I found the same microorganism as in the brain. Further proof (2) of their etiological relation to rabies was demonstrated by the intracerebral injection of rabbits with the antiformin sediment from the dogs' brains which produced typical hydrophobia.

On account of the difficult technic in finding these microorganisms by use of antiformin, I resolved to try again to demonstrate them by direct staining of smears and sections without using antiformin. As a consequence, I found, after using a great list of aniline dyes, that the azur carbonate (Unna-Giemsa) was the only one which gave a uniform and constant result. Sections and smears were stained with one per cent. carbolazurcarbonate solution and differentiated in equal parts of acetone and alcohol.

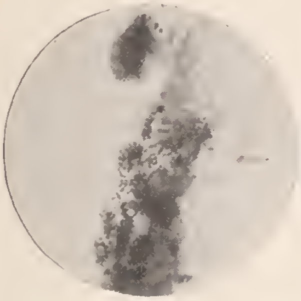

Fig. 2.—Fixed virus, Pittsburgh; azur carbonate; oil immersion 1/12, ocular 4.

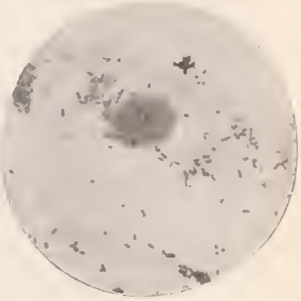

Fig. 3.—Fixed virus, Washington; azur carbonate; oil immersion 1/12, ocular 4.

With this staining method, the entire cycle of the rabies virus can be demonstrated. We find cocci and bacilliforms similar to those previously found with antiformin and in the unchanged smear stained with Gram. In addition, there was a spirochete form which was not demonstrated with either the antiformin method or the Gram stain.

To establish the efficiency of this staining method, I examined the fixed virus from different Pasteur institutes.[1] I was able to find the same microorganism in all the different strains. The brain substance on all our common culture mediums was sterile, both anaerobic and aerobic cultures.

The great pleomorphism of the rabies virus is striking, but I think we can satisfactorily interpret all the different developing forms. We know that the virus travels along the nerve fibres. Therefore, there must be a motile form which is represented by the spirochete form. The bacillary and coccilike forms correspond to the vegetative and sporelike form of rabies virus. The exclusive staining properties of the rabies virus and its almost achromatophilia to all aniline dyes except azur carbonate almost establishes the fact that this is a specific microorganism.

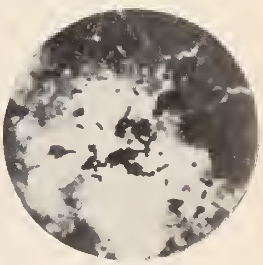

Fig. 4.—Dog, salivary gland; antiformin sediment, Gram stain; oil immersion 1/12, ocular 4.

Babe's (3) microscopical findings of dustlike granules in the nerve cells which he demonstrated with a combined staining method after Cajal and Giemsa, also shown by Koch and Rissling (4), with Haidenhein iron hematoxylin and later with von Krogh stain, and which they all consider a form of rabies virus, I believe are degenerative products and not microorganisms. I also believe that the Negri bodies, especially the "inner bodies" which are considered to be sporulation forms of rabies virus, are degenerative products of nuclear origin. The artificial cultivation of the microorganism will be the final proof of the etiological specificity.

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[1] U. S. Marine Hospital Service, Washington, D. C.; Chicago Pasteur Laboratory; New York Pasteur Laboratory, and Pasteur Department of Biological Laboratory of Alexander.

Encouragement is given me in my efforts to cultivate the microorganism from the fact that after keeping the fixed virus in sheep plasma for nine days at 37° C., it was fully virulent. The injection of the serum water of this culture killed a rabbit in ten days, with typical symptoms of hydrophobia. A control culture of fixed virus in bouillon was rendered avirulent in five days. In the rabbits injected intracerebrally with this culture rabies did not develop.

Although few in number, these experiments teach that an effort to obtain artificial culture may not be in vain, and I still endeavor to cultivate this microorganism. The biological properties of rabies virus are akin to those of poliomyelitis and smallpox, and possibly they have similar staining properties.

Smears were made from the cervical part of the spinal cord in a case of poliomyelitis which was previously observed and published two years ago. The diagnosis was confirmed by inoculation of a monkey in which typical lesions developed. I stained some of these smears with azur carbonate after fixation in methyl alcohol. I found a great number of coccilike formations in one of the smears, while the original culture, taken from the spinal cord two hours after death, was absolutely sterile. With the usual staining methods of a great number of smears, no microorganisms were found. This is not sufficient to draw a conclusion, but it may give a clew toward demonstrating the microorganism of poliomyelitis.

A more extensive report of my observation of rabies and poliomyelitis will be given later.

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100-110 EAST STOCKTON AVENUE.

TREATMENT OF HEMORRHAGE BY MEANS OF PRECIPITATED BLOOD SERA.

Together with a Method of Estimating the Activity of the Latter.

BY G. H. A. CLOWES, Ph.D.,
Buffalo, N. Y.,

AND F. C. BUSCH, M. D.,
Buffalo.

INTRODUCTION.

Persistent hemorrhage from small vessels may be due to a variety of causes, the most important of which are diminished or delayed blood coagulation, high blood pressure, and persistent vasodilatation. It is proposed in this communication to present a mode of procedure which has proved of considerable value in treating the first and most frequently occurring condition, a low coagulation factor. Abnormally low or retarded blood coagulation may occur as a more or less constant defect in true bleeders or hemophiliacs, as a transient condition in patients suffering from toxemia, and occasionally without any demonstrable cause in apparently normal individuals. It is not the purpose of this article to discuss the probable nature of the defect in question. It may, however, be stated that the view once held that calcium deficiency is the main cause of persistent hemorrhage has been disproved.

Since the commencement of our work on the treatment of hemorrhage, a series of articles has been published by Howell (1) and his associates throwing considerable light on the mechanism of blood coagulation, and indicating a variety of ways whereby, under pathological conditions, coagulation may be retarded or entirely prevented.

It has long been known that the fibrin clot results from the coagulating action of thrombin, the so called fibrin ferment, on fibrinogen a normal constituent of the blood, in the presence of calcium. There has been considerable speculation regarding the origin of thrombin and the forces which under normal conditions result in the liberation of this body from its precursors when a bloodvessel is sufficiently injured to cause hemorrhage. Howell has demonstrated that retardation or suspension of clotting is frequently attributable to the action of a body designated as antithrombin, which neutralizes thrombin; and that it is only after removal of the antithrombin or the addition of a further amount of thrombin that coagulation can be induced under such circumstances. It is also possible, especially in cases of hepatic cirrhosis, that the fibrinogen content of the blood may fall so low that even in the presence of an adequate proportion of thrombin the clot formed is not sufficiently tough to effect the desired result. For details regarding the processes in question and the extent to which individual constituents of the blood may vary under varying pathological conditions, reference may be made to a recently published paper by Whipple (2).

Practical experience would indicate that in the large majority of cases of pathological hemorrhage, thrombin is not liberated in sufficient quantity or rapidly enough to produce the desired clot. A rational therapeutic procedure to obviate this defect would be to introduce into the system a supply of the ferment in question, through the instrumentality of which the normal coagulation process might be induced. Fresh normal serum from whatever source contains large quantities of fibrin ferment, and the administration of serum, either locally or by subcutaneous injection, has been found to give excellent results in the hands of a large number of investigators.

For a general review of the literature on the use of serum in the treatment of hemorrhage, reference may be made to recently published papers by Probasco (3) and Lescohier (4). While serum has been used in isolated cases in the treatment of hemorrhage since 1897, in which year Bienwald (5) reported the successful treatment of a case of hemophilia by this means, the procedure does not appear to have been generally adopted until recently.

The brilliant results reported by Welch (6) in the treatment of hemorrhage of the newborn, have doubtless served to focus attention on this therapy and have led to its use in all cases of otherwise uncontrollable hemorrhage. The sera of a large variety of animals have been employed, but a prejudice seems to exist in favor of fresh human serum, the use of which is considered to entail less risk of toxic effects. Rabbit serum has been successfully employed and does not appear to have given any unfavorable symptoms. Horse serum has been used extensively, but apparently with some hesitation on account of the supposed risk of anaphylaxis. The greatest degree of toxicity has been ascribed to the serum of bullocks and dogs.

SEPARATION AND PRECIPITATION OF BLOOD SERUM.

In our early experiments human and rabbit sera freshly separated from the clot were used with satisfactory results in the treatment of hemorrhage of the newborn and in other hemorrhages. Considerable difficulty was experienced in procuring blood serum when required in emergency; for even when taken with the greatest precaution and preserved sterile in a refrigerator, it rapidly loses its efficiency as an agent for checking hemorrhage. It was obvious that the difficulties in question might most readily be overcome by precipitating fresh serum in the form of a dry powder.

With this end in view we attempted to apply certain principles regarding the precipitation and conservation of enzymes, which had previously been worked out by Clowes (7) while engaged in researches on zymase, the enzyme of yeast. In these researches, which are still in part unpublished, Buchner's method, which consists of precipitating pressed yeast by means of acetone, was first employed. This method was subsequently modified, a mixture of acetone and ether being used as precipitant. This latter procedure proved peculiarly applicable, as after numerous experiments we succeeded in precipitating from blood serum an anhydrous, sterile, soluble powder containing the desired fibrin ferment in a relatively concentrated form.

Our first preparations were made from human and rabbit serum; but owing to the difficulty experienced in obtaining an adequate supply as the demand increased, we subsequently used the serum of horses, bullocks, sheep, and goats, from all of which satisfactory products were obtained.

Horse serum, for reasons stated above, is considered preferable to that of other animals, and so far as we have been able to judge is readily precipitated and yields a very active product. Consequently, for upward of a year we have worked almost exclusively with preparations derived from horse serum and have obtained clinical results fully equal to those previously obtained with precipitated rabbit and human sera.

The method of preparation which we have employed consists of precipitating fresh serum by means of an excess of a mixture of acetone and ether, and filtering under pressure to remove the precipitant. The amount of precipitant and the proportions of acetone and ether which it is necessary to employ in order to obtain the best results vary widely with the different animals, and even with animals of the same species. Even such apparently extraneous factors as the temperature and degree of humidity of the atmosphere exert a marked effect on the process. Consequently, it is advisable to make one or two preliminary experiments from which to determine the best working conditions. The best results are obtained when the precipitate separates rapidly and is readily soluble in water. An observant individual easily acquires an appreciation of the factors making for or against the success of the process.

Fortunately, we have at our disposal a very reliable laboratory method (full details regarding which will be found at a later stage in this report) by means of which we are able to determine the relative blood clotting capacity of precipitated sera before using them clinically. This method is obviously of great assistance in controlling the preparation of the product, and serves as a valuable check on the results obtained. All preparations used clinically have been tested in this manner and have been found to exert a clotting action on plasma, varying from three to ten times that of fresh normal serum.

Precipitated blood serum, if properly prepared, is a friable, anhydrous, sterile powder, readily soluble in cold water at a concentration twice that of the original serum and, so far as we are able to judge from preparations made two years ago, retains its active principles unimpaired for long periods of time. A product of this type possesses over blood serum the advantage not only of permanence, but also of immediate availability, a factor of no small importance in dealing with hemorrhage.

APPLICATION OF PRECIPITATED BLOOD SERA IN THE TREATMENT OF HEMORRHAGE.

In upward of one hundred and fifty human cases of hemorrhage thus far treated products precipitated from the sera of human beings, rabbits, and horses by the method described above have been used. Recently, for reasons stated above, precipitated horse serum has been employed exclusively with excellent results. The types of hemorrhage treated include: Hemorrhage of the newborn; hemorrhage from gastric ulcer; hemorrhage from duodenal ulcer; pulmonary hemorrhage; hemorrhage during and after prostatectomy; hemorrhage from kidney pelvis; hemorrhage from bladder; uterine hemorrhage; hemorrhagic purpura; hemorrhages after turbinectomies and tonsillectomies. The serum powder has been applied as a local styptic to bleeding surfaces, as in oozing after nasal operations and from separated peritoneal adhesions. It has also been used with apparent success as a prophylactic before operative procedures upon the nose and throat. The fear has been expressed, as stated above, that anaphylactic reactions might result from the use of products derived from animal sera; but in our experience with upward of one hundred and twenty cases treated (many repeatedly) with precipitated sera of horses and rabbits no such symptoms have been noted.

We are indebted to a number of physicians for reports on the use of precipitated serum. The following are a few typical case histories illustrating the range of application of this product. For convenience the dose of serum powder employed has frequently been expressed in terms of its equivalent of fresh serum:

Case I. Hemorrhage of the newborn. Well nourished male infant. Oozing of blood from the base of the cord occurred twelve hours after delivery, and twenty-four hours later a stool was passed, which on examination was found to contain a small amount of fresh blood. The bleeding from the cord was partially checked by means of a local dressing with the precipitated horse serum referred to above, but recurred at each dressing.

Following the discovery of blood in the stools a solution of blood serum powder equivalent to ten c. c. of fresh serum was injected subcutaneously. The oozing from the cord ceased entirely two hours after the injection and subsequent stools were found to be free from blood. No further hemorrhage occurred and recovery was uneventful.

Case II. Hemorrhage of the newborn. Well nourished male child. Difficulty was experienced in introducing a one per cent. silver nitrate solution into the eyes, the lids being swollen and hard to separate. The necessary manipulation caused the expression of a thin bloodstained fluid, which continued to ooze from beneath the lids of both eyes, gradually increasing in quantity and in blood content, until within twenty-four hours from birth a frank hemorrhage had developed. The eyelids at this time were markedly puffed, as if from the accumulation of fluid beneath them, and blood escaped steadily drop by drop, at times forming an actual stream over the cheeks. The tension upon the eyelids at this stage caused so much distress that it was found necessary to press out the blood. The clots were very soft and melted when pressed between the fingers.

The application of adrenalin and cold compresses during a period of sixteen hours failed to relieve the condition, on the contrary, the bleeding steadily increased. At this stage a solution of five c. c. precipitated rabbit serum was injected subcutaneously and within three hours the bleeding from the right eye had ceased, and that from the left eye had markedly diminished. Clots expressed at this time were firm and normal. Two more serum injections, one of five c. c. and one of seven c. c. given at four hour intervals caused a complete cessation of bleeding and the treatment was temporarily discontinued. Thirty-six hours later, hemorrhage suddenly recurred from both eyes but was easily controlled by a single injection of ten c. c. of serum powder. Recovery was complete and further history uneventful. (Reported by Dr. Charles Wall, of Buffalo.)

Case III.[1] Hemorrhage of the newborn. Poorly nourished male infant. The first evidence of hemorrhage was a small bloody stool twenty-four hours after birth, at which stage calcium lactate 0.06 gramme was given *per os*, every three hours. On the third day after birth two large bloody stools were passed and small petechial hemorrhages appeared upon the trunk and limbs. The calcium lactate was discontinued, and one injection of ten c. c. of rabbit serum powder solution administered subcutaneously. On the fourth day larger subcutaneous hemorrhages appeared on the thighs and abdomen, there was oozing of blood from the nasal and buccal mucous membrane, and one bloody stool. Three injections of horse serum powder solution (two of ten c. c. and one of five c. c.) were given in the course of the fourth day. On the fifth day three stools were passed containing, however, a smaller amount of blood, and there was no further spread of the subcutaneous hemorrhages.

The treatment was the same as on the previous day, three doses of horse serum powder totalling twenty-five c. c. being injected. On the sixth day three stools passed showed only slight traces of fresh blood and the subcutaneous hemorrhages were found to be rapidly fading. It was, however, decided to continue the treatment for another day, four injections of horse serum powder totalling twenty c. c. and one injection of five c. c. fresh human serum being administered. On the seventh day a stool passed was tarry in character, but all evidence of fresh hemorrhage had disappeared, and the treatment was discontinued. From this time on, there was no further evidence of bleeding either from the intestinal tract or subcutaneously and recovery was rapid and uneventful. (Reported from Buffalo General Hospital.)

Case IV. Persistent bleeding from a slight cut. This patient, a boy aged three years and nine months, had a hypertrophied heart, with apparently compensated congenital valvular heart defects. There was no previous history of unusual bleeding. A small cut at the base of the big toe of the right foot was dressed with apparent control of the hemorrhage which was not excessive. Hemorrhage however recurred during the night with considerable loss of blood. The bleeding was in large part controlled by passing a ligature through the wound and by the application of pressure; a constant oozing of blood, nevertheless, continued under the dressing. Perchloride of iron was then applied to the wound, after which it was repeatedly painted with collodion. This failed to prevent the oozing of blood, which continued during a period of nearly five weeks. When seen by one of us, in consultation, the child was nearly exsanguinated, and blood was seen to be slowly but steadily oozing from under the collodion dressing.

A subcutaneous injection of a five c. c. solution of human blood serum powder was administered, with the result that two hours later oozing from the wound had ceased and did not recur. The same dose of serum was repeated on three successive days. In five days the dressing came away and the wound was healed. There was no further bleeding and the child made a rapid recovery from the anemia. (Patient of Dr. Ross G. Loop, of Elmira, N. Y.)

Case V. Hemorrhage of the newborn. Mild. A well nourished female child, the fourth day after delivery, had slight hemorrhages from the cord, from the nose, and from the vagina. The stools were normal. When first seen by one of us in consultation, there were a few petechiæ on the ears and fingers.

A solution of human serum powder equivalent to five c. c. of whole serum was injected subcutaneously, at 5 p. m. During the evening slight oozing recurred from the vagina and the nasal mucous membrane. At 1 a. m. another serum injection of eight c. c. was given, after which there was no further hemorrhage. (Patient of Dr. N. G. Russell, of Buffalo.)

Case VI. Pulmonary hemorrhage. Female, aged thirty-one years, with moderately advanced pulmonary tuberculosis. For three weeks previous to the use of serum, she had had hemoptysis of fair amount, at intervals of one to three days. Rest in bed, codeine, atropine, and finally aconite, failed to relieve the hemorrhages.

She was given, at two hour intervals, three doses of five c. c. horse serum powder solution. The expectoration on the day following serum injection was only slightly blood tinged. During the next three months, at the end of which period she was discharged with an arrested lesion, there were no further hemorrhages. (Patient of Dr. George Eckel, of Buffalo, N. Y.)

Case VII. Hemorrhage from urinary bladder. Male, aged twenty-six years, had been passing bloody urine for four days. Microscopic examination of the urine showed numerous erythrocytes and leucocytes, in the ratio of ten of the former to one of the latter. A test with three glasses showed blood in equal amount in all.

A ten c. c. solution of horse serum powder was given by subcutaneous injection. On the following day the urine showed no blood macroscopically. Microscopic examination still showed numerous cells but in the ratio of sixteen leucocytes to one erythrocyte. (Patient of Dr. Carl Topkins, Buffalo, N. Y.)

Case VIII. Hemorrhage and purpura in typhoid fever. A woman, aged fifty-five years, in the fourth week of typhoid fever, had several severe intestinal hemorrhages, following which there was general subcutaneous bleeding over the abdomen and back. The patient was profoundly toxic and comatose. The freedom with which blood flowed from needle pricks of the ear lobes, made for the purpose of blood examination, afforded further proof of the extent to which the blood coagulability had been diminished. This condition had continued for a week before serum treatment was commenced.

Four doses of horse serum powder solution, each equivalent to ten c. c. of fresh serum, were given subcutaneously, on four successive days. No further intestinal hemorrhages occurred; the subcutaneous hemorrhages were rapidly absorbed; the temperature dropped and the coma disappeared. Blood coagulability improved as shown by the rapid clotting of blood after ear punctures. The patient had no further hemorrhage, but three weeks later, died as a result of intestinal perforation. (Patient of Dr. William Getman, Buffalo, N. Y.)

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[1] The majority of cases of hemorrhage of the newborn have, in our experience, been relieved by one or two injections of precipitated serum powder. We have purposely selected this unusually stubborn case of hemorrhage for presentation in order to emphasize the importance of persistence in treatment, and to demonstrate that extremely large doses may safely be administered.

CASE IX.—Hemorrhage from gastric ulcer. A woman, aged thirty-five years, had had an occasional unusually dark stool for one or two months preceding the attack, noted below. At 9.30 a. m. the patient vomited about 400 c. c. of fresh blood. Six hours later, a large bloody stool was passed, at which time the patient fainted. She was then taken to the hospital, had a moderate sized bloody stool during the night, another large red black stool the day following, and another that night. The same night she again vomited between 300 and 400 c. c. of blood. There was marked pallor and prostration at this time. The day following there was no stool or hematemesis. A day later there was another large red black fluid stool and one again two days later.

At this time patient received a subcutaneous injection of horse serum powder solution, equivalent to ten c. c. of fresh serum. The next day there was another bloody stool, and ten c. c. of serum was again injected, this time intramuscularly. There were no further hemorrhages, the patient made a rapid recovery, and has had no further attacks during the eight months that have elapsed since treatment. (Patient of Dr. Joseph Lewis, of Buffalo, N. Y.)

CASE X. Gastric hemorrhage. A man, aged sixty-five years, had been vomiting blood for one hour during which time the hemoglobin had dropped to thirty-two per cent. While bleeding was still in progress a solution of ten c. c. horse serum powder was injected subcutaneously and within fifteen minutes following the injection, bleeding had ceased and did not recur. (Patient of Dr. N. G. Russell, of Buffalo.)

CASE XI.—Bleeding from mucous membranes. Male, aged thirty-four years, Italian laborer, who had been in America three years. The only history of previous illness was an attack of chills and fever, six years before, which cleared up in a few days without medication. When first seen, May 25th, he complained of pain in the abdomen, vomiting of blood and passage of bloody urine. He vomited from four to six times daily, the vomitus containing a large amount of blood, there was also oozing from the gums. On May 26th the hemoglobin reading was seventy-five per cent. Patient was given calcium lactate, fifteen grains every four hours for three days without affecting the hemorrhages.

On May 30th a solution of horse serum powder equivalent to ten c. .c. of fresh serum was injected subcutaneously. The following day hemorrhage from the gums had nearly ceased. There was no more hematemesis, and the bleeding from the gums and the bloody urine cleared up within forty-eight hours. As malaria was considered to be the etiological factor, he was given large doses of quinine. In three weeks he had regained his strength and the hemoglobin reading was between eighty-five and ninety per cent. (Patient of Dr. A. J. Cetola, of Buffalo, N. Y.)

CASE XII.—Hemorrhage following extraction of teeth. S. S., male, aged forty-five years, single. Had had diabetes, probably for the last five years up to March this year. Since then on a low carbohydrate diet, the urine had been sugar free. Slight cuts, such as those sustained in shaving, bled freely. July 29th, at 10 a. m., the left lower front bicuspid and first molar were extracted under cocaine anesthesia. There was very free bleeding from the molar socket for a short time. This diminished to a slight oozing until 5 p. m., when profuse hemorrhage occurred for a few minutes and again slackened to a steady oozing. The dentist (Dr. A. F. Isham) tried to stop the hemorrhage from 6 to 11.40 p. m. by the use of hot water, Monsell's solution, and by packing with adrenalin tape. At 10 and 10.30 p. m., calcium chloride, fifteen grains, was given. Strong pressure over packing controlled the bleeding which would however reappear upon release of pressure.

At 11.40 p. m., a subcutaneous injection of horse serum powder solution, equivalent to ten c. c. of fresh serum, was administered. The pressure and packing were continued for thirty minutes, at the end of which time, the packing being removed, bleeding was found to have ceased and did not recur. (Patient of Dr. William Irving Thornton, of Buffalo.)

CASE XIII. Uterine hemorrhage. Unmarried woman, nullipara, aged forty-two years. Profuse menstruation began July 12th. Hemorrhage continued practically unchecked in spite of treatment with astringents until July 19th, on which date a solution of cow's serum powder, equivalent to ten c c. of fresh serum was injected subcutaneously. Hemorrhage ceased within two hours of the injection. Curettement was done on July 20th with unusually little hemorrhage. Diagnosis—endometritis. (Patient of Doctor Colton, of Buffalo.)

CASE XIV. Uterine hemorrhage. Mrs. X. Loss of blood as a result of excessive hemorrhage during three last menstrual periods, occurring at intervals of only two or three weeks, had been sufficient to cause collapse. Bimanual examination revealed a retroverted uterus, the size of a small grapefruit, with a smooth, soft, slightly dilated cervix.

After the subcutaneous injection of horse serum powder solution equivalent to 10 c. c. of serum, hemorrhage began to diminish and at the end of six hours had ceased. A prophylactic dose of ten c. c. was given an hour before curettement with the result that there was little bleeding during curettage and none afterward. Microscopic diagnosis, chronic endometritis. (Patient of Doctor Colton, of Buffalo.)

CASE XV. Rectal hemorrhage. Young woman, aged eighteen years, well nourished; personal and family history, negative. May 11th, consulted physician because of pain in rectum. Mucus and pus was present in stools. Had had a rectal discharge for two weeks previously. Digital and speculum examination was without result, because of accompanying pain. Was put on a restricted diet, with lactic acid milk, and given bowel washes of sodium perborate. For three weeks the condition remained stationary, at the end of which time pain increased and the rectal discharge became bloody. June 12th and 13th had profuse hemorrhages from the bowel.

After the third hemorrhage, a subcutaneous injection of horse serum powder solution, equivalent to ten c. c. of fresh serum, was given. Bleeding rapidly subsided. June 15th, under general anesthesia, examination with the proctoscope revealed an ulcer the size of a quarter. This was painted with ten per cent. silver nitrate, and recovery was uneventful. (Case reported by Doctor Colton, of Buffalo.)

CASE XVI. Nasal hemorrhage. Man, aged thirty-five years, railroad switchman; single. Family history negative. Had had no severe hemorrhage previously, although as a result of an accident, nine years ago, he lost his left leg. Had drunk (whiskey) to excess up to seven years ago, since which time he had been an abstainer. Wassermann test and tuberculin test both negative. First nasal hemorrhage, October 29, 1911, bled for an hour; controlled by packing. November 20th bled from left nasal chamber for two hours. Bled almost daily with varying severity up to December 23rd, when he entered the Sisters Hospital of Buffalo. Upon nasal examination, an ulcer on each side of cartilaginous septum was discovered. His red blood cells, at this time, numbered 1,390,000 and his hemoglobin was forty per cent. This was further reduced to thirty-two per cent. by January 19, 1912. Hemorrhages had continued almost daily since entrance.

On February 26th and again on March 7th solutions of five c. c. horse serum powder were injected subcutaneously. Hemorrhages subsided and finally ceased after March 11th, and by March 13th the nasal ulcers were healed. Recovery thereafter was rapid and uneventful. (Reported by Doctor Walsh, of Buffalo.)

CASE XVII. Pulmonary hemorrhage. M. B., female, aged twenty-two years, single, occupation schoolteacher. Had had several moderate sized hemoptyses in the course of a week, becoming increasingly frequent and severe.

Treatment of the patient by rest in bed and opiates having completely failed to relieve the condition, three doses of horse serum powder solution each the equivalent of ten c. c. serum were injected subcutaneously at intervals of two hours. There was no hemorrhage on the following day, and only a very slight hemorrhage on the second day after treatment, since which time no further hemorrhages have occurred. (Reported by Dr. George Eckel, of Buffalo.)

CASE XVIII. Prophylactic use of serum preceding nasal operation. E. W. H., aged fifty-seven years, male. Adenocarcinoma of the nose springing from the left ethmoid and sphenoid cells. During previous six months had several severe spontaneous hemorrhages from the nose and very severe bleeding after an operation upon the growth by another physician.

Immediately before the last operation a subcutaneous injection of rabbit serum powder solution equivalent to ten c. c. of serum was given. The new growth was then enucleated so far as possible, with an unusually small amount of bleeding and with remarkable clotting of blood. The exact diagnosis of the new growth was made, later, by histological examination. (Reported by Dr. F. W. Hinkel, of Buffalo.)

Case XIX. Nasal hemorrhage. Mrs. E. A. F., aged fifty-six years. Large mucous polyp, originating in the right maxillary sinus and filling the right nasal chamber. The polyp was removed December 26 and a considerable part of the nasoantral wall was resected in order to reach its point of attachment. December 28th, upon the removal of the tampon, a severe and continuous hemorrhage followed.

This was promptly checked by the injection of a five c. c. serum powder solution (rabbit's serum). January 2, 1912, the patient was awakened at 3 a. m. by a free hemorrhage from the right side of the nose. By the time that medical aid arrived, she had lost much blood. A five c. c. rabbit serum powder solution was injected subcutaneously, after which the hemorrhage rapidly subsided. Although there was no recurrence of hemorrhage, the serum injection was repeated on January 4th. On January 8th more of the antral wall was resected incident to the removal of another small polyp mass without recurrence of hemorrhage. (Report of Dr. F. W. Hinkel, of Buffalo.)

Case XX. Nasal hemorrhage. Mrs. G. F. S., aged forty-five years, May 7th. Asthmatic. Hypertrophic rhinitis of unusual extent. There was, following thorough removal of hypertrophied tissue, including resection of the turbinates, a severe and continued hemorrhage, in spite of tamponage.

A two c. c. solution of horse serum powder was injected, this small dose being used because of a fear that asthma might be induced in this patient who had some idiosyncrasy in relation to the odor of horses. The hemorrhage rapidly subsided. A larger dose of serum was given, on May 9th, as a prophylactic, with no untoward effect. (Report of Dr. F. W. Hinkel, of Buffalo.)

Case XXI. Use of serum as a prophylactic. Mr. F. S. S., aged fifty-seven years. Five years previously following removal of nasal polyps and free exenteration of the right ethmoid cells, there was severe and persistent hemorrhage. This was checked with difficulty by complete nasal tamponnage. About ten days later a secondary hemorrhage occurred, of such severity and persistence that it was found necessary to ligate the right common cartoid artery.

Recently, after the injection of five c. c. horse serum powder solution, polyps were removed from the right nasal chamber, with very little hemorrhage. This patient had arteriosclerosis and chronic nephritis. (Reported by Dr. F. W. Hinkel, of Buffalo.)

While small doses of the precipitated serum powder will frequently check hemorrhage we have found it advisable to administer relatively large doses, the amount most commonly employed being 0.6 to 0.7 gramme, which is equivalent to ten c. c. of whole serum. In certain cases of persistent hemorrhage injections have been repeated at frequent intervals, infants even having received from twenty to forty c. c. daily for periods of several days without any unfavorable effects. For prophylaxis against hemorrhage, accompanying or following operation, injections have been given the day preceding, and an hour before operation, and when postoperative hemorrhage was feared, one to two hours after operation.

The fear that anaphylactic reactions might result from the use of precipitated horse serum appears thus far to be groundless. No such reactions have been exhibited in any of the patients under observation, some of whom have received repeated doses. In a case of pulmonary hemorrhage, for example, injections were given at weekly intervals for a period of four months.

The precipitated sera were generally readily dissolved by shaking for two or three minutes with cold water, the volume of water required being less than half that of the serum from which the powder was originally precipitated.

It is particularly important to note that human sera, and preparations derived from human sera are in no wise superior and seldom equal to those of certain animals.

METHOD OF ESTIMATING THE RELATIVE ACTIVITY OF FRESH AND PRECIPITATED SERA.

The relative rapidity with which the preparations in question cause coagulation of plasma when admixed with the latter at comparable concentrations affords an index of their coagulating activity. The preparation of plasma is as follows:

The blood of any suitable animal (that of a goat was employed in the majority of our experiments) is drawn into a large graduated tube containing a two per cent. aqueous solution of sodium citrate in the proportion of one part of the latter to three or four parts of the blood. The tube is cooled in ice, shaken gently to insure a thorough admixture of blood and citrate solution, and the contents are centrifugated to remove corpuscles. The clear plasma, which should be almost colorless if the operation has been satisfactorily performed, may be preserved in a refrigerator for several weeks.

The precipitated sera to be tested are dissolved at concentrations comparable with that of fresh serum, and each of the resulting solutions is admixed in at least two strengths with a constant amount of the plasma. The tubes are then shaken and placed in an incubator at 37° C. and observed at varying intervals of time from commencement of incubation, the result being recorded as follows:

+++ indicates the formation of a solid jelly, such that the tube may be inverted and even shaken gently without any indication of fluidity.

++ indicates the formation of a jelly which has not however set firmly enough to retain its form or permit of inversion of the tube.

+ indicates a slight but recognizable increase in viscosity compared with normal controls.

In the accompanying table a series of precipitated rabbit sera are compared with fresh rabbit serum by the method described above, and it will be observed that sera precipitated a year or more previously are fully as active as freshly precipitated serum and that all the preparations in question are apparently more active than fresh rabbit serum. That this effect is not due to traces of the precipitants has been amply demonstrated by control experiments in which the addition of small amounts of the precipitants employed exerted, if anything, a slight retardation.

Similar results may be obtained from precipitated sera of horses and other animals. We have made a comparison of various preparations obtained from rabbit serum rather than of similar products obtained from horse serum, because, having first employed rabbit serum and having at our disposal some of the earlier preparations, a better demonstration of the durability of the product is afforded than could be obtained from the more recently precipitated horse serum.

We are well aware that the results obtained by tests of this nature carried out *in vitro* are not necessarily indicative of the results to be anticipated *in vivo*. It has been noted, however, that these preparations give clinical results corresponding so far as can be judged with the test tube results, those causing coagulation most readily *in vitro* being generally most effective *in vivo*. For example, the serum powder preparations which exerted a remarkably strong precipitating action on plasma, a year and a half after their preparation were found to be unusually active when subsequently employed clinically.

Similarly, the observation that even carefully preserved serum lost its coagulating effect on plasma in a comparatively short space of time, coincides with the general clinical experience that fluid blood serum, unless absolutely fresh, is of little value in checking hemorrhage.

It will also be noted that serum previously heated to 60° C. for thirty minutes has no coagulating action on citrated plasma, from which we may conclude that the action of the product in checking hemorrhage is probably attributable to its content of fibrin ferment. Since water at 60° C. destroys the action of the powder, we consider it advisable when making a solution for clinical purposes to keep the temperature of the water employed below 40° C.

TABLE.

Materials tested.	Vol. of sol. or serum in c.c.	Water added in c.c.	Citrated plasma in c.c.	Incubated at 37° C.			
				Extent of coagulation after			
				15 min.	30 min.	1 hr.	2 hrs.
Rabbit serum powder prepared 18 months previous; 7 per cent. sol..	0.25	....	0.5	+++	+++	+++	+++
	0.05	0.2	0.5	+	++	+++	+++
Rabbit serum powder prepared 12 months previous; 7 per cent. sol..	0.25	....	0.5	+++	+++	+++	+++
	0.05	0.2	0.5	+	++	+++	+++
Rabbit serum powder freshly prepared; 7 per cent. sol...........	0.25	....	0.5	+++	+++	+++	+++
	0.05	0.2	0.5	+	++	+++	+++
Rabbit serum preserved sterile for three months..................	0.25	....	0.5	......	......	......	+
	0.05	0.2	0.5	......	......	......	......
Fresh rabbit serum	0.25	....	0.5	+	++	+++	+++
	0.05	0.2	0.5	......	......	+	++
Fresh rabbit serum, heated in advance, 30 min. at 60° C..........	0.25	....	0.5	......	......	......	......
	0.05	0.2	0.5	......	......	......	......
Control	....	0.25	0.5	......	......	......	......

THEORETICAL CONSIDERATIONS.

It is not proposed to indulge in a theoretical discussion of enzymatic and physicochemical phenomena, but it might not be out of place to point out that the somewhat surprising observation that precipitated blood serum powder is more active than the serum from which it was derived, may readily be explained on the basis of the physicochemical theory of adsorption.

According to this theory, enzymes may be considered to function in virtue of a process of adsorption taking place on their exposed surfaces. If this be the case, the larger the aggregates the smaller will be the surface exposed, consequently, the lower the enzymatic activity. Furthermore, the deposition of foreign bodies on the surfaces in question might be expected to cause the frequently noted phenomena of retardation and ultimately complete suspension of enzymatic action. The precipitation of bodies possessed of enzymatic function by the method adopted in our experiments might be expected to result in a breaking down of the bodies in question into smaller aggregates than those originally present. These smaller aggregates might, according to our theory, be expected to exhibit an increased enzymatic activity on account of their increased and freshly developed surface area. It is possible that the greatly increased activity of precipitated sera may be attributable, at least in part, to elimination of antithrombin and consequent liberation of thrombin. It is proposed to investigate this and other theoretical questions in the near future.

CONCLUSIONS.

1. Blood serum is found to be of considerable value in the treatment of all forms of hemorrhage due to low blood coagulability resulting from diminished thrombin content.

2. Human serum is in no wise superior to that of a variety of animals.

3. Blood serum precipitated by means of a suitable mixture of acetone and ether is fully as effective as fresh serum, if not superior to it. Precipitated serum is freely soluble and possesses the advantage over fluid serum of being sterile, always available, and retaining indefinitely its capacity to stimulate coagulation of the blood.

4. The product obtained from horse serum appears to yield more uniformly satisfactory results than that obtainable from the sera of other animals, and exerts no deleterious effect.

5. The determination of the rapidity with which sera and solutions of precipitated sera at comparable concentrations cause coagulation of citrated blood plasma affords a simple means of estimating the relative activity of the preparations in question, and consequently of standardizing precipitated sera for clinical purposes.

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113 HIGH STREET.

SUSPENSION LARYNGOSCOPY.

BY LOUIS G. KAEMPFER, B. S., M. D.,
New York,

Assistant, Mt. Sinai Dispensary, Nose and Throat Department.

The direct method of examination of the larynx introduced by Kirstein possesses distinct advantages over the older indirect method, and was a step forward in the diagnosis and treatment of endolaryngeal conditions. As the technic became perfected and the original tubes of Kirstein were discarded for those devised by Killian and his pupil Brünings, larger vistas of usefulness were constantly opening for the newer method.[1]

A further advance in the direct method of approach to the larynx is the recently introduced suspension laryngoscopy of Killian. The method has been used in a number of cases with success, and as yet we are just on the threshold of its possibilities. In this country the method is as yet practically unknown. For this reason the writer deems it a privilege to be able to describe his somewhat extended observations of this procedure during a recent trip abroad.

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[1] For a detailed description of the instrumentarium and the technic of direct laryngoscopy and bronchoscopy I must refer the reader to Brünings' book, in which the studies that led up to the adoption of the instruments and operative technic by Killian are exhaustively set forth.

THE INSTRUMENT.

The instrument can be described as a sort of gallows from which the patient's head is suspended by a hook while a spatula holds back the epiglottis and depresses the tongue into the floor of the mouth.

The gallows. The gallows is fastened to the side of the table near the head end. It has two motions—one anteroposterior along the length of the table, the other in the vertical plane. The anteroposterior movement is made with a screw and worm. The vertical movement has two adjustments—a coarse adjustment with a sleeve which can be clamped fast in any position and a fine adjustment with a screw. A horizontal arm stretches across the table from the top of and at right angles to the vertical arm to and beyond the mid line of the table. Along the horizontal arm is a series of notches to receive the hook.

The hook. The hook is thirty-two cm. (thirteen inches) long. The lower part is straight; the upper third, curved gently forward and upward, ends in a stout hook by which it is suspended from the gallows. Attached to the lower end of the straight shaft of the instrument is a bow which lies in the transverse, vertical plane and whose closed side is toward the left. The upper end of the bow fits into the shaft of the hook by a vertical rod which can be raised and lowered in the long axis of the shaft by means of a screw. The free end of the bow carries a small plate, which when the instrument is in position rests against the biting edge of the upper incisor teeth, or on the gums if the teeth be absent. This plate is parallel to the tongue spatula, which will presently be described. When the bow is lowered, by turning the screw in the shaft of the hook, the plate is forced *down* against the upper incisors and the mouth is opened wider.

On this plate there is a small shelf, five mm. in height, at right angles to it. The shelf can be moved forward and backward by a screw. It rests against the inner surface of the upper incisor teeth and serves to retain the instrument in place. When the instrument is in position, therefore, the upper incisor teeth, or the alveolus if they are absent, rests in the angle formed by the plate and this shelf. If the teeth are absent a somewhat higher shelf must be used.

Albrecht, of Berlin, has lately devised a hook which is designed to obviate the necessity for the toothplate and shelf. At a sufficient distance above the spatula to clear the chin, the vertical part of the hook is bent at right angles forward, i. e., toward the foot of the table. This horizontal arm and spatula are therefore parallel. At the forward end of the horizontal arm is another vertical arm whose end is hooked for hanging it over the gallows. The vertical distance from spatula to gallows is the same as in Killian's simpler instrument. The length of the horizontal arm is adjustable by means of a rack and pinion.

Albrecht asserts that by keeping the free end of the spatula directly under the point of suspension, the spatula will stay in position without any counter pressure against the teeth. In patients whose incisors are long, or whose mouths cannot be opened very widely, the thickness of the plate and shelf partially closes an opening already small and in some cases renders suspension laryngoscopy impossible.

Since the publication of his paper, Albrecht has been obliged to add the shelf, because in a certain number of cases the instrument could not be otherwise retained in the mouth.

The matter of keeping the instrument in position has been one of the most difficult problems in the development of suspension laryngoscopy. On the cadaver, where his first work was done, Killian experienced no difficulties. In the living patient, however, this is not so easy. If, after the instrument is in place, the patient swallows, the larynx rises up and pushes against the end of the spatula which slowly slides from the mouth. Killian tried a number of methods to prevent this accident before he finally devised the small shelf which rests behind the incisor teeth. He set the spatula into the shaft at an acute angle; he roughened the surface that rests against the tongue, and he bent the forward end of the spatula so that it should hook into the larynx. A later and satisfactory though somewhat clumsy arrangement was an arm attached to the shaft above the spatula. The arm carried a large knob on its free extremity which could be hooked under the chin. The present arrangement of the plate and shelf serves a threefold purpose and takes up very little room. It holds the mouth open, holds the tongue out, and prevents the instrument from slipping.

The spatula. The spatulæ are made of steel, are set at right angles to the shaft of the hook, and are interchangeable. The form of spatula now used is made like a gutter and is V shaped on cross section. The end at the shaft is widest. It narrows down toward the free end. The tip, however, broadens out, is flatter on cross section and curves slightly upward. There are four sizes of spatula. A short flat spatula has been devised for operations in the pharynx and mouth.

The light. Either reflected light, a head light of some form or other, or a small lamp fastened to the instrument, can be used. Reflected light is the least desirable. During the introduction of the instrument the light must be constantly shifted and this is annoying to the operator. At first Killian used the Kirstein head lamp, but the lamp attached to the instrument gives the most satisfactory illumination. A small lamp on a universal joint attached to the bow gives a very satisfactory light, or a small cold lamp can be fastened to one or both sides of the spatula. In neither of these methods is the light in the way of the operator. They give him a freer range of action than either the head light or the reflected light. A glass shield on a head band can be worn. Some form of shield is necessary, especially in tuberculous cases where the application of lactic acid and iodoform causes coughing. The blowpipe of Sidney Yankauer can be adapted to this instrument without encroaching upon the field of vision, and furnishes protection for the operator without causing him the annoyance of working behind a mask.

Instruments. A special set of instruments has been devised for operating in the suspended position. In general the ordinary forceps and curettes used in the laryngoscopic and bronchoscopic tubes can be used. The special instruments for suspension laryngoscopy are heavier and stronger than the latter. There is a universal grip to which is attached a tube twenty cm. long. The various biting and cutting forceps can be attached to the end of the tube, and are operated by a rod through its lumen They are so made that they can be used for either side. In addition, a set of ordinary curettes for tuberculous granulations is made.

SELECTION OF PATIENTS.

The same difficulties that one encounters in using the direct laryngoscope are met with here. Patients who do not open their mouths wide, those with thick tongues or prominent incisor teeth are not especially adaptable to suspension laryngoscopy.

Before attempting this procedure the operator examines the mouth, pharynx, and larynx, and finally does a direct laryngoscopy with the Kirstein spatula. The success of the suspension laryngoscopy depends largely upon the degree that the tongue can be compressed.

PREPARATION OF PATIENTS AND ANESTHESIA.

Some patients, especially those who have had the bronchoscope passed a number of times, can be examined by suspension laryngoscopy with only cocaine anesthesia. For this purpose Killian employs a twenty per cent. solution; about ten drops of cocaine solution, and three to four drops of a one to 1,000 epinephrine are applied directly to the larynx as for direct laryngoscopy. This is repeated two or three times. The first application is made to the epiglottis, the others to the deeper parts. For patients who are not tolerant under cocaine anesthesia, he employs, in addition, morphine and scopolamine. In some cases a general anesthetic is required.

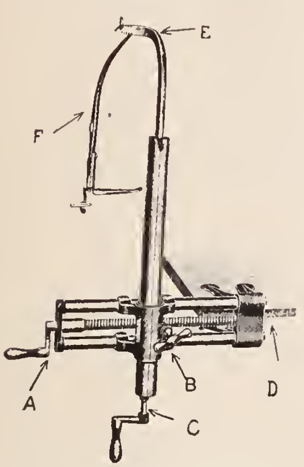

Fig. 1.—The gallows; *a*, screw for anteroposterior motion; *b*, sleeve and screw for coarse adjustment of vertical arm; *c*, screw for fine adjustment of vertical arm; *d*, device for clamping gallows to table; *e*, horizontal arm showing notches and method of hanging hook.

Great care must be used in the preparation of the scopolamine solution. Heffter found that solutions of scopolamine began to deteriorate after six hours. For this reason a fresh solution is prepared each time. The dose used is 0.0003 gramme (about 1/200 grain), given two hours before operation and repeated in an hour. With each injection of scopolamine the patient gets 0.01 gramme (about 1/6 grain) morphine. If this dose is not sufficient a third injection of scopolamine, 0.00015 gramme, morphine 0.0005 gramme is given. If a general anesthetic is required, ether is used. In all cases the preliminary cocaine anesthesia is carried out. This inhibits the reflexes and the ether anesthesia need not be so deep.

The merits of scopolamine morphine anesthesia do not come into question here. Suffice it to say that with these doses and with fresh solutions a satisfactory degree of anesthesia can usually be obtained. In a long experience in Killian's clinic, as well as in other places, no untoward effects have been observed.

Scopolamine dries up the secretions, and one great source of annoyance and difficulty is spared the operator by the dry condition of the parts. There is very little secretion and the suction pump is scarcely ever used.

In children under sixteen years of age, it is not to be recommended; chloroform anesthesia is better. In order to still the cough reflex, small doses of codeine can be given. It is better to omit the preliminary cocainization in children; if done at all, a weak solution should be employed. The combination of cocaine with general anesthesia can produce dangerous collapse.[2]

INTRODUCTION OF THE SPATULA.

Suspension laryngoscopy is done with the patient in the dorsal decubitus and with the head free of the end of the table. The gallows is fastened about four inches from the head end of the table on the right side. For the form of gallows now made, a flat table or at least one with a flat head end must be used. The operator stands or sits behind the head of the patient.

The patient's head is held by an assistant and another assistant has charge of the gallows. The proper spatula having been selected, the operator introduces it along the tongue until it comes in contact with the edge of the epiglottis. The gallows is then approximately adjusted.

In the next step the tongue is drawn out, either by the patient himself or by an assistant. The tongue need not be drawn out further than the edge of the teeth. The spatula is passed along the tongue until it reaches the posterior pharyngeal wall, and then the end is raised until the larynx is brought into view. The hook is now passed over the horizontal arm of the gallows and the latter brought into position by its fine adjustment.

The assistant holding the head can now very slowly and gently let go. As soon as the head hangs by its own weight the field will be considerably enlarged. The little plate on the end of the bow must be so adjusted that the shelf rests securely behind the upper incisors. By means of the screw in the shaft the box can be lowered and the mouth opened wider.

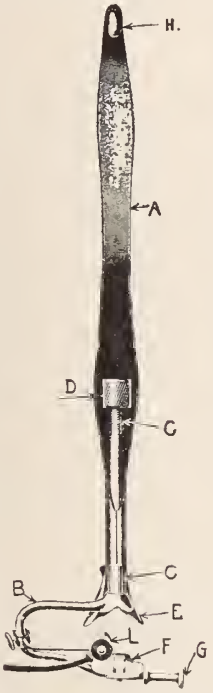

Fig. 2.—The hook from the back; *a*, shaft; *b* bow; *c c*, vertical rod to raise and lower bow; *d*, screw for raising and lowering bow; *e*, edge of spatula; *f*, tooth plate; *g*, screw for regulating tooth plate; *h*, hook by which instrument hangs over gallows; *l*, electric lamp on universal joint fastened to bow.

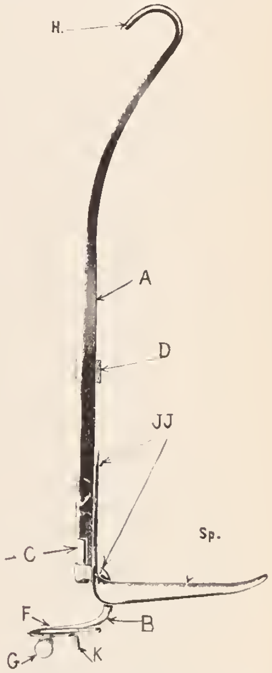

Fig. 3.—Hook from right side; *a*, shaft; *b*, bow; *c*, vertical rod; *d*, screw for moving bow; *f*, tooth plate; *g*, screw for regulating tooth plate; *k*, shelf for retaining instrument in mouth; *l*, hook; *sp*, spatula; *jj*, clips by which spatula is fastened to shaft.

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[2] The writer saw one case in Killian's clinic in which the cocaine was used before a general anesthesia in a boy of twelve years with an almost fatal result. After the cocainization of the larynx the child was put upon the table and the moment that the spatula entered the larynx he went into collapse. The pulse almost disappeared, breathing became shallow, the face was pale, and the extremities were cold. Artificial respiration and stimulation were resorted to, and after a time the patient was restored. Some days later a fibroma was removed from his vocal cord in suspension laryngoscopy, the patient being under ether narcosis. There were no accidents and he made a complete recovery.

It is well, before beginning, that the operator get an idea as to how wide the patient's mouth can be opened. Patients under cocaine or scopolamine morphine anesthesia will protest if the bow be lowered too far. In patients under general narcosis much harm may be done by overstretching the parts.

DIFFICULTIES.

It is not always simple to obtain a good picture. In general it may be said that the same obstacles encountered in the direct laryngoscopy are met with here. A great deal depends upon the tongue. A short, thick tongue, especially when the surface is much curved from side to side, usually baffles the operator. It is difficult and sometimes impossible to keep the spatula from slipping off sidewise. A thick tongue, too, cannot always be sufficiently depressed into the floor of the mouth to give a good view of the larynx. Sometimes the epiglottis slips off the end of the spatula. This is overcome by substituting a longer spatula. Often a good picture cannot be obtained because the tongue has been pulled out too far. The tip of the tongue need not be brought further out than the edge of the teeth.

When difficulties are encountered in the introduction of the spatula, or where a good picture cannot be obtained, Killian recommends the use of a shorter spatula and its introduction from the angle of the mouth. Only half the tongue can be depressed and the field is much narrower than when the spatula lies in the middle line.

ADVANTAGES.

The two main points in favor of suspension laryngoscopy as a rational procedure are: First, the larynx is brought so near to the operator that manipulations are permitted that would be impossible with any other method of approach; second, the operator has both hands free with which to work instead of one as in all other methods. Another great advantage of suspension laryngoscopy is that secretions and blood tend to flow toward the pharyngeal roof which is the most dependent part. The opening of the larynx being in direct line of vision can easily be sponged free of blood and secretions. This enables the operator to make a longer and more thorough examination and to do more complete operations. He can, for instance, remove in one sitting small and not easily accessible growths or curette the larynx entirely free of tuberculous granulations.

THE LARYNGEAL PICTURE.

The picture in suspension laryngoscopy is extensive. One sees directly into the larynx. The epiglottis, of course, is not seen, being covered by the spatula. The oropharynx and the relations of the pharynx and larynx are well shown.

The first portion of the larynx to be seen is the posterior wall. The cords are in the cadaveric position. If the spatula is too broad it may be difficult to get a view of the anterior commissure. The substitution of a narrow spatula and pressure on the larynx externally, as suggested by Brünings, will usually bring the entire larynx into view.

CLINICAL OBSERVATIONS.

The malady that lends itself most readily to treatment in the suspended position is tuberculous laryngitis. Granulations can be completely removed at one sitting. Infiltrations can be easily treated with galvanocautery. Smaller and larger growths in the larynx can be readily attacked in this position. Bleeding is easily controlled. Foreign bodies in the larynx are not difficult of removal.

The extirpation of pharyngeal growths, such as fibromata on the roof of the pharynx, is facilitated by this position. The writer saw Killian remove a large fibroma from the pharyngeal roof of a boy of twelve years. In his hands and in this position, this exceedingly bloody and difficult procedure was quickly and skillfully done, and the patient made an uneventful recovery.

Killian reports fifty cases in which he has used the suspension laryngoscopy without untoward results other than slight traumata of the pharyngeal wall or epiglottis, or an occasional squeezing of the tongue between the instrument and the incisor teeth. The latter accident can be avoided by placing a small cotton pad on the tongue.

The scopolamine morphine narcosis was satisfactory in almost every case. In only two was a general anesthetic used. Applications of twenty per cent. cocaine were made in most cases. The majority of the patients were young men between the ages of twenty and thirty years, although there was a goodly number of women and children. In every case the procedure was well tolerated, and none of the patients complained of pain on the next day, although several were suspended for considerable lengths of time.

Clinically the cases fall into two main groups; those with tuberculous laryngitis and those with papillomata. Several of the tuberculous cases were operated in twice, but most of them were curetted only once. All cases with ulcers or granulations were curetted thoroughly and the clean bases rubbed with lactic acid or iodoform powder. The infiltrations were cauterized with the galvanocautery.

There was a rise of temperature following the curettement, usually of short duration. Killian remarks that his tuberculous patients tolerated morphine scopolamine injections much better than they did general anesthesia. Bleeding was easily controlled.

Papillomata of the larynx occurred mainly in children. They lend themselves readily to this method, and the growths can be removed quickly and completely and in fewer sittings than with the ordinary direct method.

Beside these two main groups, Killian's cases include two cases of difficult decannulization, and one each of polypi on the vocal cords, pachydermia, and lupus. The latter was treated by curettement. The above mentioned case of pharyngeal fibroma was operated in after the publication of his paper.

My observations lead me to believe that in suspension laryngoscopy we have a procedure which broadens appreciably the scope of laryngoscopy. A method that in its infancy has already revealed so many possibilities can be accorded a brilliant future. It is very probable that the instrument and the technic are by no means perfect, and that the near future will reveal improvements in these directions. At all events our observations have convinced us that Killian's suspension laryngoscopy will be as important to the laryngologist as cystoscopy has become to the surgeon.

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1. KILLIAN: Die Schwebe Laryngoskopie, *Archiv für Laryngoscopie und Rhinologie*, xxvi, 2. 2. IDEM: *Berliner klinische Wochenschrift*, xlix, 581, 1912. 3. ALBRECHT: Eine Modification der Schwebe Laryngoskopie, *Ibidem*, xlix, 1331, 1912.

616 MADISON AVENUE.

INFECTED KNEE JOINT.*

Two Cases of Drainage without Subsequent Ankylosis.

By HARLAN SHOEMAKER, M. D.,
Shelby, N. C.

Several theories have been advanced recently which materially alter our previous conception regarding drainage of cavities lined by endothelial cells. Dr. John B. Murphy, of Chicago, is the chief exponent of the theory which is based upon his observation of natural phenomena, that a large joint, if but exposed to the air for any length of time and not necessarily traumatized or infected, is most likely to become, through the drying and ultimate destruction of these same delicate endothelial lining cells, the seat of ankylosis. In considering this theory from a practical point of view, two cases have been treated by me, in which the knee joint was exposed for a number of hours, as well as infected, without untoward results.

CASE I. A girl of eight years, as she was running around a corner of the house, hooked her knee on a rusty nail and tore the right knee joint open through the lateral ligament. The joint was searched by an unwashed hand and sewn tightly shut. Twelve hours later the child was brought to the hospital and the joint was reopened, a number of blood clots were washed out, and the lateral incision was again closed. Drainage was placed high up beneath the tendon of the quadriceps muscle and brought out through the fascia lata, high up and somewhat posteriorly. The foot was elevated eighteen inches and a straight posterior splint applied which extended from the ankle to the gluteal fold. No extension was used. In three weeks all suppuration had ceased and passive motion was begun by allowing the child to use her limb. In six weeks one hundred per cent. of motion had returned.

CASE II. Young man, twenty-two years, while sawing shingles, slipped and fell into the saw. The circular saw instantly removed the articular surface completely from the external condyle and travelled through the patella, chewing up the ligament of the quadriceps femoris, where the saw emerged from the patella. The popliteal vessels and nerves were not injured, but had a close call. Only one half of the articular surface remained on the femur. The patella was cut through obliquely, and consequently was drilled and wired with silver wire in two places. The ragged wound was closed by interrupted silkworm gut stitches. Drainage was carried out of the joint at its highest point beneath the quadriceps femoris tendon and through the fascia lata somewhat higher up the leg and more posteriorly. The limb was placed upon a posterior splint and the foot elevated eighteen inches.

Suppuration lasted four weeks. The result was better than I expected, three months after injury, twenty-five per cent. of motion was obtained, just through the ordinary exercise of walking. The boy now has a very serviceable leg. It might be noted that the articular surface which was removed by the saw, was brought to the hospital several days later, but could not have been used owing to the oncoming suppuration.

These two cases bring up the following points for discussion:

1. The endothelial lining of the joint can be exposed to air and recover its function. It was so exposed between six and eight hours in the second case.
2. The joint can be traumatized internally and recover.
3. The joint can be infected and recover.
4. The joint can be drained any length of time necessary, without materially altering its function.
5. The presence of pure silver wire does not necessarily, even in extensive suppuration, act as a foreign body.

There is no doubt that with sufficient exposure to the drying influences of the air, the endothelial lining of any of the serous cavities of the body will become materially modified, but that the exposure necessary to produce such a condition is greater than the time consumed by an operation is well illustrated by the foregoing cases.

What takes place in a serous cavity after traumatism and superimposed infection has been clearly set forth by Professor Adami. At first the joint weeps, and if the joint secretion were to be collected, it would be found to have a specific gravity of 1,010 or less, and contain one per cent. or less of albumen. This is a true hydremic condition and absorption will occur if let alone. A severer traumatism might produce a venous stasis within the joint, then the fluid from the joint would be found to have a specific gravity of 1,010 and contain about three per cent. albumen.

However, if the aspirated fluid from a serous cavity contains four per cent. albumen and has a specific gravity of 1,018, it will also contain cells and possibly bacteria. The condition becomes a surgical one, as the lymphatics will be blocked by so heavy a fluid, and while its watery portion may be absorbed, the detritus and fibrin will remain to form a foreign body. Consequently, while the conditions of our second conclusion (that the joint can be traumatized internally and recover), may be reduced by rest, elevation, and cooling lotions; those of our third (that the joint can be infected and recover), require surgical intervention to overcome a mechanical obstacle.

My method of operating on the knee joint is exactly the reverse of other methods in vogue, and is applicable to joints which have been opened by traumatism or by selection. In case of traumatism the original wound is always closed, and the joint treated as described. I make an incision through the skin at the upper level of the bursal sac, which lies beneath the tendon of the quadriceps femoris muscle. This bursa generally extends two and one half inches above the upper margin of the patella. This flap is then turned down, the joint opened through the external lateral ligament, ligating any anastomosing arterial branches, and the patella turned to the inner side. Flex the knee if better exposure of the joint is needed—the patella being dislocated internally and upside down by this flexion. With this exposure all balls of fibrin—the "joint mouse" of the Germans—can readily be removed.

With the reduction of the parts, the capsule of the joint is sutured laterally with a close running catgut suture which does not wound the endothelial lining of the capsule—a subendothelial stitch, and the deep fascia and skin are likewise closed. In event of traumatism, which would produce a transudate equal to the venous stasis just spoken of, with a specific gravity of 1,015, discretion would warrant carrying a drain out of the top of the bursal sac. Should the joint be infected, obviously the drain would be necessary. The drain should be a dependent one, and in the two cases in question it was carried higher up the limb and out of a buttonhole made through the fascia lata, well toward its posterior border. This method of drainage has several things to recommend it:

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*Read before the North Carolina State Medical Society, Hendersonville, N. C., June 19, 1912.

1. With the elevation of the whole limb, eighteen inches at the foot, the drainage of the joint becomes dependent.

2. With the flow of joint secretion all blood fibrin and cells and bacteria are washed out of the joint through Nature's efforts.

3. The adhesions which will naturally be formed by the irritation set up by a rubber tube on a delicate membrane, will be found at a place where they can do no damage. They cannot interfere with the mobility of the joint, and they will never be strong enough to restrict the motion of the tendon. At best these adhesions can only shorten the bursal sac. This is of no importance unless it must be used in subsequent operative procedure for a similar drainage. Silver wire, in my hands, has never acted as a foreign body when the drain was carried away from the wire. This gives Nature an opportunity to encapsulate the wire.

Surgical drainage of the knee joint is not new. Barker, writing in the *London Practitioner* for February, 1910, uses Bier's hyperemia treatment early, and if that fails, he aspirates the effusion, makes a smear, and if bacteria are present, he opens and drains the joint. He fails to state his method of drainage. B. Riedel, *Deutsche medizinische Wochenschrift*, Berlin, 1910, drains the knee infected with purulent arthritis, back of the condyle or through the popliteal space. This is certainly a dependent method, but it may leave fibrin deposited between the articular surfaces (Adami states that floating bodies in the joint are collections of fibrin from joint effusion), and it has the added danger of injury or thrombosis by extension of the inflammatory action to the great vessels. A neuritis might develop from a similar reaction.

The kind of bacterial activity does not alter the treatment. Gonorrheal infections should not be allowed to bring about the deformity of a stiff leg any more than should any other organism. If a stiff leg is inevitable, it should be a straight leg.

In the mobilization of the knee, Klapp (*Zentralblatt für Chirurgie*, August, xxxvi, 1143) mobilizes the knee by the interposition of soft parts after breaking up the ankylosis. In the first place, it is doubtful if ankylosis need exist, and if it does, the introduction of a lubricant, such as deflocculated graphite, would more successfully insure a mobile joint than the eburnation of any animal membrane. It has the advantage that it can be reintroduced into the joint. Bismuth pastes have proved poisonous.

In conclusion, I should say that with dependent drainage, elevation is most important. It is the Fowler position of the leg. I never use extension for the same reason that I would not interpose an animal membrane between the articular surfaces. With extension, the relaxed joint is separated, and fibrin is deposited between the articular surfaces, with a sure guarantee of ankylosis. The joint membrane is so constructed that it can bear the weight of the body without injury, and, furthermore, it can bear the weight of the leg indefinitely, without becoming diseased through pressure.

In reviewing this simple treatment for an infected joint, I have two main objects in my method of treatment; first, the relief of the infected condition; and, second, the restoration of function. Under the first condition, the infection is relieved by rest on a splint, elevation of the foot, and dependent drainage as described. So far as I am able to observe, the joint is not exposed to air with drainage carried such a distance from the joint. Under the second condition, the patient is placed in the ambulatory position with a posterior splint and allowed to walk, with the splint as protection against any unusual effort, until all soreness has left the limb and joint, at which time the splint can be laid aside.

A CHEAP AND EFFICIENT ELECTRIC HEADLIGHT.

By Jerome Wagner, M. D.,
New York,
Clinic Assistant in Surgery, Polyclinic Hospital; Assistant Surgeon, Department of Proctology, Cornell University Clinic.

There is no headlight on the market to-day that can be purchased for less than five or six dollars, some instrument makers asking ten or twelve. The one I describe below cost me less than two dollars and fifty cents, and no doubt could be obtained for very much less if a smaller light is sufficient. The light can be operated from a single dry cell or from a rheostat. This is of great advantage, inasmuch as many of the homes we visit are not equipped with electricity, and it is most inconvenient to carry a six or eight cell battery, which most other headlights demand. The cell for my headlight can readily be carried in a vest pocket; the light proper takes no more room than the ordinary mirror on a head band. Every physician has a head band with a mirror, and two dollars or less can replace the mirror with an electric light.

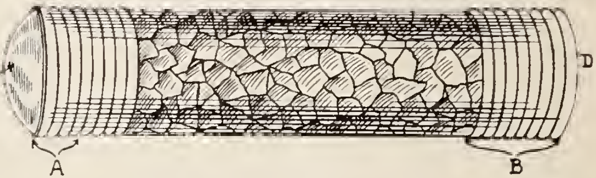

Fig. 1.—The ordinary pocket flashlight, parts *A*, *B*, and *C* alone are used. These flashlights come in different sizes; the smaller ones costing but ninety cents are most desirable, bringing the cost of the lamp to less than two dollars.

Fig. 1 shows an ordinary pocket flashlight, which can be purchased at any electrician's for $1.50 for the large size, down to ninety cents for the smaller sizes. Parts *A* and *B* in Fig. 1 are detached from the flashlight and screwed together; part *A* containing the lamp, a one volt tungsten, and a powerful convex lens. A connection is then made through the back of part *B* with a silk wire of any desired length (mine is six feet long). At the end of the wiring attach two pin poles which will fit any rheostat or the poles of any dry cell after the latter have been inverted at their ends so as to grasp the two poles of the wire snugly.

A flat piece of tin about one half inch wide is then fitted about the connection at *D* (Fig. 2) to which is attached a short rod about one half inch long with a ball at the end. This will fit in the joint formerly occupied by the mirror, in any headband. The light is now complete, with an outlay of about seventy-five cents to an electrician for soldering the connection, wiring, and ball joint, twenty-five cents for a dry cell, and $1.50 or less for flashlight, depending upon size one desires.

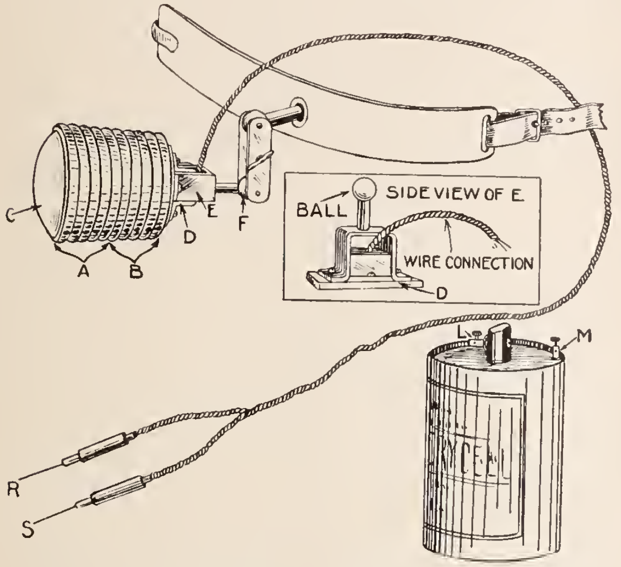

Fig. 2.—*A*, *B*, and *C*, part from flashlight; *D*, connection with wiring; *E*, piece of flat tin around *D* and supporting *F*, the ball to make a swivel joint; *L* and *M* show how the poles of any dry cell can be inverted so as to hold the pin poles, *R* and *S*.

The lamp gives a powerful white light, the area of light depending upon distance from object. I maintain these advantages: 1. Cost is less than half that of the cheapest contrivance on the market; 2, it is as efficient as the most expensive headlights; 3, it is inexpensive to keep, a cell renewal costing but twenty-five cents, a new electric bulb the same; 4, there are no intricate parts to get out of order.

226 West Ninety-seventh Street.

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Abstracts and Reviews.

VERTIGO; A CLINICAL AND THERAPEUTIC STUDY.*

By Richard Lake, F. R. C. S.,
London, England.

The type of vertigo to be considered is limited to the aural form, and the causes of this form of vertigo may be classified as follows:

I. Peripheral causes. (a) Chronic progressive middle ear deafness. (b) Hemorrhage into the labyrinth, and embolism. (c) Traumatism.

II. Aural vertigo due to altered state of the blood pressure. (a) Increased blood pressure. (b) Decreased blood pressure.

III. Aural vertigo due to systemic causes. (a) Leuchemia. (b) Occasional. (c) Specific. (d) Anemic (cerebral anemia).

One of the two commonest causes of aural vertigo is the first, chronic progressive middle ear deafness. In this condition the diagnosis of the cause is relatively easy, for otological examination reveals the presence of chronic lesions of the middle ear. This form of vertigo is of purely peripheral origin; that is, it is due to some involvement of the peripheral vestibular nervous mechanism. General measures of local treatment should be tried, and if they fail resort should be had to operation. It is to be borne in mind that operation is not to be undertaken in cases in which the hearing is good, or even useful, because the operation always leads to complete deafness in the treated ear. The operation is now well known and has for its object the division of the vestibular nerve proximal to the semicircular canals. The results of the operation are immediate and certain relief. The dangers of the procedure are nil. In my series of some seventy cases presenting this condition for treatment it has been necessary to operate in only fourteen. All of these proceeded to recovery after the operation without difficulty and in all the vertigo was immediately and permanently cured. Emphasis should be laid upon one feature in the operative treatment of this condition, and that is the adoption of *antiseptic* rather than *aseptic* surgical measures. This is essential because of the intimate connection existing between the middle ear and the throat via the Eustachian tube. It is my belief that, although the strictest asepsis may have been observed in the course of the operation, subsequent infection of the region from the Eustachian tube is almost unavoidable.

Cases due to labyrinthine hemorrhage or embolism are far less frequent than are those due to the condition just described. These cases should all be tried on a thorough course of treatment with large and ascending doses of pilocarpine. This treatment should be continued for a period of two weeks. It is seldom, if ever, necessary to operate in this class of case.

In the traumatic cases the vertigo rarely lasts more than six months. General measures of treatment are usually fairly successful. Two of the common but little recognized causes of this form are the presence of plugs of cerumen and the effects of violent nose blowing. A characteristic feature of these cases is the persistence, after the disappearance of the vertigo, of an inability to walk in the dark. This may be attributed to the presence of a vestibular neuritis.

The second great group of causative factors, altered blood pressures, includes the next largest number of cases. In the cases with increased pressure arteriosclerosis plays an important part. Here, again, the lesion is peripheral in the vestibular nerve. These cases tend toward recovery from the vertigo spontaneously in many instances. Such recovery is due to the gradual destruction of the vestibular nerve and is associated with complete deafness in the affected ear. A peculiar feature of these arteriosclerotic cases is the tendency of the attacks of vertigo to come on in the early morning. The most logical explanation for this seems to be that at this time the circulation is at its lowest ebb and it is insufficient owing to the increased peripheral resistance of the thickened vessels. Treatment in this group is quite successful and consists in the use of either quinine and hydrobromic acid, or of potassium iodide.

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*Summary of a lecture delivered before the Section in Otology of the New York Academy of Medicine, December 13, 1912, and of the ensuing discussion.

Those cases in which the blood pressure is below normal show one characteristic feature, namely, a greatly increased vertigo on rotation. The indication for treatment is obviously to restore the blood pressure. This is best accomplished by the continuous exhibition of a trustworthy preparation of ergot. Operation should not be considered unless thorough trial of this treatment fails. In these cases the lesion is probably not wholly peripheral, there being some central factor in most of them.

In the third class of causes the cases which are due to leuchemia or pernicious anemia are not amenable to treatment. Among the most frequent of the occasional causes is gouty dyspepsia. Its relief effects the disappearance of the vertigo. Specific disease, syphilis needs no discussion. Cerebral anemia, when a cause of vertigo, leads to a fairly typical symptom complex. There is vertigo, a sensation of surface warmth, flushing, and sweating. These same symptoms are said to be associated also with seasickness. In this class of cases the trouble is obviously of central origin, lying within the brain.

In closing, emphasis should again be laid upon the fact that operation is seldom needed and that when it has to be done it is practically free from any danger to the life of the patient. It causes immediate and permanent relief of the symptoms, but also brings about permanent deafness.

DISCUSSION.

Dr. Charles L. Dana regarded all vertigo as vestibular in origin, but not always as aural. He then briefly reviewed the anatomical relations and distribution of the vestibular nerve to illustrate how numerous and varied the sites of disturbance might be. He said that it is a sensory nerve, irritation of which causes vertigo, just as irritation of an ordinary sensory nerve causes pain. The irritation might occur at any point in the wide ramification of this nerve and vertigo would be the result. Examples of vertigo due to causes other than aural might be mentioned, such as that associated with migraine, or coming on in place of a migrainous attack; the vertigo of epilepsy; or that frequently present in multiple sclerosis.

Dr. James F. McKernon agreed heartily with Mr. Lake with regard to the indiscriminate opening of the labyrinth. He also was in accord with the idea so well brought out that vertigo was only a symptom of some lesion. The caution not to operate in cases in which the hearing was good met with his approval. One of the more common occasional causes of vertigo, he thought, should be given as exostoses of the external auditory canal. Alcoholism was a direct cause of labyrinthine hemorrhage and resulted in ultimate total deafness. He thought that the use of pilocarpine should be continued for six weeks rather than for only two. As to the safety of operation, he could not agree with Mr. Lake, for he thought that it was not, by any means, devoid of danger. He would suggest, further, in the treatment of the arteriosclerotic cases with high blood pressure, that spirit of nitroglycerin be added to the list of drugs already given by Mr. Lake.

Dr. E. B. Den.ch said that vertigo from chronic progressive middle ear disease could be cured, in many cases, by the local use of pilicarpine. Operation on the middle ear with extraction of the ossicles and puncture of the oval window also gave good results in many cases. In the cases with increased blood pressure careful otological examination, he thought, would reveal the presence of some middle ear lesion, and that the blood pressure was a second factor only. Successful treatment of these cases should take both of these factors into consideration.

Dr. Philip Hammond, of Boston, said that there was an apoplectiform type of vertigo from increased endolabyrinthine pressure. He thought that otosclerosis in the region of the oval and round windows prevented the accommodation to variations in pressure. The suddenness of the attacks was due to the sudden change in pressure within the labyrinth. This change was not necessarily due to an increase in the pressure, but might well be the result of a diminution. The outflow of the labyrinthine fluid was partly by percolation, through the bony walls of the labyrinth. Otosclerosis stopped this, and it was quite possible that the fluid might become absorbed with a resulting reduction in the endolabyrinthine pressure.

Dr. Percy Fridenberg spoke of the importance of the visual factor in causing vertigo and considered the remarks made by Doctor Dana to offer an explanation for this observation.

Dr. T. Passmore Berens thought that operations upon the labyrinth were dangerous.

In closing Mr. Lake said that in his hands labyrinthine operations had been entirely without danger. This he attributed to his employment of antiseptic measures in the course of the operation and during the after treatment. He used five per cent. solutions of phenol very popular in Great Britain, as an antiseptic.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXIX.—How do you manage chronic ulcers of the leg? (Closed December 16th.)

CXXX.—How do you treat subacute and chronic laryngitis? (Answers due not later than January 15, 1913.)

CXXXI.—How do you treat psoriasis, and with what success? (Answers due not later than February 15, 1913.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be award-

ed to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXVIII was awarded to Dr. Maurice Schneck, of New York, whose article appears below.

PRIZE QUESTION CXXVIII.

THE TREATMENT OF INFANTILE CONVULSIONS.

By MAURICE SCHNECK, M. D.,
New York.

Before discussing the treatment of infantile convulsions it may not be amiss to state some of the causative factors underlying these attacks, as the treatment of these cases depends upon one or more of these etiological factors.

To begin with, the most predisposing causes are: 1. Those due to some demonstrable lesions of the nervous system, as birth palsies, hemorrhages, syphilis, hydrocephalus, tumors of the brain, meningitis, etc. 2. Those due to nonspecific lesions of the nervous system, as epilepsy, spasmophilic diathesis, hereditary tendencies. 3. Those due to various (a) external poisons, such as ptomaine, drugs; (b) internal poisons, such as specific infections, intestinal putrefaction, and defective internal metabolism. The exciting causes are pathological factors of the alimentary tract, inflammatory or suppurative processes of the middle and internal ear, dentition, biliary and urinary calculi, etc.

One of the most difficult problems is to differentiate the various convulsive seizures of infants. The physician must therefore be guided by the history obtained from the parents, in order properly to learn the nature of the isolated attack and treat it accordingly. Bearing these facts in mind, the treatment of infantile convulsions resolves itself into: 1. Treatment of the attack; 2, prevention of the recurrence of attacks, and, 3, removal of the cause.

Treatment of the attack.—Upon arriving at a case of infantile convulsions, the physician must bear in mind that no time is to be lost in inquiring into the history, as a few moments may decide the fate of the infant; he should immediately proceed to urgent measures. The child should be placed in a hot mustard bath or what is more usually convenient, a mustard pack. This should be kept up until the skin becomes red. Hot compresses to the infant's body will give similar results. Should the attack continue, a few whiffs of chloroform or vapor inhalations will subdue it. An icecap to the head should be placed to allay cerebral congestion, if present, or irritation of the brain. I have never yet had opportunity to resort to a hypodermic injection of morphine because the foregoing procedure is sufficient and has proved to be successful in combating any convulsive attack, and, second, because the infant's nervous system is highly susceptible to the narcotic effects of potent drugs which may bring about deleterious results. Always, even without any history of previous constipation, I empty the lower bowel by a simple enema of soapsuds and water, followed by a thorough colonic irrigation of hot and cold water by means of a Kemp tube. As soon as the bowels have been emptied, chloral hydrate, at least eight minims of a two per cent. solution, together with potassium bromide, grs. v at a dose, is injected into the rectum, the injection being allowed to remain for some time. The drug always acts in from five to ten minutes, and the effect lasts for a few hours. The child is then placed in a quiet room free from any disturbance.

As soon as the attack is over, measures must be adopted to combat the overexcitability of the nervous system. Attention should first be paid to the diet, as this is of paramount importance. Food should be withheld for the first six hours. Then the infant can be placed on a tea diet, or older infants on oatmeal porridge without milk. The following day breast feeding (in small infants) should if possible be begun at once. It occurs sometimes that the child being placed to the breast is threatened with the return of convulsion; this indicates that the mother's milk is at fault and should be chemically and microscopically examined for a possibly too high percentage of proteids or fats. While the overexcitability, after it has once been removed by initial evacuations of the gastrointestinal tract, does not return if the child is kept on breast feeding, great care should be exercised in artificially fed babies. It is certain, from clinical observations, that the quality and quantity of food may bring on convulsions, also cause them to disappear. In the obese, overfed children the diet should therefore be cut down to the lowest limit. In feeble and anemic infants it is best to diminish the intake of proteids and carbohydrates in order to prevent the possibility of decomposition or putrefactive action in the intestines, thereby increasing, through their irritation, the excitability of the nervous system. In older infants, a farinaceous diet should be given for a few days only, when it should be replaced by a milk diet. In babies over two years, milk and soups in addition to a soft vegetable diet may be tried.

Should there be any indication of another threatened convulsion, feeding should immediately be suspended, a hot bath instituted, and a rectal suppository of antipyrine and extract of belladonna, of each gr. 1; potassium bromide and valeriana, of each grs. v, inserted into the rectum once daily for a few days.

The treatment should now be directed to the cause of the attack. Careful search should be made for all possible sources of reflex excitations, and these should be immediately corrected. Not only should the history of the patient be obtained, but the family history is also important, as the significance of heredity has been fully demonstrated that children without any demonstrable weakness, but exhibiting a spasmophilic diathesis, are born of mothers who have themselves had spasmophilia in their childhood, and in some instances still present distinct latent symptoms. The infant should be placed on tonic treatment, thereby building and toning up the nervous system. It is not amiss to say that in a case of rhachitis with nervous manifestations good results have been obtained from the use of the phosphates in combination with codliver oil.

The facts to be borne in mind, then, are that convulsions in childhood almost always have a serious aspect. With proper care and attention to the history and aftertreatment, they may mean nothing more than an accidental complication of some underlying condition; on the other hand, they may be the beginning of a serious disturbance in the function of the growing nervous system with mental and moral deterioration, grave neurosis, or epilepsy as the ultimate result.

233 EAST FIFTH STREET.

Dr. Morris Ginsburg, of Philadelphia, states:

When called to a case of convulsions in an infant, I invariably take with me a bag containing chloroform, gauze, a hypodermic outfit, and if it occurs during the night, also a solution of chloral and bromide, a rectal tube, and some dry mustard.

A glance at the child establishes the diagnosis of convulsions; a few words from the parents tell of its duration and probably give a clew as to the underlying cause. The immediate treatment depends upon the violence and the previous duration of the attack. As a rule I place a few drops of chloroform upon a piece of gauze and hold it intermittently to the infant's nostrils, at the same time ordering the parents to prepare a mustard solution of one tablespoonful of mustard to one quart of warm water. If the withdrawal of the chloroform after several minutes' administration causes a resumption of the convulsion, I inject *per rectum*, by means of a catheter or rectal tube, a solution of chloral and bromides—from three to six grains of the former and from five to ten grains of the latter.

Counterirritation, in order to withdraw the blood from the internal organs and from the cerebrum, is my next thought, but I attempt to accomplish this with the least possible disturbance to the patient. Immersion of the infant in a tub, I have found to be unsatisfactory for that reason, and instead, I use a pack made by saturating a towel or sheet in the above mentioned strength of mustard solution, in conjunction with a mustard footbath. The pack is allowed to remain from ten to fifteen minutes, by which time the whole body surface is fairly red.

Morphine I have been rarely called upon to use, and then, usually in cases due to meningeal conditions, or where the heart action is such as to make chloroform or chloral rather dangerous. A hypodermic injection of 1/16 to 1/64 of a grain, repeated if necessary, seems to be without any particular danger, and even acts as a cardiac stimulant.

The convulsion over, I have the child placed at rest, head elevated, icebag to head, and I question the parents as to the onset and probable cause of the convulsion, also as to the previous history of the infant in regard to susceptibility to these attacks; the presence or absence of rickets, the diet, etc. I also take the temperature. The causes resolve themselves into several classes:

First of all we must consider that infancy itself, by virtue of the instability of the nervous system during that period of life, is a great predisposing factor. Add to this the various ailments, such as rickets, syphilis, malnutrition chiefly from digestive disorders, and the prevalence of some of the acute infections, and it may easily be seen why infantile convulsions, as well as other nervous affections, among them chorea, enuresis, general restlessness and insomnia, are so frequent.

By far the most important of the exciting causes can be located within the gastrointestinal tract, resulting from overfeeding or from improper feeding. A colonic irrigation is therefore indicated in practically all cases shortly after the convulsions have subsided. The addition of asafœtida makes it more effectual. This should be followed either by castor oil or by fractional doses of calomel with a dose of oil at the end. At the same time, if high fever is present, antipyrine and a combination of bromides may be prescribed with advantage. Cases of this nature get well within twelve to twenty-four hours.

Convulsions may be the signal of the oncoming of an acute infectious disease—pneumonia, scarlet fever, or other, and here the general course of treatment outlined for these conditions should be followed, particularly that of elimination and reduction of temperature in the various ways. The cause for the convulsions is both the toxemia of the disease and the effects of the high temperature upon the nervous centres. Convulsions during the course of an attack of whooping cough or late in pneumonia are due to asphyxiation, and are very dangerous.

Various reflex causes are cited, including dentition, worms (rare in infants), phimosis, and other. These are much more liable to act upon infants predisposed to convulsive seizures, especially those suffering with rickets, but as a rule, the real exciting cause is gastrointestinal in nature, and it is here that we must look for relief. Between attacks, the infant should be given general dietetic and hygienic care with the aid of codliver oil, iron, and phosphorus.

Finally, convulsions may be caused by direct excitation of the brain substance. This is seen in meningitis, brain tumor, brain abscess, head injuries, and in epilepsy. In these conditions, chloroform is obviously not so applicable, and we must depend chiefly upon the bromides and kindred drugs, and finally upon operative procedures.

Dr. Carlisle P. Knight, of Ellis Island, N. Y., notes that—

Although there are numerous points in the etiology and many direct causes of infantile convulsions, the pathological conditions are practically the same in all cases. There is, in the height of the attack, severe cerebral hyperemia, overtaxed right heart, pulmonary congestion, and perhaps slight congestion of all the internal organs.

Called to treat a case of infantile convulsions, we should remember the main points in the pathology enumerated above, in order to treat the case intelligently. Regardless of the cause, the condition presented should be treated heroically and immediately.

There have been many drugs advised and tried in controlling convulsions, but I employ three standard remedies which can be depended upon; that is, chloroform, chloral, and mustard. There should always be in the emergency bag the first two mentioned, also two soft rubber catheters of large size to be used as rectal tubes. Mustard being a household remedy, will usually be available Without a doubt, chloroform is of the greatest immediate benefit, most rapid in effect, and may be used without hesitation, even in the youngest infant. Upon seeing the child in the attack, I would at once begin the use of the chloroform. Having started the administration of it and with the beginning arrest of the convulsion, the bowels should be emptied by the use of a soapsud enema, carried up as high as possible with the aid of the soft rubber catheter, and recurrent washings used until all the contents have escaped and the returning water becomes clear. A very handy contrivance may be made for the return flow washings by attaching a catheter to a fountain syringe and then inserting it into the rectum. At the same time another catheter should be inserted alongside of the first and held in position by an assistant. Having cleared the intestine of its contents, we should now give chloral (about eight or ten grains for a child two years old), dissolved in milk or some warm liquid, per rectum. This should be inserted as high as possible in order to be absorbed quickly, and prevented from escaping by pressing together the buttocks. The effect of this drug is noted in about fifteen or twenty minutes and may be repeated in forty or forty-five minutes if necessary. To relieve the internal congestion, I have found it best to put the patient in a hot mustard bath, immersed up to the shoulders, while on the head an icebag should be placed. The bath serves another purpose, in that it keeps the mother busy and thus diverts her attention, and gives the physician more control of the situation. The bath should be continued until the skin is of a healthy red glow.

After removal from the bath, if the temperature is very high, the icebag should be continued and alcohol rubs given about every hour until the temperature is reduced. I believe the alcohol rub (alcohol and cold water equal parts), rapidly applied with a sponge, is far more effective in reducing the temperature and quieting the patient than the cold water bath which necessitates undue handling, and which is not borne well by most children. Also the average layman does not know how to give the cold water bath intelligently. Many have recommended the use of morphine in treating convulsions, but I have never employed it, because I have never seen the indication for it, where chloroform or chloral could be obtained. The uncertainty of its action in young children makes it objectionable.

When once the convulsion is under control, a return attack may be prevented by keeping the patient under the influence of chloral or the bromides. Calomel, given in one tenth grain doses until a movement occurs, to produce purgation, to deplete the bowel, and to keep the portal circulation free, is advisable. Where convulsions have been frequent, there is more or less exhaustion which must be treated. For this the system should be supported by rest in bed, an appropriate diet given, and stimulants used as indications required.

After the attacks have ceased, it is now all important to unearth the underlying causes which have produced the attacks, and to remove them.

(*To be continued.*)

Therapeutical Notes.

Treatment of Gastric Disorders.—W. H. Willcox, in the *Medical Press and Circular* for July 17, 1912, lays stress on the advisability of physical rest in gastric hyperacidity. The diet should be readily digestible and citrated milk, or milk containing one drachm of sodium bicarbonate to the pint, freely administered. The following preparation may be given one hour after each meal:

℞ Bismuthi subcarbonatis, }
Magnesii carbonatis, .. } ....āā grs. x;
Sodii bicarbonatis, ...grs. xl;
Aquæ chloroformi, ...q. s. ad f℥i.
M. ft. solutio.

Sometimes the use of olive oil in tablespoonfu' doses before meals is useful. Spiced food, all condiments, and soups or meat extracts should be avoided.

In chronic atonic dilatation of the stomach the author advises rest in bed for a few days. The stomach may be well washed out and emptied at the start, and the patient then fed on citrated milk to which eggs, beaten up, have been added. In the first twenty-four hours the quantity of fluid ingested should be limited to one ounce every hour; later the amount may be gradually increased. When the stomach has regained its tonicity and diminished in size, light, easily digestible solids may be given; but big meals must always be avoided. Fluids had best be taken only between meals. Massage of the abdomen is of value. The following nerve tonic may be administered three times daily after meals:

℞ Strychninæ sulphatis, ...gr. 1/25;
Tincturæ cardamomi compositæ, ...fʒss;
Acidi hydrochlorici diluti, ...♏x;
Aquæ chloroformi, ...q. s. ad f℥i.
M. ft. solutio.

Lactic Cultures in Intestinal Disorders.—E. I. Harrington, in the *New York State Journal of Medicine* for February, 1912, divides into three classes the cases in which he has found lactic cultures useful: 1. Cases of intestinal indigestion and autointoxication associated with marked putrefactive changes, odor, and indicanuria, and with indolacetic acid absent or in small amount only. In this form of indigestion the cultures—pure, fresh cultures of *Bacillus bulgaricus*, grown in a private laboratory—proved almost always curative, without other medication except cathartics. The dose used for adults was from three to four teaspoonfuls of the liquid culture three or four times daily, according to the severity of the case; the best method of administration was found to be in sweetened water before meals. The diet to be prescribed in these cases is described as follows: Meat and eggs in limited amount, once daily; buttermilk and milk are desirable provided they contain no preservative; fruits and sweets to be taken freely, as well as cream, butter, bacon, and gelatin; if the starch digestion is good there is no objection to vegetables.

2. Cases of intestinal indigestion in which it is believed that the dominating organism is the colon bacillus or other allied type. In this variety the movements are seldom offensive, though there is a varying amount of abdominal pain, tenderness, and

distention. There is indolacetic acid in the urine; indican may be present, but is oftener absent. Nervous symptoms, such as tremor, insomnia, feelings of apprehension, and nervous exhaustion, are characteristic of severe cases. In these patients, the results of treatment with cultures were not so good as in the first class, and more time was required to obtain favorable effects.

3. In enterocolitis of infants. Here the lactic cultures were found by the author always to lead to recovery, except in cases so far advanced as to be within one day of death—a period too short for the cultures to act. Babies of any age, even only three weeks old, were treated in this way, the cultures being given in doses of one teaspoonful every six hours, or a half teaspoonful every three hours, in a little water with milk sugar. Beside the preliminary dose or two of castor oil, no drugs were given except lime water or calcium carbonate. Antiseptics are especially to be avoided, as they counteract the growth of the lactic bacilli and annul the effects of the treatment. As for the diet, whey, diluted according to age, is best; later, milk is added in increasing amount. For older babies barley water or other cereal water with milk sugar may be added. It is essential that the milk used contain no preservative, and where such is not surely the case, the diet will have to be limited for one or two days to barley or other cereal water with lime water and milk sugar, after which, as the case improves, a little condensed milk is added. In breast babies the milk was usually continued from the first and the cultures given between the feedings. It was found unnecessary to use rectal or colon washings in conjunction with the lactic culture treatment.

Treatment of Alopecia areata.—R. Horand, in *Lyon médical* for August 18, 1912, reports a severe case of alopecia areata, rebellious alike to applications of mercury bichloride, pilocarpine, croton oil, etc., as well as to the use of a constricting band and to internal medication, in which exposures of the affected areas to the ultraviolet rays, by means of Kromayer's lamp, gave good results. These rays induce pronounced and prolonged cutaneous hyperemia. They are both more active and safer than the x rays, which are capable of causing permanent alopecia through atrophy of the hair follicles.

Treatment of Disturbances at the Menopause.—Plicque, in *Bulletin médical* for June 15, 1912, observes that purely hygienic measures will in most cases largely overcome the various "congestive" symptoms at the climacteric. Physical exercise, especially walking, is very valuable; while walking in the open air is to be preferred, walking in the house, in conjunction with the household duties, is by no means useless. For the prevention of insomnia the patient should be advised never to retire until at least two hours have elapsed since supper time and to walk around as much as possible during that time. The evening meal should be light and should not include any meat. The quantity of fluid taken should be reduced to half a pint. At other meals vegetables and fruit should chiefly be taken, especially during the "congestive" periods, though well cooked white meats are also permissible. Skim milk often proves more acceptable than whole milk.

As derivative measures, hot foot baths, dry cupping, rubbing of the congested region with turpentine or ammonia liniment, careful massage and the use of the faradic current are of chief value. Internal derivation by drugs such as aloes is to be avoided except in obstinate cases. Sedation by means of bromides, monobromated camphor, or valerian, is useful in all cases where repeated nervous attacks occur. Asafœtida may with advantage be given in the following combination, originally recommended by Debreyne:

℞ Camphoræ, }
Asafœtidæ, } ....āā 0.10 gramme;
Extracti belladonnæ foliorum, ...0.02 gramme.
Ft. in pil. No. i. Da tales No. lx.

Of these pills, from two to six may be administered daily; where the latter number is given, the amount of belladonna in each should preferably be reduced one half. Of special value, especially in cases of artificially induced menopause, is the administration of dried ovarian substance in cachets or tablets each containing 0.1 gramme; of these five may be given daily.

Drug Treatment of Edema.—J. L. Miller, in the *American Journal of the Medical Sciences* for July, 1912, reports an investigation of the effects of digitalis, theophyllin, strophanthin, and Fisher's solution in various forms of nephritis associated with edema. In eight cases of chronic interstitial nephritis with broken cardiac compensation, digitalis preparations caused marked diuresis only in one instance, though dyspnea was considerably relieved. Theophyllin, on the other hand, given in capsules in doses of 0.25 gramme daily, gave good results, only one case failing to react to it. Diuresis was marked within twelve to eighteen hours, reached its maximum generally within forty-eight hours, and continued until the drug was stopped on account of nausea or until edema had largely gone. Where dyspnea was present, it was only moderately relieved. Intravenous injections of strophanthin, 0.75 milligramme at a dose, were given in ten cases. After one injection only a very moderate diuresis developed, but this continued for several days, the edema meanwhile gradually decreasing. Dyspnea was greatly lessened. In several instances, by repeating the injection about once a week the patient was kept reasonably comfortable when other forms of treatment, such as sweats, laxatives, and digitalis had failed to give even temporary relief.

A case of acute nephritis with edema reacted well to theophyllin, but of four cases of acute exacerbation of chronic parenchymatous nephritis only one showed diuresis, even after several days' use of the drug. Digitalis, strophanthin, alkaline diuretics, and Fisher's solution (prepared by dissolving eight grammes of crystalline sodium carbonate and fifteen grammes of sodium chloride in one litre of water) were tried in these patients, but had little or no influence on the urinary excretion. Miller concludes that failure of the kidneys to react to theophyllin indicates a very grave disturbance, as the four patients of chronic parenchymatous nephritis, in whom it proved ineffectual, all died within two weeks.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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PRESENILITY, A PROBLEM IN PREVENTIVE MEDICINE.

As an example of the increased efforts of modern medical men along the line of preventive medicine, the investigations now being carried on with the view of finding means and methods for the prolongation of life and the prevention or amelioration of old age infirmities, are praiseworthy. At least one medical faculty has recognized the importance of this subject by inaugurating a chair and course of study in geriatrics. Old age is not only an important medical question, but a far more important economic problem, because old age carries with itself an incapacity which makes its victims charges on the public, or burdens and handicaps to some individual.

Yet it is not so much a problem of the prevention of old age and its infirmities to the individual concerned, and of its burdens on the public, because we are prepared to expect dependence of the aged, as it is the tendency to *premature* senility in our strenuous civilization. Against this condition we have at the present time made no preparation, partly because it is still a new problem, though it is becoming more common every day. Individuals of whom we still expect activity are young in years though old in body, and of little use physically. While climatic conditions, such as those encountered in the hot countries, are conducive to rapid decay, as well as the chronic exhaustive diseases, these conditions do not interest us so much as the premature old age found in the absence of these conditions as the result of the high pressure mode of living in the more advanced communities, following upon the keen competition everywhere. People now believe that only youth can enter the lists, and the period of successful competition and efficiency is very short. Large employers recognize the inefficiency, comparative at least, of age and refuse new employment to men past middle life. The result is that every one tries to crowd all the work he can into this period, in order to live in ease when his efficiency is impaired. In many instances overwork in early life is born of a desire to retire as early as possible to a life of ease, rather than an easy life. To carry this out, however, means to make the pace that kills. When such men retire, they retire old in fact though young in years, little able to enjoy the life for which they worked so hard. Less strenuousness, a slower, surer mode of living would be far more economical of life. Hurried living acquires such a momentum that stopping is hard, if indeed possible. In fact, many now realize that they must remain in the saddle if they are to continue life at all. Their mentality is kept alive only by the stimulus of their bodily activity—and these are likely to cease working at the same time. To stop means to fall. It is a common sight to see hard workers of prominence die as soon as they attempt to retire.

The symptoms of presenility are the same as those of senility, except that mental acuity is not so much impaired in the former. A middle aged man showing the signs of old age, an atrophic and flabby condition of the skin, with such physical signs as heightened blood pressure, usually accompanied by more or less hardening of the arteries, small and sluggishly reacting pupils, and beginning arcus senilis, is to be considered in the class of the prematurely aged, even if no definite somatic changes can be found. In its pathology presenility is merely an early replacement of parenchymatous tissue with fibrous. When such minute organs as the capillaries are affected it means throwing many of them out of the circulation and an increase of blood pressure in the circulatory system. "A man is as old as his arteries" is a sound maxim. When fibrosis is far advanced and well organized nothing can be done in the way of remedy.

The prevention of presenility lies in the abandonment of the doctrine and practice of the strenuous life, and in the substitution of the simple life. Trying to do life's work in too short a period is not, in the long run, economical of time. Still, to ask people to live at a slower pace is almost to invite atavism. A more easily accomplished method of prevention, and certainly more acceptable, lies in the adoption of regular periods of vacation, or periodic relaxation; during such periods the metabolic processes have a chance to recoup. Specifically speaking, the young connective tissue elements thrown out in a reparative effort will be absorbed, because no longer needed, and before they are so much organized that this becomes impossible. Indeed, the vacation system is the creation of the modern strenuous life; it is an example of necessity being the mother of invention. Every one should, in the language of the sea, be laid up occasionally to prevent too much wear and tear.

THE STATE NURSES' ASSOCIATION AND HOSPITAL TRAINING.

In its recent annual meeting at Utica the New York State Nurses' Association recommended that its members take action during the next session of the Legislature to have the Nurses' Practice Act so amended as to render State registration of nurses compulsory and to debar from practice all nurses who have not had institutional—that is to say, hospital training. While casual consideration of the proposed amendment suggests that its adoption might prove advantageous, a deeper analysis of the ultimate effects of the amended law shows clearly that the favored nurses and the rich would alone profit by it, while people of moderate means and the poor would suffer. Moreover, it would debar from an honorable living thousands of faithful women who, though unprovided with hospital experience, are nevertheless well trained in the theory of nursing, and, under the guidance of the physician, soon become highly efficient—and this without, we might add, losing what is now too often lacking in the hospital trained nurse, the sympathetic gentleness which all sufferers crave.

Before the New York State Nurses' Association can convince us that the amendment they demand is for the public good, they will have to demonstrate, first, that the State is supplied with a sufficient number of hospital trained nurses to meet the needs of all sufferers therein requiring such aid —which we know is by no means the case; second, that in order to provide for the vast majority of patients, the small wage earners and the poor, who are now provided for by those of their sisters who have not had institutional training, an adequate number of hospital trained nurses will give their care for a moderate sum, say eight to fifteen dollars a week. If they cannot meet these requirements the amendment proposed, were it adopted, would prove a public calamity.

THE CRISIS IN PNEUMONIA.

One of medicine's great mysteries is the crisis in pneumonia; physicians since Hippocrates have been puzzled how to explain this clear cut change about the seventh day; a change generally salutary, but which often bears no apparent relation to the pulmonary lesion or to the patient's general condition.

Eggers found, in most of the cases of lobar pneumonia he studied, increased antipneumococcal power, greatest as a rule at the crisis or just after it, and lasting thereafter for variable periods; to him the antibodies seemed, in part at least, to be opsonins, whose activity could be manifested in proper circumstances, even in organisms with some degree of resistance. The cases in which this apparently characteristic increase of antipneumococcal power did not occur, presented irregularities either in course or in termination.

Cole, in setting forth work by himself and his colleagues in the Rockefeller Institute, finds that the main attempt to explain the crisis, as well as recovery by lysis, has been to demonstrate antibodies in the blood serum. Neufeld's experiments, instanced by Cole, have shown an increase in immune substances in the blood of patients upon recovery from pneumonia. Neufeld obtained his results by testing the protective power of the serum for mice against a known lethal dose of pneumococci; and he showed that while normal human serum had no such protective action, the serum obtained from the patients following the crisis did have such action. While Strauss, Seligman, Klopstock, and others have not confirmed these results, Dochez's work confirms that of Neufeld. To Cole it seems that the crisis in pneumonia is still an obscure phenomenon; "and at the present time it cannot be stated whether it represents a destruction of the bacteria, a neutralization of the poison, a kind of anaphylactic shock, or a combination of all these phenomena."

Dochez, in seeking to elucidate the problem of the pneumonia crisis, has inoculated white mice with the serum of recovered pneumonia patients; and his results seem to show that some sort of protective substances is usually present in the blood of those recovering from this grave general infection. It seems that the appearance of these protective substances, when demonstrable in the blood, coincides rather sharply with the period of critical fall in temperature and the disappearance of the pneumonia symptoms. These substances are found only at or after the crisis; and they may afterward reach a considerable concentration. In certain instances they cannot be demonstrated at any period of the disease. Experiments in which serum can be tested against an homologous strain of the pneumococci, yield in most cases evidence of the presence of the protective bodies; whereas whenever shock cultures are used the serum as a rule shows no protection.

But how bring the development of this protective power into causal relation with the pneumonia crisis? The latter depends apparently on some single cause, some relatively simple reaction, such as the destruction of the bacteria by immune substances or the neutralization of toxines by antitoxines. If the blood of animals recovering from the disease constantly contained protective substances, we could reasonably assume that the crisis and recovery occur because of the development of such substances. And what is the nature of the immune bodies to which this protective power is due? Are they antitoxines or bactericidal substances or opsonins or bacteriotropins in the serum? Such questions, also, as whence these immune bodies come and why they develop, are yet to be solved.

STATISTICS OF TUBERCULOUS FAMILIES.

C. Leroux and W. Grunberg, in *Revue de médecine* for November, 1912, compare detailed statistics secured by them in 442 tuberculous families of the working classes with similar data relating to 126 nontuberculous families. As regards the number of children in each family, it was found that 282 children existed for every 100 families in which the parents were healthy, 288 where the mother alone was tuberculous, 327 where both parents were tuberculous, 380 where the father alone was tuberculous, and 450 where the parents were simultaneously tuberculous and alcoholic. The general infantile mortality was 17.75 per cent. in healthy families, 40.6 per cent. in tuberculous families, and 44.3 in families where tuberculosis, syphilis, and alcoholism were combined. The various causes of infantile mortality, including abortion, stillbirth, and infectious diseases all contributed to the increased death rate among the tuberculous. Where the father alone was tuberculous, the total mortality was 43.2 per cent., where the mother alone, 39.5 per cent., and where both parents, 49.1 per cent. Curiously, a study of thirty-seven families in which the grandparents alone were tuberculous, the parents being healthy, showed the very high mortality of 44.2 per cent. among the grandchildren, a fact which leads the authors to believe that the germ cell is influenced by heredity, even to the second generation, as in the case of syphilis. Detailed information as to the causes of death in the children of tuberculous parents is also given. In addition to the well known special tendency of these children to cardiovascular weakness, there appears also to be a predisposition to pulmonary diseases in general, since the proportion of lung disorders among them was from thirty to forty per cent., compared with fourteen per cent. in the children of healthy parents. The existence of rickets of tuberculous origin is also supported by the statistics. The remedial measures advocated include protection of the pregnant woman against overwork and underfeeding and the destruction of premises infected with the tubercle bacillus.

THE PRESENT STATUS OF ROENTGEN THERAPY IN GYNECOLOGY.

Percy Shields, writing in the *Lancet-Clinic* for November 2, 1912, concludes from a study of Röntgen therapy that climacteric hemorrhage can nearly always be cured by the x rays, while dysmenorrhea and pruritus vulvæ are less amenable, many cases, however, receiving benefit therefrom. With proper regard for the age of the patient sterility can be produced by the proper and cautious use of x rays. Bearing in mind the much higher mortality of this method of treatment over the operative, myomata should under no circumstances be treated by the x ray, except when the patient refuses operative measures.

VENTROSUSPENSION OF THE UTERUS.

In this issue of the JOURNAL appears a very interesting article by Dr. J. Dawson Whitall, of Philadelphia. The doctor reports a case of ventrosuspension of the uterus with linen thread, and calls attention to the danger of this operation in a childbearing woman, as the lower uterine segment and posterior wall become so thinned in the effort to compensate for the enlarging fetus that rupture of the uterus would be extremely easy, whether normally or instrumentally emptied. A Cæsarean operation became necessary in this case and no vestige of the suspension was found. If a ventrosuspension is done, catgut, not linen, should be used, as the latter will release itself if the woman becomes pregnant. We believe our readers will pay special attention to this very interesting report.

THIRTEEN.

It is difficult to read with a grave face the presentiments attributed by some of our daily journals to prominent thinkers in Europe over the supposed fatal influence of the terminal digits of the current year. Whether or not the European philosophers have really uttered the drivel attributed to them, there must be at least a reverent audience for that sort of thing or the papers would not give space to it. The physician has ever to bear in mind the small superstitions among his patients, yet need not combat them if they are harmless. If Oliver Wendell Holmes were to ask to-day his famous question as to how many of his audience had at the moment a horse chestnut in the pocket to ward off the pains of rheumatism, he would probably bring to light as many fetishes as he did forty years ago; not all "buckeyes" perhaps, but prophylactic to no greater degree. A really grave and scientific answer exists to the thirteen menace of this twelvemonth, however; theological chronologists inform us that this is really the nineteen hundred and seventeenth year of our era, consequently all the dreadful things belonging to 1913 happened four years ago—as well as the good things, unfortunately.

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Medical Law.

V. RIGHTS AND LIABILITIES OF THIRD PARTIES.

The liability of a railroad company for negligent and improper medical treatment received by its employees in a hospital maintained by it with contributions from its employees' salaries, appears from the rule applied by the Supreme Court of Wyoming, in the case of Williams vs. Union Pacific R. Co., 124 Pacific Reports, 505, to be the same as that of a charitable hospital for similar treatment to a patient.

The admitted statement of facts before the court was "that the defendant (the railroad company) did not furnish the plaintiff with proper hospital accommodations in said hospital, and did not treat him properly therein, and did not furnish him the services of skillful or competent physicians or trained or capable nurses, and did not use or exercise due or reasonable care in the selection of such nurses and physicians and surgeons as were furnished to plaintiff." Upon the law applicable to this statement of facts, the court said: "With reference to cases of this character, it may be said that in general it has been held that a railroad company is not liable for negligence of its surgeons if it has used reasonable care in their selection. We think this is the correct rule." And later the court says: "It is also held that the duty of a charity hospital ends with the selection of capable surgeons and nurses." (Citing McDonald vs. Massachusetts General Hospital, 120 Mass., 432, and other cases.)

The statement of the character of treatment received by plaintiff from the physicians was, among other things, that the physician furnished, did, in the performance of the operation, "carelessly and negligently and unnecessarily cut a large hole in the neck of plaintiff's bladder . . . so that plaintiff's urine has ever since passed from him through his anus and always will thus pass." In commenting upon the legal effect of this allegation the court said:

> The words "carelessly" and "negligently," as here used, are not synonymous with the word "unnecessarily." The latter negatives the necessity of cutting the bladder in the performance of the operation, while the former refers to the manner of doing, and not to the necessity of doing. The necessity of cutting the bladder in the performance of the operation rested in the judgment of the surgeon, and called into activity his power to perceive and perform (*Webster's New International Dictionary*), which was the measure of his skill. If, therefore, he performed an act unnecessary to the operation with or without negligence, such act would be attributable to errors of judgment or want of skill.

The court then quoted the following from the opinion in the case of Akridge vs. Noble, 114 Ga., 949:

> From the time the surgeon opens with his knife the body of the patient until he closes the wound thus made in a proper way, the law imposes upon him the duty of exercising not only due care, but due skill as well. During the entire time he must not only know what to do, but he must do it in a careful and skillful manner.

VIII. CIVIL MALPRACTICE.

In the case of Dougherty vs. Soll, 126 Pacific Reports, 924, the attention of the Supreme Court was directed solely to the question whether or not the evidence was such as to show the defendant to be guilty of malpractice.

It appeared that plaintiff, on June 25th, suffered a cut on his knee with an axe; plaintiff avers that at that time his patella was cut or broken. Defendant treated plaintiff, not for a broken patella, but for a cut, and insists that plaintiff did not then have a broken patella. About two weeks after plaintiff's injury he began to walk without the aid of a crutch or cane, and on several occasions he was seen walking some distance from his home with a natural gait, except that he limped slightly. About August 23rd he walked a quarter of a mile or more from his home, over a country road, to the house of a friend, where he attended a party; he there saw defendant and said that he was feeling fine.

Two days later plaintiff had a fall and again injured his knee. He then called defendant, who had not treated him for several weeks. Defendant found the knee swollen and applied remedies to reduce the swelling preliminary to further treatment. After a second treatment plaintiff stated that he was going to Seattle to attend school, and that he would consult a surgeon there, whereupon defendant gave him a letter containing a history of the case. The contents of this letter is not shown in the reported case. Plaintiff went to Seattle about September 2nd, where he called upon a surgeon who at first gave him some simple treatment, but upon the second call the surgeon decided that the patella was fractured and that an operation was necessary.

Mr. Justice Crow, in expressing the view of the court, said:

> It seems to us that the vital question now before us is whether the patella was broken by the first or second accident. The trial judge found that it was severed by the stroke of the axe in June, a fact that the appellant should have then discovered, but did not discover, that appellant failed to treat respondent skillfully and properly, and that he should respond in damages for malpractice. . . .
>
> We have examined the record with much care. It must be admitted that the evidence is conflicting, but we are convinced that it preponderates in favor of findings we now make to the effect that the patella was not severed by the first accident; that appellant's treatment of the injury then sustained was skillful, proper, and successful; that, under such treatment, the respondent had well progressed toward a perfect recovery, that the patella was fractured by the second accident; and that at no time had appellant been guilty of negligence, unskillfulness, or malpractice. We cannot enter upon a detailed discussion of the evidence, but will state that undisputed circumstances support these findings, which are also supported by the evidence of a number of skillful surgeons, as well as other witnesses not experts.

The judgment of the lower court was reversed and the case sent back with instructions that it should be dismissed.

In the case of Coss vs. Spaulding, 126 Pacific Reports 468, the question whether a physician was liable to a person for malpractice where he was employed by a third party was litigated.

In this case it appeared from the evidence that the plaintiff, a boy of twelve years of age, was run over by an automobile and the tibia of his right leg broken. The next morning the owner of the automobile, Mr. Purdue, called with the defendant, Doctor Spaulding. The mother's testimony describes what took place as follows:

> My husband called up Mr. Purdue who said he would send his physician. The next morning he brought Doctor Spaulding down, and I stepped up, and he said, "I am Mr. Purdue, and this is my physician, Doctor Spaulding." Doctor Spaulding examined the leg, and felt it, and then I asked him if it was broken. He said, "No; it is not broken." I said, "No bone trouble there at all?" He said, "No." I said, "I can feel the bones move." He said, "No; you can't feel the bones move; if you could feel them, I could." . . .
>
> Then he examined the leg again, and still insisted it was not broken. . . . He gave me a prescription for liniment, and told me to get antiphlogistine and put that on to get the soreness out. He said the leg would be all right in a few days. I got the prescription filled, and used the liniment as directed. He came again December 11th. . . . I said, "The boy's leg is broken." He said, "Oh, no; it isn't broken; the child's leg is all right."

On cross examination she said:

> After the doctor said it was not broken, I thought he was a doctor, and knew what he was talking about, and I thought it was not broken. . . . I thought Doctor Spaulding had the case. I thought Mr. Purdue put him on the case, and, of course, he was the physician on the case, and I didn't consider it necessary for me to say anything about it.

The testimony of the plaintiff regarding what was said and done by the defendant on each occasion when called to see plaintiff was substantially the same as that given by his (plaintiff's) mother.

Doctor Beer, who is a practising physician and surgeon, was called as a witness, and testified that he performed an operation on plaintiff about January 15, 1912; that "the operation was to unite a faulty union of the tibia of the right leg. In making this operation, separating the bones and reuniting them properly, it was necessary to make an incision and expose the bone and the union. The (x ray) pictures, Exhibits 1 and 2, fairly represent the condition of the bones as I found them before the operation was performed."

In answer to certain hypothetical questions, containing an enumeration of the facts testified to by the witnesses regarding the extent of the injury and the appearance of plaintiff's leg at the time defendant examined it and the length of time that had elapsed after the accident before the examination was made, Doctor Beer said:

> I think a physician, with due care and attention and consideration that he should give to a case of that kind, could easily determine the condition that was present in that case. I can hardly understand, with a boy of his age and physique, how it could be overlooked, if a man had given it proper examination. Notwithstanding the swelling, I think the injury should have been discovered. . . . If a man would use due diligence in his examination, he should have discovered it.

At the close of plaintiff's case, on motion of defendant, the case was dismissed. Upon an appeal to the Supreme Court, defendant urged (1) that the evidence fails to show that the relation of physician and patient existed between plaintiff and defendant; and (2) that neither negligence nor unskillfulness on the part of defendant in his treatment of plaintiff was shown.

Mr. Justice McCarthy, speaking for the court, disposed of these points with the following words:

> Regarding the first proposition, we are clearly of the opinion, from the evidence adduced, that the relation of physician and patient existed. The defendant not only called upon and examined plaintiff for the purpose of determining the character and extent of the injury, but after the examination was completed he prescribed for plaintiff and gave directions to his mother, who was caring for and nursing him, regarding the treatment he should receive at her hands for the injury. . . . It is further contended that plaintiff cannot recover, because neither he nor any one authorized to act for him employed defendant to perform the services in question. It is conceded, however, that defendant was employed by Mr. Purdue, and that under the contract of employment he, on the occasion referred to, examined and prescribed for plaintiff's injury. The defendant, therefore, was under the same legal obligation to plaintiff to use ordinary care and skill in his examination and treatment of the injury as he would have been under if plaintiff or plaintiff's mother had employed him to perform those services. It is to recover damages for an alleged breach of this legal duty that this action is brought. The action, therefore, is not based on contract as the argument of counsel for defendant seems to imply, but on tort. Under the great weight of authority, the question of whether plaintiff, his guardian, or some third party employed defendant to perform the services is wholly immaterial. Even though a physician or surgeon renders his services gratuitously, he cannot escape liability for his negligent or unskillful treatment of his patient.
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> We are of the opinion, and so hold, that the question of whether the defendant used ordinary care and skill in his diagnosis and treatment of the plaintiff's injury should have been submitted to the jury.

The disposition of the case by the trial court was therefore set aside and the case sent back for a new trial.

News Items.

New Physicians in Pennsylvania.—The Pennsylvania State Board of Medical Education and Licensure on December 27th announced the names of seventy applicants who passed the recent examinations for license to practise medicine and surgery in the State. Forty-one failed.

Physicians' League of Brooklyn.—At the last meeting of this organization, the following officers were elected: President, Dr. Thomas Dixon; vice-president, Dr. Martin L. Bodkin; recording secretary, Dr. Charles Dumey; corresponding secretary, Dr. David Davidson; treasurer, Dr. Melvin Sheldon.

Pathological Library of Bellevue Open to Physicians.—Announcement is made by the general medical superintendent of Bellevue Hospital that the library in connection with the pathological department of the new Bellevue Hospital, corner of Twenty-ninth Street and First Avenue, is open for the use of all practising physicians.

Moving Pictures of Mental Diseases.—At the New York Academy of Medicine, on the evening of December 23d, Dr. T. H. Weisenburg, professor of clinical neurology at the Medico-Chirurgical College, Philadelphia, displayed a series of moving pictures taken by him during the past five years. These pictures showed in detail many forms of nervous diseases with their clinical symptoms and the different methods of examination. Doctor Weisenburg believes that moving pictures should be used as an aid to actual clinical demonstration in the case of rare operations.

Southern Surgical and Gynecological Association.—At the twenty-fifth annual meeting of this association, held in Old Point Comfort, Va., December 17, 18, and 19, 1912, under the presidency of Dr. J. M. T. Finney, of Baltimore, the following officers were elected: President, Dr. John Young Brown, of St. Louis; first vice-president, Dr. A. Morgan Vance, of Louisville, Ky.; second vice-president, Dr. Lomax Gwathmey, of Norfolk, Va.; treasurer, Dr. Le Grande Guerry, of Columbia, S. C.; secretary, Dr. William D. Haggard, of Nashville, Tenn. The next annual meeting of the association will be held in Atlanta, Ga., in December, 1913.

New Tuberculosis Hospital in Suffolk County, N. Y.—The Board of Supervisors of Suffolk County has voted to purchase as a site for the proposed county tuberculosis hospital a property consisting of forty-three acres, seven miles north of Patchogue. The price is $4,000.

Decreased Mortality from Tuberculosis.—The mortality from tuberculosis in New York State, outside of New York city, shows a very substantial reduction during the first nine months of 1912, compared with preceding years. The number of deaths from pulmonary tuberculosis during the first nine months of the past year was 3,796, while in 1911 there were 4,076.

Personal.—As a testimonial of appreciation to Dr. William S. Thayer, of Johns Hopkins University, for refusing to accept an offer made him recently by Harvard University, his friends in Baltimore have had his features reproduced in two large bronze portrait medallions and about a hundred small ones. One of the large medallions was presented to Mrs. Thayer and the other will go to Johns Hopkins University.

Dr. Charles Milton Ford, for many years attending surgeon to the New York Children's Hospitals and Schools on Randall's Island, has been appointed consulting surgeon to these institutions.

An Extra Year For Medical Students in Philadelphia.—Announcement has been made by Dr. J. M. Baldy, president of the State Board of Medical Examiners, that hereafter medical students must serve a year as hospital internes after completing their college course before they can be licensed to practise. They may, however, substitute an additional year of postgraduate work, practically extending the medical course in all schools of the State from four years to five. The deans of all the principal schools and medical authorities generally are said to be in favor of the change, and the legislature will be asked to make this new requirement a law.

Erie County Medical Society.—At the annual meeting of the Medical Society of the County of Erie, N. Y., held on the evening of December 16th, the following officers were elected: Dr. J. F. Whitwell, president; Dr. J. V. Woodruff, first vice-president; Dr. A. W. Hurd, second vice-president; Dr. Franklin C. Gram, secretary; Dr. Albert T. Lytle, treasurer; censors, Dr. John J. Bonnar, Dr. Francis E. Fronczak, Dr. Arthur G. Bennett, Dr. Irving Potter, Dr. Lawrence Hendee, Dr. A. D. Carpenter; chairman of the committee on legislation, Dr. F. Park Lewis; committee on public health, Dr. Henry R. Hopkins; committee on Membership, Dr. Harry Mead.

Eugenics Investigations.—Mrs. E. H. Harriman has contributed $1,000 and Mr. George F. Baker $250 toward the salary and expenses of a eugenics field worker for Orange and Rockland Counties, N. Y. This work is to be carried on under the joint auspices of the Eugenics Record Office at Cold Spring Harbor and the New York State Charities Aid Association, which maintains county agencies for dependent children in these and eleven other counties in the State. A large amount of material relating to significant family histories is now on file in the offices of the county agents, and it is believed that if this could be supplemented by further investigation it would become of great value. Miss Florence Givens Smith has been appointed to carry on the work.

International Congress of Physical Education.—This congress will take place under the auspices of the faculty of medicine at Paris, March 17 to 20, 1913, thirty nations having been invited by the French government to take part. It is purposed to study the scientific principles underlying the physical education of school children and methods of improving national and individual physique, in order to learn how to battle successfully against mortality, depopulation, and their causes, principally alcoholism and disease. There will be seven sections of the congress: 1. Physiology of Physical Exercise; 2, Kinetitherapy; 3, Physical Education of the School Child; 4, Military Training by Gymnastics, Equitation, Shooting, and Military Sports; 5, Games and Sports; 6, Touring, Mountain Climbing, Aeronautics, Yachting, Canoeing; 7, Sports for Women. An exhibition will be held during the congress, divided into five sections, as follows: Scientific, artistic, retrospective, sports, and industries. Special rates are obtainable from railways and steamships. Further information will be gladly furnished by Dr. Henri Dausset, adjunct general secretary, 41 avenue Montagne, Paris.

Gifts and Bequests to Hospitals.—By the will of Louis Schaefer, who died on November 26th, the New York German Hospital and Dispensary will receive $2,000.

By the will of Peter Reid, who died in Passaic, N. J., on December 7th, Passaic charities will receive $340,000. This amount includes a trust fund of $200,000 for the Passaic General Hospital, $50,000 to the Passaic Home and Orphan Asylum, and $20,000 to St. Mary's Hospital.

Peter Doelger, who died on December 15th, left $15,000 to philanthropic organizations, which included $3,000 to the New York German Hospital and Dispensary, $1,000 to Mount Sinai Hospital, $6,000 to the Sisters of St. Francis, and $3,000 to the Home for the Aged of the Little Sisters of the Poor.

A Low Death Rate in New York Last Year.—According to the annual statement of vital statistics of the city of New York, just issued by the commissioner of health, the past year's death rate was the lowest the city has ever experienced, and it is believed that it will compare favorably with that of any other large city in the world. The total deaths reported during the year numbered 73,008, which was 2,415 less than during 1911. The annual death rate in a thousand of population was 14.11 last year; for 1911 it was 15.13; for 1910 it was 15.98 and for 1909 it was 16.0. A comparison of the past year's mortality from different causes with the averages of the years 1902 to 1911, inclusive, shows a reduced mortality in all causes except cancer and homicide. There was an increase of 57 deaths from homicide, but a decrease of 174 deaths due to suicide. Infant mortality during the year was the lowest ever recorded in the city, the rate being 10.05, which is considerably lower than any of the large cities of the world, with the exception of Paris.

Child Labor Day.—The six thousand clergymen who last year observed Child Labor Day are asked to speak on that subject Sunday, January 26th, or Saturday, January 25th. For seven years the National Child Labor Committee has issued such an appeal, and the interest aroused by the last Child Labor Day resulted in a general demand for the passing of the Federal Children's Bureau Bill, in improved child labor laws in ten of the fourteen States holding legislative sessions, and an increasing use of lecture slides and exhibits about child labor. The day has never been used as an appeal for funds and this year special attention is called to child labor in tenement house manufacturing. The National Child Labor Committee also reminds clergymen that child laborers become unskilled adult workers, and the Chicago Vice Commission gives as the second greatest cause why 40,000 girls are sacrificed annually to an immoral life, "the economic stress of industrial life on unskilled workers, with the enfeebling influences on the will power." This cause the commission gives as second only to the lack of ethical training and religious instruction.

Millions Spent in Campaign against Tuberculosis.—According to the fourth annual statement of expenditures issued by the National Association for the Study and Prevention of Tuberculosis, nearly $19,000,000 was spent in the antituberculosis campaign in the United States during the year 1912. The expenditures during the year for sanatorium and hospital construction and treatment make the largest single item in the total, amounting to nearly $16,800,000. The antituberculosis associations and committees spent over $765,000, while dispensaries and tuberculosis clinics spent over $500,000. Over $115,000 was spent for the maintenance and establishment of open air schools and fresh air classes, which is more than double the amount spent for this purpose in 1911. Official, State, and municipal expenditures outside of the maintenance of institutions, which are included in the other totals, amounted to $280,000. In addition to these figures, about $500,000 was spent by hospitals for insane and penal institutions in caring for their tuberculous inmates. The total expenditures for the year 1912 are 29 per cent., or nearly $4,500,000 greater than the total for the year 1911. Another significant feature pointed out by the national association, is the expenditure of public money. During the year 1912, 65.6 per cent. of the $18,900,000 spent in tuberculosis work came from either Federal, State, county, or municipal funds. New York State again leads in the amount spent in fighting tuberculosis, the total amount expended being $5,162,316; Pennsylvania comes next with a total expenditure of $2,219,319, while Massachusetts and Colorado are third and fourth, with total expenditures of $1,407,319 and $1,005,520, respectively.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

November 5, 12, and 19, 1912.

Muscle Contraction and Colloid Expansion.—Grober's many experiments are concerned with the time required for the swelling of the unstretched colloids in acid solution and their shrinkage in salt solution. The time relation of these colloids and those of muscle contraction are so similar in every respect that the supposition held by many authors becomes probable, i. e., that muscle contraction is chemically produced colloidal expansion.

Sixty Nephrectomies.—Suter reports two deaths immediately following operation out of sixty cases of nephrectomy; four of the survivors died later. Out of fifty cases, fifty-six per cent. were permanently cured, thirty-four per cent. much improved, ten per cent. only slightly or temporarily improved. Among the latter most of the patients had bladder involvement. The condition of the bladder before operation influences the prognosis, therefore in the early stages before the bladder is involved the prognosis after a radical operation on the kidney is very good. An unfavorable factor in the prognosis is the testicular or prostatic involvement. As a general rule, women have double the chances for recovery that men have. It is remarkable what a small minor part pulmonary tuberculosis plays in the later complications.

Septic Rheumatoid Conditions.—Schürer found *Streptococcus viridans* (Scattenmüller) in the blood of three patients suffering with acute polyarthritis following an attack of follicular angina. The clinical picture was in no essential point different from the severest polyarthritis rheumatica except that the patients were uninfluenced by salicylic acid. This circumstance coupled with the fact that in the severest cases of articular rheumatism the blood cultures are persistently negative, compel us to separate etiologically septic arthritic rheumatism from the real polyarthritis rheumatica.

Ocular Disturbances Caused by Sun Eclipse.—Hoppe enumerates seven cases. Of the greatest interest were the functional disturbances, dark spots, light and moving apparitions, diminution in the sharpness of vision. All these patients within six weeks' time recovered sufficiently for the performance of the ordinary duties of daily routine, but in no case was there complete ideal recovery of all the functions of the retina.

Pituglandol.—Eisenbach recommends this hypophysis extract as the best of all the ecbolics on the market at the present time. It is not, however, altogether reliable in its action. It cannot induce abortion. It is excellent in atonic hemorrhage. With careful administration, no harmful side actions were noticed.

Neosalvarsan.—Stühmer says that the tolerated doses of neosalvarsan is, according to his revised experiments, 0.2 to the kg. of rabbit. The clinical identity of the so called salvarsan exanthemata and the real serum exanthemata point to a causal fundamental participation of an albuminous body in each. Animal experiments with dissolved antigen blood corpuscles show that a real anaphylaxis exists toward such substances. The author thinks he is justified in explaining the hitherto inexplicable exanthemata and delayed death after the intravenous injection of neosalvarsan as the result of the formation of a body proteid through hemolysis. The use of a 0.5 per cent. sodium chloride solution, decreasing single doses, increasing the intervals between injections, and intramuscular injection precautions will act prophylactically.

Neurorecidives after Salvarsan.—Cronquist finds that the presence of neurorecidives after salvarsan treatment varies markedly in the different clinics and seems to be particularly conspicuous in certain regions. This circumstance gives rise to the suspicion that Ehrlich's injection rules are not followed scrupulously. When the solution is not injected immediately after its preparation, or when the solution during its preparation is stirred too vehemently, oxidation products are formed, much more poisonous than salvarsan, which probably have an affinity for the central nervous system.

Local Treatment by Steam.—Baeyer, noticing the disadvantages with treatment by hot air and the good results obtained by the use of steam baths and steam douches for the whole body, was induced to construct steam chests for local applications, which he describes in this article. No burns of any kind were produced in over 1,000 treatments. The results obtained in accident cases were also very satisfactory. In almost all cases the patients preferred the moist, warm air to the other modes of treatment.

Postoperative Intestinal Paresis.—Pettenkofer recommends an intestinal electric stream for paresis of the gut, the principle of which consists in making a fluid in the intestine act as the electrode. An intestinal probe containing a metal spiral serves to transmit the electricity. The second electrode consists of a metal massage ball covered with felt. The stream is allowed to flow from five to ten minutes, increasing its strength slowly to fifty milliampères, then decreasing to zero and changing the current. When the indications for relieving the paresis are not very urgent the procedure may be repeated in a few minutes in cases in which the first attempt was not successful.

Compression Myelitis.—Mendler reports a case in which at operation the cause of the compression was found to be a vertebral sequestrum, three cm. long, which had penetrated into the spinal canal and was surrounded by fibrous adhesions. The operation was followed by an excellent functional result.

Treatment of Furunculosis.—Schüle asserts that incipient furuncle is inhibited from further growth by central cauterization. As a prophylactic he recommends Haegler's disinfection method, epilation of the affected skin, and the application of Credé's salve. On the following day tincture of green soap, absolute alcohol, and another application of Credé's salve. After fourteen days the latter is displaced by zinc salve.

Treatment of Large Carbuncles by Circumcision.—Heddaus relates another case of a diabetic carbuncle in which a good result was obtained by deep circular incision around the necrotic area. This area thus became walled off and did not spread further. However, secondary lung foci had formed so that this operation could not prevent a fatal outcome.

Application of Neosalvarsan to the Eye.—Rosenmeyer reports a case of parenchymatous keratitis and congenital syphilis which had resisted all previous specific treatment, but was cured by a local application of two per cent. neosalvarsan (partly in solid form and partly in two per cent. solution). The process was brought to an immediate standstill, while a gradual clearing up of the cornea took place.

Prophylactic Appendicectomy in Gynecological Operations.—Hörrman says that in every gynecological operation the appendix should be removed. It is not sufficient to remove only the macroscopically changed appendix. Severe inflammatory changes frequently escape the senses of touch and sight; only the microscope is able to make the final diagnosis. However, the appendix need not be removed in operations for malignancy, in hasty operations in women over sixty years, nor in long lasting operations. Neither is it necessary in cases where removal of the appendix would entail the loss of much time, or increase the incision, or where an entirely new incision would have to be made.

Salt Solution in Anaphylactic Shock.—Langer's experiments on animals have shown that guineapigs treated with lamb's serum do not react so strongly in anaphylactic shock when they are given repeated small doses of salt solution *per os* before the second injection of the serum. These results, the author believes, should be verified on the human subject since the means of verification are so harmless in themselves.

ZENTRALBLATT FÜR CHIRURGIE.

December 7, 1912.

The Value of Bile and of the Contents of the Small Intestine to the Organism.—Schmilinsky reports two cases, one of a biliary fistula from which from 800 to 1,000 c. c. of bile escaped daily. The patient was in bad condition when seen, and, as this was ascribed to the enormous loss of bile, measures were taken to conduct the secretion into the stomach. The stomach bore it well and the patient improved so much that a plastic operation to unite the biliary fistula with a loop of the intestine could be performed. The other was a case of a fistula in the upper part of the small intestine which had to be made during an operation because of the condition of the patient. There was a rapid loss of strength, together with the other annoyances connected with an intestinal fistula in the upper part of the tract, so, four days later, connection was made with the transverse colon with good result.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

November 16, 23, and 30, 1912.

Streptococci in the Vaginal Secretion of Parturient Women.—K. W. Jötten, on investigating the lochia of twenty women free from fever, found in fourteen typical hemolytic streptococci. He comes to the conclusion that such streptococci have no pathological significance, neither intra partum or afterward.

The Action of the X Ray on Carcinoma of the Uterus.—E. Bumm reports a case in a woman of forty-six years, who was greatly benefited by massive doses of the x ray. No specific action upon the tumor could be demonstrated, the limitation of the growth and the cleansing of the carcinomatous surface being due apparently to a sclerosis of the surrounding muscular and connective tissues.

The Treatment of Eclampsia.—Lichtenstein belives that the expectant treatment rests on a firmer foundation than does the active. He lays much stress on the value of venesection primarily, it being a rapid and rational method.

The Rubber Glove as a Source of Infection.—H. Hellendall and Fromme report a large number of bacteriological examinations made of the perspiration that collects in the gloves during operations. They found a considerable number of bacteria, although the hands had been disinfected and the gloves sterilized. From this they conclude that slight tears in the gloves may be able to cause infection through the escape of the organisms present in the perspiration.

Myoma and Pregnancy.—S. S. Cholmogoroff reports a case in a woman of forty years in which the fetus was enclosed in a uterus that had undergone a complete interstial myomatous degeneration.

ZENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE

November 15, 1912.

Anaphylaxis and Waxy Degeneration of the Muscles.—H. G. Wells calls attention to an article in the same journal (XII, 23), in which the authors, Beneke and Steinschneider, state that the waxy degeneration occurring in the voluntary muscle in anaphylaxis is due to the acute poisoning. Wells believes that the condition is due not to the anaphylaxis, but to the asphyxia and the accompanying irritation of the respiratory muscles.

Cylindroma of the Skin.—G. F. Dick takes exception to Borst's assertion that cylindromata are endothelial in structure. He holds that the specimen which he reports as well as the cylindromata of the salivary glands and skin in general are of epithelial origin.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

October, 1912.

Sugar of Breast Milk.—F. Lust calls attention to the fact that, while the literature abounds in various articles on the proteid and fat content of human milk, very little has been written about the sugar. Lust examined the sugar from the milk of twenty-five women and found that the average percentage of sugar was 7.1 per cent. The least amount was 5.7 per cent. and the greatest amount 8.5 per cent. Thus it is seen that some breast milk contains thirty grammes more milk sugar in a litre than others. Lust shows that a large amount of milk sugar in breast milk may be the cause of diarrhea, while a small amount, on the other hand, may cause constipation. Lust experimented to see whether adding sugar to the mother's diet would increase the amount of sugar in the milk. In some cases the percentage of the sugar in the milk was slightly increased by giving 100 grammes of malt extract to the mother daily, while in other cases the percentage of sugar was not affected

Eosinophilia and Exudative Diathesis.—Erich

Aschenheim is of the opinion that an eosinophilia of five per cent. is normal in childhood. According to him, in infants the eosinophilia may even be higher. From Aschenheim studies the following conclusions are drawn: 1. An eosinophila is more often seen in severe eczema than in any other manifestation of exudative diathesis; 2, the eosinophilia disappears when the skin eruption improves; 3, eosinophilia may occur without any symptoms of exudative diathesis (or worms); 4, eosinophilia may occur in perfectly healthy individuals.

ZEITSCHRIFT FÜR AUGENHEILKUNDE

November, 1912.

Injuries of the Eye by Lightning.—F. von Marenholtz reports the following curious case: A woman was sitting close to a window during a thunderstorm, with the right side of her face turned toward the window. She was holding a child in her lap. Suddenly she was struck by lightning and rendered unconscious. The child in her lap was not struck or injured in any way. The woman was unconscious for half an hour; when she waked she had tremblings, weakness, and pains in all of her limbs, but no signs of paresis. The hair on the right side of her head and her right eyebrow was singed, but there were no other external signs of injury. The nervous shock kept her in bed for three weeks. On the day after the accident she complained of her right eye, which was found to have an inflammation of the iris and to be almost blind. No treatment was given for six weeks, at which time the eye was photophobic, the seat of an attack of iritis. The lens had several punctate, yellowish white opacities on its anterior capsule, confined entirely to its medial portion. The papilla was cloudy, its margins indistinct. In the region of the macula there was a gray spot with a white margin, and outward from the papilla another atrophic place in the retina that was richly pigmented. The visual field was concentrically contracted, with two absolute scotomata corresponding to the two lesions in the retina, the vision was reduced to 0.1. The vision of the left eye was normal. Under treatment the iritis disappeared in the course of three weeks, although the pupil could not be more than moderately dilated, but the conditions in the fundus and in the lens, as well as the vision, remained unchanged.

PARIS MÉDICAL

December 7, 1912.

Bone Traumatisms in Children.—Kirmisson, in terminating his article by a discussion of treatment, says that reduction followed by methodical immobilization is the ideal procedure. Immobilization in the young need not be as prolonged as in adults, a month usually being long enough. In the young, moreover, there is little likelihood of ankylosis, the great stumbling block to immobilization in the old. Massage must be cautiously used in children; used too soon or with too much force it may irritate the periosteum and cause new growth. The surgeon must not confound massage with passive movements, the latter being most dangerous, while massage, practised with skill and gentleness, gives excellent results.

Treatment of Spastic Paralysis by Resection of Nerve Roots.—See this JOURNAL for November 16, 1912, p. 1033, where a summary of this paper appears.

Should We Operate in Spina bifida?—Froelich answers this question in the negative, unless the tumor is growing with great rapidity, seems likely to rupture, or its surface is covered with ulcers.

PRESSE MÉDICALE.

November 23 and 27, 1912.

Artificial Menopause.—T. Tuffier and A. Mauté assert that not less than three distinct morbid factors must be recognized in the etiology of the symptoms of artificial menopause, viz., the suppression of the ovarian internal secretion, independently of its menstrual function; the suppression of the menses, and changes produced in other internally secreting glands by the removal of the ovarian influence. The effect of the first of these factors is practically limited to metabolic disturbances, such as may lead to chronic rheumatism and obesity The congestive and nervous symptoms are the result of the suppression of the menses and not directly of the ovarian deficiency, while the disturbances in the functions of the other glands, manifested especially in adrenal and thyroid overactivity, add to the difficulties resulting from the menstrual suppression, and play a prominent part in the production of the symptoms. Ovarian extract alone has not given very satisfactory results in the artificial menopause, and should be reserved to combat the trophic changes—obesity, chronic rheumatism —and perhaps for certain cases of confirmed exophthalmic goitre, in which it has seemed to be of value. The congestive and nervous phenomena should be treated with agents restraining the activity of the thyroid and adrenals—for the thyroid, antithyroid serum, and for the adrenals, ipecac, sodium salicylate, opium, and ergot. In a few special cases thyroid substance and epinephrine, in small doses, were employed, on the principle that small amounts of these agents appear sometimes to reduce the corresponding function. Intelligently employed, these drugs quickly relieve the symptoms.

Appendicectomy and Radical Cure of Femoral Hernia by Inguinal Route.—E. Desmarest asserts that in all cases of right sided femoral hernia unaccompanied by strangulation, simultaneous removal of the appendix is indicated. This combination of procedures can be easily executed only by way of the inguinal canal, an additional argument besides those already advanced being thus afforded in favor of the inguinal route in operating on right sided femoral hernias. Desmarest describes the technic and reports three cases in which he performed the combined operation; in but one of these was there a history of appendicular symptoms.

Experimental Polyuria.—H. Vaquez and J. Cottet add to their previous communications on the relation of the volume and specific gravity of the urine secreted in the daytime and at night, further information on the behavior of the chlorides and urea in these two periods, and point out the utility from the diagnostic standpoint of estimating the output of chlorides in testing for renal incapacity by the induction of polyuria.

SEMAINE MÉDICALE

November 27, 1912.

Annexal Inflammation and Lymphangitis of Upper Border of Broad Ligament.—R. de Bovis discusses the annexal complications that may follow parturition, exclusive of the common and well recognized type of broad ligament inflammation. He refers in particular to the so called "puerperal salpingitis," described in detail by Friedman in this country some years ago. After operating in three cases he disagrees with the statement that the inflammatory tumors referred to represent a true salpingitis. In one instance, indeed, there had been a voluminous pyosalpinx which had ruptured into the broad ligament, but it seemed clear that this condition had been present before, and had become aggravated and perforated owing to the pregnancy and parturition. In the two other cases the tube was thickened, but merely in its outer cellular covering, the duct being free of pus; the broad ligaments, on the other hand, were congested and edematous in their lateral portions, and there were abscesses, in one case opposite the hilum of the ovary and in the other in the interval between the tube and the round ligament. The appearance of the annexal trouble a few days after parturition, the rapid progress of the infection, the fact that the mucous membranes are generally spared, and the occasional production of a psoas abscess, as in one of the author's cases, all point to a streptococcic rather than gonococcic infection, advancing by way of the lymphatics, and while perhaps inducing some salpingitis, causing lymphangitis in particular. From the etiological and clinical standpoints the condition thus closely resembles the classic circumuterine phlegmonous inflammation. There is this difference, however, viz., that the uterus remains movable, the infection occurring by preference in the lateral expansions of the broad ligament rather than at its base. The treatment is at first medical —icebag especially—operative intervention being reserved for prompt use when signs of suppuration appear.

ARCHIVES INTERNATIONALES DE LARYNGOLOGIE, D'OTOLOGIE ET DE RHINOLOGIE.

September and October, 1912.

Stenosis of Esophagus.—Sargnon notes that stricture is usually caused by action of the caustic and follows in short time after swallowing such a solution. Stenosis may be secondary to ulcerations, as after scarlatina or peptic ulcer of the cardia. Luetic stricture has not been observed, tuberculous stricture is doubtful. Diagnosis often requires the esophagoscope. In simple cases dilatation with bougies is used, preferably slow, from a few hours up to twenty-four hours. Complex cases require visual search to find the lumen (endoscope), which is usually lateral. Dilatation is instituted. Brünings has devised special probes for this internal esophagotomy, either with esophagotome, a Guisez guide, or with hidden blade. Electrolysis has not been tried by Sargnon. In cases requiring external surgery, gastrotomy is used as a preliminary; this allows the use of probes and permits keeping them in place from twenty-four to forty-eight hours, feeding being through the new gastric mouth, and dilatation of the esophagus may be in either direction. Care must be used in retrograde cartilage dilatation not to injure the retrolaryngeal region because of danger of edema of the larynx. Low cervical esophagostomy is useful, the operation being done in two parts, an external opening on the left, then suture of the muscles about the esophagus to the muscles of the neck and to the skin, so as to have a temporary opening. At the subsequent operation, the narrowing of the tube is looked for (visually) and Nélaton's probes are introduced. The major external operation (anastomosis of esophagus with stomach, skin or intestines) Sargnon believes to be quite unnecessary if patience and skill are used with the endoscope.

Lumbar Puncture in Ear Suppurations of Diabetics.—Ferreri says that acute middle ear disease and mastoiditis in diabetics is very common and very grave. The prognosis is good according as the urine contains little sugar, when acetone and diacetic acid are lacking, and when operation is early. The presence of sugar in the cerebrospinal fluid Ferreri believes to be a most important finding, until now not emphasized. If present, it means a very grave prognosis. It is in cases where the urine contains little glucose (a complication, acute otitis developing meanwhile) that one observes endocranial diffusion and that lumbar puncture is most helpful. If the amount of sugar in the cerebrospinal fluid reaches four per cent., coma is imminent and operation useless. If practised early, lumbar puncture will lessen the sugar content in the urine. Dangerous operative cases among diabetics are those presenting generalized symptoms beside polyuria, and those cases rare until now in which abundant glucose is found in the spinal fluid. In these there is great destruction of bony tissue and coma is to be expected. Ferreri believes that presence of sugar in ear complications demands an early operation, which has good prognosis only if the patient is relatively young. Lumbar puncture he advocates more for diagnosis and prognosis than as a curative means. Pus, acetone, and diacetic acid in this fluid give a very grave prognosis. However serious the ear suppuration may be, if no trace of glucose is found in the fluid, surgical intervention will not be disturbed by coma or other complications, either as a result of anesthesia or in the course of the sickness.

Tuberculosis of the Larynx Complicated with Diphtheria.—Imhofer reports a case showing this combined infection in a working man, forty-one years old, whose cough had lasted about six weeks. During the last four weeks, his voice had become involved. The false membrane at necropsy involved the lower part of the epiglottis, the vocal cords, interarytenoid region, larynx, trachea, and right bronchus. The lungs were filled with miliary tubercles. The bronchial glands, spleen, and ileum were greatly involved. Of the tonsils, the left was normal, while the right showed miliary or conglomerate tubercles. Koch's bacillus was found in these organs with a typical pathological picture. Typical Klebs-Loeffler bacilli were found in the false membrane. Imhofer considers the patient to have been a "carrier" of diphtheritic infection, since there was no other apparent infective agency. The diphtheria was evidently planted on the tuberculous process which had weakened the patient's resistance and was spreading from below upward, not having passed the larynx at the time of death.

Subglottal Abscess.—Torretta reports a case in a man, forty-one years old, who had marked attacks of suffocation; external examination showed a uniform swelling from the thyroid to the jugular fossa, with skin of normal color, induration, but no fluctuation. Internally, under the anterior commissure was a swelling the size of an almond, filling most of the tracheal orifice. Incision of this area was made and about a soupspoonful of thick pus emerged, the patient being in the Rose position. Respirations become easy. Eight days later, there were redness and fluctuation externally. An external incision was made down to the thyroid isthmus and abundant pus found; packing was done and cure ensued in a fortnight. Torretta classes the case as an abscess of the thyroid isthmus. Excepting for need of the immediate operation external evacuation is indicated.

Origin of a Facial Palsy.—Houlié reports complete facial paralysis following removal of dressing four days after a radical mastoid operation. The sudden removal of packing, the patient being under ethyl chloride, evidently tore the exposed nerve.

RIFORMA MEDICA.

November 30, 1912.

Anastomosis of Nerves.—C. Barile reports some experiments on a modified technic; his idea is to put in contact a maximum of nerve filaments with the least injury to the nerves. With a fine knife he cuts circularly the healthy nerve, so as to form a kind of groove all around; then he cuts the paralyzed nerve V shape. With four stitches, two on each nerve, he insures the paralyzed nerve lying in the groove made in the healthy one, in this way bringing into contact all the fibres of the paralyzed nerve with a great number of the fibres of the healthy one. Barile asserts that with his technic he had a reestablishment of the function of the nerves much more complete and rapid than with the older methods; his experiments were made by comparing results obtained in two limbs of the same animal; one limb being operated on by his method, the other by different procedures now in use.

ROUSSKY VRATCH.

September 29 and October 6, 1912.

Hedonal Chloroform Anesthesia.—E. M. Senkevitch reports 100 cases in which he preceded the chloroform anesthesia by administration by the rectum of five to six grammes of hedonal in 100 to 150 c. c. of water, from thirty to fifty minutes before the anesthetization. He found that hedonal acts favorably on the chloroform narcosis in all its stages The primary feeling of asphyxia is eliminated; the narcosis comes on more rapidly; the period of excitement is either diminished or altogether removed and a much smaller quantity of chloroform is required. The effect of hedonal is somewhat accelerated by the addition of from ten to thirty per cent of alcohol to the solution, but the alcohol increases the heart's action, while lowering the blood pressure, and should not be used on any but vigorous young persons, particularly men, and on alcoholics. Hedonal chloroform anesthesia should take the place of chloroform alone or morphine chloroform.

Experimental Scarlet Fever.—V. N. Klimenko reports a number of experiments on monkeys, *Macacus rhesus,* in which he endeavored to transmit scarlet fever. Altogether he used twenty monkeys and varied the methods of infection in every conceivable manner, but in not a single instance was the disease transmitted.

Scarlet Fever in Infancy.—L. V. Aksenoff concludes from a series of observations that scarlet fever is rare in breast babies, particularly during the first six months. It is more common in boys. The complications during the first half year are more frequent and more severe, the most serious being gangrenous sore throat, and the most frequent lymphadenitis.

Palpation of the Appendix.—P. F. Bjalkus asserts that a normal appendix cannot be felt and when it is palpable it is diseased. Generally, palpation of a diseased appendix is possible if proper care is exercised in making the examination. Chronic appendicitis, he found, frequently complicates pulmonary tuberculosis, and acts unfavorably on the disease by interfering with the nutrition.

Thorium in Pernicious Anemia.—S. M. Livshitz reports a case of pernicious anemia treated successfully with water charged with thorium (50,000 Maché units). After drinking this water for a month the patient was relieved of all his symptoms and the blood became practically normal.

BRITISH MEDICAL JOURNAL.

December 7 and 14, 1912.

Biology of Tumors.—C. M. Moullin remarks that Nature has never drawn a line separating the benign from the malignant tumors. Malignancy is a purely clinical term, and metastasis is only an accident of growth, absent from what are called benign tumors because the cells of these have reached a more advanced stage of organization and can no longer exercise their primitive power of detachment and autotransplantation. Remarking that tumors are common to all animals, Moullin states that he will draw from all sources for his facts. The primitive functions of the living organism, be it a single cell or a complex of cells, are those of growth and multiplication. Early in the course of evolution these two functions became separated in the more complex organisms with the differentiation of the germ and somatic cells. In the course of this specialization the somatic cells lost their power for the reproduction of the race and later for reproduction of the individual. Long after the power of complete reproduction had been lost the somatic cells still retained powers to reproduce parts of organs or of portions of the body which had been destroyed. Finally, all that is left to the somatic cells of the powers which they originally possessed is that of simple growth, the ability to maintain size and structure unimpaired in the face of constant waste. Whether the organism is a primitive metazoon or an ovum which will develop into the most highly specialized of mammals, the force which regulates and controls its development, as distinct from the power of growth, which is an inherent property of its cells so long as they are living, is the mutual influence that these germ and somatic cells exert upon each other and their fellows, compelled thereto by the differentiation in their work. It is this influence, working with the driving force of inheritance through countless ages, modified in some infinitesimal degree by the surroundings in each individual case, that frames the laws that guide and control the development of the body and the tissues that compose it. Tumors do not obey these laws. They are tumors because they do not. Whatever their structure, their growth and development are not conditioned in any way by the growth and development of the rest of the body. The degree of perfection to which they attain depends upon that of the tissue from which they spring, and the rate of their growth partly upon this, partly upon the supply of food they can get. Whatever their origin, no relation, such as that which holds good between the germ and somatic cells, ever exists between them and the parent body. They simply live upon it like parasitic growths. Tumors from somatic cells originate by a process of budding from these cells after their differentiation from the germ cells has taken place, or from structures developed from them. These tumors owe their origin, not to the action of germ cells, but to the release from control of what is left of the power of reproduction which the somatic cells originally possessed in equal degree with the germ cells. When the resulting tumor is built up of tissues that have practically attained their full development its increase in size is slow, and it never invades the rest of the body. When it consists of cells which retain so much of their primitive energy of growth that, if once released from the restraint of the laws that would compel their future development, they grow and multiply in a manner only surpassed by the cells that compose the germ layers of the embryo. They increase without limit, and without an attempt at higher differentiation, and they spread everywhere in the directions of least resistance, partly of their own efforts, by a process of autotransplantation, partly carried along in the blood stream or in the lymphatic channels, and unless destroyed as foreign bodies they reproduce their kind wherever they come to rest. This explanation of the origin of tumors holds good not only for those tumors that spring from the somatic cells and are formed of more or less highly differentiated simple tissues, but it is no less true of those strange growths that sometimes develop from fetal or embryonic relics. It is not tumors that are inherited, but the strength of the driving force that directs development and controls growth.

Function of Appendix.—Arthur Keith, as a result of careful investigations into the comparative anatomy of the cecum and the appendix, comes to the conclusion that both of these organs have definite functional parts to play in the processes of digestion. The cecum is divided, even in man, into two distinct regions, the cecum proper and the cecocolic sphincteric tract.

Intracellular Parasite Developing into Spirochetes; Parasites Found in Syphilis.—E. H. Ross, using the jelly method of examination and staining, has found cell inclusions in syphilitic tissues which are closely similar to Kurloff's bodies. The first case was from a Hunterian chancre. This was pricked and the blood was examined on a jelly. In several of the mononuclear leucocytes there were distinct cell inclusions, each one of which was imbedded within the cell cytoplasm itself, surrounded by a cell wall, and having a distinctly staining chromatin mass in its interior. Round or pear shaped bodies were found in the same specimen, lying free between the blood cells. These were similar in size, shape, staining reactions, presence of chromatin nucleus, cytoplasm granules, to those seen included within the cells. These intracellular and extracellular bodies have since been found in each of 143 cases of primary or secondary syphilis which has been examined by this method. They have been found in the chancres, in the hard, shotty, nonsuppurating glands, in the blood from the maculæ and condylomata, in the ulcerated tonsils, and in the blood taken from the finger. It is obvious, for many reasons, that these bodies are parasites, and now various stages in their development have been observed. The following outline of the various stages in the development of this parasite may be given: The small extracellular, round, or pear shaped bodies, common in chancres and glands, become included within the cytoplasm of the leucocytes, epithelial, and other cells. Here they encyst themselves in a cell wall, grow, and their chromatin undergoes division and subdivision. These bodies may be found multiple or single in the large mononuclear cells. As the parasites grow the nucleus of the cell is squeezed and distorted. Each of the several chromatin masses within the parasite has in its centre a well marked, deeply staining dot. There may be from one to twelve chromatin masses within an inclusion, according to the size and development of the parasite. In the fully grown parasite, to be found in the large mononuclear cells squeezed from the deeper parts of the chancres or found in the glands removed by operation, each chromatin mass is seen to resemble the free, round or pear shaped forms already described. In some instances the chromatin mass gives rise, while still within the cell and when it has reached its full size, to several minute purple staining, curled and twisted, spirochetelike tails, many closely resembling *Spirochæta pallida*. When these inclusions rupture the spirochetes are extruded. All of the forms described have been seen in chancres, glands, and sores of syphilitic patients and also, but far less frequently, in the circulating blood. They have not been seen in any except syphilitic patients, though many controls have been examined. The administration of salvarsan or treatment with mercury reduces the numbers of the free parasites apparently within a few hours. The included forms seem to remain unaffected. The great constancy with which these parasites are found may be a means of diagnosis of syphilis at a very early stage. The extremely close similarity which exists between these parasites of human syphilis and the Kurloff bodies, together with the other forms of *Lymphocytozoon cobayæ* of guineapigs and rabbits, justifies the suggestion that these guineapig or rabbit parasites might produce in man a mild affection capable of modifying human syphilis in the same way as vaccination with cowpox has modified smallpox in man, both in the individual and in the community.—E. Jennings and S. R. Moolgavkar, working independently of Ross and of one another, have confirmed many of the findings just described.

The Infective Granule as the Initial Phase in the Life History of a Hemogregarine.—H. Henry describes a somewhat analogous course of development in the case of *Hemogregarina simondi* parasite, the spirochetosis of Sudanese fowls, to that described by Ross for *Spirocheta pallida.* However, his object is to show that the free, newly formed hemogregarina contains two or more refractive granules, which emerge from the nucleus and traverse the parasite to one or the other pole, usually to the posterior. These granules are then shaken free from the living parasite as it swims along. These free granules are much more highly refractile and show far more active Brownian movement than do the free leucocytic and other granules which are to be found in fresh blood. These granules may be found frequently in specimens of blood showing heavy infection with the hemogregarina, and they appear to be undergoing division within the cells. As they increase in size these granules, which seemed at first to be wholly chromatin, become surrounded by a clear zone which later becomes a definitely stained accumulation of protoplasm. In the liver and spleen these granules appear to grow rapidly and to become distinct hemogregarines.

LANCET.

December 7 and 14, 1912.

Eclampsia.—A. J. Wallace reviews the previously used methods for suppression of the convulsions in eclampsia, with considerations as to their shortcomings. He then reports upon two cases in which he used magnesium sulphate by intradural injection. In both of the cases the convulsions seemed to be well controlled, at least for several hours at a time. The injection was made into the subdural space in the lumbar region and one c. c. of a sterile, filtered solution of magnesium sulphate of twenty-five per cent. strength was injected for every twenty-five pounds of the estimated weight of the patient. In the first case seven fits had occurred in the seven and a half hours preceding the injection and none in the seven hours following the injection. In case two there had been six fits prior to the injection, three being severe, while none occurred during the four hours after the injection.

Osteomyelitis of the Spine.—G. R. Strong reports eight cases of this comparatively rare condition, one from life, the others from the post mortem records of the hospital. All of the cases were due to staphylococcus infection, and most gave a history of injury. In many the condition closely resembled tuberculous disease of the spine. From an analysis of these he concludes that where the arches of the vertebræ are involved the prognosis is considerably better than where the bodies have been attacked. Immediate operation seems to hold out the only hope in treatment. Strong believes the condition to be far commoner than is usually thought to be the case and urges that it be considered in all cases of spinal disease, except those which are most obviously tuberculous. In view of this, he thinks that in every case the local tuberculin tests should be made, the general tuberculin reaction taken, the tuberculoopsonic index measured, a leucocyte count, and a blood culture taken. Any spinal swelling should be aspirated and the fluid examined bacteriologically as well as being subjected to a cytological examination. The spine should be radiographed, and if doubt still remains an exploratory incision should be made.

Tuberculin.—J. H. Lyons, believing that old tuberculin might contain some substance which produced a positive reaction, perhaps by irritation, on apparently healthy individuals whose skin is not sensitized by the products of the tubercle bacillus, sought to remove that substance with the idea that a positive skin reaction might then more definitely indicate the presence of tuberculous disease. By repeated precipitation of a sample of old tuberculin with a considerable bulk of absolute alcohol he obtained two substances; one the clear filtrate, which had been reduced by evaporation to the bulk of the original tuberculin used; the other the several collected precipitates, which he dissolved in distilled water. Skin tests made with the latter, by injecting it into the skin, showed positive reactions in ninety-two per cent. of all the persons upon whom it was tried, though many were nontuberculous. The filtrate, on the other hand, has given no positive reaction in persons apparently free from tuberculosis. It does, however, give positive reactions in the vast majority of those who are tuberculous, 186 positive out of 191 tuberculous subjects tested. All of the five who gave completely negative tests were in the last stages of the disease and died within two weeks. A positive test is shown by the development around the area of injection into the skin, beneath the horny layer, of a raised area of induration and inflammation, appearing in twelve to eighteen hours. This form of purified tuberculin has also been used in the treatment of some few cases and the results seem to have been good up to the present time.

Pharmacotherapy of Pneumococcus Infections.—A. E. Wright and his collaborators have made experimental studies of Morgenroth's new drug, ethylhydrocupreinhydrochloride, taking up the following lines of investigation: 1. Measurement of the bacterial effect exerted on the pneumococcus by the drug in graduated dilutions in water and serum respectively. 2. Prophylactic and therapeutic animal experiments, together with measurement of the bactericidal effect exerted on the pneumococcus by the blood of these animals drawn both before and after administration of the drug. 3. Preliminary experiments on normal and infected men, together with measurements similar to those detailed under 2. 4. Comparison of the course which pneumonia runs in treated and untreated cases. The first group of experiments brings out the following facts: Dilutions of one part of lysol in 500 parts of serum, dilutions of one part of creosote in 2,500 to 12,500 parts of serum, and dilutions of one part of guaiacol to 2,500 parts of serum fail to kill the pneumococcus. Dilutions of one part of lysol in 62,500 parts of water, one part of creosote in 300,000 of water, and one part of guaiacol in 1,500,000 of water, all kill the pneumococcus. On the other hand, dilutions of one part of ethylhydrocupreinhydrochloride in 400,000 parts of serum kill the pneumococcus, and one in 800,000 inhibit its growth. The antiseptic values of the serum dilutions of this drug do not differ appreciably from the values of watery solutions. The experiments further show that the drug exerts its bactericidal powers specifically upon the pneumococcus. The inference from the experiments is reasonable that this drug would be capable of exerting a bactericidal action on the pneumococcus *in vivo*. Calculating on the assumption that a drug absorbed into the blood all at one time will act in its total quantity at the same moment, the doses of the several antiseptics experimented with may be compared for a seventy kilo man, giving amounts in each case sufficient to produce bactericidal action on the pneumococcus circulating in the blood. The dose of lysol would be greater than fourteen grammes, of creosote or guaiacol greater than 2.8 grammes, while of the new drug it would require only 0.017 gramme. Morgenroth's observations on mice inoculated, before or after treatment with the drug, with a strain of pneumococci which was invariably fatal to untreated mice, showed that the drug prevented infection in ninety per cent. of prophylactic inoculations, and cured about fifty per cent. of the mice treated after inoculation. Mouse experiments of Wright and his coworkers confirm the findings of Morgenroth, for the serum and urine of mice treated with the drug both showed greatly increased bactericidal powers toward the pneumococcus. The urine of treated men showed similar increased bactericidal properties. These bactericidal properties are not destroyed by heating these fluids to 60° C. Tests of the bactericidal and opsonic powers of human serum before and after administration of the new drug to normal men showed that the blood is rendered bactericidal to the pneumococcus and that the opsonic power is not appreciably affected by administration of ethylhydrocupreinhydrochloride.

Aural Vertigo.—An abstract of Mr. Lake's address appears on page 27.

Eradication of Recurrent Cancer.—R. C. Lucas's patient had her left breast amputated for cancer, but the axilla had not been thoroughly cleaned out, and in 1897 she presented herself for examination on account of the presence of a mass in the other breast. She was then sixty-seven years of age. Examination at that time showed the presence of rather extensive recurrence in the left axilla, together with a mass in the upper and outer quadrant of the right breast and some lymphatic involvement in the corresponding axilla. Her health was very good, and simultaneous removal of the right breast together with thorough cleaning out of both axillæ was done with prompt recovery. Examinations at several years' intervals following this second operation showed no signs of any recurrence, though the masses removed had shown the condition to be one of scirrhus carcinoma. She died at the age of eighty-two years, fifteen years after the removal of the recurrent cancer, without having shown any signs of further return, her death being due to cardiac disease.

PRACTITIONER.

November, 1912.

The Inunction Treatment of Measles.—D. J. Connolly says that the general trend of opinion in the medical profession in regard to the use of inunctions of eucalyptus oil in the treatment of scarlet fever and measles, strongly recommended by Milne, is noncommittal. He reports in tabulated form the results he obtained in a large number of cases by this means during the period of one year. The patients were from the poorest class of the community, with all that this connotes as regards unhealthy, unhygienic surroundings, predisposition to disease, and diminished resisting powers. From this experience he deduces that the thorough rubbing in of eucalyptus oil all over the body, together with energetic local antiseptic applications to the mouth and fauces, are most useful adjuncts in the treatment of measles; that the mortality is decidedly lowered; that even when serious complications are present the treatment has a beneficial influence on the course of the disease. Careful and constant nursing and the maintenance of an even temperature of 65° F. are very important.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

November, 1912.

A New Reagent for Detecting Occult Blood.—R. F. Ruttan and R. H. M. Hardisty say that in orthotolidin we have a reagent for occult blood that is more satisfactory than benzidin on account of its greater delicacy, its more lasting color, and the fact that it can be made into a solution that retains its delicacy unimpaired for three or four weeks. The substance known as tolidin, or orthotolidin, is a crystalline, basic body of the aromatic series with melting point from 120 to 130° C., very soluble in water, easily soluble in alcohol and ether, and closely allied to toluidin and benzidin. They assert that it is superior to the reagents in general use for clinical work. While benzidin is equally good for the detection of blood in the feces and stomach contents, this is true only for freshly prepared solutions of benzidin, solutions of which lose fifty per cent. of their delicacy in twenty-four hours, while tolidin remains unchanged for three or four weeks. Another point in favor of tolidin is that when the blood is in small quantity the reaction increases gradually in intensity and persists longer than with the other reagents.

INDIAN MEDICAL GAZETTE.

November, 1912.

Developmental Defect.—L. Cook reports the case of a woman, about thirty years old, in whom he found absence of the right kidney, ureter, Fallopian tube, and broad ligament. The uterus was smaller than normal and pulled over to the left side. On the left side the organs were normal, except that the kidney was unusually large. The right ovary was situated above the brim of the true pelvis upon the psoas muscle and had attached to its anterior extremity a fibrous cord which passed downward and forward to the internal abdominal ring, having no connection whatever with the uterus. Cook takes this cord to be the remains of the "plica gubernatrix," the upper part of which normally produces the ligament of the ovary and the lower part of the round ligament of the uterus. The condition was evidently due to the nondevelopment of the right Muellerian and Wolffian ducts, but whether the primitive secretory organ, the Wolffian body, was ever developed could not be determined.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 19, 1912.

Alimentary Aberrations.—P. F. Brown concludes his long and valuable paper with the statement that we have to-day in the alimentary application of the x rays as trustworthy a method of aiding our diagnostic knowledge as has been given us for many years, but that this method is only a factor making for diagnostic success in any given case. He fears that the practitioner of the future is in danger of becoming a clinical scientist, rather than a scientific clinician, through just such helpful agents as this. The physician's primary mission is still entered upon at the bedside, where he has little to aid him but his wits which he must use, and then he can utilize the aid given him by the laboratory.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 21, 1912.

Pulmonary Tuberculosis as an Obstetric Complication.—C. S. Bacon observes that our aim is to save and cure tuberculous women, if possible, but if we cannot save them we must, at least, prevent them from injuring others; we must protect the children from infection. To attain this requires concerted professional and social effort. From the viewpoint of public health and preventive medicine, the problem appears different from that which presents itself to the short sighted physician governed by the rules of custom. It is almost a moral law that pregnancy should be prevented either by celibacy or by sterilization. The only matter of doubt is the induction of abortion in these cases. Uniform treatment is impossible, because of ethical, legal, and professional considerations. Nevertheless, the care of the mother and the protection of the child call insistently for professional, philanthropic, and State cooperation.—Minor remarks that if an actively tuberculous mother has had a child, it should be separated from the mother, not perhaps absolutely, but as close to absolutely as it is possible to make it from the very beginning, excepting for one or two days, and there should be no nursing at all, as lactation is most disastrous to a tuberculous woman.—Dickinson suggests, as a means of sterilization, a cauterization by heat at each corner of the uterus by means of a sound with a little platinum tip, thus producing a stricture and an obliteration.—Bacon suggested that if it has been necessary to induce abortion in any particular case, sterilization should afterward be insisted upon, and should be thorough; a tubal sterilization by abdominal laparotomy or, preferably, by vaginal celiotomy.

Intradural Root Anastomosis for the Relief of Paralysis of the Bladder and Other Paralytic Affections.—See this Journal for June 8, 1912, page 1224.

Cyanosis in Dementia præcox.—W. B. Cornell has found a cutaneous cyanosis in a large majority of dementia præcox cases, most frequently and most intense in the catatonic form, next in order in the hebephrenic, and then the paranoid. It is part of a generalized vasomotor disturbance consisting in a phlebostasis, of unknown origin, and is variable within large limits, even in the same patient. Cyanosis is valuable in differentiating dementia præcox from manic depressive insanity, imbecility, hysteria, constitutional inferiority, and occasionally the organic psychoses.

Relation of the Infant Welfare Movement to Pediatrics.—See this Journal for June 15, 1912, page 1294.

Properties, Uses, and Indications of the Various Carbohydrates Used in Infant Feeding.—See this Journal for June 15, 1912, page 1293.

Diagnosis of Tuberculosis of the Kidney in Very Early and Very Advanced Cases.—See this Journal for June 8, 1912, page 1229.

Use of Tuberculin in the Treatment of Surgical Urogenital Tuberculosis.—G. S. Whiteside says the treatment of any case, in any stage, by tuberculin is not as satisfactory as one could wish, being equally efficient with bacterin treatment of any other condition. Although a better method will probably be discovered, the various preparations of tuberculin may be used to advantage in the meantime, being mainly aids to surgical and other treatment, and, moreover, the source of disappointment at times even when used by competent persons. Much harm, often irreparable, may be done if tuberculins are not used with good judgment as to dose. The best preparation is the one which the surgeon is most used to, for it is necessary to be cautious, and to be guided by the results of personal experience. The guide should be the symptoms of the patient, carefully observed and correctly interpreted.

Recent Advances in Our Knowledge Concerning the Causes of Glycosuria.—T. B. Futcher considers it unwise to accept as settled any new theory advanced to explain the cause of diabetes mellitus. We must, however, accept as positively proved that not only the pancreas, but also the adrenals (chromaffin system), thyroid, parathyroids, and pituitary have a very marked influence on carbohydrate metabolism. Although in a considerable percentage of cases of diabetes lesions of the pancreas have been found, it is apparent that morbid changes in that organ will not explain all cases, even when we take into account alterations in the islands of Langerhans. The essential and primary disturbance may be in one or another of the ductless glands. A marked correlation of the internal secretions of the ductless glands is beyond question. The internal secretions of the adrenals (chromaffin system) and pancreas mutually retard action. An important function of the adrenals is to set free the carbohydrates in the liver, and possibly in other storehouses also. Normally this influence is exactly balanced or counteracted by the hormone contained in the pancreatic internal secretion, resulting in a normal flow of sugar from the liver. If the chromaffin system is overstimulated, as it may be through the sympathetic nervous system, there is an overproduction of the "accelerator" hormone of the adrenals, and the "retarding" hormone of the internal secretion of the pancreas is overbalanced, the glycogen in the liver is rapidly set free and a hyperglychemia and glycosuria result. Pancreatic diabetes is produced in a similar manner. The glycosurias in pituitary and thyroid diseases may be explained in a somewhat analogous manner. There are fewer adherents at present to the theory that hyperglychemia results from deficient consumption or oxidation of glucose in the tissues. Cohnheim's theory is in part correct, as may be shown, but the consensus favors the view that the hyperglychemia and glycosuria are dependent on the overproduction of sugar in the liver.

Surgical Treatment of Chronic Seminal Vesiculitis by Vasotomy (Belfield Operation.)—See this Journal for June 15, 1912, page 1294.

Umbilical Hernia.—J. W. Kennedy makes a strong plea for early operation in these cases and insists that the treatment must practically be prophylactic—must be given not only before there is any strangulation of the viscera, but before the hernia becomes of menacing size.

Urinary Calculi.—Max Kahn and Jacob Rosenbloom have shown by recent analysis that the majority of renal calculi are composed of insoluble salts of calcium and not of uric acid or urates. Antiacid treatment is therefore not indicated. A course of acid treatment is more rational.

Chancre Developing Four Days after Salvarsan Injection.—Melvin Rosenthal reports a case in which there was the development of a disease, presumably syphilitic, in an individual giving repeated negative Wassermann reactions. Other points of interest are that a man suffering from the direct effects of syphilis should contract a chancre, and that a chancre should develop four days after an intravenous injection of salvarsan. The writer insists that there is no possibility of faulty technic or other errors.

MEDICAL RECORD.

December 21, 1912.

Marginal Sounds in the Diagnosis of Pulmonary Tuberculosis.—G. E. Bushnell observes that the expert clinician learns by experience to attach no great importance to the marginal sounds, whatever his theory of their causation may be. When Janeway said, "We may hear fine crepitation which does not mean very much," and when Lawrason Brown promulgated the dictum that "physical signs at one apex should be considered to be due to tuberculosis until the contrary is proved; physical signs at one base should be considered nontuberculous until the contrary is proved," perhaps marginal sounds were in mind. The marginal sounds have been a stumbling block to many physicians. The writer entertains the hope that the investigations recorded in his paper will aid in clearing up doubts and in removing these stumbling blocks.

Selection of Female "Risks" in Whom Hysterectomy and Ovariotomy Have Been Performed.—H. D. Ingalls has limited his observations absolutely to those women in whom the uterus and ovaries, the uterus alone or the ovaries alone, have been removed. The undesirable features of this class of cases include the great disturbance to the nervous system owing to the fact that we induce a premature and forced menopause; malignant degenerations and changes in other organs appear; hernias are more frequent; there are great changes in personal appearance, mental characteristics, and in temperament as a result of the so called unsexing operation. None of these features is proved. He concludes that these risks may be safely written under the following conditions: Sure and accurate knowledge that no malignancy was expected or found at the time of operation; that the operation did not reveal any abdominal or other complication present; that sufficient time—at least two years—has elapsed to be sure that all nervous and physical disturbances resulting from the operation have entirely disappeared; and that the applicant is up to the required standard in all other respects.

Sacral Kidney Simulating Acute Appendicitis.—M. S. Kakels reports a case in which the clinical picture and symptoms led to the diagnosis of acute appendicitis. A Kammerer incision was made, and only after the abdomen was opened and a slightly congested appendix removed was the true nature of the case revealed. When the coil of intestines was pushed aside a retroperitoneal mass was exposed, situated over the right sacroiliac synchondrosis a little to the right of the median line. An incision into the mass revealed a sacral kidney which took the place of the right kidney, which was missing. The writer excuses the error in diagnosis, from the rarity of sacral kidney and the symptoms present, and emphasizes the importance when diagnosticating acute abdominal conditions of bearing in mind the possible existence of an ectopic kidney.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

November, 1912.

Tertiary Syphilis of the Liver.—T. McCrae concludes that the clinical picture of hepatic syphilis is a varied one with prominent general symptoms in many cases, of which loss in weight is marked. The duration of the symptoms may be prolonged, and there may be intermissions in which temporary improvement occurs. Fever is a common symptom. In the majority of cases features suggestive of hepatic diseases are noticeable. Most common is tumor or enlargement which may suggest malignant disease, general enlargement with nodulation or the presence of large rounded masses. The relatively marked enlargement of the left lobe, compared with the right, is a striking feature. Other diseased conditions of the liver may obscure the diagnosis, or the condition of the liver may not be correctly interpreted. An occasional difficulty is ascites. Important aids are a knowledge of hepatic syphilis and the therapeutic test. The syphilitic process can be influenced by treatment, the results (cirrhosis, amyloid) never.

Maltose in Infant Feeding.—J. L. Morse recalls that the sugars commonly used in infant feeding are lactose, saccharose, and maltose, all being disaccharides, lactose consisting of dextrose and galactose, saccharose of dextrose and levulose, and maltose of dextrose and levulose, which are not absorbed as such in the intestines under normal conditions, but are first split into their respective monosaccharides by special ferments (maltase, saccharase, and lactase) which are formed in the mucous membrane of the small intestine. Lactose is preferable to maltose for the feeding of normal infants, but there is a type of intestinal indigestion due to the fermentation of sugar, in which maltose is better borne, especially during convalescence. In the treatment of diarrhea due to the gas bacillus and similar organisms, maltose is contraindicated. Maltose is less useful than lactose in diarrheas caused by the dysentery bacillus.

Bismuth Poisoning.—L. M. Warfield finds that bismuth salts, like lead and mercury salts, may produce definite and characteristic symptoms of poisoning in persons that are more or less susceptible. The whitish diphtheritic membrane that caps the ulcers is peculiarly characteristic of bismuth stomatitis. The visceral lesions caused by bismuth also demonstrate that it is one of the metallic poisons and should be cautiously used.

Weight Curves in Typhoid Fever.—W. Coleman has found that loss of weight occurs in practically all cases of typhoid fever but the amount of loss varies, the total loss being greater the severer the infection and the longer the duration. His experiments with high calory diet have demonstrated that it is possible to maintain patients suffering from typhoid fever in weight equilibrium throughout the entire course of the disease by giving them sufficient nourishment.

Alimentary Oversecretion of Chronic Ulcer as Shown by the Lactose Test Meal.—D. Roberts concludes that the demonstration of an alimentary oversecretion is highly suggestive of a chronic gastric ulcer. It must be determined by future observations whether a low ration occurs in a case of ulcer of this type. It cannot be stated on this comparatively small number of cases (four) future observations whether a low ratio occurs in conditions other than ulcer. In a few instances the writer found the gastric juice three times the amount of the test meal residue. In those cases in which ulcer has been diagnosticated, a ratio as low as this has proved the exception.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

November, 1912.

Maternal Feeding.—J. P. Sedgwick well puts it, "Maternal feeding should be the keystone of the propaganda for the prevention of infant mortality." From the study of replies received in answer to questions asked, the author concludes that the number of mothers who nurse their infants can be increased. The methods by which this may be done are discussed at some length. The article concludes with a request that all join in the dissemination of information concerning the importance, possibility, and technic of breast feeding.

Ophthalmia in the Newborn.—A. W. Tallant, from a study of thirty-seven cases, found that secondary cases developing some five days after birth are of distinct importance. She advises that their number could be greatly diminished by the repetition of some prophylactic treatment at intervals of two or three days through the puerperium, when gonorrhea is suspected in the mother. It is also stated that the records of the asylums for the blind in this country show that the proportion of their inmates whose affliction is attributed to ophthalmia neonatorum is not falling off to any extent. Consequently the necessity of prophylaxis at birth should be vigorously pushed on all sides.

The Care of the Nose and Throat in Children.—H. Hays is of the opinion that there are no tonsils of so little value during the first two years that they should be removed, unless they cause definite symptoms, directly or reflexly. If, however, it is decided to remove the tonsils, enucleation is held to be the only operation permissible.

ARCHIVES OF DIAGNOSIS.

October, 1912.

Diagnosis of Mental Disorders Associated with Cerebral Syphilis.—Francis M. Barnes, Jr., points out the fact that a syphilitic lesion may often be unexpectedly found to be the anatomical basis of a mental disorder previously supposed to be of the functional or nonspecific organic classes. Cerebral syphilis may develop in a brain already affected with mental disorder, e. g., dementia præcox. It may also occur in conjunction with other organic brain diseases, such as arteriosclerosis and senile dementia. The differential diagnosis in life is often difficult or even impossible, as there is no mental symptom complex characteristic of cerebral syphilis.

New Method of Duodenal Intubation.—Albert Abrams and George Jarvis, after mentioning the observation of Knapp that the duodenum may be entered with the ordinary stomach tube in cases of complete insufficiency of the pylorus, point out that the pylorus can be dilated for the passage of the tube through a reflex elicited by making firm pressure on both sides of the fifth dorsal spine by means of an instrument with two prongs designated as the "radicular pressor." The reflex is of brief duration—not over one minute—and is momentarily exhausted if the pressure exceeds one half minute. In the absence of an assistant, concussion of the fifth dorsal spine suffices to open the pylorus. Before its introduction into the duodenum the tube, while still in the stomach, is cleansed by means of a syringe filled with some colored fluid. When the duodenum is then entered, aspiration shows absence of the colored fluid, thus confirming the passage of the pylorus by the tube. The fluid from the duodenum also differs from that obtained from the stomach in that it is alkaline and will respond to tests for amylopsin, trypsin, and steapsin. The pressure at the fifth dorsal spine, while dilating the pylorus, increases the tone of the stomach proper so much that it may be delimited by percussion owing to the dullness arising through pressure on the air or gas in the organ. The stomach is also temporarily displaced from the horizontal to the vertical position.

Avulsion of Mesentery.—H. Beeckman Delatour reports a case and mentions as diagnostic signs of this condition: 1. A blow tending to tear rather than crush the abdominal contents—a glancing or sliding blow; 2, evidence of internal hemorrhage; 3, slight or no abdominal tenderness. Muscular rigidity may be either present or absent. If time enough elapses, signs of acute intestinal obstruction will develop; these must not be mistaken for peritonitis.

Domelike Appearance of Abdomen in Differential Diagnosis of Extrauterine Pregnancy.—A. Shulman believes this sign pathognomonic, though it is still unmentioned in textbooks. It is caused by accumulation of blood in the pelvic and abdominal cavities in sufficient quantity to force the overlying structures upward and outward in the direction of least resistance. If there is a history of atypical bleeding, fainting spells, pains on one side, and a rapid, feeble pulse which perhaps has later returned to normal, all doubts as to the diagnosis are removed. In ovarian cysts there is a ruggedness and asymmetry of abdominal contour distinguishable from the condition in extrauterine pregnancy; large fibrocystic tumors show fluctuations limited to certain areas; adiposity can be excluded by placing the hands upon the sides of the abdomen and bringing them together, thus gathering up the walls in a fold and separating them from the viscera; in ruptured ovarian cyst and large cysts of other viscera a good history will furnish the means of diagnosis.

ARCHIVES OF INTERNAL MEDICINE.

October, 1912.

Fat Metabolism of Lipomas.—H. G. Wells states that satisfactory evidence is lacking to establish the generally accepted statement that simple subcutaneous lipomas do not give up their fat to the body during emaciation. There is no question, however, that this is true for fatty sarcomas. All reported analyses indicate that the fats of lipomas are identical with those of normal fat deposits.

Investigation of Value of Hexamethylenamine.—C. F. Burnam states that even after rather large doses of hexamethylenamine, there appear in the bile, sputum, saliva, and cerebrospinal fluid only traces of the drug, less than one to 150,000. It was also ascertained that *in vitro* a one to 50,000 formaldehyde solution, and a five or ten per cent. hexamethylenamine solution, are both incapable of destroying or inhibiting the growth of various microorganisms, such as the streptococcus, staphylococcus, and typhoid bacillus. With these facts as basis, Burnam asserts that the use of hexamethylenamine for the curing or bettering of, or as a prophylactic against infections of the bile passages, respiratory passages, and cerebrospinal system is illusory. He has no explanation to offer, however, for the clinical and bacteriological improvements reported by others. As regards the elimination of the drug in the urine, it was found that on the customary doses of from five to ten grains, three times a day, not more than two patients out of ten showed any decomposition of the drug into formaldehyde. At least sixty per cent. showed such decomposition, however, when from twenty to thirty grains were given every four to six hours. Clinically, it is the free formaldehyde which is the effective agent. Its liberation appears to be due to some specific activity of the renal epithelium. The greatest decompositions were observed in highly acid urines, but in definitely alkaline urines large amounts of formaldehyde were also occasionally met with. There is no fixed dose of hexamethylenamine. The only toxic effect is occasioned by the liberation of formaldehyde, and when this does not occur, it is safe to increase the dose until it does appear. The proper treatment is to give a dose just insufficient to cause bladder irritation; improvement will then generally follow so rapidly that long continued use of the drug will not be required.

Value of Glycyltryptophan and Tryptophan Tests in Gastric Diseases.—F. S. Smithies found more than one third of eighty-seven cases of gastric cancer to give positive glycyltryptophan reactions; more than one fourth were lactic acid positive, and about one thirteenth of the number gave the tryptophan test. Diagnosis of malignant disease was in each case quite possible, independently of these chemical reactions. No other class of gastric diseases, however, gave a positive glycyltryptophan test as frequently as cancer.

Experimental Study of Racial Degeneration in Mammals Treated with Alcohol.—C. R. Stockard gave guineapigs alcohol by inhalation to the point of beginning intoxication for an hour at a time, six days a week. Forty-two matings of alcoholic guineapigs gave only eighteen young born alive, and of these only seven, five of which were runts, survived for more than a few weeks. Nine control matings gave seventeen young, all of which survived and were normal, vigorous individuals.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

October, 1912.

Factors Modifying Blood Pressure in Tuberculosis.—F. M. Pottenger points out the fact that the blood pressure is lowered in pulmonary tuberculosis and becomes progressively lower as the disease advances. Low pressure is favored by the action of the toxines, which tend to produce vasodilatation, the disturbed action of the diaphragm, and particularly, as the disease becomes advanced, by the weakness of the heart muscle and general wasting. The altered diaphragmatic action is operative through the dilatation of the splanchnic veins it engenders, the suction effect upon these veins which is normally produced by the contractions of the diaphragm being lessened as the result of the relative immobility of the chest on the side involved. Tending to antagonize the low pressure factors are others which favor high pressure, viz., the increase in the frequency of the heart beats, the cardiac hypertrophy, and the thickening of the arterial walls due to the continued circulation of toxines.

High Blood Pressure Arising from Nervous Strain in Diseases of Nervous System.—See this JOURNAL for July 20, 1912, page 149.

Treatment of Pulmonary Tuberculosis by Compression of Lung.—M. E. Lapham discusses in particular the difficulties and dangers attending the use of this measure. A careful estimate of the degree of nitrogen pressure is required, as insufficient pressure accomplishes little and may possibly cause localized hyperemias, thus favoring hemorrhage, while excessive pressure reacts upon the digestive functions by interfering with the portal circulation, may weaken the heart action, induce neurasthenia, cause pain, and cripple the action of the other lung. It is always possible that a new standard of pressure may have to be adopted in a given case. Danger of penetrating the lung exists when the pleural surfaces are too adherent to be separated, and this danger is not confined to the first treatment, but is imminent every time one tries to renew the compression, because of the possibility that the cushion of nitrogen may have failed to keep the surfaces apart. Many cases have been reported of repeated punctures, as evidenced by cough and expectoration of blood, without any harm; but there have also been cases of sudden death, sometimes even before the nitrogen was turned on. These fatalities may be ascribed either to reflex respiratory arrest or to gas embolism. The latter is favored by canalization of the pulmonary veins when they are held out by fibrosis of the lung tissue, as well as by the negative pressure in the chest during inspiration, and has occurred as late as the twentieth filling in patients who had never presented any difficulties. Spengler advises the use of the x rays in cases with adhesions, to make sure that the nitrogen cushion is thick enough to keep the lung from being punctured. Without this information, only the readings of the manometer can give guidance for the location of the point of the needle, and these are sometimes misleading. The point may actually be in the pleural cavity without the manometer showing any excursions, adhesions blurring the effect of the respiratory efforts.

Ductless Glands as Factor in Production of Racial Differences.—A. M. Crispin collates facts tending to show that the internal secretions play an important rôle in the adjustment of the animal organism to environmental influences. These influences being dissimilar in different localities, differentiation occurs, and the most advantageous of the resulting changes are transmitted to succeeding generations.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, March 18, 1912.

The Vice-President, Dr. Ransford E. Van Giesen, in the Chair.

Removal of Uterus and Vagina for Complete Prolapsus.—Dr. Herman J. Boldt presented a uterus and vagina removed four days previously from a patient fifty-eight years old, who, notwithstanding her advanced age, was compelled to undergo much physical exertion. Unlike most sufferers from this condition, she was the subject of considerable vesical disturbance. During the first two days the patient complained of hypogastric pain, which, in Doctor Boldt's experience, was unusual after such operations. At the present time she was doing well, and was up and about.

Ovarian Cyst with Complete Twist of the Pedicle.—Doctor Boldt presented a second specimen, an ovarian cyst removed two days previously. The tumor, which belonged to the left ovary, had extended two fingers' breadth above the umbilicus. The interesting feature in connection with the specimen was that a complete twist of the pedicle existed without the patient's having symptoms. The tumor showed the effect of the twist in the dark color of its contents and the appearance of its walls. Yet the patient stated that she was entirely free from pain; nor was there any pain upon palpation of the abdomen when she was examined.

The Treatment of Bleeding from Gynecological Sources.—Doctor Boldt said that before deciding on any treatment it was necessary to determine the source of the hemorrhage; otherwise, one could not meet the condition intelligently. Commencing with external sources of bleeding, he mentioned varices, which, he said, were a cause almost exclusively in pregnant women. Sometimes the hemorrhage was very profuse, and in two instances which he had met with the patients were almost exsanguinated. Here inspection at once showed the condition. Aside from pregnancy, bleeding could occur only from injury to a vein. This might result from scratching, and he had seen one case of the kind. Bleeding from erosion or ulceration of the vagina caused by pessaries could usually be remedied by the application of a silver nitrate solution after removal of the pessary. Having referred to bleeding in connection with senile atrophy of the vagina, he went on to speak of that due to carcinoma in this situation. Here the treatment would depend on how far the growth had advanced at the time of its discovery. If this was early, complete removal would be indicated; where this was impossible, palliative treatment. Thorough curetting should be done with a sharp curette, and afterward acetone or iodine applied. Slight bleeding from the vaginal portion of the cervix, due to erosions, might occur after sexual intercourse, and was best treated by the application of one per cent. solution of silver nitrate. Between syphilitic and tuberculous ulcerations it was difficult to distinguish, except with the aid of the microscope. In the former, after the bleeding had been stopped by tamponing, specific treatment should be instituted. In tuberculous ulcerations the treatment was by curetting, followed by the use of the galvanocautery, if the ulcer were confined to the vaginal portion of the cervix. Myomata of the cervix were sometimes a source of hemorrhage. If large, their extirpation was a serious operation. If small growths were allowed to remain, the best treatment consisted of the use of copious hot douches and the internal administration of ergot. To stop the bleeding from lacerations of the cervix resulting from delivery (the diagnosis of which could be made upon inspection and with the use of retractors) all that was necessary was one or two sutures. Hemorrhages from the body of the uterus might be divided into two classes: Those where the organ was of normal size and those where it was enlarged. In the first of these was profuse menorrhagia without any definitely assignable cause, and this he was accustomed to treat by means of a strip of gauze medicated with ten per cent. phenol, and wrapped about an applicator syringe, which, after its introduction into the uterus, was pushed off with a forceps and allowed to remain for twelve hours. This plugging was removed by means of a string left attached to the gauze. In the second class we had hyperplasia of the uterus, which was first described by Pallen, some thirty-five years ago, under the name of "fibrosis of the uterus." In many of the cases nothing could be found in the endometrium. A good plan of treatment was the local application every third, fourth, or fifth day of pure phenol impregnated into an intrauterine gauze tampon which was allowed to remain in the uterus for from eight to twelve hours. In obstinate cases a few drops of a fifty per cent. solution of zinc chloride might be employed in place of the phenol, an alkaline powder, such as sodium bicarbonate being used in the vagina to prevent corrosive action by any of the solution escaping from the uterus. For inflammatory conditions of the endometrium, curetting, followed by suitable local applications, was of service. In the case of submucous myomata and of polypi of the uterus it was often almost impossible to make a diagnosis when these were of small size. When this could not be done otherwise, it was advisable to slit up the cervix and make a digital exploration. If a moderate sized polypus were found, the cervical incision usually sufficed for its removal; if a myoma, the incision was extended, and the growth enucleated. Hydatid mole gave an impression of elasticity, feeling somewhat like a toy balloon to the touch. In ectopic gestation immediate operation was generally called for, and abdominal incision was always to be preferred to the vaginal. In premature separation of the placenta the patient was attacked with sudden faintness, sometimes amounting to collapse, and there was a rapid increase in the size of the uterus. The indication was to empty the latter as quickly as possible. In placenta prævia, where this was marginal the patient, with the exercise of special care, could usually be carried to full term; but if it were central, or nearly so, the emptying of the uterus was called for. Sometimes we had to make use of tight tamponing until dilatation of the cervix could be accomplished, while in some instances vaginal, or even abdominal Cæsarean section was indicated. When there was atony of the uterus Momberg had recommended constriction of the trunk with rubber tubing, on the principle of the Esmarch bandage. If the patient had any heart trouble, however, this procedure was contraindicated. A myomatous uterus could be diagnosticated after the expulsion of the child by means of bimanual examination. In rupture of the uterus if the rent were small, and the child still in the uterus, loose tamponing was preferable to abdominal section. With a large rent, abdominal section was imperative.

Study of 139 Cases of Induction of Labor with the Champetier de Ribes Bag.—Dr. George L. Brodhead, having described these bags and the technic of their introduction, said that the series of cases was made up of seventy-five private and sixty-four hospital or outdoor patients, of whom forty-eight were primiparæ and ninety-one multiparæ. At the time of the induction of labor seventy-five of the women were at, or beyond full term, fifty-three between eight and nine months of pregnancy, eight between seven and seven and one half months, and three between six and six and one half months. Contracted pelvis was the principal cause for which the procedure was undertaken (in forty-one of the cases), and the various other causes were enumerated. From the total number of cases it was necessary to subtract four in which the membranes had already ruptured and one in which the time of rupture was not known; leaving 134 cases. In introducing 193 bags in these cases the membranes were ruptured in six cases, giving the very small percentage of three of accidental rupture. Sizes number two and three of the bags were found the most useful. In ninety per cent. of all cases labor was induced by the use of not more than two bags, and in only six instances were three required. Anesthesia was employed in introduction in 16.6 per cent. of the cases, fourteen per cent. in private work and twenty per cent. in hospital work. The higher percentage in the latter was due to the necessity of giving an anesthetic when demonstrating the technic before students. As to the time required for the beginning of labor, in twenty-three of the forty-eight primiparæ labor commenced at once (forty-nine per cent.), in thirty-six, within twelve hours (seventy-six per cent.), and in forty, within thirty hours (eighty-five per cent). Among the multiparæ these percentages were respectively thirty-one, sixty-eight, and eighty-nine. The average time in primiparæ was eight hours, twenty-two minutes, in multiparæ, ten hours, twenty-two minutes, and in all cases, nine hours, forty-one minutes. The average duration of labor was twenty-two hours, nine minutes, in primiparæ, fifteen hours, fifty-two minutes, in multiparæ, and eighteen hours, two minutes in all cases. Forty-nine per cent. of the labors terminated normally, in twenty-one per cent. the low forceps operation was done, in eleven per cent. the median forceps, in three per cent. the high forceps, in ten per cent., version, and in three per cent., breech extraction. Craniotomy and Cæsarean section were each performed in one case.

The possibility of change of presentation after the introduction of the bag should always be borne in mind in using this method. This accident occurred in seven of the 139 cases (five per cent.), though in only one was the outcome changed because of it. In that instance a vertex presentation altered to a breech, and the child, which was delivered by breech extraction, was stillborn. Four of the seven cases were in private work and three in hospital work. In one case a vertex presentation, left occipitoanterior, changed to a breech presentation, and later to a transverse, and the patient was delivered by podalic version. In another instance a right occipitoanterior vertex changed to the transverse position. By external version the vertex was brought over the brim of the pelvis, when the membranes were ruptured, and one hour later normal delivery took place. Fortunately the membranes had remained intact, and the necessity of version for the transverse position was thus obviated. In two of the seventy-five private cases presentation of the cord occurred. In one the child was saved, but in the other the child, though born alive, died at the end of twenty-four hours, evidently from meningeal hemorrhage. In four also of the hospital cases the cord prolapsed, with an infant mortality of three; giving a percentage of 4.3 cases in the 139 cases, for this complication. The hospital records of 5,300 obstetric cases (not including these 139) showed only one per cent. of cases of cord prolapse. Such prolapse was, therefore, apparently four times as frequent with the use of the bag. It was to be remembered, however, that in the series of 139 cases labor was induced in forty-one for contracted pelvis, in nineteen for disproportion between the head and the pelvis, and in three for hydramnion, and that in three of the six cases of cord prolapse there was either disproportion or deformed pelvis. In one case of the 139 a curious accident occurred. For the purpose of inducing labor for flat pelvis in a multipara at eight months a No. 3 bag was introduced at 12.30 p. m., and one hour later the membranes ruptured spontaneously. There were no labor pains, however, and when on the following day the patient was examined it was found that the bag had slipped up into the uterus, above the child's head. By means of traction upon the stem the bag was then brought down into the cervix, the first stage of labor began in an hour, and in three hours the labor was completed normally. If the stem had been tied to the vulva pad, as was usually done, the accident would not have happened, and though in this instance no harm had resulted, it was well to guard against such occurrences

In private work the morbidity was practically nil, and in hospital work very slight. In some ten of the hospital cases there was more or less febrile temperature following delivery, but in only three of these could the temperature be considered as having to do with bag morbidity. In the first of the cases, in which labor was induced at eight months for chronic nephritis, the patient was in very poor general condition, and a slight daily rise of temperature for several weeks was attributed to this. In the second case labor was induced at eight and three quarter months, also for nephritis. The patient was delivered by version of a seven pound child which had evidently been dead some time. On the fourth evening the temperature rose to 104° F., but, after that, gradually became reduced to normal, and on the twelfth day she was discharged in good condition. In the third case labor was induced at the eighth month for chronic endocarditis and poor general condition, and the patient was delivered normally of a four pound child, deeply asphyxiated, which died on the following day. The temperature ranged between 101° and 103° F. for the first four days, and then became normal. As the power of resistance was very low in the first and third of these patients, on account of their poor condition, temperature under any circumstances was not surprising. The total mortality among the children amounted to ten deaths in the seventy-five private cases, but as six of these could be excluded, the real number of deaths attributable to the bag method of inducing labor (including one case of prolapsed cord) was four, or 5.3 per cent. In the hospital cases the infant mortality was twenty-two in all. Here ten deaths could be reasonably excluded; leaving twelve, or a mortality of twenty per cent. If, however, we subtracted three cases of prolapsed cord and two cases of difficult breech extraction, the mortality would be eleven per cent.; a death rate which still compared unfavorably with that in private work. While three mothers in the private cases died from eclampsia, and one in the hospital cases from chronic nephritis and the toxemia of pregnancy, in none of these was bag induction responsible for the fatal issue. The maternal mortality could therefore be said to be nil.

Septic Puerperal Infections.—The first part of this paper, by Dr. John O Polak, was devoted to the etiology and pathology of such infections, and the statement was made that in his experience the high mortality in general practice, and especially the morbidity in puerperal sepsis, was produced by medical men, and was due to insufficient disinfection of the hands, together with a tendency to undertake operative delivery, often in the absence of any positive indication, before complete dilatation of the passages had been secured. From midwives there was less trouble of this kind, since they did not attempt operative procedures. In entering upon the second portion of the paper he said that each case of post partum or postabortal infection should be studied individually, and an accurate diagnosis be made of the clinical, bacteriological, and blood findings, before any treatment was instituted. In this examination we should determine, first, whether the infection was confined to the genital canal; second, the site of the local lesions, whether in the uterus or beyond it; third, the nature of the intoxication present; fourth, what natural or individual resistance the patient had. A well contracted uterus, with a closed cervix, should not be entered, but under other conditions a digital exploration should be made of the interior of the uterus to ascertain its contents. In putrid or saprophytic endometritis, associated with a decomposition of the placental tissues, secundines, or blood clots within the cavity, and which produced general symptoms essentially toxemic in character, the uterine contents might (in pregnancies after the seventh week) be removed with the finger or a placental forceps. When the finger had demonstrated that the cavity was empty the uterus should be firmly packed with sterile gauze which had been previously soaked in pure tincture of iodine and squeezed to remove the excess. This pack was to be left in position for from twenty to thirty minutes, and after its removal no further intrauterine instrumentation or medication should be resorted to. If the cervix were found open and the body of the uterus empty and well contracted, and if the endometrium were smooth, as was often the case three or four days after delivery, the digital examination might be followed by a single intrauterine douche of normal salt solution. The principles of the treatment after the condition of the uterus and the extent of the adjacent local lesions had been determined might be summarized as follows: First, the destruction of the infecting organisms, or the diminution of the force of the invasion, at the site of the primary infection; second, stimulating the resisting power of the patient; third, the destruction of organisms in the blood stream; fourth, operative measures. In carrying out the first of these principles efficient drainage was a most potent factor, and it was therefore advised that the bed should be so raised that the patient would be kept in the Fowler position. In reinforcing the resistance of the patient, in addition to food and stimulation, fresh air and sunlight were of very great practical value. For the third point considerable reliance could be placed on vaccines. Polyvalent vaccine should be administered at once, and later, autogenous vaccines, which might be repeated at such intervals as the existing conditions indicated. Any operative measures which might be undertaken would obviously be dependent upon special indications present.

Dr. Henry C. Coe said he could not assent to the somewhat dogmatic tone of the papers which had been presented. Experiences certainly varied. Certain conditions which Docor Boldt had described, and their treatment, were well recognized; but we met many cases of hemorrhage, particularly in young women, which were dependent upon no condition that we were able to determine. In some such cases he had tried ligation of the uterine arteries, but this procedure had not proved of permanent value. In every instance the hemorrhage had recurred, and in one or two cases he had resorted to hysterectomy. He fully agreed as to the value of splitting up the cervix for making the diagnosis of myoma or polypus of the uterus. These were cases which gave great trouble to the general practitioner. As to the use of the modified de Ribes bag, he had not had the favorable experience of Doctor Brodhead, and he always approached this little operation with some degree of trepidation. While his mortality among the mothers had been nil, his percentage of deaths in the children was larger than that given in the paper, and in this connection he narrated two cases where the children were born dead. He conceded, however, that in some instances this method of inducing labor was essential. He could not altogether agree with some of Doctor Polak's contentions. At Bellevue Hospital they had many cases of sepsis following criminal abortion, and in most instances of this kind Nature had built up such protective walls that they had no hesitation in invading the exudate present. He approved Doctor Polak's conservative stand in regard to curetting and douching, believing his objections well taken. On the whole, however, Doctor Coe thought he was rather too optimistic in his views.

Dr. J. Clifton Edgar said he had employed Momberg's belt in three cases, and they had given him a warning. It required the utmost care to prevent syncope when the belt was withdrawn, as it caused anemia about the heart. He agreed with Doctor Polak that the physician was more apt to be responsible for puerperal sepsis than the midwife. His observations at the Jewish Maternity Hospital, where he was consulting obstetrician, had convinced him of this. He also agreed that polyvalent serum should be administered at once, on account of its sustaining effect, which gave a chance for the formation of antibodies. Autogenous vaccines could be given after the diagnosis had been established. Doctor Brodhead's experience had led him to prefer the use of the modified de Ribes bag to other methods, and probably most of us had also come to the conclusion that it was preferable. Some, however, advocated Krauss's method of introducing a catheter. As to the size of the bag or bags to be employed, he thought that Doctor Brodhead had taken the right position. While the No. 2 and No. 3 bags were not as efficient as the larger ones, with them there was less danger of a change in the position of the fetus occurring than when the larger No. 4 and No. 5 were used. The beginner in this method was apt to rupture the membranes, but with proper care there was but little risk of this. The bivalve speculum should be employed when making the introduction, and he rarely found it necessary to give an anesthetic, even in his clinic at the Manhattan Maternity. When the cervix was not sufficiently dilated to admit the bag, Krauss's method might be used, or gauze introduced, for causing dilatation. He did not believe in doing any injury to the cervix. While the uterus had been known to be ruptured by a Barnes bag, he had never seen any harm result from the rupture of a modified de Ribes bag. As to the life of such bags, some tests which he had had made showed that four boilings were about all that they could stand.

Dr. Austin Flint, Jr., discussing the question of the induction of premature labor, said that the crux of the matter hinged on two points, namely, first, the period of pregnancy at which it was done, and, second, the condition of the cervix, irrespective of the period of pregnancy. Bags worked well in favorable cases, but not in unfavorable ones, where the time was more than a month before term or where there was a long, hard cervix. Here it was advisable to temporize, if possible, by introducing a bougie or leaving a gauze tampon in position for twelve hours or more before resorting to the use of the bag. The indications for employing the latter should always be borne carefully in mind. Unfortunately, however, these bags were now being more and more used for insufficient causes. So, too, was Cæsarean section done too frequently, and this was all wrong. He believed that Doctor Polak was right in urging that early exudates should be left alone; later we could open up freely. The use of iodine, as practised by him was new to him (Doctor Flint). Personally he had been in the habit of employing alcohol.

Dr. Ralph W. Lobenstine said that in the induction of labor in a primipara, with the cervix long, tough, and undilated, he did not think bags were as satisfactory as the introduction of the bougie into the uterus, combined with tight vaginal tamponage. In all other cases he was an ardent advocate of the rubber bag. He agreed with Doctor Flint that at the present time the induction of labor was practised entirely too frequently, and without adequate medical reasons. In resorting to this procedure in the case of a muscular woman, especially a primipara, with only a moderate pelvic dystocia, one should always keep in mind the fact that the unyielding cervical muscle, when Nature had not as yet prepared it for labor, might cause more actual difficulty than the dystocia. After the complete premature rupture of the membranes he believed in starting up labor within twenty-four or forty-eight hours, as a longer delay would increase the dangers to both mother and child. One point of caution: When the bag was being filled one should always remember the possibility of pinching the cord. As to Doctor Polak's paper, Doctor Lobenstine said that the digital intrauterine exploration was undoubtedly of great value, provided it could be carried out aseptically and with the utmost gentleness. Personally, he had been using the tincture of iodine for several years in the class of cases mentioned and had found it more satisfactory than alcohol. He firmly believed in the value of an exploratory abdominal incision in certain doubtful puerperal pelvic infections. Without this, in some instances, an exact diagnosis as between an extraperitoneal and an intraperitoneal condition, was impossible.

Dr. Samuel W. Brickner, having referred to the small number of Doctor Brodhead's cases (six per cent.) in which the bags failed to induce labor, and discussed what was best to be done in cases of this kind, stated that in general his own experience had been much the same as that of Doctor Brodhead. Of late he had been trying the rectal tube, as advocated by Little of Montreal, and had found it exceedingly useful. In septic puerperal infections his experience with vaccines had been different from that of Doctor Polak. Both with polyvalent and autogenous vaccines his results had been practically nil; he had not observed any benefit whatever from their use. Patients might get well, however, whether these agents were employed or not; so that it was somewhat difficult to know what value to assign to them. In cases of puerperal infection he believed that, except for vital indications, such as the removal of pus, the less surgical interference there was, the better off the patient would be.

Dr. W. H. W. **Knipe** mentioned a case of gynecological bleeding which evidently depended on too much alcohol periodically. The patient had passed the menopause, and he expected to find carcinoma of the uterus; but a careful examination and the use of the curette revealed nothing whatever. An extended study of the case showed that the bleeding came on whenever she indulged too freely in stimulants. In inducing premature labor his own plan of procedure was to begin with a large soft rubber tube, inserted in a zigzag manner, and finish up with the bag; and this seemed to work very well. His results with these bags had been good, and he had found nothing to take their place. In cases of puerperal sepsis he was accustomed to employ gauze saturated with Churchill's tincture of iodine (one half strength), which he left in the uterus for two to three hours, and follow this up with a seventy per cent. solution of alcohol. His impression was that after the germs had once got into the blood stream we could do very little either with vaccines or anything else.

Doctor **Brodhead** said that the reason why he took up the use of the bag was because he had ruptured the membranes (a very undesirable complication) so frequently with the bougie. He regretted that Doctor Coe had expressed himself so pessimistically. It was only by the study of a large number of cases that we could arrive at any definite conclusions. When eclampsia or other emergency was present he was accustomed to employ both the rectal tube and the bag, but ordinarily the latter was sufficient. He believed that if premature induction of labor were resorted to in all suitable cases, Cæsarean section would be much less frequent than at present. Earlier than the eighth month, however, the latter operation gave much the best results.

Doctor Polak, in closing, said that he made use of iodine in only one class of cases, namely, where the decomposing matter within the uterus had been removed by the finger. He never employed it in streptococcic infection or where the endometrium was smooth. The special point that he wished to make was that in every case a complete blood count and blood culture should be obtained.

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Letters to the Editor.

WEISMANN'S CELL DIVISION THEORY.

New York, *December 26, 1912*.

To the Editor:

The Bradshaw Lecture on the Biology of Tumors, by C. Mansell Moullin, M. A., M. D. (Oxon.), F. R. C. S., reported in the *British Medical Journal* for December 7th, contains many interesting and instructive passages, indicating in the author a profound knowledge of the subject dealt with.

In so vast and so recently developed a science as the evolution of living tissues, there must necessarily be ample room for divergence of opinions on many points still obscure, and on not a few considered by many as established facts.

One question, upon which I have before expressed my opinion, refers to the nature of the germ cells. The almost generally accepted theory of Weismann that "the germ cells are the direct descendants of the germs of the original primitive metazoa" is asserted by the author of the Bradshaw Lecture and this is, I must say, in perfect accordance with the orthodox doctrine of Weismann. This means that the primitive germ cells of the original metazoa have been reproducing themselves by division and subdivision, without any differentiation whatever, except such infinitesimal modification produced by the ever changing conditions created by the influence of the somatic cells surrounding them. This influence is granted by the lecturer, although perhaps not so plainly by Weismann. The Weismann division of the organism into germ cells and somatic cells implies (with the corollary that the germ cells are immortal, because every germ cell is a division or a subdivision of previous germ cells, back as far as the original primitive germ cell or cells) that every germ cell in existence to-day or which will be reproduced from these in the future, must necessarily contain an organic portion, however infinitesimal, of the original primitive germ cell or cells.

In my own opinion, there is no ground for entertaining such a view, there is no ground for considering the germ cells as direct descendants of the germ cells of the parent organism of any individual, any more than the liver cells or the brain cells or the intestinal cells. In other words, the germ cells are differentiated cells just the same as the liver cells, the brain cells, or the intestinal cells.

That principle of direct descendance has been propounded by Weismann and his school under stress of theory, to harmonize with and support the other parts of his general theory.

But let us look at the facts: The germ cells of parent organisms, namely, the spermatozoon and the ovule, unite in the act of fecundation to form the conjugate cell which is to develop into the new being. The conjugate cell, otherwise the fecundated ovum, is nothing like the ovules in the virgin ovary; whatever the origin of those ovules, they are not produced in the same way as a conjugate cell; they are, therefore, essentially different; the spermatozoa also are essentially different, just as much so as, in the inorganic world, hydrochloric acid differs from hydrogen and chlorine respectively. They each and all have different properties. Now let us observe what takes place in the fecundated ovum which, I think, I have proved, is not a germ cell but a conjugate cell formed of two germ cells. It divides and subdivides until it forms what is called the mulberry mass, and what is that mulberry mass? It is a metazoic group of embryonic cells. Are they germ cells? Not at all. Not one of them can perform the function of a spermatozoon or of an ovule, and it is only later on in the process of ontogenesis that the germ cells make their appearance in the new metazoon, and by the same process of differentiation as the other cells of the different organs of the body. The germ cells are, therefore, differentiated cells and are not immortal as some disciples of Weismann would have it; but, like other differentiated cells, of a distinctly mortal nature. There would be as much reason, or as little reason, to divide the cells of the body into somatic cells and blood cells, meaning the corpuscles of the blood. The cell division of Weismann is no more warranted by the facts than the example here suggested.

P. Z. Hebert, M. D.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Wassermann Reaction. Its Technique and Practical Application in the Diagnosis of Syphilis. By John W. Marchildon, B. S., M. D., Assistant Professor of Bacteriology, St. Louis University Medical School. Eleven Illustrations and Colored Frontispiece. St. Louis: C. V. Mosby Company, 1912. Pp. xiv-103. (Price, $1.50.)

This handy volume contains an unusually lucid and detailed description of the method of making a Wessermann test, an average of about five pages each being allotted to the description of the preparation of the amboceptor, complement, red blood corpuscles, patient's serum, and antigen. Numerous illustrations depict the laboratory apparatus required, while charts are freely used to show the method of control. The author then passes to the practical application of the reaction in the different types of syphilis. He is not too specific in his clinical conclusions, although he ventures to state that the reaction is positive in all untreated tabetics and paretics! This is going a little too far. The entire absence of bibliography, however, conceals the source from which he obtained such figures. The book closes with a few paragraphs on the Wassermann reaction in other diseases and a chapter on the influence of treatment on the reaction.

Elementary Bacteriology and Protozoology. The Microbiological Causes of the Infectious Diseases. By Herbert Fox, M. D., Director of the William Pepper Laboratory, of Clinical Medicine in the University of Pennsylvania, Pathologist to the Zoological Society of Philadelphia, etc. Illustrated with 67 Engravings and 5 Colored Plates. Philadelphia and New York: Lea & Febiger, 1912. Pp. vi-237.

Doctor Fox within some 221 pages has succeeded very well in preparing a book on bacteriology, a rather difficult task when one realizes how voluminous the material on this subject is. The book, as the title indicates, is elementary in character, being intended primarily for nurses. To that purpose it seems quite admirably suited. The general features of bacteriology as relating to medicine are briefly stated and would suffice for one not going deeply into the matter. Protozoology is dismissed rather shortly, but that chapter probably contains as much as is necessary. As might be expected, the mechanical part of the volume is well done and the book itself can be recommended as a manual for nurses.

Kohlenhydratkuren bei Diabetes. Von Prof. Dr. GEORG ROSENFELD, in Breslau. Halle a.S.: Carl Marhold, 1912. Pp. 64.

This monograph deals with the carbohydrate treatment of diabetes from two points of view; one concerning those treatments in which a carbohydrate is added because the substance is of value to the patient, the second form of treatment being that in which various carbohydrates, although not very well borne, are given in certain form, either on account of their influence upon oxidation or because they influence metabolism favorably. The various types of carbohydrates are briefly reviewed, and the article concludes with a few lines concerning the indications for carbohydrate treatment. The greater part of the publication consists of tables giving the results of various feeding experiments.

Life and Letters of Dr. William Beaumont. Including Hitherto Unpublished Data Concerning the Case of Alexis St. Martin. By JESSE S. MYER, A. B., M. D., Associate in Medicine, Washington University, St. Louis. With an Introduction by Sir WILLIAM OSLER, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England. With Fifty-eight Illustrations. St. Louis: C. V. Mosby Company, 1912. Pp. xxv-317.

Whenever the physiology of digestion comes up for discussion one must always call to mind the foundation that was laid nearly a hundred years ago by an army surgeon, one William Beaumont. In June, 1822, the accidental discharge of a shotgun tore a hole in the left upper abdomen of a young French-Canadian, Alexis St. Martin. Doctor Beaumont was called upon to take charge. At first he did not realize the wonderful opportunity that lay before him but he soon appreciated its value and applied himself to unravelling the mysterious problems of digestion. The story of his achievements is indeed thrilling and should be a stimulus to all. Doctor Meyer has done all America a service by his painstaking care in assembling so much bearing upon the person and the work of this pioneer, who by his accurate and methodical traits started correctly the study of gastric digestion.

Enzymes. By OTTO COHNHEIM, a.o. Professor of Physiology, Heidelberg. Six Lectures Delivered under the Herter Lectureship Foundation at the University and Bellevue Hospital Medical College. First Edition. First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, 1912. Pp. viii-173. (Price, $1.50.)

The appearance in book form of Professor Cohnheim's lectures at Bellevue during his visit here two years ago, will be greatly appreciated by the profession at large. Professor Cohnheim presents the great merit, so common among German teachers, of making an abstruse subject clear even to a benighted reader. In the present case all that is required is close attention to the text, and the reader will acquire more knowledge of the far reaching question of enzymes than he could from far more pretentious works. In fact, the whole subject of enzymology is reviewed, the methods for the preparation, purification, and analysis of the eighteen enzymes studied being given. On the whole, it would be difficult to imagine a more satisfactory book notwithstanding its diminutive size.

The Kallikak Family. A Study in the Heredity of Feeble Mindedness. By HENRY HERBERT GODDARD, Ph. D., Director of the Research Laboratory of the Training School at Vineland, N. J., for Feeble Minded Girls and Boys. New York: The Macmillan Company, 1912. Pp. xv-121. (Price, $1.50.)

In *The Kallikak Family* we read the story of a feeble minded girl, a moron or high grade imbecile, who has been under close observation and training for several years; particularly the story of her family which has been traced by means of "field workers" through six generations. In Revolutionary times a normal young man became the father of an illegitimate child through a feeble minded girl. Later he married a normal girl and established a family. Posterity to the number of 480 individuals has been traced to the illegitimate, and 496 to the legitimate union, and the results are striking. Although all of the problems of heredity are not yet settled, and the applicability of Mendel's law to humanity remains still to be proved, one can scarcely read this little book and study its charts without being convinced of the important influence of "blood" in the breeding of intellectual as well as feeble minded human stock.

Pharmacology. Action and Uses of Drugs. By MAURICE VEJUX TYRODE, Ex-Instructor of Pharmacology in the Medical School of Harvard University. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. ix-288. (Price, $1.50).

Until recently there has been a dearth of good books of moderate size on this subject for the student. The contents of the present little volume are practically limited to the knowledge required by him as a preliminary to the study of therapeutics and answer well the purpose intended by the author. In the second edition various new facts in pharmacology have been introduced. Such recently developed subjects as endotracheal anesthesia, the organic arsenicals, hexamethylenamine, etc., are all found duly mentioned. The pharmacology and uses of pituitary extract, however, appear to have been neglected, but one short sentence being devoted to this drug. On page 2 occurs the odd expression "therapia sterilis*ata* magna." It would seem justifiable to hope that the introduction of Ehrlich's remedy has not, as this expression would suggest, initiated an era of "sterilized therapeutics," but rather one of increased efficiency in treatment through sterilization.

Die experimentelle Pharmakologie als Grundlage der Arzneibehandlung. Ein Lehrbuch für Studierende und Aerzte. Von Dr. HANS H. MEYER, Wien, und Dr. R. GOTTLEIB, Heidelberg, Professoren der Pharmakologie. Zweite, neubearbeitete Auflage. Mit 64 z. t. farbigen Textabbildungen und 1 farbigen Tafel. Berlin und Wien: Urban & Schwarzenberg, 1911. (Through Rebman Company, New York.) Pp. xx-554. $3.50.)

This work is the product of two of the world's foremost specialists in the subject of which it treats, and gives evidence, not only of their own extensive labors, but of a thorough assimilation of the literature of pharmacology, including the most recent. Numerous references are given throughout, yet so inconspicuously that they do not interfere with the clear sequence of the text, though imparting to it a degree of authority obtainable in no other way.

The book is almost unique among works on pharmacology in the arrangement of the subject matter, which is not divided into sections corresponding to the individual drugs discussed, but to the structures, or systems of structures, in the body on which they act. Thus there are successive chapters concerned with the pharmacology of the motor nerve endings, of the central nervous system, of the sensory nerve endings, of the vegetative nervous system, of the eye, of the digestive tract, of the organs of reproduction, of the circulation, etc., in each of which the drugs acting on the particular functions under consideration are brought together and compared. This plan obviously necessitates that the drugs which act on several structures or systems shall be given divided consideration in different portions of the book, atropine, for example, appearing in the sections on the eye, circulation, respiration, digestive tract, and sweat. This disadvantage is more than made up, however, by the accurate comparisons rendered possible in the discussion of drugs having similar but not identical effects upon a given organ. Especially valuable and timely is the section on the pharmacology of the autonomic portion of the nervous system, the importance of which has been so greatly emphasized of late. Due information is given as to the chemistry of drugs. Excellent diagrams, tracings, and tables illustrate a number of the agents discussed. Much new material has been added to the present edition, and all through the book the needs of the practitioner have been carefully considered.

Miscellany.

The Alleged Relations between Tone and Color.—We take the subjoined question from the *Ladies' Home Journal* for January, 1913, solely in order to reproduce the sane and matter of fact answer of the distinguished pianist, Josef Hofmann. Physicians should never overlook an opportunity to stamp out this sort of mystical nonsense, which is astonishingly current in many *soi disant* circles of culture.

Q. Is there any relation between sound and color? A friend of mine says that he "hears in color"; that the upper register of the piano ranges from red to white and the lower registers the darker shades: brown, green, blue, etc. Do you think there is anything in this?—D. K. L.

A. I do not. It seems to me that this hearing in colors is a piece of hyperesthetic imagination. I am told that there are certain mathematical relations between the vibrational numbers of the ground colors and the common chord when in absolute time; but since we do not paint with absolute colors and do not make music with absolutely pure tones these relations can, at best, have only a scientific and not an artistic bearing, especially as every one of the color hearers imagines some different color when hearing the same tone. The character as well as the quality of the instrument may also have an influence upon the color hearer, so as to cause him to see different colors if the same note is produced by a different instrument. However, if it makes any one happy to see green in his mind's eye at the sound of C—or red, or white—it would be cruel to rob him of this harmless pleasure.

Meetings of Local Medical Societies.

Monday, *January 6th.*—Clinical Society of the New York Nose, Throat, and Lung Hospital; German Medical Society of the City of New York; Brooklyn Hospital Club; Utica Medical Library Association; Niagara Falls Academy of Medicine; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

Tuesday, *January 7th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of the West Side German Dispensary and School for Clinical Medicine, New York; Buffalo Academy of Medicine (Section in Surgery), Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity (annual); Long Island Medical Society; Amsterdam City Medical Society (annual); Lockport Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

Wednesday, *January 8th.*—New York Pathological Society (anniversary); New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Dunkirk and Fredonia Medical Society; Medical Society of the County of Richmond, N. Y.

Thursday, *January 9th.*—New York Academy of Medicine (Section in Pediatrics); West Side Clinical Society, New York; Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers; Auburn City Medical Society; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua (annual); Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

Friday, *January 10th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-Internes of the German Hospital in Brooklyn; Saratoga Springs Medical Society.

Saturday, *January 11th.*—Therapeutic Club, New York.

Births, Marriages, and Deaths.

Married.

Conlin—Thatcher.—In Setauket, N. Y., on Tuesday, December 10th, Dr. William Conlin and Miss Anne E. Thatcher. **Corn—Rosenberg.**—In New York, on Saturday, December 14th, Dr. David Corn, of Ridgefield Park, N. J., and Miss Fannie Rosenberger. **Kruse—Maxfield.**—In Fort Wayne, Ind., on Tuesday, December 17th, Dr. Edward H. Kruse and Miss Geneva Maxfield. **Mott—Tucker.**—In Rochester, N. H., on Wednesday, December 25th, Dr. George Ernest Mott, of Malden, Mass., and Miss Evelyn Sarah Tucker. **Spicer—Chatfield.**—In Waterbury, Conn., on Tuesday, December 17th, Dr. Edmund Spicer and Mrs. Minnie Tracy Chatfield. **Voegtlin—Kreuter.**—In Baltimore, on Saturday, December 21st, Dr. Carl Voegtlin and Miss Lillian Kreuter. **Warner—Francisco.**—In Cincinnati, Ohio, on Saturday, December 21st, Dr. Henry Jackson Warner, of the United States Public Health Service, and Miss Edmonia Gertrude Francisco.

Died.

Adnett.—In Cleveland, Ohio, on Thursday, December 19th, Dr. Hills Adnett. **Bailey.**—In Oneida, N. Y., on Monday, December 23d, Dr. Edward P. Bailey, aged fifty-seven years. **Bergen.**—In Washington, N. J., on Sunday, December 22d, Dr. Everitt James Bergen, aged sixty-six years. **Brower.**—In Kingston, N. Y., on Sunday, December 15th, Dr. Charles S. Brower, of Woodstock. **Collier.**—In Albany, N. Y., on Sunday, December 15th, Dr. Albert V. D. Collier, of Catskill, aged seventy--five years. **Dietrich.**—In Kansas City, Mo., on Monday, December 16th, Dr. Adolph Dietrich, aged fifty-three years. **Egan.**—In Chicago, on Sunday, December 22d, Dr. James J. Egan. **Ferrel.**—In St. Louis, Mo., on Thursday, December 19th, Dr. Henry E. Ferrel, aged thirty-seven years. **Giles.**—In Baltimore, on Saturday, December 21st, Dr. Alfred B. Giles, aged fifty years. **Gordon.**—In Newburgh, N. Y., on Sunday, December 15th, Dr. James Gordon, aged seventy-four years. **Green.**—In Dallas, Texas, on Tuesday, December 17th, Dr. John Alexander Green, of Blooming Grove. **Johnson.**—In Waverly, N. Y., on Monday, December 16th, Dr. William E. Johnson, aged seventy-five years. **Longan.**—In Houston, Texas, on Wednesday, December 18th, Dr. Herbert Augustine Longan, of Kansas City, Mo. **Miller.**—In Detroit, Mich., on Tuesday, December 17th, Dr. C. C. Miller, aged sixty-six years. **Morehouse.**—In Danville, Ill., on Friday, December 20th, Dr. Herbert W. Morehouse, aged sixty-nine years. **Oatman.**—In Brooklyn, N. Y., on Thursday, December 26th, Dr. Edward L. Oatman, aged fifty-nine years. **Porter.**—In Butler, Mo., on Monday, December 23d, Dr. H. P. Porter, aged seventy-three years. **Reoch.**—In Phenix, R. I., on Sunday, December 15th, Dr. William Stewart Reoch, aged forty-three years. **Rogers.**—In Hartford, Wis., on Monday, December 16th, Dr. Ezra M. Rogers, aged eighty-one years. **Solatinow.**—In Passaic, N. J., on Wednesday, December 25th, Dr. Joseph Solatinow, aged sixty-four years. **Standing.**—In St. Louis, Mo., on Sunday, December 15th, Dr. William Standing, aged sixty-six years. **Stevenson.**—In Pittsburgh, Pa., on Thursday, December 19th, Dr. William Blaney Stevenson, aged twenty-four years. **Swartz.**—In Fort Wayne, Ind., on Tuesday, December 10th, Dr. Douglas A. Swartz, of South Whitley, aged fifty-five years. **Ward.**—In Anniston, Ala., on Thursday, December 12th, Dr. Lucius Cincinnattus Ward, of Daviston. **Yeagley.**—In York, Pa., on Thursday, December 12th, Dr. John H. Yeagley, aged sixty-three years.

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SPASM OF THE PYLORUS AND CONGENITAL PYLORIC STENOSIS.*

By Henry Koplik, M. D.,
New York.

In my first paper upon pylorus spasm and pylorus stenosis, I made an analysis of those cases in which the spasm of the pylorus with only a relative stenosis played a leading rôle, and those in which a distinct growth of congenital origin existed at the pylorus with symptoms of spasm as an accompanying symptom. Strange as it may seem, we cannot as yet say that all are agreed that such a condition as pure spasm without any anatomical change in the structure of the pylorus exists as a distinct uncomplicated entity. Pfaundler maintained that all the cases with which this paper deals were those of pure spasm. He has since materially modified his views, dividing the cases of pure spasm of the pylorus from true congenital hypertrophy of the tissues of the pylorus. However this may be, I will not enter into any academic discussion of the opinions of other writers which have been considered in my first paper. Only this must be borne in mind, that Ibrahim lately reiterates his doubt as to the existence of a pure pyloric spasm in infancy, without any anatomical changes at the pylorus. Cautley has published cases of pure spasm of the pylorus and I have recently seen post mortem a case occurring in the surgical service of the Mount Sinai Hospital, which in every way seems to have been one of spasm of the pylorus simulating congenital hypertrophy. The case was, briefly, one in which an infant, six weeks of age, had symptoms of congenital hypertrophic stenosis of the pylorus. There had been in addition the symptoms of explosive vomiting, peristalsis, palpable tumor before operation, absolute constipation with no fecal matter in the passages for forty-eight hours. This case at operation (posterior gastroenterostomy) showed a tumor of the pylorus the size of the end phalanx of the index finger. At the post mortem examination it was possible to pass a No. 15 catheter through the lumen of the pylorus though the pylorus was still hard and tumiefied to the same degree as at the operation. I cannot consider this case as one of stenosis of the type described in the literature, where only a filiform probe could be passed through the hypertrophic pylorus.

We have thus cases to my mind of spasm of the pylorus, which during life may or may not give a palpable tumor, and which at operation give a palpable tumor, and post mortem this tumor persists. It is even conceivable that microscopical examination of such a pylorus will show the tissues to be thickened. Whether this thickening is to be interpreted as hypertrophy or the result of contraction of muscular fibre, future investigation will show.

Pylorus spasm with relative stenosis of the lumen of the pylorus is, therefore, a distinct entity. Marked examples of the condition I have published in my first paper. It is not an impossible condition in infancy. We know that the infant stomach is exceedingly sensitive to changes in the composition and reaction of the food. It is rather far fetched to try to compare the conditions in infancy with those met in the adult. Spasm of the pylorus in infancy need not presuppose the existence of an ulcer or growth as we find it in the adult, as some writers insist. We know that vomiting in the infant can be set in motion by the least and most unaccountable circumstance, and that it may become persistent by a continuance of action of conditions such as food composition and reaction, and also constitutional excitability, which do not obtain in the adult. In pylorus spasm with a relative stenotic condition of the lumen of the pylorus, the vomiting may begin soon after birth, or be delayed two or three weeks or more. In some children there is a history of previous well being, the stools even having been normal, when some slight change took place in the feeding. Either an attempt was made to supplement the breast with a bottle feeding, or, as in one of my cases, the mother in pure jest allowed the child to nurse at another woman's breast. The vomiting dated from that time and persisted and increased in severity. The vomiting in cases of spasm of the pylorus is as "explosive" as in cases of hypertrophy, the constipation is marked, the inanition also is progressive. Peristalisis is present to a marked degree, and in the very marked cases, the pylorus can be felt when the stomach is in a condition of contraction as a small body the size of a white bean, or as large as the phalanx of the finger, and in the cases which I will bring forward, as new cases in this paper, could be felt to relax and then harden at the moment of contraction of the pyloric portion of the stomach. When the pylorus was soft it could be felt quite distinctly and when it hardened the pyloric end of the stomach was visible on the abdominal wall in the state of peristalsis, and vomiting occurred.

Thus in these cases there was "explosive" vomiting, stomach peristalsis, and a palpable pylorus. It

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*Read before the December meeting of the County Medical Society of New York.

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is in this latter point the various authors are not in accord as to their conclusions of the conditions present. With some the fact that any pylorus is palpable argues the presence of a thickening or hypertrophy (Ibrahim); with others this structure is simply that of a contracting muscular organ, just as one might feel the biceps more distinctly if it was contracted. I think the pylorus is a contractile organ, and when in a state of diastole it may be soft though palpable, like the rest of the intestine when contracted it may be felt. The fact that it is felt is no argument in favor of any hypertrophy of its structure. I think, therefore, that in cases of spasm of the pylorus or pyloric end of the stomach there may be a relative stenosis, which may either be complete or nearly so, a palpable tumor indicating the contracting pylorus. My classification of all of the cases of this affection is as follows:

1. Pure spasm of the pylorus and the pyloric end of the stomach without any palpable pylorus, with peristalsis and explosive vomiting, loss of weight, and consequent inanition. The constipation present may be only a relative constipation, that is, some fecal matter passes, or there may be several movements, green and fluid in twenty-four hours, or of a brownish color, or the constipation may be absolute and on forced movement of the bowels, little or no fecal matter passes.

2. Pyloric spasm with relative and actual stenosis, with slight or marked thickening or hypertrophy of the tissues of the pylorus. Such cases give vomiting of an explosive type, coming on soon after birth, and continuing for some time with a palpable pylorus, at first, or subsequent to the onset of symptoms. The pylorus can be felt to harden under the finger at the time of greatest peristalsis of the stomach, and to soften after vomiting has occurred. There is constipation, complete at first, which after some duration of the disease mitigates, and fecal particles may appear in the stools. There is marked progressive atrophy and inanition.

3. Congenital hypertrophy of the pylorus so called with stenosis. These cases, which are only relatively more marked in their symptomatology than the previous class, give exactly the same symptoms; there is the same spasm of the pylorus as an accompanying symptom, the pylorus can be felt just as in the previous class, the peristalsis is just the same, and the constipation is the same, only possibly more marked. In fact, clinically it is the same condition, only it may manifest itself in more aggravated forms than in the cases in which the hypertrophy and stenosis are not so marked. I think, therefore, they are practically the same set of cases as in Class 2. When operated the cases in Class 3 may show considerable enlargement and hardening of the pylorus than was evident before the operation. This has given rise to the presumption that they are a distinct entity apart from Class 2. This, I doubt,—I think both these sets of cases merge into each other and are pathologically the same, though clinically one seems a more aggravated condition than the other.

CASES.

CASE I. Congenital hypertrophy of the pylorus with stenosis (hypertrophic stenosis). H., male, six weeks of age. Mother had two healthy children. Weight at birth nine pounds seven ounces. The infant had a convulsion after birth and was at first fed on the bottle, and then placed with a wet nurse. Normal in other respects at birth. Lost one pound the first week after birth, weighing eight pounds 6.5 ounces on the fourteenth day. He still weighed eight pounds 6.5 ounces (stationary weight) at the end of the third week, being still on artificial feeding, and weighing eight pounds eight ounces he was placed with a wet nurse. At the beginning of the second week he began to vomit, vomiting the whole or part of every feeding and more in quantity than he had nursed. There was complete constipation, no feces passing. He did not improve with a wet nurse, and when I saw him in his fifth week he weighed eight pounds. The milk of the wet nurse at this time contained seven per cent. of fat, and was scanty. At six weeks of age he weighed seven pounds seven ounces. He vomited from two to three ounces of every feeding, and had about four large vomiting spells in twenty-four hours, and in twenty-four hours ran down to seven pounds seven ounces in weight and had a most marantic appearance. Examination showed a most marked and gigantic peristalsis, not only at times of vomiting, but in intervals of nursing. The pylorus could be distinctly felt as a hard body the size of the last phalanx of the small finger. He cried as if in pain when vomiting occured, and was constipated to an extreme degree. When enemata were given a dark brownish water returned; there was little or no fecal matter in the returned water. In spite of many changes of wet nurses and the feeding either direct or with pumped milk the child vomited every feeding from one to three ounces, and ran down steadily in weight as follows:

Birth, January 25th	9 lbs.	7 ozs.
Eighth day	8 lbs.	6½ ozs.
Fourteenth day	8 lbs.	12 ozs.
Third week	8 lbs.	8 ozs.
Fifth week	8 lbs.	3 ozs.
Sixth week	7 lbs.	7 ozs.
Eighth week	7 lbs.	......
Ninth week	7 lbs.	4 ozs.
Nine and a half weeks	7 lbs.	......
Tenth week	6 lbs.	14 ozs.
Ten and a half weeks	7 lbs.	......
Eleventh week	7 lbs.	2 ozs.

At this point the vomiting became rather less frequent, and there was an improvement: April 10th, seven pounds four ounces, May 17th, nine pounds four ounces. From this time on there was a steady improvement; that is, on the seventy-fifth day of life the child began to improve.

During all the illness the peristalsis was very marked, and even when improvement began there was no marked diminution of peristalsis and the pylorus was still palpable.

The first yellow fecal movement occurred in the eighth week when he vomited something like six ounces in twenty-four hours, and there was beginning improvement, although the weight was still six pounds fourteen ounces to seven pounds. At this time he nursed eighteen ounces and vomited six ounces, compared to March 19th, when he took twelve ounces of nourishment and vomited five.

In May we find that the vomiting had ceased, the peristalsis was still present, but the pylorus was not noted.

Here is an undoubted case of spasm of the pylorus as evinced by the vomiting, and peristalsis and constipation. The pylorus could be felt, and, therefore, it could be asserted that it was enlarged and thickened; there was distinct stenosis, as shown by the constipation and the inanition. When improvement did set in, it was rapid and unmistakabie. The child developed beautifully, and was normal in every way. Some would place this case in the group of undoubted cases of pyloric stenosis with hypertrophy, whereas others might insist that inasmuch as recovery took place, it was one of spasm of the pylorus with slight hypertrophy; but it is the counterpart of a case published by Ibrahim, in which he felt a small tumor early in the case, but which ended fatally later of intercurrent disease. There was a hypertrophic condition of the pylorus, though it had not given rise to any symptoms for months. In fact, in my case the consultants among the foremost pediatrists were agreed as to the case being one of congenital hypertrophic stenosis of the pylorus accompanied by spasm, with a fair prospect of reaching the operative table.

The following case I consider one of pure spasm of the pylorus and pyloric end of the stomach with a possible thickening of the tissues about the valve.

CASE II. L. H., male, aged one month, January 20th; first child. Mother had no miscarriages, and the parental history was negative. The labor was normal. Weight at birth problematic, but was a well developed baby. The baby was put on the mother's breast and did well until eight days after birth when he began to vomit. He first vomited after each nursing to some extent, and then began to vomit all of each nursing. The vomiting was profuse and large in quantity. Under treatment the vomiting improved, but then there was a relapse when the baby became quite ill. The bowel movements after birth were yellow, then became green and fluid; the child was constipated finally and only moved on enema. At the first visit baby weighed eight pounds six ounces, there were some yellow feces in the rectum. The baby cried a good deal. The mother's milk contained three per cent. of fat. The pylorus could be felt, as will be described, and there was marked peristalsis. Weight, January 27th, eight pounds three ounces. The baby had movements which contained very little fecal matter, yellow or greenish. Nursed at the breast every two hours and vomited large amounts twice daily. Two and one half hours after nursing the baby had half an ounce of milk in the stomach. The pylorus could be felt as a hard body the size of a white bean, which hardened and softened under the finger when the stomach was full,—it could be felt when the stomach was empty.

February 15th, weight seven pounds twelve ounces. The abdomen showed marked peristalsis, and the pylorus could be felt as above described. Vomited on the average of twice daily. Had two yellow movements daily, no peristalsis when the stomach was empty, looked thin but bright.

February 24th, weight seven pounds five ounces. Looked bright, vomited two or three times a day after nursing at the breast 2.5 ounces, peristalsis seen and the pylorus was felt.

March 10th, weight seven pounds 3.5 ounces. Peristalsis still present and the pylorus felt; had a bronchitis. Still vomited; now had good movements from the bowel.

March 17th, baby improving, no vomiting.

April 7th, still vomited once or twice in twenty-four hours.

May 4th, ten pounds three ounces.

June 16th, thirteen pounds five ounces. Looked well; there was no evident peristalsis, and the pylorus could not be felt.

From this time on the improvement was rapid, and the patient at eleven months weighed eighteen pounds five ounces; at sixteen months 23.5 pounds, and was on a full diet of milk, cereals, egg, beef juice.

This case is evidently one of spasm of the pylorus, brought about by the mother allowing another woman, her sister, to nurse the baby only once,—the illness dated from this time on. The peristalsis was very marked and the pyloric valve could be distinctly felt to harden and soften under the fingers. There were movements at first indicating starvation (green) and later fecal matter appeared. The constipation was marked, and the baby went into a state of inanition from which it gradually recovered. An operation was advised before the baby reached me, but was rejected by the parents.

The following case is certainly one of spasm of the pylorus with hypertrophy of the pylorus. Under observation the baby ran down to a minimum weight, and was in a state of inanition when operation was peremptorily advised, but the baby recovered without surgical interference.

CASE III. J. M., aged one month, November 15th. First baby. Father and mother well. It weighed five pounds (?) at birth, nursed at the breast until two days before the visit to me. He began to vomit from birth, and two days before I saw him, the vomiting caused the mother to take him from the breast and put him on the bottle and then return to the breast. Before he began to vomit badly, that is, two days before his visit to me, his movements were yellow.

November 15th, weight six pounds eight ounces. The mother has abundant milk with seven per cent fat. There was distinct peristalsis but no pyloric tumor; after nursing in the office, vomited four ounces.

November 18th, six pounds two ounces, losing ground.

November 21st, six pounds, vomited after every feeding, peristalsis and obstinate constipation.

December 1st, five pounds twelve ounces, still vomiting.

December 4th, five pounds twelve ounces.

December 10th, five pounds eight ounces. Infant looked well. Vomited only twice in last twenty-four hours. Peristalsis still apparent, though not so marked; had two fecal movements in last twenty-four hours.

December 17th, five pounds five ounces.

December 25th, five pounds two ounces. Vomiting less, but looked about the same; had two greenish movements in twenty-four hours.

December 31st, five pounds four ounces. Retained seven feedings, rejected three. The movement by enema seemed to contain some milk curds. No peristalsis when the stomach was empty, but evident after nursing.

January 7th, weight five pounds 5.25 ounces. Peristalsis still present, especially after nursing.

January 19th, five pounds 4.25 ounces. Peristalsis.

January 25th, five pounds six ounces; two or three greenish movements daily. After nursing not only was peristalsis evident, but the pylorus could be felt, about the size of a small hazel nut, to harden and soften, as if the valve opened.

February 3rd, five pounds 8.75 ounces; aged three months and twenty days, peristalsis still marked, but valve could not be felt.

February 10th, five pounds 11.5 ounces. Improved in looks; had two or three yellow movements daily. Peristalsis evident, not so marked, but pylorus could be distinctly felt to soften and harden,—not as large as formerly.

February 24th, Pylorus still could be felt,—not so large and hard. Peristalsis still evident. Averaged three large vomiting spells a day.

March 26th, six pounds 6.5 ounces, put in hospital and then discharged after five weeks, six pounds ten ounces.

April 21st, six pounds twelve ounces, six months old. Had mild form of peristalsis; could feel the soft pylorus, tubelike, not hard.

June 10th, eight months old, weight eight pounds. Vomited twice in twenty-four hours. Peristalsis marked, and the pylorus could be felt to soften and harden under the finger.

July 24th, pylorus still palpable—softened and hardened, in full state of stomach; size of phalanx of middle finger, hard as bean in hardened state. Peristalsis still marked in full state of the stomach, though the patient was improving. Had contracted pertussis.

August 17th, weight eleven pounds 5.5 ounces, ten months old, vomited once or twice in twenty-four hours, but no peristalsis, no pylorus palpable.

November 11th, fifteen months old, weight twenty pounds.

July 16th, twenty-one months old, weight 23.5 pounds.

This case is one of undoubted spasm of the pylorus, with relative stenosis and a palpable pyloric tumor. The vomiting was "explosive," the stools those of inanition. Even long into the period of improvement the peristalsis persisted and the pylorus was palpable. Only after the illness became critical could the pylorus be felt, and then it was felt in a state of spasm and relaxation. When the patient reached a state of extreme inanition it was seen by a noted pediatrist. Operation was advised urgently, but rejected. After the patient had suffered three months, improvement, at first gradual, set in, and then was progressive.

In this case the pyloric tumor was felt fully two months and a half after the first visit, though it was sought for before this, and this lends some color to the view that a spasm of long duration may give rise to a tumor in the form of a hard contracted pylorus apparently thickened. It is impossible to furnish any proof of these things, but the fact remains that the pylorus in those cases which end in recovery, as this one did, feel just the same as those cases which come to operation. This case resembles very closely the case operated in reported in my first paper, and also Case XV in my first paper, with the reservation that the case now being discussed ran down to a minimal weight. Case XV was admitted by a well known surgeon to be an operative case, but the parents rejected the operation on account of the great risk involved.

Case IV. F. H., male, five weeks of age. First baby. Parental history negative. Birth normal, breast fed from birth. The baby began to vomit two weeks after birth. At first vomited six or seven times daily as much as he nursed. The vomited matter came out with a gush. The baby vomited immediately after nursing, and the day before vomited twice as much as it nursed. Bowels, green, hard, dry, and constipated.

June 30th, weight seven pounds. The general condition was good, child got blue at times. Examination of all organs negative except on the abdomen, the stomach was seen in marked peristalsis. The pylorus could be felt as large as a white bean relax and harden at the moment of greatest peristalsis and vomiting. A movement obtained, dark brown, seemed fecal.

July 14th, six pounds fourteen ounces. There was peristalsis and the pylorus could be felt to harden and soften under the finger, under the liver as large as a large bean. The hardening and softening of the pylorus was quite distinct in this case. When the pylorus contracted the peristalsis became quite marked. Baby looked well. Movement examined contained feces.

July 26th. In interval the attacks of vomiting varied from one to three large vomiting spells a day. In this visit the note was made that the pylorus could be felt as large as the phalanx of the ring finger. At this time the baby was passing yellow fecal movements, about a thimbleful a day.

August 2nd, baby improving; vomited once or twice a day.

August 11th, six pounds 4.5 ounces. There was a large vomiting spell twice in twenty-four hours. Skin dark, dirty color. Was an alternate breast and bottle feeding. The pylorus still distinctly felt, and peristalsis quite marked.

Case V.—(This case is similar to those just recorded. The case escaped from observation.) M. I., male, aged ten weeks. The third child, breast fed. Parental history negative. Vomiting for past five weeks. Had vomited constantly and vomited all and more at times than it nursed. Vomited also mucus. Stools green fluid; at first yellow.

Weight seven pounds 1.5 ounce, was emaciated, though not in bad condition. Peristalsis marked; the pylorus could be felt as a tumor which hardened and softened. Contents of stomach recovered with much mucus Mother's milk contained 2.5 per cent. of fat. This baby did badly, and in one week lost six ounces. It was the case of another physician and was not seen after this.

This and the preceding case are exactly similar, and are cases of spasm of the pylorus with relative stenosis and palpable pyloric tumor.

I will now simply record a number of cases of pyloric spasm in which at some time there was in addition to the peristalsis a palpable pyloric tumor.

Case VI. J. M., male, eight weeks old; third child; normal delivery, large child at birth, said to weigh ten pounds (?). When two weeks old began to vomit; at this time the baby vomited after each nursing and the movements seemed normal. As the vomiting persisted the stools became green and finally constipated. The baby was kept on the breast; the mother tried no foods, but kept the baby on the breast.

Weight seven pounds ten ounces. Peristalsis present. The pylorus could be distinctly felt to soften and harden under the finger. This baby lost in weight 5.5 ounces in one week, and then passed from observation.

Case VII (Patient of Dr. G.). J. D., male, six weeks of age, first child; forceps delivery, weight nine pounds at birth, parental history negative. On the breast. Was well until five weeks of age when, after having two or three regular movements a day, he began to vomit in an explosive form. All that was nursed was vomited. Constipation set in; no movement except with enema, then hard brown pieces were passed. There was a steady loss in weight.

Weight eight pounds ten ounces. Mother's milk 2.5 per cent. fat. There was very marked peristalsis. Pylorus could be indistinctly felt, softening and contracting. There was typical pyloric explosive vomiting in the office; pain and crying on peristalsis.

Case VIII. Female, eight weeks old, first child. Parental history negative; breast fed. This baby began to vomit soon after birth, but still vomited large amounts four times daily. At first movements were loose, now had constipation. Had laryngismus.

Weight four pounds ten ounces. Condition was very poor, atrophic.

October 18th, vomited four times a day profusely. Constipated. There was a distinct peristalsis and the pylorus could be palpated. The vomiting was characteristically pyloric.

December 15th, seen by me four times in addition to this visit. It remained atrophic and was finally put with a good wet nurse. The vomiting continued unabated, though the baby had yellow movements. Even at this late day, there was marked peristalsis. The baby weighed five pounds eleven ounces, and from this time it improved so that at seven months it weighed fifteen pounds two ounces.

This case was an extremely marked one of pyloric spasm and relative stenosis, and made, after many vicissitudes and changes of wet nurses a brilliant recovery.

Case IX. This case was abandoned and the mother was so ignorant as to be unable to give definite data as to the child's condition. I. A., male, aged three months, weight seven pounds, in poor atrophic condition. Sent to the hospital. While in the hospital classical symptoms of pyloric spasm and relative stenosis developed of a milder type. There was explosive vomiting when the baby fed over 2.5 ounces, marked peristalsis, and a pyloric tumor which could be felt to harden and soften under the finger tips. This baby had two or three greenish movements a day. It improved in the hospital and with a wet nurse, and finally was discharged as well, weighing eight pounds four ounces, an increase of two pounds in two months.

To contrast with the foregoing, there are extremely mild cases of what appear to be to be cases of simple spasm, in which the peristalsis is marked, but there is no palpable pylorus, and finally, still milder cases of spasm of the pyloric end of the stomach in which neither peristalsis nor pylorus can always be satisfactorily established. These latter cases are those which are the border line cases of infants suffering from flatulent or habitual vomiting, and which will not be considered lest the main points of this paper be lost in their discussion.

The following case would illustrate what would be diagnosticated as a case of pure spasm of the pylorus without any hypertrophy of the tissues of the valve.

Case X. Female, ten weeks old, second child, normal delivery, weighed eight pounds at birth, breast fed. When five weeks old the baby began to vomit and vomited after each nursing, vomiting badly on an average of five times daily. The baby was constipated, and was fed in addition to the breast with one bottle daily when four weeks old. The patient retained the bottle better than the breast. The baby lost steadily. Weight at first visit ten pounds four ounces, good general condition; physical examination of the various organs negative. The mother had good breasts, the milk containing 3.3 per cent. of fat.

February 6th, there was peristalsis visible on the abdomen, but no pylorus could be felt.

February 13th, nine pounds thirteen ounces in weight. Vomiting, but movements were larger than they had been.

February 20th, ten pounds.

March 6th, nine pounds thirteen ounces. Still vomiting. Three months old. Took off the breast.

April 2nd, ten and a half pounds. Stopped vomiting.

May 17th, thirteen pounds eleven ounces. Still vomited, but had three movements a day.

The foregoing, to my mind, is a case of pure spasm of the pylorus and pyloric end of the stomach of mild form, and one which would not have been considered by me for either operation or any treatment other than careful feeding. The mother's breast milk in this case seemed to act as an incentive to spasm and vomiting, and the baby throve as soon as it was taken from the breast, but still continued to vomit on the bottle.

PATHOGENY.

The pathogeny of this affection has been ably discussed by Thomson, Ibrahim, and Pfaundler. I think this affection seems to be a distinctly neurotic one and in some cases actually hereditary. I know two of my cases occurred in sisters, both of whose husbands (brothers) were neurotic and confirmed dyspeptics. One of these sisters had two babies that suffered from pyloric spasm and stenosis and all three children recovered. One case I published in my first paper; the baby of the other sister I published in this paper as Case III. One infant was at the breast from birth, and the vomiting which set in in the fifth week seemed to have been precipitated by the exhibition of barley gruel. The other sister's infant was artificially fed from the start, so the mode of feeding *per se* seems to have little to do with starting the symptoms.

I have also noted in some of these infants an increased excitability to anodal irritation. There is a definite period over which the symptoms are the most aggravated, and that occurs, as in the first case in this paper, in the second month of life. The symptoms begin to subside after the third month if the baby is tided over this period. This is striking and should aid those whose anxiety might precipitate an operation. The condition of spasm seems to relax after the third month of life. The breast milk of some mothers is a direct inciting element in the case, and in one case which had improved after the mother's breast was discontinued (Case II), was aggravated upon the mother surreptitiously giving the breast milk to her infant.

Peristalsis continues long after vomiting has ceased to be a symptom, and the pylorus can also be felt to soften and harden under the finger long after the infant has gained the mastery over its condition.

The fact that the pylorus can be felt to harden and soften is no proof that the case is one of pure spasm without hypertrophy; on the contrary, operation may reveal such a pylous much hypertrophied, and, vice versa, a much hypertrophied pylorus may not be felt before operation. The fact that the pylorus can be felt to harden is presumptive evidence of spasm superadded to the other conditions in the case.

This would seem the place to discuss the question as to whether hypertrophy and spasm can be separated in cases of Class II and III. I have never seen a case in which apparent hypertrophy with stenosis of the pyloric lumen existed, as shown by palpable tumor, in which there was no spasm. The spasm affects, not only the pyloric valve, but the whole adjacent part of the stomach. This is distinctly proved by the fact that after operation in these cases the vomiting may persist for days, in spite of the fact that a new opening has been made in the wall of the stomach, and some food passes through as evinced by the fecal movements. Thus in these cases the pyloric valve has been sidetracked, and still vomiting occurs and involves, not only the pyloric end of the stomach, but may extend to the cardiac portion of the stomach.

PROGNOSIS.

Recovery depends on the resistance of the patient, the skill with which the case is managed, and the power of the sufferers to overcome the baneful effects of inanition. The question of prognosis is also bound up, not only with the course of treatment, but with the amount of spasm and stenosis present. Some infants with marked spasm of the pylorus do not lose much weight, but remain stationary and there are fecal movements; these cases are exceedingly mild. Cases of pure spasm need not be seriously treated here. Speaking only of complete stenosis of the pylorus with slight or marked hypertrophy of the tissues of the pylorus, some children will bear this condition well; they run down quite slowly in weight after the first great drop in weight, and seem in good strength, though marantic. Other infants, with symptoms and conditions apparently similar, run down rapidly in weight, pass into an alarming state of inanition in a short time, and threaten to or even do pass away. It is difficult, not only to foretell the outcome of such cases, but also for the physician to stand by and continue on purely medical lines in his treatment. In spite of this, though I have seen infants die, most of the seriously ill infants came through under medical management, so much so that I have gradually come to regard recovery as not incompatible with a marked congenital hypertrophy and stenosis, just as others have considered this to be impossible.

TREATMENT.

The treatment of spasm of the pylorus with relative stenosis; that is, the cases which I have placed in Class I, must remain a purely medical one. Vomiting, which may be violent, peristalsis, loss of or stationary weight, are no indication for surgical interference, however alarming the symptoms may appear at times. I think such cases should never be submitted to the surgeon. It is only the cases in Class II and III, those in which there is not only spasm and complete or relative stenosis, in which there is a palpable tumor, peristalsis, vomiting, and absolute constipation, that a question may fairly arise as to the surgical end of the treatment. I think a study of all of my cases now numbering twenty-five published, and some recent cases not published, that congenital pyloric stenosis with spasm and hypertrophy of the tissues of the pylorus, can in the vast majority of cases be brought through without surgical interference. I think the cases which must come under the knife must be exceedingly rare. I know large numbers of successfully operated cases have been published, but they are open to the following criticism: They have been for the most part infants operated upon early and in tolerably strong condition; many of the patients were little below the weight of infants who simply do not thrive on their food and have no symptoms of pyloric spasm or hypertrophy. The fatal cases are not always published. Some surgeons publish sets of cases and never follow up with additional cases operated in. The mortality of these cases with some operators is fully fifty per cent. Many cases published by surgeons, it would seem, though this I admit is difficult to judge correctly, might have come through without operation; and finally, it appears to me a very difficult matter to submit these cases early in the symptoms to the knife as the surgeon insists. I, therefore, think that inasmuch as fully ninety per cent. of my *apparently* hopeless cases have come through without operation, the risk involved in the operative interference is so great at present as not to encourage us to place any of these cases in the hands of the surgeon. There might arise cases in which from the first moment of life, a large palpable tumor was felt at the pylorus, the constipation being complete and absolute, and the loss of weight critical; that is, a loss of three or four pounds in a few days, with threatening inanition, would force one to propose operation, but such cases are exceedingly rare, and must not cloud my main contention that I have practically returned to the first views of Heubner and Pfaundler, and do not submit the vast majority of the cases of hypertrophic stenosis of the pylorus to operation. I regard the prognosis as more favorable under a nonsurgical treatment.

THE MEDICAL MANAGEMENT.

I will not go into any old data as to the medical management of these cases, but will only take up some new ideas which have lately been placed before us for consideration. Einhorn has proposed to pass through the stenotic pylorus a bucket and on the leading string of this bucket a dilator. This treatment of dilating the stenosis is quite attractive if it could be accomplished in the extreme cases. This is absolutely impossible in some cases, as has been argued; a filiform probe cannot be passed, much less a small bucket or guide. Any pylorus which will admit the passage of a bucket guide and dilator will end favorably without this procedure. A study of the successful case published as treated in this manner must convice one that this case or other cases do not come under the class of case discussed in this paper.

The second procedure proposed has been the passage of a duodenal catheter, and either leaving it in the lumen of the pylorus for a length of time, or feeding the child through it while in the duodenum (Hess). I think this procedure of limited value also. In one of my cases of persistent vomiting, in which there was a mild form of spasm of the pylorus, the duodenal catheter relieved apparently the vomiting for twenty-four hours, but it returned in increased intensity, and a good wet nurse replaced the catheter most successfully.

In marked hypertrophy and stenosis with spasm, I have seen the catheter fail to pass. We are thus reduced to the former methods, which include exceedingly patient study of the feeding, lavage at times, opium, and what is of greatest moment, persistence and attention to detail.

I will close with a reference to a direction which the feeding may take in the future. In a very suggestive series of studies by Cowie and Lyon on the acid control of the pylorus in infants, the mechanism of the opening and closure of the pylorus, as explained by Pavloff, in the adult, has been carefully worked out in infants. It appears to me that in feeding infants suffering with pyloric spasm and hypertrophic stenosis, more attention should in the future be given to the relative acidity of the stomach content than has been done in the past. In this way a relief of symptoms might be more readily attained.

30 East Sixty-second Street.

AMEBIASIS AND THE RESULTS OF TESTS FOR THE DETERMINATION OF OCCULT BLOOD IN THE FECES.*

By Randle C. Rosenberger, M. D.,
Philadelphia,
Professor of Hygiene and Bacteriology, Jefferson Medical College. Adjunct Professor of Hygiene and Preventive Medicine. Woman's Medical College;

and Truman C. Terrell, M. D.,
Philadelphia,
Resident Pathologist, Philadelphia General Hospital.

In a previous paper (New York Medical Journal, March 23, 1912) one of us (R. C. R.) reported the findings in several hundred cases of ameba in the stools of apparently healthy individuals, and beside this, in a certain number of cases the guaiac test for occult blood was positive.

No further study of the cases at that time was made, but during the past several months we have had the opportunity, through the courtesy of Dr. J. Allen Jackson, of the Philadelphia Hospital for the Insane, of examining over 200 other cases of different forms of insanity and here record the results, both as to the presence of ameba and tests for occult blood.

The stools were obtained, as a rule, after calomel and magnesium sulphate had been given, as stools so obtained were the most suitable for examination. A number of specimens were semisolid or solid, yet were in most cases fit for examination. The time the patients were in the institution varied from one day to twenty-seven years, and the diseases included senile dementia, paresis, imbecility, dementia præcox, puerperal insanity, acute and chronic manias.

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*Read before the Pathological Society of Philadelphia, October 24, 1912.

There were 150 examinations made of 137 males and 146 examinations on 141 females. In the males the number of instances of the ameba was 112. Cercomonas occurred in two cases and cercomonas with ameba in two. In the females, eighty-one cases harbored ameba; cercomonas occurred forty-four times and cercomonas with ameba thirty-one times. Among the males, thirty-six were in the institution under one year and were positive for ameba, while in eight who were inmates less than one year, no ameba was found. In sixty-six who were in the institution over one year, ameba was present, and in twelve who were inmates more than one year no parasites were found. Among females, twenty-nine had ameba who were in the institution under one year, and twenty-four were negative on being incarcerated less than one year. Ameba was present in fifty-two inmates over one year and absent in thirty-one over one year.

The method of examination was the same as in the other studies reported, simply taking a drop of the material, placing under a microscope, and examining under ordinary conditions, without a warm stage. The organism encountered corresponds to *Amœba coli*, as in no case examined was there a history of diarrhea or dysentery; the majority, if not all the patients, being subject to chronic constipation. While the parasites were found motile in quite a number of cases, yet encysted forms were most common. Apparently the parasites seemed to be more abundant during the warmer months than in the early spring; whether this really was the case or not is a matter of conjecture. In no case except one, was there a gross evidence in the stool of blood, and only in this case was there a suggestion of red cells being engulfed by ameba. A few stained preparations showed the peculiar picture of *Amœba coli*.

In a number of cases from other wards of the hospital sixty-nine examinations were made. These specimens were not obtained by a special purge. Forty-one gave no evidence of intestinal parasites; twelve showed ameba; seven showed cercomonas, and seven were not examined for parasites on account of the unsuitable condition of the specimen. In fifty-two other examinations of thirty patients, nineteen contained ameba and twenty-five showed no parasites; seven showed cercomonas. It will be seen that cercomonas was more prevalent in the females than in the males from the insane department, and here again it was noticed quite decidedly that these parasites were more common in the warm months than during the early spring.

These studies were interesting in showing the great prevalence of ameba, especially where no history of diarrhea or dysentery or abscess of the liver was obtainable, and also as to the occurrence and persistence of the reactions for occult blood. Three tests for occult blood were used in most cases; these were the turpentine and guaiac test, benzidine, and a modified Meyer's reagent. This latter is a solution of phenolphthalein in fifteen to 17.5 per cent. potassium hydrate which is boiled in distilled water with chemically pure powdered zinc (Merck) until colorless.[1] The other tests are well known and need no description here. Weber's modification of Van Deen's test was also tried and was far superior to the common guaiac test and more reliable than benzidine.

Among the females, of 141 cases, sixty gave a positive reaction to Meyer's reagent; forty-seven had positive reaction of turpentine and guaiac, and fifty gave a positive reaction with benzidine. In this group of 141, only two cases of hemorrhoids were obtainable and in this group of the whole three tests thirty-seven per cent. were positive. Individually, Meyer's reagent was positive in 42.5 per cent., turpentine and guaiac in 33.3 per cent., benzidine 35.4 per cent. In the males, of 122 tests, seventy-seven were positive to Meyer's reagent, or 66.2 per cent., while of 137 tested with turpentine and guaiac reagent sixty-two gave positive reaction, or 45.2 per cent. Grouping both reactions 53.7 per cent. gave positive evidence of the tests for occult blood. In this group of cases three instances of hemorrhoids occurred. In the sixty-nine cases examined in ordinary routine examinations, forty-six were negative to the tests for occult blood; ten cases gave a positive reaction with animal parasites, and thirteen gave a positive reaction for blood with no parasites.

Reverting again to the insane cases; in the females, there were forty-one cases negative for occult blood but showed ameba; forty cases were positive to occult blood and ameba, and twenty-five were positive for blood and negative for ameba. Among the males, forty-six cases were negative for occult blood but showed ameba; sixty-six were positive for occult blood and ameba; eleven were negative to ameba and occult blood, and fourteen were positive for blood and negative for ameba.

A study of the hemoglobin was taken in over 100 cases by Dare's hemoglobinometer and the readings ran from forty-three to eighty-five per cent., while with the Tallquist scale, the readings were from fifty to ninety per cent. Of twenty cases studied as to the constancy of low hemoglobin and ameba, the presence of ameba and the occurrence of occult blood, fifteen gave positive findings for ameba, fifty per cent. positive for the tests for occult blood, and the hemoglobin estimate from forty-three to sixty-eight per cent. The red cells in this series varied from 3,050,000 to 5,500,000. In suspected cases, as for example, carcinoma or ulcers of the intestinal tract, thirty-three gave positive reactions with all three tests. Occasionally only two tests were positive and very rarely one test alone was positive. As to the positive findings, it should be recommended that no one test should be relied upon; at least two or three tests should be performed. It occasionally happens that the diet of the patients may play an important part in the end result. For example, benzidine and even guaiac have given the reaction where rice, watermelon, and potatoes have been eaten and where iron has been taken internally; whereas with Meyer's reagent no such reaction occurred. The following articles of food and chemicals were tested with the three reagents and where positive results were obtained with benzidine and guaiac or one of the two, no reaction occurred with Meyer's reagent. Grapes (both skin and pulp), watermelon, tomatoes, raisins, rice, milk, tea, coffee, prunes, potatoes, cream, starch, tincture of iodine, bismuth, potassium iodide, salts of silver and lead, aspirin, sulphonal, sodium salicylate, potassium permanganate, tincture of chloride of iron, and solutions of indol. Prunes, rice, raisins, and watermelon were tested, naturally and when artificially digested. As to an excessive meat diet, this cannot be said to occur in the inmates of the institution. It might be mentioned, in passing, that nearly all stools showed the presence of a few partially digested muscle fibres, but none showed the gross appearance of blood.

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[1] Equal parts of the reagent and fluid feces are taken, shaken thoroughly, and a small amount of hydrogen peroxide is added. If positive a red color quickly appears, which may fade after a time.

Where the reaction is positive we believe that there has been or is a loss of blood from some portion of the respiratory or intestinal tract. It appears reasonable to suppose that in these insanities, autointoxication exists and in this way may bring about a lowered blood pressure or a lessened tonicity of the bloodvessels, causing these positive and constant reactions for occult blood. This view of autointoxication is, we believe, rather strengthened by the general prevalence of constipation among this class of patients. That there is an anemic condition prevailing is fully shown by the hemoglobin and the red blood cell count. It may appear to some that Meyer's reagent is oversensitive in its results, but the tests with other substances that gave a positive reaction with other reagents showed that this reagent only reacted to blood. (Additional experimentation with Meyer's reagent finally gave us two substances giving a reaction similar to that for occult blood—viz., sulphate of copper and essence of pepsin.)

There were no cases of epistaxis, no cases of cancer or ulcer, and no gross evidence of adenoids or an ulcerated condition of the gums. It appears to us that the test or tests for occult blood might be additionally interesting in cases of secondary anemias, apart from cancer or tuberculosis.

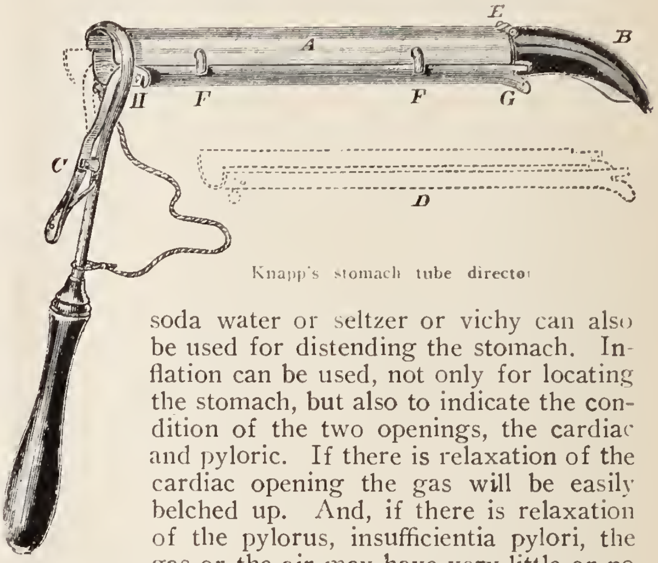
2330 North Thirteenth Street.

THE NEWER TEACHINGS OF THE DISEASES OF THE ALIMENTARY CANAL.*

By Mark I. Knapp, M. D., LL. B., LL. M.,
New York.

IV. INFLATION.

This is a very useful method to locate the stomach. There are two ways of inflating the stomach, either with air or with carbon dioxide. For the former a stomach tube is connected with a double rubber bulb. The stomach tube is then introduced and the ordinary air is pumped in until the stomach stands out prominently. This method is the best and should always be insisted on. But sometimes the patient objects to the stomach tube. In such case we inflate the stomach with carbon dioxide, generated by the coming together, in the stomach, of sodium bicarbonate and an acid. Usually, the patient is given to drink two solutions, one of tartaric acid and the other of bicarbonate of sodium. Half a teaspoonful of each, bicarbonate of sodium and of tartaric acid, are dissolved separately in separate glasses, using about half a glassful of water to each glass. The patient drinks first one and immediately afterward the other glass. By the interaction in the stomach of the two chemicals, carbon dioxide is evolved which distends the stomach. If both gastric orifices are in a normal condition the gas distends the stomach, which then stands out prominently and can therefore be seen and felt and palpated and percussed. Ordinary soda water or seltzer or vichy can also be used for distending the stomach. Inflation can be used, not only for locating the stomach, but also to indicate the condition of the two openings, the cardiac and pyloric. If there is relaxation of the cardiac opening the gas will be easily belched up. And, if there is relaxation of the pylorus, insufficientia pylori, the gas or the air may have very little or no effect at all and the stomach cannot be distended. Very frequently we find a condition where there is pyloric insufficiency and a stenotic condition of the duodenum. In this case one may be led to believe that there is a gastrectasy, that the stomach extends a good deal beyond the median line. The skilful diagnostician will rarely be misled. Besides, the test meal examination will show the presence of the insufficiency of the pylorus.



Knapp's stomach tube directo

One of the easiest methods to locate the stomach is the cold water test, which I described in the *Medical News* for June 10, 1905. It consists in having the patient drink one or two glasses of ice water. Instead of plain water any other cold drink, or ice cream may be used. This method works best on an empty stomach. After the patient has drunk the water we wait for about four or five minutes and then we look for the cold area on the abdomen. The cold area locates the stomach. In applying this test care should be taken that the patient's abdomen be warm before he is given the cold draught, and therefore his abdomen should not be bared, or, if bared before, it must again be covered, and we must wait until the abdomen warms up again. If we examine too soon the cold may not yet have penetrated to the surface, and, if we wait too long, then the cold water will have been gradually warmed up in the stomach and the test will fail. I will cite here an interesting incident. In demonstrating this test to my class I was surprised to find the cold area on the right side below the umbilical line, and accordingly I concluded the stomach was there situated. The subsequent x ray examination showed a dislocation of the stomach to the right side. How easily can one demonstrate a gastroptosis by this rather agreeable method; it is the method which is the most easily accessible to every practitioner.

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*See also previous articles by Dr. M. I. Knapp, which appeared in the Journal of July 27, August 17, September 21, and December 7, 1912.

Gastrodiaphany is rather a toy without any special merit; it is cumbersome and expensive, but is an excellent means to impose upon the patient. Some believe that a little hocus pocus is not inappropriate. It was discovered or invented by a scientific Frenchman, Milliot, in 1867, and caught the fancy of Einhorn, in 1889, since which time the poor Frenchman has not been permitted to get whatever credit he deserves. At best the gastrodiaphane can show the location of the stomach, provided it has been introduced properly, and it may also show a tumor, if the tumor is situated between the light and the observer. It cannot show any pathological condition which exists behind the lamp. The gastrodiaphane is essentially a small electric light carried into the stomach at the end of a stomach tube. The stomach must be filled with water before the light is turned on, and the more water is admitted into the stomach, the plainer is the picture. The room must be darkened. If it were possible to use the gastrodiaphane the first time the patient comes to us for a diagnosis, there might still be some excuse for transillumination of the stomach. But this cannot be done. The patient's stomach must first be used to instrumentation, which requires many visits of the patient to the physician's house; it means, that the patient's stomach must have become used to lavage before the gastrodiaphane can be employed. Where is the skill of the physician who by this time has not yet been able to diagnosticate a tumor of the anterior wall of the stomach without the gastrodiaphane? The methods mentioned before are much easier and far better for the purposes for which the gastrodiaphane has been introduced. Milliot used it on dogs, and there it best belongs.

Other ingenious methods, as sound palpation, intragastric whistle, etc., have been devised, but they are scarcely used.

Splashing sound. This means is also used for locating the stomach. This would be an excellent method, as it requires the introduction of neither instruments, nor water, nor any other object. But the trouble is that the splashing sound may come even from the very region of the stomach without it being produced in the stomach. I have recently (*Medical Record,* February 10, 1912) reported such a case, and since that time I have seen the same again. Yet we find that Einhorn reports gastroptoses on the mere strength of the splashing sound. In view of the fact, that the splashing sound can be obtained, under certain conditions, also from coils of the intestine and not at all from the stomach, one can easily understand, how it was possible for Einhorn to cure many cases of gastroptosis which he diagnosticated by the splashing sound. Apparently, Einhorn is laboring under erroneous impressions, and what he diagnosticates by splashing sound as gastroptosis, never is gastroptosis; gastroptosis cannot be cured by either medicines or even by Einhorn's duodenal alimentation. One can easily cure an appendicitis, or cancer, which never existed; so can one also cure a gastroptosis which never existed. We will speak of this later.

I have now observed several cases where the splashing sound was in the very region of the stomach, and further examination proved that the splashing sound came from the jejunum, lying behind the stomach. The splashing sound is elicited by the presence in a hollow viscus, or in a part of a hollow viscus, of a mixture of gas and fluid. Striking the abdomen sharply with the end of our fingers gives that succussion sound. To make sure that the splashing sound comes from the stomach, we must attempt to aspirate the stomach. If we find that no fluid can be aspirated, then the splashing sound was not produced in the stomach. Again, if we have to introduce the tube, in order to verify that the succussion sound came from the stomach, why can we not, with the tube already in the stomach, inflate the stomach and be sure of our diagnosis? No one must ever make a diagnosis merely by the splashing sound without exposing himself to well merited contempt and ridicule. The splashing sound may, perhaps, be used along with other methods; but one using this method alone exposes himself to the risk of being charged with intentional insincerity.

Percussion. I will mention first the percussion of the esophagus over the spinous processes of the vertebral column. The height of the diaphragm also can in this way be ascertained. Of value is the esophageal percussion when we are dealing with a tumor of the esophagus, or with a constriction. Here also the lighter the percussion, the better the result; in strong percussion, slight pathological changes will escape discovery. By the very light percussion even slight thickenings or adhesions can be diagnosticated. Percussion of the stomach has for its purpose to ascertain its dimension and the quality of its contents. The results obtained from percussing the empty stomach will differ from the results obtained by percussing over a stomach having contents. Percussion ought to be practised with the patient in the recumbent, and in the standing position, and the results will vary accordingly. If there is any chyme, this will change its level with the various positions of the stomach, and for that reason, percussion ought to be practised in more than one position of the patient. Percussion of the empty stomach may or may not give the desired information concerning the stomach itself. Percussion of the chyme filled stomach gives different notes of resonance, varying with the position of the patient. If the patient is in an easy, recumbent position, with the knees drawn up, the stomach being only partly filled, percussion of the anterior portion of the organ will give tympanitic resonance, while on the left side of the abdomen, corresponding to the fundus ventriculi, we elicit a dull note. This phenomenon is simply due to gravity, the chyme gravitating down to the lowest level of the fundus. If now the patient be put on his right side, this side will be dull and the fundal portion tympanitic.

Palpation. Next to inspection, this is the most difficult and the most important of all the physical methods of examination. Experience and training will make all perfect. The personal equation may, sometimes have some influence. Every one may become a genius in palpation if he tries it and perseveres in it. Most extreme gentleness must be learned, and the patients must not be shocked by the cold hands of the physician.

The usual position of the patient is the recumbent one. However, occasion may demand that the patient be turned either on his left side or on his right. I have recently (New York Medical Journal, November 25, 1911) described the inclined posture, the patient's position being head down, the body inclined about fifteen degrees. The patient should breathe normally. It is best not to suggest anything to the patient. Do not tell him to breathe normally or fast; say nothing to him, and the patient will continue to breathe in his usual, normal way. With the patient in the proper position, our attention must be directed to ourselves. Our hands must never be cold; cold hands applied to the bare abdomen of the patient will cause contraction of the abdominal muscles, which will very much interfere with palpation, perhaps make it impossible. If the patient is on a low couch we sit alongside of him. I practised this latter method for many years, as I was taught under Ewald, but I have discarded it now. In this position the examiner soon gets tired. Palpation for a length of time, as when one has an interesting case, which may take a long time for the palpation, or if one has many cases to examine, becomes quite a hardship to the examiner in this awkward position. I now examine my patients on the ordinary examining chair, which permits elevating the patient to the proper height, and also admits the patient being tilted in the inclined position, mentioned before. The patient should come up to the height of the elbow of the physician, the physician standing.

We now must be cognizant of the fact that we are to use a most delicate mechanism, our sense of touch. Therefore, we must not interfere in any way with the tactile corpuscles of our fingers, we must not interfere with their nutrition, with their circulation. For that reason the palpating hand must assume the easiest position, which will not interfere with the free circulation; the hands and fingers must be fully relaxed. The palpating hand and the forearm should be in the same axis; the forearm and the hand should not form any angle at the wrist. We feel with the palmar surfaces and tips of the last phalanges of one or both hands, using all the fingers or only one, according to circumstances. The fingers of both hands should be used simultaneously and equidistantly from the median line. This is done for the purpose of comparing the resistance under the fingers of each hand and for the purpose of confirming the finding of the one or the other hand. We use one hand to feel the area which is under scrutiny, and the other hand for comparing the relative resistances felt under our fingers, under each hand.

We must distinguish two methods of palpation; active and passive. In active palpation the examiner "goes for" the object which he is to palpate, the palpator is actively using his hand and fingers with greater or lesser effort. In passive palpation, the examiner does nothing more than to hold his fully relaxed hand or fingers upon the abdomen of the patient without causing any perceptible pressure, and permits his hands and fingers to be easily raised with the respiration of the patient. It is this method which enables one to "see with his fingers." It is very hard for the beginner to persuade himself of the efficacy of such a manipulation and, perhaps, he is not even inclined to dignify this procedure with the name of palpation. But this is the only method by which we can perceive the very slightest changes. Repeatedly have surgeons disputed my diagnoses, which were made, first by inspection and then by this sort of palpation. They have disputed me even after they had had the opportunity of examining the patient under anesthesia. I had to use a good deal of persuasive talk to make them operate, and the operations confirmed my diagnoses. Quite recently I made the diagnosis of a tumor at the smaller curvature of the stomach. This diagnosis was very hotly disputed by a competitor, who wanted to bet all the money he had with him that I was wrong. The surgeon, to whom I referred this case for operation, did his best to dissuade me from the operation, even after the patient had been put fully under the anesthetic, upon the operating table ready for the operation. But I insisted; the operation, so unwillingly conceded by the surgeon, confirmed my diagnosis.

In the execution of this method we use the tips of the flexed last phalanges. The fingers of both hands are employed at equal distances away from the median line. Without at all lifting our fingers from the abdomen of the patient, they are very gently and very quickly pressed down to the extent of about one sixteenth of an inch or less and, when the pressure is released the resiliency of the abdomen raises the finger tips. This manipulation is performed at the rate of about sixty or eighty strokes a minute. The hands are not used both at the same time, but alternately. Now one hand performs those strokes, then the other. In this way our fingers perceive the differences of resistance under the fingers of each hand. Only a few strokes are executed by each hand at a time. Here it means the first impression. The strokes must not be of long duration; they must be very rapidly done. If, instead, the finger is pressed down slowly the perceptive power of the tactile corpuscles is lessened. By this method we feel the resistance or tension of the parts underneath.

We palpate for the following reasons: For defining the size and position of the several viscera of the abdomen and their relation to each other; for evidence of pain; for gross pathological changes; and for tumors. The trained fingers will easily palpate, not only the free border of the liver, but also the greater curvature of the stomach, the transverse colon, etc. Here we will use passive palpation. We will just permit our fingers, which are fully relaxed, to be moved with the respiratory movements of the abdomen; we will use no pressure whatsoever. For the palpation of the pancreas the stroking movements are used, but for the palpation of the kidneys and spleen active palpation is employed, as follows:

For palpating the right kidney, the palpator stands at the right side of the patient, facing the patient's head, the patient lying on his back. The physician places the palmar surface of his left hand against the right lumbar region of the patient and the palmar surface of his right hand upon the patient's abdomen, his hands trying to meet each other. If the left kidney is to be palpated, the physician remains at the right side of the patient, but the position of his hands is reversed, his right hand against the patient's lumbar region and his left hand upon the patient's abdomen. In certain instances the kidneys are better felt with the patient on his side; on his right side to feel the left kidney and on his left side to feel the right kidney. For the prolapse or enlargement of the spleen the palpator examines as for the prolapse of the left kidney. Occasionally prolapsed kidneys are examined with the patient standing. For the active palpation of tumors, enlargements of viscera, etc., the inclined posture, mentioned before, gives the most excellent results. The patient is inclined with his head down, and the physician stands at, or near the shoulder of the patient, facing the patient's feet; active palpation is employed. It is surprising to find how easily this palpation is executed in this position and how easily pathological conditions can be felt. My explanation for the ease in this position is that the abdominal viscera fall against the diaphragm and thus relieve the tension of the abdominal muscles, which makes the palpation so much easier.

Tension, tenderness, and pain are elicited by passive palpation. The physician should never ask the patient whether he has pain here or there. Very often nothing more than the suggestion of pain will bring forth a positive answer to a nonexistent fact. While palpating, the examiner should watch the facial expression of the patient. When the physician touches a painful spot, the patient will manifest the pain by wincing or outcry; there is no need of asking him whether it hurts. A colleague called me in to make a diagnosis without asking questions. I observed nothing else than distention of the intestine. My friend was somewhat irritated when I told him that there was nothing but what I found, and in a spirit of reproach, he showed me that the right inguinal region was tender and the patient said so. "Well," said my friend, "Knapp, you are wrong this time, you see that there is something the matter here." Thereupon I pressed down into the left inguinal region. To the great surprise of my friend the patient gave unequivocal evidence of pain also in the left side. Now my friend himself palpated the left region and found the pain. The result of this episode was, that the patient was saved an unnecessary operation. In examining women, who complain of pain in either or both inguinal regions, one must be especially careful before he resolves upon a pathological condition of the annexa. Repeatedly have I seen mutilating operations performed and advised. when the only trouble was nothing more than a distention of the cecum or of the sigmoid flexure. It is true that women have ovaries and ovarian tubes, but they also have loops of intestines, the cecum, and the sigmoid flexure. As an illustration I will mention the case of a young woman who came to me to have herself "built up" before the operation for the removal of her left ovary. She mentioned the name of one who holds a very high position and is considered an authority everywhere as having advised her the operation. Perhaps this was not so. I examined her, and found, that the trouble was in the sigmoid but, nevertheless, I told her that the previous diagnosis of ovarian trouble was right. This I did, because I feared, that if I told her the truth, she would never come back to me and would be operated on and I wanted to prevent the operation; I lied to the patient for her own sake. After some weeks, when I got through with my treatment I told the patient, that she was now ready for the operation. She answered, "Doctor, I don't think I am going to be operated upon; I feel no more pain there." I then told her the truth, for which she was very thankful.

Before proceeding with the palpation for tumors, we must think of the occupation of the patient, as this may have a decided bearing on the development of the abdominal, especially the recti muscles. Either one or parts of both these muscles may, by occupation, be hypertrophied. Evacuation of the patient's bowels before examining him will always be of use, as accumulated fecal matter will simulate tumors. Not so easy, if at all possible, is the diagnosis of passive fat tumors. By this expression Senator means, that isolated pieces of fat remain, while general atrophy of the fat of the body takes place. Such passive fat tumors do occur, and their diagnosis is difficult, if not impossible. Temporary "gas tumors" are freely movable tumors, sometimes felt in the region of the stomach; if we keep our fingers on such a tumor for some little time, we feel it resolve and disappear. The bore of every novice in palpation is the diagnosis of aneurysm of the abdominal aorta. Especially is the beginner led into mistakes, when the conditions for palpation are favorable, as in lean subjects, and in cases of diastasis recti. He feels the pulsating abdominal aorta, which is covered by the tissues overlying it and which enlarge the area of pulsation.

Having diagnosticated the presence of a tumor, the question is, where is it? Is it in the pylorus, which is by far the most frequent seat of a neoplasm, or is it in the lesser curvature, which comes next in frequency, or in the anterior or the posterior wall of the stomach? If a tumor is felt, and the question arises as to whether that tumor is on the anterior wall or the posterior, then such question may be decided by examining the stomach both empty and filled. If the tumor is felt best when the stomach is empty, the diagnosis of tumor of the posterior wall will be a proper one. But if the tumor is best felt when the stomach is full, then we are dealing with a tumor of the anterior wall. Tumors of the omentum and of the intestine must also be thought of, when palpating.

616 MADISON AVENUE.

PERNICIOUS ANEMIA.*

An Embryonic Factor in Its Etiology.

By G. W. McCaskey, A. M., M. D.,
Fort Wayne, Ind.,
Professor of Medicine, Indiana University; Physician in Chief to Hope Hospital.

In accepting the invitation to address your society this evening I have been bold enough to select for discussion one of the *bêtes noires* of medicine. It is not my intention to attempt a complete review of pernicious anemia, because the magnitude of the task would exceed the proper limits of a society paper. The investigations of the last few years, while not uncovering the pathology of the disease, have placed it in a clearer light, and indicated the direction in which we should look for the final solution. This is really a fundamental and important step in advance.

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The anemias form one of the most important chapters in clinical medicine. Their classification is as yet unsatisfactory. The ideal nomenclature would be one based upon etiology. For this, however, we will have to await more exact knowledge. Literature is fortunately about rid of the epithet "primary," and it is to be hoped that the time will soon arrive when so absurd, so scientifically meaningless a nosological designation as "pernicious" will likewise become only a memory. There are a few salient and quite generally accepted facts concerning this disease which it seems to me should form the groundwork of its clinical and pathological conception. These facts have reference to the blood picture, the available data in regard to hematogenesis, and certain points in the clinical history and therapeutic results.

The characteristic changes of the blood in pernicious anemia are well recognized. With regard to the constancy and significance of some of these changes there is some diversity of opinion among observers. A very great reduction in the number of red cells is absolutely constant. No case is on record conforming to the general conception of the disease without this particular finding. The count always ranges as low as one to two million during the exacerbation; up to two and one half or three. rarely reaching four million during the remission. I have never seen a count in excess of four million during the period of greatest improvement. It is rather exceptional in my experience to have it much exceed three million, and in many instances it never reaches that figure. This is in striking contrast to the ordinary types of anemia resulting from most assignable causes, in which with a very low total hemoglobin content the red cell count will range from three to four and one half million.

Along with this low red cell count there is a considerable increase in the size of the cells. The average measurement in my cases has certainly been decidedly increased. This is questioned by some observers who contend that if the microcytes are carefully computed the average will be close to the normal. This is not true of my cases in which an average of 8.5 to nine microns is not uncommon. The thickness as well as the average diameter of the blood disc is probably also increased. This obviously increases the mass of the cell still more. It should be remembered, however, that an increase in the average diameter of the blood disc from, e. g., seven to eight microns, an increase in diameter of one seventh, would without any variation in thickness represent an increase of about one third in volume, as the area of two circles are approximately to each other as the squares of their diameters. I am therefore of the opinion that, the hemoglobin in the stroma of the erythrocytes in pernicious anemia is not of greater than normal density. However this may be, the total hemoglobin of the blood is rarely reduced equally with the red cell count, and the color index which is simply the quotient of the percentage of hemoglobin divided by the percentage of red cells, compared with the normal, is nearly always greater than one, and usually ranges from 1.2 up to 1.6, and may exceed two. The highest color index that I have found is 2.5.

There are other histological characters of the greatest interest. Poikylocytosis need not detain us, as it is not in the least peculiar to pernicious anemia. The persistence in the blood, however, of nucleated red cells is of the first importance. If they are of normal size for an erythrocyte of the circulating blood they are without any special significance in the diagnosis of pernicious anemia. They are simply the evidence of an overactive blood regeneration, an effort to replace the blood cells destroyed by some hemolytic process, known or unknown; but it is perfectly normal blood regeneration. They may be difficult to find at times in undoubted cases of pernicious anemia, and again be found in abundance in the acute anemias following severe hemorrhages, etc. They are, therefore, entirely without significance for the purpose of differential diagnosis.

The large nucleated cells known as megaloblasts, have, however, an entirely different meaning. There is quite general agreement among hematologists that their actual occurrence, at least during certain blood crises which occur in the clinical course of pernicious anemia, is essential to the diagnosis of the latter. They usually can be found, although it frequently takes protracted and tiresome search to find them. They are not essential at any particular moment, and it is perhaps conceivable that the megaloblasts might constantly lose their nuclei before entering the circulation. It is a question of rapidity of regeneration. There is some difference in opinion as to what really constitutes a megaloblast. Ehrlich's definition is a nucleated red cell from two to four times as large as a normal erythrocyte. As Ehrlich was the pioneer and discoverer of modern hematology it would seem as though his nomenclature and standards should be adopted as a recognition of priority, and for the further reason that a uniformity of terminology is desirable to avoid confusion of literature. Ehrlich's definition of a megaloblast is possibly arbitrary. The real question, however, is broader than priority of terminology and has to do with the distinguishing characteristics of embryonic blood, for the megaloblast is normal in the blood of the early human embryo and pathological in that of the adult organism.

Whether or not the megaloblasts are ever found in the normal adult bone marrow is still in dispute. Ehrlich, Lazarus, Bloch, and Cabot have never been able to find them, and believe that they do not exist under normal conditions. On the other hand, Grawitz, Engel, Naegeli, Emerson, and others, consider them as rare normal constituents of adult erythroblastic bone marrow. It seems curious that with the present perfection of technique such differences of opinion on such a question should exist. It would seem as though it must be due to varying conceptions of what constitutes a megaloblast. Doctor Emerson tells me, for instance, that he would label as megaloblasts only those cells which have a nucleus equal in size to the diameter of a normal erythrocyte. My recollection of megaloblasts is that there would always be in such a cell sufficient protoplasm surrounding the nucleus to make a cell at least twice the average size of the adult erythrocyte.

If this is correct then it would still conform to Ehrlich's definition above quoted, and does not help us in explaining the discrepancy. Hunter defines a megaloblast as a nucleated red cell from ten to twenty microns in diameter with an average of twelve microns.

I feel driven by the logic of the situation to conclude with Ehrlich and others that the cell which should be called a megaloblast, i. e., the large erythroblast, found not only in the bone marrow but in the blood of the embryo, probably does not exist in adult normal bone marrow, and this means that it does not exist anywhere in the normal adult human organism. When found by certain observers as very rare cellular constituents of normal adult bone marrow, they possibly represent localized embryonic reversions.

These cells are the only forms of erythroblasts found in early embryonal bone marrow, and these, or the megalocyte which is simply a megaloblast from which the nucleus has disappeared, are the only erythrocytes found in very early embryonal blood. Later in embryonal life the normoblast or erythroblast which is the size of the normal adult erythrocyte, appears and gradually increases as the megaloblast gradually decreases in number. At the close of embryonic life megaloblasts have become rare and normoblasts very largely predominant. For information concerning the blood in the early days of extrauterine life we naturally turn to the pediatrist. Holt tells us that during the first few days normoblasts are very numerous, but rapidly disappear, until after a few weeks they are not found at all. At this time any excessive hemolysis may reproduce normoblasts in the blood in large numbers and occasional megaloblasts. As time goes on and the adult type is developed neither normoblasts nor megaloblasts are ever found in normal blood. When an excessive demand is made upon the hematopoietic apparatus, as by a hemorrhage, normoblasts appear in varying numbers, although they may be found with difficulty or not at all. It is then fully agreed that the megaloblastic type of bone marrow, and therefore of blood formation, is the normal one in early embryonic life, but is gradually replaced by the normoblastic type during intrauterine life, although during the early period of extrauterine life reversions to the megaloblastic type are easy, becoming more and more difficult, and therefore more and more highly pathological, as time goes on. When adult life is reached it is by universal agreement pathological in the blood, although stated by some observers to occur rarely as a normal constituent of the bone marrow. As already indicated, so long as original investigators are not in accord, I adopt the view that they are not normally present even in bone marrow of the normal adult, partly because of the embryological facts just cited.

Another reason is the universally admitted fact of the nonappearance of megaloblasts in normal adult blood. About this there is no dispute. The erythroblast of the bone marrow undoubtedly becomes the erythrocyte of the circulating blood, the normoblast becoming an average sized erythrocyte, while the megaloblast becomes a megalocyte. This view is sustained by the fact that the primary erythrocyte in the circulating blood during the first two months of embryonal life has an average diameter of twelve microns instead of 7.5 microns in the normal adult blood. Now, if the megaloblast existed in normal adult bone marrow it seems to me that in its later form of the megalocyte it would certainly be found in normal blood. In its well marked larger sizes this is certainly not the case. But the erythroblastic marrow apparently exists to furnish circulating erythrocytes, and the complete absence of megalocytes from the normal blood is strong evidence to my mind of the nonexistence of its antetype, the megaloblast, in the bone marrow. If it exists at all, it probably is as a sleeping cell. W. K. Hunter says that the megaloblast, if present in the bone marrow of normal adults, must be extremely rare.

An important fact, however, should be recalled at this point. The normal erythrocyte has an average diameter of 7.5 microns. We must not, however, thing of it as having anything like a fixed dimension. Variations in size from five to nine microns are within the normal range. The protoplasmic mass of the largest of these sizes, assuming the thickness to be the same, would be more than three times as great as that of the smallest. It is very evident in fact that the transition in size from a normoblast to a megaloblast; or, after the disappearance of their nuclei, from the normal erythrocyte to the megalocyte, is gradual. It follows, therefore, that the transitional forms of erythroblastic bone marrow, the variations between the normoblastic and megaloblastic types, must be equally gradual. The types are found at either end of the line—early embryonal and mature adult. The normoblastic type in early embryonal life would probably be quite as pathological as the megaloblastic degeneration of pernicious anemia in the adult.

I have dwelt at such length upon these questions because of their obviously fundamental importance; and because they furnish the basis of the particular view of the disease, or rather one aspect of it, which it is my intention to develop a little later.

Let us now turn to and review another phase of our subject. If megaloblastic degeneration of the bone marrow, and the resulting alterations in the blood picture are constant anatomical changes, why do these changes occur? This question obviously involves the etiology of pernicious anemia. The view that finds very nearly universal acceptance at the present time and which I think is entirely correct, is that it is caused by some toxine or toxines which are, while hemolytic, irritating to bone marrow. It is certain that several toxines can produce the combination of a megaloblastic degeneration of the bone marrow, a fatal hemolysis, and high color index. Experimentally, ricin and saponin, and clinically a toxine secreted by *Bothriocephalus latus* can produce this result. Just how this result is brought about is an interesting point in the pathology of the disease. Undoubtedly the most important attribute of the toxine or toxines which give rise to this ensemble, is their hemolytic power. The rapid destruction of red blood cells which is the most important incident in the disease, is evidenced by the liberation of iron and its deposit in the liver and other organs, as shown by the hemosiderin reaction, and by the hyperplasia of the red bone marrow. This hyperplasia is the response of the erythroblastic tissue to the demand made upon it to supply the loss entailed by the excessive hemolysis. But this response is pathological in character. In the ordinary types of anemia resulting from malnutrition; hemorrhages, or even certain hemolytic toxines, the bone marrow hyperplasia is of the normal adult type; that is to say, the erythroblastic tissue is normoblastic only. The histology of the blood in such cases will therefore be normal, with the possible, and indeed not rare addition of normoblasts. The erythrocytes will be of normal size. In pernicious anemia, however, a distinct change takes place, and the erythroblastic tissue, having undergone hyperplasia, is largely megaloblastic. In other words it has reverted to the embryonal type.

The cause of this reversion, or embryonic degeneration, apparently finds its most plausible explanation in the irritation of the bone marrow tissue by the hemolytic toxine. About the existence of such a toxine there can be no doubt. There is plenty of evidence tending to prove its existence and its widespread effect upon tissues other than the blood. This is especially true of the central nervous system, and more particularly of the spinal cord. It has been asserted by some that the spinal cord lesions of pernicious anemia are the result of the anemia and not of the toxines causing it. This view is not at all tenable. In the first place, there is no special tendency to spinal cord lesion in the ordinary forms of anemia due to repeated hemorrhages, the toxines of septic processes, etc. Again, the cord lesion bears no constant relation to the severity of the anemia. It may be absent in moderately severe cases of pernicious anemia, and exaggerated when the symptoms of the disease are light. Not only so, but several cases are on record in which the symptoms of the spinal cord disease clearly precede those of the pernicious anemia. Byrom Bramwell has recently reported a case of this kind. In one of my own cases, unreported, the history pointed clearly to this order of events. Now there is only one rational construction to place upon these facts, which is that the spinal cord lesion and anemia are due to one and the same toxine, or possibly coexisting toxines.

When we come to examine the problem which has to do with the megaloblastic degeneration of the bone marrow it is not nearly so simple. The hyperplasia *per se* is clearly the result of the increased demand for erythrocytes. It is one of those marvellously delicate biological adjustments, which challenge wonder and baffle comprehension.

The fact that in this particular group of cases the compensating increase in erythroblastic tissue should assume a degenerative type, is susceptible of several possible explanations. Perhaps the most commonly accepted one is the effect of a toxine, or group of toxines, which by their specific action upon the newly forming bone marrow produces this result. Such a view, fitting in as it does with the best established theory of its toxic origin, is quite plausible and appears at first sight to be adequate. A careful review of all these facts has convinced me that it is entirely inadequate. Some other point of view, at least some supplementary theory or working hypothesis, is necessary to bring the facts into line, and we may be quite certain that they can be so harmonized if placed in the proper light and proper relations. Facts never swear at each other, nor disagree, if properly understood. The apparent conflict is the penalty of our limitations.

The following are some of the facts which appear to me to make the exclusive theory of toxic irritation of the bone marrow quite untenable.

The hemolytic toxines of the intestinal parasite, *Bothriocephalus latus,* produce, as is well known, megaloblastic degeneration of the bone marrow; but it does not do so constantly. In a certain proportion of cases it is of the normoblastic type. Now, if the megaloblastic degeneration were alone the result of the fish worm toxine without auxiliary factors, it would be practically constant; but this is not the case. Furthermore, cases have recently been reported in which hookworm anemia, which was formerly supposed to be always normoblastic, was megaloblastic.

In the secondary anemias of children, megaloblastic degeneration is very common if it is not the rule. Clearly no specific toxine can be here assumed; in fact, no toxine of any sort is required. The embryonal tendency is still so strong that it asserts itself almost normally as a part of the simplest hyperplastic processes in the bone marrow.

Again, in anemias from a great variety of causes, megaloblastic degeneration occurs. Clerc and Guy, in a recent communication, aver that some of the secondary anemias occurring in cases of gastric cancer, cannot be distinguished in any way from the so called cryptogenetic type. The blood picture, the marrow changes, the symptomatology, and everything with the single exception of the remission is identical. There might, obviously, be a question of a toxine derived from the malignant neoplasm in these cases. If so, it would probably be the same in all, and yet, as a rule, it produces a normoblastic, but, as is now asserted, exceptionally a megaloblastic hyperplasia of bone marrow. Recent cases indicate that anemia from hemorrhage may sometimes be megaloblastic.

Finally, in the experimental anemia produced in animals by ricin poisoning, the curious fact has been established that relatively large doses, producing a rapidly progressive anemia, are associated with normoblastic bone marrow regeneration, while repeated small doses, acting more slowly, produce megaloblastic degeneration.

Undoubtedly something beside the specific action of a toxine or group of toxines is necessary, and I believe that in embryological faults or tendencies at least a plausible partial explanation may be sought. The existence of such special tendencies is strictly in accord with well known biological laws, and squares with clinical observations. The inherently weak myocardium; the tendency to atheromatous degeneration of the arteries; the instability of the psychic or motor brain cortex, may perhaps be thus best explained.

The *Schlummerzellen* theory of Grawitz is of interest in this connection. He believes that embryonal cells may remain in an inactive state, so completely atrophied from inaction as to be invisible, or at least morphologically unrecognizable, and yet when subjected to the action of a suitable stimulant, e. g., a toxine, be capable of returning to full vigor and development. The theory struck me at first as grotesque—less so when I found that so able an investigator as Adami admits the validity of Grawitz's theory, although declining to follow him to the extent of the invisible condition of the cells.

The origin of malignant neoplasm in such embryonal cells furnishes a partial parallelism in another department of pathology. The stimulus which lights these sleeping embryonal cells into activity has been thought to be toxic by some, mechanical by others.

So far as the erythroblastic marrow is concerned, it is entirely conceivable that some of the megaloblasts present in the early embryonal bone marrow and which should, and, for the most part, do disappear, might remain as inactive schlummerzellen, or sleeping cells, throughout adult life.

If this theory is correct the incidence of pernicious anemia may be said to be, in part at least, a question of idiosyncrasy. It is not offered as a complete theory of pernicious anemia. The problems presented by that disease are too many sided to be thus easily solved. But, as possibly leading us a step farther in the elucidation of those problems, this theory of peculiar embryonic tendencies activated by special toxines appeals to me to be entitled to serious consideration.

CROTALIN IN THE TREATMENT OF EPILEPSY AND NERVE DISORDERS.*

By James B. Woodruff, M. D.,
Rochester, N. Y.

Medical literature contains a great number of articles on the subject of snake bites, that from a therapeutic standpoint are of little value. It was noticed that persons with certain diseases, especially epilepsy, who recovered from rattlesnake bites were improved or cured. One of the best known pioneers in the study of snake venom is Dr. S. Weir Mitchell. During the past few years much laboratory work has been done in testing the hemolytic action of venom.

It has been the dream of many men to produce an antivenine to counteract the poisonous bites of reptiles and at present they have had a measure of success. Chief among these is Calmette, who has produced an antivenine for cobra poison, and in our country Dr. H. Noguchi, at the Carnegie Institute in Washington, has produced the same for rattlesnake poison. Rattlesnake venom has been known and used by the homeopaths for many years and is one of their highly prized remedies. When given by the mouth the venom has a decided effect, for an animal so treated may acquire an immunity which may be transmitted by its serum; the full effect of the drug, however, is not obtained. The pigeon, the most susceptible of animals to the venom, can eat large quantities without serious effect. The hypodermic use of venom dates back only a short time, and brilliant results are now being obtained from its use in many diseases, mostly of a nervous origin.

Crotalin is the name applied to the venom obtained from a species of snake named *Crotalus horridus,* commonly known as the rattlesnake. The venom I use is obtained from *Crotalus adamanteus* or the diamond back rattler. The venom is extracted by causing the snake to bite on the edge of a glass funnel, the venom running into a bottle beneath. The fresh venom is spread on glass and allowed to dry, either in the air by gentle heat, or *in vacuo,* forming a yellow substance which when broken up resembles crystals. In this dried state it will keep indefinitely without deterioration. When required for use, the crude venom is purified, sterilized, and when diluted to the required strength is put in glass ampoules and sealed. I use eight different strengths representing from grain 1/200 to 1/25. A small amount of trikresol is added to insure its preservation. Because of its unstable character and its susceptibility to the action of heat and chemicals, the preparation of crotalin requires great care to insure a trustworthy product without any deterioration or loss of any of its elements.

Venom is the most polytrophic substance in the animal or vegetable kingdom. Noguchi says, "of all physiological products elaborated by diverse groups of specified cells of the animal body, none are so complex as the venom of snakes," and later he says in comparing it with the ferments of the digestive tract and to the leucocytes with their fibrin ferment, "the multiplicity of these active principles becomes, however, almost insignificant when compared with venom."

The two main constituents of crotalin are *hemorrhagin,* about ninety per cent., and *neurotoxine,* about ten per cent. The hemorrhagin has a special affinity for the endothelial cells of the walls of the blood and lymph vessels, and the neurotoxine acts mostly on the cells of the nervous system. By certain processes it is possible to eliminate or modify either of these elements.

The exact therapeutic action of crotalin is not understood, but it probably acts as a stimulant to the central nervous system, as is well illustrated by its effect in nerve exhaustion. Dr. R. H. Spangler believes that it has a decided influence in revitalizing the functions of the various organs. Another apparent effect is its ability to block undue outside stimulation on the nerves of special sense. Possibly this is illustrated by cases of insomnia where refreshing sleep is produced without any signs of narcotism. There is no question that it has a profound influence on the body and will certainly cause marked benefit in many conditions, especially of a functional nervous origin. There is usually an increase of the weight, sleep is better and less disturbed, and a general feeling of well being is marked. I have made a few blood examinations in cases treated and believe that a marked leucocytosis is produced, probably reaching its height about the fourth day. This leucocytosis may account for the beneficial effect in cases of phthisis. Dr. T. J.

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*Read before the Thirteenth Annual Meeting of the Lake Keuka Medical and Surgical Association, July 11, 1912.

Mays has reported a large percentage of cures in these cases. Personally I have reports of only two such and both are benefited. I have case reports of epilepsy, asthma, neuralgia, and neuritis, including lumbago, sciatica, tics, and coccygodynia, laryngitis, pleurisy, chorea, debility, and nerve exhaustion, and in the literature are recorded cases of hoarseness, pneumonia, acute and chronic bronchitis, and incontinence of the urine, that have been treated by crotalin.

The skin at the point chosen for injection is scrubbed with alcohol or prepared by some other equally efficient method. Ordinary precautions should be taken not to enter a bloodvessel and the injection should be made rather deeply in the tissues or muscles. At the time of the injection there will be a stinging pain less marked if given slowly. Later there may be more or less pain and swelling depending on the size of the dose, the site of the injection, and especially on the susceptibility of the patient, which varies greatly. The pain, if present, will disappear after two days and the swelling after five days. It is seldom advisable to inject a dose large enough to produce an undue reaction, but if it is done and the pain becomes severe, most relief is obtained from a compress wet with a saturated solution of magnesium sulphate. An ice bag will also aid. It is best to give the first two or three injections in the back of the arm and always begin with a small dose, as grain 1/200 or 1/150. Later the injections are better given in the back where they cause very little reaction. The site should be changed at each injection. I have not seen a single injection followed by any untoward effect or infection, nor have I seen any report of such, and to date many thousand injections have been given. The psychic effect of a marked local reaction may be helpful in some cases, but I am led to believe that the beneficial properties of crotalin do not depend on the severity of the reaction. My rule after reaching the strength of grain 1/125 or 1/100, is not to increase the dose as long as improvement continues. If the case is not improved the dose should be slowly increased and some cases will take as high as grain 1/25 and occasionally 1/12. If grain 1/12 is used I believe it should be decreased after a few treatments. The tendency is to give too large doses. The injections should be given as a rule every five to seven days, except in cases like asthma or neuritis where a more profound influence is desirable and they may be given every other day. A discussion of a few special diseases will make this more plain. I will first take up epilepsy.

In cases of epilepsy, as one would expect, the so called idiopathic cases are more amenable to treatment than the cases caused by trauma, tumors, etc. The crotalin treatments will modify the severity of attacks and often change their character from gros mal to petit mal. The intervals between attacks will be lengthened. The mental activity of the patient will be greatly improved. This is well illustrated in Case 1, that of a girl of seventeen years, who was feeble minded, unable to read, sew, or do any work, even dishwashing. After the treatment she improved mentally so that now she reads the daily paper, story books, sews doylies, and actually argues logically with members of the family. The apprehension and fear which cling to epileptics is very soon dispelled and they become cheerful. The stupidity and mental confusion following an attack is improved and shortened, and the after effects, as prostration, nausea, vertigo, and headache, are either stopped or improved. Involuntary urination is controlled in most cases. Menstrual functions, if irregular, are made more nearly normal. Patient VII had on an average fourteen attacks of gros mal and seventy of petit mal, making eighty-four in all every week. During the seventeen weeks she has been under treatment she has had forty-five attacks of gros mal and sixty-nine of petit mal, making 118 in all. It is thus seen that during this seventeen weeks we have relieved her of 1,310 fits.

Incidentally she has gained seventeen pounds.

Doctor Spangler, of Philadelphia, has treated many cases and reports thirty-six in the New York Medical Journal for September 9, 1911. Another article appears in the *Münchener medizinische Wochenschrift,* 33, 1911, by Doctor Fachenheim, of Germany. During a recent meeting of the American Association for the Treatment of Epilepsy, Doctor Spangler read a paper on the cure of eight cases. In treating epilepsy, the general rules for administration should be followed. One dose a week is usually sufficient, although some cases do better with one every five days for a time. After the dose has been raised to grain 1/100, it should not be increased so long as improvement continues. A case should be under treatment for a long time, and if all seizures should cease, the treatments should be continued for at least a year, at gradually lengthened periods, to insure a more permanent result. Occasionally a case will be met in which the first two or three treatments will cause no improvement and may apparently make the case worse, but this will soon pass away and improvement follows. I usually tell this to patients in advance that they may not be alarmed. Large doses, grain 1/25 or 1/12, while they may be indicated for a short time, are liable to cause too much irritation and the fits will reappear or become worse. This is well illustrated by Case I, where grain 1/12 caused the attacks to become more frequent and a drop to grain 1/75 caused improvement. One may expect that the treatments will benefit every case and persistence may cure many. As regards *cure,* I do not know what length of period without a seizure should be considered as such, but I think it should be several years of close observation with the drug before one should apply the word *cured.*

In cases of neuralgia and neuritis, including sciatica, lumbago, tics, coccygodynia, etc., a few injections of crotalin will cure the case and often the first injection will give marked relief, causing your patients to be very grateful. One case of supraorbital tic is reported where after the standard forms of treatment without benefit, the nerve was resected, giving relief. When the nerve regenerated, the old pain returned, and a few doses of crotalin gave relief for several months, when the man felt a slight return of the pain, but was again relieved by crotalin, and remained free to date, nine months later. Case XI was one of coxalgia that was relieved entirely by four injections and has had no return in about a year. In Case XIV, the patient had pleurisy two years ago and has had pain in her side at times ever since. Last fall the pain was more marked and has increased in severity for the past ten months, notwithstanding the constant treatment of three good physicians, each in turn advising her to try electricity. Examination showed her lungs to be sound and the pain was apparently a neuritis. One injection gave her relief of all sharp pain and four caused a disappearance of all symptoms. In these cases the injections should be made, if possible, near the origin of the affected nerve, as, for instance, in intercostal neuralgia, along the spine. If this is impossible, place the medicine in the region of the pain. It is better to use small doses at intervals of two or three days than to give large ones with their attending reaction. In cases of tics of the face, the injection should be made near the affected nerve, if possible, but not into it, and the dose should be very small, about the face and neck usually not to exceed grain 1/150, and the initial dose should be much smaller.

In some cases of asthma the crotalin acts almost as a specific and has improved all cases on which it has been tried. In Case IX the patient was for years subject to attacks of asthma. When I first saw her she was propped up on pillows with the well known symptoms. An injection of grain 1/125 gave her relief in about an hour, and she remained free for three days, when the attack returned, and the second treatment gave entire relief. This woman stated that she had often had injections given for the attack, but had never been so completely and quickly relieved. Case VIII was that of a woman, sixty-five years old, short of breath, caused by auricular fibrillation and subject to attacks of asthma which awoke her every night. The attacks usually lasted two hours and sometimes recurred about 4 a. m. The treatments have given her very great relief, and now she either sleeps well all night, or if an attack does come, is very mild and of short duration. Incidentally the heart condition has entirely disappeared. In these cases the injections should be given every three or four days, and in case improvement does not follow, the injections should be made in the cellular tissue of the neck over the region of the vagus nerve on alternate sides and in doses of grain 1/300 to 1/200. In some cases a large dose with a very severe reaction will mark the beginning of improvement.

Cases of debility, accompanied by nervousness and loss of sleep, are improved, and feel invigorated. This is illustrated by a patient who awoke at 3 a. m. every morning and was unable to sleep more. Two treatments caused perfect sleep and a sense of well being.

Functional laryngitis seems to respond to the treatment of crotalin. This is illustrated by Case XVII, treated by Doctor Quigley. The patient was in the last stages of consumption and for two months had been unable to eat any solid food on account of pain in the larynx. For some time he had been unable to speak above a whisper. An examination showed that there was no ulceration and very little swelling in the larynx, but a marked inflammation. The injections of crotalin restored the man's voice, and relieved the pain so that he was able to eat solid food until the time of his death, about three weeks later. Dr. T. J. Mays reports a case of painful laryngitis in a tuberculous subject where the injections in the arm did not give any relief. He then gave grain 1/200 in the neck over the region of the right vagus and in an hour the same dose on the other side. This was followed by a dose in the neck every other day, and absolute relief followed.

Chorea will undoubtedly be improved, and Case XV was that of a boy of nineteen years, who was scarcely able to walk on account of the choreic movements. He was not able to sleep before 4 a. m. and was greatly depressed. Four treatments, covering a period of nineteen days, caused the disappearance of the choreic movements, and his sleep was sound all night. In this disease one should use the standard forms of treatment and use the crotalin simply as an aid to bring quicker results.

While not quite germane to my title I wish to speak of tuberculosis. Dr. T. J. Mays reports a large percentage of cures in cases of tuberculosis. Case XVIII, treated by Doctor Marion, was that of a woman with chronic phthisis, complicated with asthma. Both apices were solid. When treatment was begun, in March, she had great enlargement of the cervical glands and tuberculous peritonitis with diarrhea. Under the treatment these conditions entirely cleared, the asthma improved; she now coughs a little and expectorates not at all. Case XIX is another one of phthisis of twenty-three years' duration with two or more hemorrhages a year. The patient had a constant pain in her side. Under treatment this pain disappeared, and her general condition is improving rapidly. She has very little cough and no expectoration. Several blood counts have shown hemoglobin eighty-five per cent. and the white corpuscle count about 13,600 on the day of injection and four days later varied from 15,400 to 25,000. It seems very probable that after a more extended use of the crotalin its range of usefulness will be greatly enlarged. Appended are two typical case histories.

Case V. Miss C. (treated by Doctor Marion). On March 25, 1910, began to have attacks of gros mal three times a week with very frequent attacks of petit mal: May 4, given crotalin, grain 1/200; May 9, had two attacks of gros mal, no petit mal; May 13, no attacks; May 17, no attacks; May 22, no attacks, given grain 1/100; May 27, two gros mal, given grain 1/200; May 31, no spells, given grain 1/100; June 4, one attack, gros mal; June 8, no attacks, given grain 1/75; June 11, no attacks, given grain 1/50; June 15, one attack gros mal; June 19, no attacks; June 24, one attack gros mal, given grain 1/100; July 2, no attacks; July 8, two attacks gros mal.

During the nine weeks of treatment she had nine attacks of gross mal and no attacks of petit mal.

Case VI (February 20, 1912). E. F., female, four years and six months old; one aunt had epilepsy, otherwise family history good. When about six months of age began to "hold breath." The spells had grown gradually worse until she had an average of six a day, lasting about a minute each. They were ushered in by a yell, a throwing of the arms backward, followed by stiffness and falling, then involuntary urination. Seizures were always brought on if she was spanked, hurt, or frightened.

The child received weekly injections of grain 1/300 to grain 1/175, and during the twenty-one weeks has had thirteen fits, five of which occurred in one week. She is gaining in weight and her disposition is very greatly improved.

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513 MONROE AVENUE.

INSTRUCTION IN CHILD HYGIENE.*

By MARY SUTTON MACY, M. D.,
New York,
Secretary, Public Health Education Committee, Medical Society of the County of New York.

Child hygiene is a comparatively recent development or specialization of interest in a broader field of practical care of the health of the individual and the community. Infant hygiene has had a longer period of careful attention, chiefly because the infant is more apt to be retained under the immediate care of the physician than is true of the older child. Municipal hygiene, industrial hygiene, school hygiene, and other subdivisions of the kind have received considerable, in fact extensive attention, because of their direct and vital bearing upon community efficiency, which is another way of saying because they directly touch the public pocketbook and are to be reckoned in dollars and cents.

The large number of children have the fortunate or unfortunate habit of being obstinately healthy, even in unhygienic and unsanitary surroundings, if we exclude the occasional infections to which all children are liable, though not necessarily subject, such as diptheria, scarlet fever, measles, and the like. Therefore, less attention was naturally attracted to the subject of child hygiene until the schools began to notice the laggards, the defectives, and the delinquent children. Subsequent investigations and study produced a growing sentiment in favor of helping these unfortunate and nonnormal children by paying attention to their personal hygiene at home and in school, and so child hygiene became an issue.

Even to-day, after several years of careful attention to the hygiene of childhood, the literature on the subject is meagre, so far as I have been able to discover. By that I mean the literature which bears directly on the hygiene of the child; its physical hygiene, its mental hygiene, its moral hygiene, and its social hygiene as influencing the individual at various periods of its growth.

We have a mass of undigested and more or less contradictory anthropometric data, very little of which is available to assist the parent and teacher in understanding the physiological variations occasioned by growth, and most of which is therefore inadequate to serve as a basis for practical hygiene. We have libraries of so called school hygiene; largely statistics and accounts of experimental investigations, and mostly unapplied or lacking in such elucidation as would make them readily applicable to masses of natural children by anyone but a trained statistical specialist in hygiene, who possessed the power to expend unlimited money, unhampered by boards of education, boards of health, or other collections of individuals not in perfect sympathy with the particular fads of the specialist.

We possess a constantly growing ocean of literature on "child study," which concerns itself chiefly with the distinctly pedagogical and psychic interests of the child, and gives but desultory and uninterested attention to the hygiene of physiological growth or, for that matter, to the real hygiene of mental growth. We possess, even in medical literature, but scant information on the physiological adjustments made by the complex human mechanism to the alterations in function, position, mechanism, and use of organs and systems incident upon alterations in growth. Here is a field for the statistician, for the experimenter, and for the digester and assimilator of literature to work together for the enriching of the literature of child hygiene.

Having thus briefly and sketchily reviewed the available means of instruction in child hygiene in the field of literature, let us consider what other sources of information are open to the parent, the teacher, and the general public.

1. Let us consider the instruction of the parents. A. As individuals, concerned with the individual care of their own children, the parents can and naturally do turn to the medical profession for instruction in child hygiene. But few parents, even among the rich, feel that they can afford to go to the physician and pay the required fee in order to be told the details of simple cleanliness, fresh air, exercise, rest, work, and relaxation which would best benefit their perfectly healthy child. Consult the physician if the child is sick? Yes! Get a prescription for medication as well as the advice in simple hygiene, and you have another proposition in the parent's mind. On the other hand, few doctors, be they general practitioners or specialists, would feel that they had time to give such hygienic advice for well children in the consultation hours which they are accustomed to devote to the cure of suffering humanity. And the poor cannot afford such consultation at any time.

B. As collections of individuals, in social groups, in mothers' clubs, or in parents' meetings connected with the schools and settlements, parents can be instructed in the details of normal child hygiene by means of occasional talks or lectures, or of courses of teaching which shall include not only the telling but also the showing how to do definite, necessary, and simple things to maintain the health of the normal child. These talks should be given by the school doctors or the school nurses or both, to the mothers' clubs, or parents' meetings of the school or settlement, and may well be supplemented, especially among the poor, by demonstrations in the selection and preparation of the child's food, exercise, and clothing, by the school teachers of cooking, physical training, and domestic science; and they should also be supplemented by visits to the homes of the ignorant to reinforce and reiterate necessary items of domestic hygiene. Among the better classes, talks on child hygiene should form regular events of the meetings and lectures of the women's clubs; and might well form subjects for meetings at assemblies of men, such as lodge meetings and other gatherings where fathers and prospective fathers may be instructed in that vital personal hygiene which concerns themselves as it pertains to their sons and to their daughters. All such talks or lectures should be given by physicians, who are at once interesting speakers and authorities upon the subject they present, and should be supplemented by outlined reading.

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C. Colleges and universities which train the young men and young women of the country might well include the subject of child hygiene in the curriculum as a practical subdivision of domestic or even political economy, in such a form that it should serve to stimulate an appetite for more detailed knowledge by the individual before he or she assumes the rôle and duties of citizenship and parenthood.

2. Let us consider the teacher's instruction in child hygiene. To be more accurate in the use of the present tense, I should have said, let us consider the teacher's lack of instruction therein. In no other profession with which I am in the least familiar does the practitioner know theoretically so much about the tools for the work and so little about the material upon which the work is to be performed. Our normal colleges and training schools for teachers ground their students most carefully in method and in matter to be taught, including much theory in psychology, in didactics, or induction, in *school* hygiene—note the emphasis on the qualifying adjective, please!—in grammar and rhetoric, in discipline, in domestic science, and other sciences which the future teachers may or may not be able to put into practice, depending upon the character and amount of supervision they are subjected to, and the whims of the school boards which may govern their individuality. But alas! it must be confessed, the physiology taught to the teachers is a farce, the hygiene is theoretically good for the school and practically impossible with the child. It is strange how insistently perverse is the human nature of the normal healthy child, which refuses to conform in any safe number of particulars to the data offered as characteristic of the average child in the carefully taught rules of "child study classes." Fortunately for the future of our country the children do persist in refusing to be average. Why lay so much emphasis upon the biology of invertebrates and lower vertebrates, details of which the high school teacher must give to her classes, and absolutely refuse to teach the teacher any practical biology of man? The child is the material upon which the teacher's work must be done. It is only fair and just to child and to teacher that the child's nature should be known to, and understood by the person who is expected to develop and train it. The mistake pedagogy has made, and continues to make, is to emphasize the psychic nature of the child and ignore the physical, the fundamental nature which must be normal before the psychic can mature.

The courses in physiology and hygiene of childhood in the normal schools and training schools for teachers should be practical; not only didactic or inductive, but laboratory methods, being employed. They should be wide in scope and inclusive in range of years covered, and they should be compulsory on all teachers.

The physiology course should be practical, not only in the instruction of details of mature function in the digestive, the respiratory, the circulatory, the excretory, the muscular, the nervous, and the reproductive systems, but also in the variations of balance incident to, and consequent upon variations in maturity. The differences observable at stated periods of growth, and the effects thereof upon the physical efficiency of the child, should all be made definite and repeatedly emphasized to the pedagogical student. This should be a major course in the curriculum and taught by a specialist, preferably a physician or an expert from a physiological laboratory, and not by a teacher from the ranks.

The course in hygiene of childhood should be parallel with the physiological course and should aim to apply, to the uses of the teachers, the physiological truths and data furnished by the major course. Practical opportunity to apply the knowledge gained should be liberally supplied. The student teacher should be called upon to give evidence of efficiency by suggestions in actual cases for, 1, the improvement of home hygiene in specific cases; 2, for the adaptation of the ordinary schoolroom facilities to the greatest good of the greatest number of individual children in a given class; and, 3, by being required to make practical suggestions for the improvement of the existing school conditions, with a view to minimizing the nonhygienic obstacles in the paths of the children of the given class. This course also should be conducted by an expert.

3. Let us consider the instruction of the general public in the hygiene of childhood. It it to be accomplished in a variety of ways. First, by occasional free public lectures by well known and competent authorities; second, by newspaper and magazine propaganda; third, by lecture courses under the auspices of boards of education, boards of health, university extension, or local medical societies, and, fourth, by societies for the study of child hygiene, which give lecture courses, publish authoritative data in inexpensive and easily comprehensible form, and which in other ways attempts to mould public opinion.

The scope of public instruction should include such general topics as, 1, the character, preparation, variety, and amount of *foods* for children of varying ages; 2, the *ventilation* of the home, the nursery, the sleeping room, and the school and playroom; 3, the value of *exercise*, its kind, amount, environment, restriction, and scope, according to the age periods of the child; 4, *outdoor life,* its educational, as well as its hygienic value and significance; 5, *sleep,* its amount, environment, bedding, clothing, and hours, according to varying age periods; 6, *clothing,* its nature texture, character, variety, amount, and the dangers of inadequate, superabundant, and improper clothing; 7, *work,* character and amount of mental, manual, and physical work which is legitimate for various stage of physiological maturity, dangers to the child and the community from child labor, purposes of the varied curriculum and its so called fads and frills; 8, *sex hygiene,* its relation to social morals, physical health, and community efficiency, its methods of instruction, time, place, and specific information to be given at different ages; 9, *play,* its meaning, supervision, time, and character; and, 10, *personal hygiene* and the *prevention of contagious diseases.*

Time forbids a more lengthy statement of the means, but we must glance for a few moments at the needs for instruction in child hygiene, and I would ask you to consider these under the following heads: A. Individual needs of children, parents, and teachers; B, school needs; C, social needs.

A. The individual needs of such instruction for the children are that they may have, 1, "fair play" and, 2, an opportunity to react in a normal fashion to environments adjusted to develop the maximum of efficiency with a minimum of wear and tear on health and of waste of energy.

The individual needs of instruction in child hygiene for the parents are to enable them to fulfill their duty to their child by providing, in so far as is physically possible, an environment which will promote the development in their offspring of the desirable traits of biological heredity and afford opportunity for the healthy maturing of all physical and psychical functions in due order and due time.

The individual needs of instruction for the teachers are that they may be enabled to make use of their knowledge, not only to prevent wear and tear for themselves and their pupils, but also by removing preventable obstacles and promoting normal conditions, facilitate the development and growth which they desire, and direct its course along natural lines at normal times.

B. The school needs which call for instruction in child hygiene are manifold and I shall suggest but a few of them: 1. The maintenance of a normal standard of efficiency in the physique, and therefore in the minds of the children; 2, the regulation of the curriculum to the capacities of the child, by avoiding overstimulation and consequent exhaustion through a crowded curriculum, and by avoiding understimulation and consequent inertia among the supernormal or highly gifted children, to whom the present curriculum might readily be adapted without being overcrowded; and by avoiding misdirected stimulation, prevent much truancy, delinquency, backwardness, and inefficiency; and, 3, the institution and development of a practical eugenics, which shall assist in the elimination of mental deficiency and preventable physical deficiency by a broad education in the value of physical and mental efficiency in community life.

C. The social needs, like the school needs for instruction in child hygiene, are legion and we have time to name but a suggestive few: 1. The prevention of child labor; 2, the dangers to child life of congestion of population and therefore its relation to community welfare; 3, the value of the healthy child as a community asset and its place in the social system; 4, the dangers to social efficiency, in childhood as well as adult life, from debauchery, prostitution, and all forms of vice; and, 5, the rights of the child,—who has not asked to be born,—and the social, moral, and physical obligations of its parents and the community in which it lives.

In closing, let me give a few items of interest which I have obtained as the result of a questionnaire sent out this last April, concerning what has been done, along the lines suggested in this paper, in the city of New York within the last few years. Inquiry brought out the facts that the following opportunities were freely used for the instruction of parents in child hygiene:

1. In schools, vacation playgrounds, offices of philanthropic organizations, and in milk stations, lectures on the care of infants and on child hygiene are given by doctors and nurses regularly appointed in the Board of Health under the division of child hygiene organized in 1908. This division also provides literature in the form of pamphlets for free distribution.

2. The Association for Improving the Condition of the Poor, under its Committee on Physical Welfare of School Children, give lectures in public schools, though it is not specified if these are pertinent to child hygiene *per se.* In 1910, this committee also employed dieticians to instruct mothers on the recreation piers in the cooking and serving of proper food.

3. The Public Education Association, through its Parents' Meeting Committee and in cooperation with the Society of Sanitary and Moral Prophylaxis, devotes its time to teaching of sex hygiene to the mothers' clubs of the public schools.

4. The Public Health Education Committee of the American Medical Association, through women's clubs, parents' associations, church organizations, settlements, and other groups, reaches large numbers of mothers and fathers. Its lectures are given by physicians, and in cooperation with the medical societies of New York and Kings counties, courses of lectures have been given every year since 1909, and are very popular. Many of these lectures are on child hygiene.

5. The People's University Extension Society also provides lecturers to settlements, institutions, schools, clubs, churches, libraries, etc.

These last two organizations provide lectures in other than the English language if necessary. Both have child hygiene as one of many topics in their list.

Many of the organizations mentioned provide lectures for teachers' clubs and organizations, as well as for parents, but so far as I have been able to learn, no provision is made for the *adequate* training of teachers by either the Board of Education or any of the other organizations or schools for the training of teachers in the city of New York. Teachers' College, of Columbia University, offers a course in child study under a psychologist, and in school hygiene, including a course on the hygiene of childhood, under a physician and a nurse, but I cannot discover that this latter course is comprehensive or practical, and the child study is primarily psychological, all hygiene being incidental. The School of Pedagogy of New York University is even less active, the courses offered there being on the physical nature of the child and anthropological study of school children; but child hygiene is merely incidental. The training schools of the Board of Education offer nothing practical, and the physiology and hygiene they pretend to give are not so presented as to appeal to the teacher or student as important subjects.

The Board of Education in its public lecture courses occasionally includes some topic of child hygiene. The Board of Health conducts a more or less vigorous campaign in health education—child hygiene included—and many of the settlements in cooperation with such organizations as the Public Health Education Committee of the American Medical Association, the Public Education Association, and others in the first list given, are all actively engaged in teaching the public the importance of child hygiene.

101 West Eighteenth Street.

TUBERCULOUS MENINGITIS.

Report of a Case in an Adult, with Recovery.

By Samuel Schaeffer, M. D.,
New York.

Case. H. Z., aged thirty-nine years, married, occupation butcher. I was called to see the patient July 18, 1912, when I found him unconscious and cyanosed, with his head thrown back, and with rigidity of the neck and lower limbs. From his wife I ascertained that the patient had come home for his dinner feeling perfectly well, and had eaten a hearty meal. Half an hour later, he complained of an intense headache, and a distressed feeling in the epigastrium which made him vomit. In an hour he became unconscious with tonic spasms of the lower limbs and twitching of face.

Examination showed the patient to be a well built, muscular man, with a large frame. The head was thrown back, neck rigid; pupils contracted, equal, and reacted slowly to light. There was some twitching of the muscles of the face, but no paralysis. Heart and lungs were normal. Abdomen was relaxed; no rigidity or tenderness. Extremities were rigid; knee jerks exaggerated; Kernig's sign present. Babinski's reflex present; no paralysis found. Respiration 20, pulse 76.

In the evening, the patient was removed to the French Hospital. On admission, his temperature was 102° F., pulse 94, respiration 26. He had now become delirious, complaining of an intense frontal headache, and was with difficulty kept in bed. A lumbar puncture was made and about 30 c. c. of a bloody fluid was obtained. The blood was not due to the puncture of a bloodvessel, for exactly the same fluid was obtained in six subsequent punctures. On July 19th his temperature had dropped to 99.2° F., and pulse to 74. The noisy delirium and restlessness continued. A lumbar puncture was again made, 30 c. c. of fluid obtained, and 30 c. c. of Flexner's meningococcus serum injected. July 20th, the patient showed no improvement. A blood count showed 19,300 white blood cells, with ninety-two per cent. polynuclear cells, one per cent. large lymphocytes, and seven per cent. small lympocytes. The examination of the cerebrospinal fluid for meningococci and tubercle bacilli was negative. There were three examinations made for meningococci and one for tubercle bacilli. A cell count of the cerebrospinal fluid showed ninety-seven per cent. polynuclear cells and three per cent small lymphocytes. The Wassermann reaction was negative.

In view of the fact that nothing else could be done, it was decided to continue with the injections of the meningococcus serum. He was accordingly given injections of the serum on the 20th, 21st, 22d, 24th, and 26th, when they were discontinued on account of no evident improvement.

On July 27th a consultant, who was called in to see the patient, suggested the possibility of a syphilitic meningitis. He was accordingly put on intramuscular injections of salicylate of mercury and potassium iodide in increasing doses. This treatment was discontinued after a week, as the patient did not improve.

On July the 26th the temperature rose to 104.8° F., pulse 124, respiration 28. On the 27th the temperature dropped to 99° F., pulse to 90. From July 28th to August 1st, when the patient left the hospital, the temperature ranged between 99° and 101° F., the pulse between 82 and 100. His mental condition had cleared up somewhat; he would answer a question occasionally; but for the greater part of the day he was dull and apathetic. Toward evening he would become restless and delirious, and would have to be restrained in bed. On August 1st his wife requested that he be taken home. This was done; and he remained in the same condition in which he had been in the hospital for about two weeks.

About the middle of August he began to show improvement; his mind became clearer, his delirium gradually subsided, and in the last week of August he was allowed to sit up. He was then sent to the country for two weeks, and during this time his mental condition gradually cleared up. September 18th the patient walked into my office and told me that he was feeling fine; the only thing that he complained of was his poor memory.

August 30th, the Department of Health reported that the guineapig which had been injected with the cerebrospinal fluid proved to be tuberculous on autopsy.

The points of interest in this case are:

1. The sudden onset of the attack, without any previous history of illness.

2. The continued presence of blood in the cerebrospinal fluid. It has occurred to me that the presence of blood might suggest tuberculosis, just as a bloody pleuritic fluid would.

3. The high polynuclear count. This may be accounted for by the presence of blood in the cerebrospinal fluid. Still, Marcon and Mutzner report a case in which the cerebrospinal fluid contained mainly polynuclear leucocytes, yet the autopsy revealed a well advanced tuberculous meningitis.

Several cases of recovery from tuberculous meningitis have been reported. Freyhan reported the first case of recovery, perfect after several months. Henkel reported the second case on record in 1900. Barth, in 1902, reported the recovery of a child, two years and nine months old, in whose lumbar puncture fluid tubercle bacilli were found. Gross, in the same year, reported a case in which three lumbar punctures had been made, the first showing tubercle bacilli, the other two being negative, yet the case went on to recovery.

A case is reported by Jansen where undoubted tuberculous meningitis was cured by daily administration of 900 grains of potassium iodide, and an autopsy, three years later, showed a former tuberculous meningitis.

Dr. W. Hale White, in *Brain*, has also reported a case of tuberculous meningitis of undoubted authenticity, in which recovery occurred.

360 West Thirtieth Street.

VANADIUM SELENIUM IN CANCER.*

Its Histological Effect.

By Felix von Oefele, M. D.,
New York.

Of the different tumors, sarcoma and the carcinoma we call malignant. Especially for carcinoma we state that selenium compounds are a specific treatment. In sarcoma the selenium must be combined with other active agents.

The basis of this selenium treatment is a chemical action of selenium as an oxidizer; especially in carcinoma selenium increases the oxidation of sulphur compounds. But beside this chemical action everybody wishes to know the histological effect of selenium on carcinoma. The histological results of selenium on the tumor I shall explain.[1]

In practical medicine typical tumors are very rare. Mostly a real tumor has the main characters of a certain kind and partakes slightly, in some ways, of the character of other kinds of tumors. We will not, because we cannot explain whence this intermediate character mostly comes. But it is a fact, that an intermediate tumor, partly of malignant and partly of benign character, can either grow more malignant or more benign. It is bad, obviously, if a tumor becomes more and more malignant in character. The intention of therapeutics should be to change a malignant tumor into a benign one, if possible, and this is exactly what selenium does.

A sarcoma is a malignant tumor, a conglomeration of embryonic cells in a histological as well as a chemical sense. In a carcinoma about the same kinds of cells are placed in crypts, the intervening places are filled by connective tissues, and it has the appearance of a pseudogland. Sarcoma and carcinoma make sprouts in the neighboring tissue, just as a plant grows.

A demarginated fibroma is exactly a contrary kind of benign tumor. But very often we find in practical cases a fibrosarcoma or a fibrocarcinoma. As above stated, it becomes worse, if the sarcoma or the carcinoma tissues increase, and it improves if the fibroma characteristics overpower the malignant characteristics.

In cases of carcinoma and sarcoma cure by selenium compound, it is impossible to cut out at certain times pieces of the tumor and to make a series of histological observations on the selenium influence on the tumor tissue. It is only occasionally that we get specimens of both the earlier state of the tumor and of the treated tumor. The best opportunity came in a case where the original tumor and recidives were operated on. Later on, the recidive was treated by selenium compound. After some weeks of the selenium treatment, pains occurred from the pressure of scars on nerve trunks. A part of the tumor was again taken out. We have some other occasional observations on treated patients.

It would go too far to give, point by point, the results of these examinations and to show how these points form a mosaic picture of conclusions, which are not yet without missing parts. But sometimes we can restore these parts. To such restoration the conclusions of Professor Wassermann on mice tumors are very valuable.

Our impression of selenium action is this: The selenium affects particularly the crypt cells of carcinoma, which I shall call the parenchyma. These cells become, by selenium treatment, colloidal. The parenchyma swells up from place to place and becomes degenerated. The colloidal detritus of these degenerated parenchyma cells becomes more and more resorbed and new connective tissue replaces the crypts, increasing the stroma. In a later state this connective tissue retracts. The tumor does not spread further over the boundary line after the selenium treatment. The tumor becomes, therefore, more and more of the demarginated character of fibroma. And this fibroma can contract more and more in the character of a scar.

But the tumor will not absolutely disappear by the selenium compound treatment. This furnishes some practical instructions for the selenium compound treatment in cancer cases. If in cancer cases a radical operation is possible, this radical operation should be done. But the success of this operation should be improved by subsequent selenium compound treatment, because this treatment will prevent recidives and metastases. In the second case it will be possible to have an operation, although not a radical one. In these cases the operation can be done and the residue of the operated tumor can be treated, internally and locally, by selenium compound. In the third case the malignant tumor is no longer operable. In this case the selenium treatment is absolutely necessary. If the condition of this patient and of the tumor is improved, an operation can be done later on. An operation is not indicated in the state of colloidal degeneration of the parenchyma and soft swelling of the tumor. But it seems that in the state of fibroid retraction of the tumor an operation will be very often necessary.

Some irritations are always there by a hard, fibroid scar. And the feeling of the patient can be improved by cutting out this hard tumor. If before the cancer was inoperable, the transformation into a fibroma gives to the surgeon the opportunity to do a new and useful operation, whereas the surgeon was before useless, and could not operate. That is what some selenium compounds can accomplish in cancer cases.

326 East Fifty-eighth Street.

THE AUSCULTATORY METHOD OF BLOOD PRESSURE READINGS,

With the Aid of a New Instrument.

By James F. Prendergast, M. D..
Philadelphia.

The value of the sphygmomanometer as a diagnostic help is acknowledged by all up to date clinicians; the factor which has caused the greatest amount of discussion and which has been the stumbling block to many doctors using it, is the taking

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*See my letter on this subject, *Medical Record,* June 22, 1912.

[1] My observations have been mainly of the action of vanadium selenide, Va_2Se_5 (selenium compound) prepared under my direction; I have also prepared Va_2Se_2 and Va_2Se_3.

of the diastolic pressure. The reading of the systolic pressure is easily acquired with a little practice, and is fairly accurate for clinical purposes.

The taking of the diastolic pressure, however, is an entirely different proposition, and I venture to add, very few users of the instrument obtain accurate readings of the diastolic pressure and fewer yet by far can interpret its value after they have obtained it. This is based on a large experience in demonstrating and teaching the value of the sphygmomanometer for clinical use. It is this uncertainty and difficulty that has caused so many different makes of manometers to be placed on the market, each new model asserting some advantage over its predecessor particularly in the taking of the diastolic pressure; all of them however depending on the tactile sense, the excursions of the mercury in the tube or on the oscillations of the needle in the pocket type of instrument.

Now it is very difficult, at times, even for the expert to say just which is the widest excursion of the mercury column or the greatest swing of the needle, at which point the diastolic pressure is determined, hence one can imagine the difficulty of the inexpert or the average physician who is only occasionally called on to take blood pressure readings. I have seen a number of cases where the variations in the swing of the needle and the play of the mercury column were so nearly equal that it was almost impossible to read accurately the diastolic pressure.

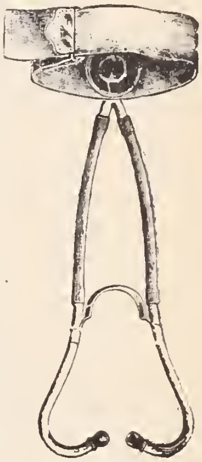
To overcome this difficulty the writer advises the use of the auscultatory method of determining the blood pressure.

In October, 1905, Korotkoff, of St. Petersburg, first advocated the determination of blood pressure by auscultation, and this method has been thoroughly studied and generally adopted by the German clinicians as a routine procedure. Ettinger, Ehret, Krylow, Bozowski, Fischer, Sterzing, and Schrumpf abroad, Goodman, Howell, Gittings, and Norris in this country have studied and investigated this method and recommend it as more accurate than by palpation of the radial pulse or watching the oscillations of the column of mercury or the needle.

In order to enable the physicians to take the blood pressure readings more accurately and to make them of greater clinical value to the profession as a diagnostic and therapeutic guide, my instrument makers have placed on the market, at the suggestion of the writer, an auscultoscope. It consists of a two inch band to which is attached a metal bowl or cup the face of which has a very delicate diaphragm with a centre projection to fit more snugly to the surface of the arm over the brachial artery just at or below the bend of the elbow. Flexible rubber tubes are connected with the drum or body of the instrument to which are attached hard rubber ear pieces. It is called the Bowles sphygmometroscope and resembles the Bowles stethoscope with certain modifications; it is attached to the arm by a two inch band.

The instrument is intended for use with any kind or form of sphygmomanometer either pocket or mercury. Its method of application is to place the band on the arm one or two cm. (one half to one inch) below the arm band or cuff of the sphygmomanometer at the bend of the elbow, having the projection on the diaphragm of the drum directly over the brachial artery before it divides into the ulnar and radial, care being taken to avoid pressure.

Pump the cuff connected with the manometer with air until the radial pulse is cut off, open the release valve, and allow the air to escape slowly from the arm band. The first impulse or sound heard is the systolic pressure, a clear thump or tap caused by the sudden stretching of the walls of the relaxed vessel and the rapidity of the blood stream (Krylow); first phase. Then follows a murmur (second phase) followed by a clear sound (third phase), clear sound becomes dull (fourth phase), disappearance of all sound which is the diastolic pressure (fifth phase). The systolic and diastolic pressures are read off the scale of the sphygmomanometer as the sounds are heard. Some clinicians accept the fourth phase as the diastolic pressure, but the men who have had the greatest experience and have done the most experimental work accept the fifth phase as the true diastolic pressure.



Prendergast auscultoscope.

Where one is merely trying to read the systolic and diastolic pressures it is not necessary to attempt to interpret the different phases. The essential thing to remember is, that the first tap or sound is the systolic pressure and just at the disappearance of all sounds is the diastolic pressure. Clinican experience and laboratory experiments will in time help us accurately to determine the meaning of the different phases or sounds. For instance, Fischer found in cases of high diastolic pressure the first sound or phase was loud and clear, the second when present was short but clear. If the third was short the fourth could not be heard.

In arteriosclerosis with hardening and loss of elasticity in the bloodvessels, Krylow says, the auscultatory phenomena are apt to be more pronounced. According to Ettinger's experience the rapidity of the blood stream increases the auscultatory phenomena. He also believes that absence of the third phase alone denotes moderate weakness of the heart muscle, while coincident absence of the second and fourth phases indicates that the weakness has reached a high degree. When there was improvement of the heart in some of his cases the third phase returned. In a case of fatal pneumonia with sudden cardiac failure, on the day of death there occurred a sudden disappearance of the second and third phases. Howell and Goodman say that absence of the fifth phase is pathognomonic of aortic insufficiency.

In many cases of aortic regurgitation the determination of the diastolic pressure by auscultation is impossible owing to the well known "pistol shot" sound (Gittings).

To get accurate results the cuff of the sphygmomanometer should be a wide one, twelve cm., and fit the arm perfectly. The patient must cooperate with the physician and keep perfectly quiet or sounds may be produced which can be easily misinterpreted. The advantages of having the sphygmometroscope band strapped on the arm are: it gives us freedom of hands to manipulate the release valve and palpate the radial pulse, combining the two methods, one checking the other. The bowl of this instrument fits more snugly to the arm and can be held in position directly over the vessel, thus magnifying the sounds and, not being supported by the hand, extraneous sounds are prevented.

The auscultatory method is more accurate, and the reading of the diastolic pressure much easier and more reliable. The readings from actual demonstrations are from five to ten mm. Hg. higher than by palpation. The systolic pressure is generally higher and the diastolic is lower, giving us a wider pulse pressure which from experimental data is closer to the true blood pressure than that found by palpation.

The writer advises, until experimental research and clinical study prove the contrary, that the last "phase" or the disappearance of all sounds be accepted as the true diastolic pressure. This is the teaching of the majority of clinical workers who have had the largest experience in this line of research. Furthermore, if this suggestion is followed our blood pressure records will be standardized and of greater value.

Goodman and Howell say: The asuculatory method is useful in differentiating certain organic and functional derangements. It was found that any arrhythmia which may be present is noted earlier by the auscultatory method than by feeling the pulse or listening to the heart. By this method true organic cardiac lesions can be differentiated from a neurosis. In organic lesions there is a uniformity in sequence of readings, in neuroses the readings are marked by variations in sequence and a variation in the systolic and diastolic pressures.

SUMMARY.

For routine estimation of the systolic and diastolic blood pressure, the auscultatory method is by far the most accurate and satisfactory. The syhygmometroscope by magnifying the sounds and giving the user the freedom of his hands renders the work more accurate, simpler and pleasanter.

REFERENCES:

GOODMAN and HOWELL, *American Journal of Medical Sciences*, September, 1911; IBIDEM, *University of Pennsylvania Medical Bulletin*, November, 1910. GITTINGS, *Archives of Internal Medicine*, 1910. In an article in the *Interstate Medical Journal*, 1912, 10, Warfield accepts fourth phase as the diastolic pressure.

4012 Chestnut Street.

Abstracts and Reviews.

THE INFECTIOUS LESIONS OF BLOODVESSELS.[*]

By F. B. Mallory, M. D.,
Boston,
Associate Professor of Pathology, Harvard Medical School.

Infectious lesions of the bloodvessels may be divided into two main types; those in which the infecting organism is very virulent and rapidly destructive of the tissues, and those in which the organism is only mildly virulent and the process of destruction is a slow one. It is with the latter group that we will deal chiefly, for it is in this group that we can find the several stages of development of the lesions.

The occurrence of infectious lesions of the bloodvessels is far more common than is generally thought. The chief organisms which are found as the causative agents of the several different types of lesions are: The ordinary pus cocci in nonvirulent and virulent strains, the streptococcus of Poynton and Paine, the glanders bacillus, that of tuberculosis, leprosy, and the spirochete of syphilis.

The vascular lesions are the result of local infection by one or another of these agents and may be of several types. The vessel may become involved from within or from without by direct infection, or it may become damaged as the result of infection of its nutritive vessels or of the surrounding tissues with resulting obstruction to the blood supply.

The local infection of the vessel wall causes a lesion in one of three ways—by the actual presence of the infecting organism, by the toxine which the organism liberates, or owing to the toxic products of destroyed tissue cells. Each of these factors may cause the attraction of endothelial leucocytes, polynuclear leucocytes, or lymphocytes. The lesion may be the result of a combination of two or more of the processes mentioned. It is usually the rule, however, for each type of organism to cause a characteristic type of lesion in a characteristic manner.

Depending upon the circumstances of location and amount, the exudation or accumulation of fibrin may be a complication or a beneficent process. It may occlude the lumen of the vessel when it collects on the intima. Or here it may undergo softening with the production of emboli. It may accumulate in such large amounts outside the vessel as to compress it and close its lumen. Last, it may be present in smaller amounts and by subsequent organization be the means of causing healing of the vessel.

When mild strains of the streptococcus are the causes of the lesions these organisms will usually be found to have died out in many of the areas involved. They produce necrosis of the vessel wall, with the accumulation of fibrin, and the attraction of polynuclear and endothelial leucocytes into the area outside of the vessel with the formation of an abscess. Fibrin does not accumulate within the lumen in these cases as a general rule, but in a case of arteritis nodosum, in which the infecting organism was similar to the rheumatic streptococcus of Poynton and Paine, there were large collections of fibrin in the lumina of a large number of the vessels. It might be remarked, at this point, that the endocardial lesion in rheumatism is, in reality, a lesion of the bloodvessels. These septichemic lesions are to be found scattered widely throughout the body. Their ultimate results may be death by rupture of a large vessel, death before the destruction of a large vessel has developed, or the lesions may undergo healing. The healing may be by obliteration of the lumen of the vessel and organism, or it may take place by organization of the fibrin, as a result of the invasion of endothelial leucocytes, without the obliteration of the lumen of the vessel. In the latter case miliary aneunysms are common. In the course of healing of damaged vessels the smooth muscle cells never regenerate.

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[*] Summary of a lecture delivered before the Harvey Society at the New York Academy of Medicine, December 14, 1912.

Vascular infection by the glanders bacillus most closely resembles that by the pus cocci, and the formation of small abscesses in the wall of the vessel is very common. The toxine which the bacilli liberate causes necrosis with the exudation of serum and the attraction of polynuclear and endothelial leucocytes. In the abscesses some of the endothelial leucocytes fuse, under the influence of the toxines, to form large cells with large lobulated nuclei. The end results of vascular infection by this organism are similar to those with the pus cocci, save that healing seldom occurs.

When the tubercle bacillus is the cause of the vascular lesions a careful study of specimens will show that in the earliest stages the bacilli are taken into the endothelial cells lining the interior of the vessel. The toxine of these bacilli has the widest scope of attraction of any known. It causes the accumulation of very large numbers of endothelial leucocytes and lymphocytes, which, owing to their excessive abundance, cut off the blood supply of the tissue in the centre of the area, and in which the infecting bacilli are situated. The tissue then undergoes anemic necrosis with the formation of the typical tubercle. Practically all tuberculous lesions begin in the endothelial lining of bloodvessels. Surrounding the accumulation of cells a reparative process begins by the invasion of the area by fibroblasts. In the bloodless central portion some of the endothelial leucocytes fuse to form the multinuclear giant cells. It has been observed that these giant cells form around particles of fat or fatty matter, and it is believed that their formation is in response to some chemical property of this fat.

When the tuberculous process involves capillary vessels, or the terminal veins of the spleen, a minute area of necrosis results. When, however, large vessels are involved the process is different, for the infection in these is not from within the vessel, but through the minute vessels of the adventitia. In these cases, therefore, the lumen is seldom infected and thrombi do not form. These vessels sometimes do ulcerate through, however, with the liberation of large amounts of tuberculous material into the blood stream and the production of general miliary tuberculosis. Aneurysm rarely results from tuberculous infection of the vessels. General miliary tuberculosis is the typical condition, after which all widespread infective vascular lesions pattern, as far as distribution is concerned.

The bacillus of leprosy is a mild infecting agent and owes its action almost purely to mechanical factors. It produces little toxine, but it continues to multiply in the endothelial cells of the vessels and the fixed tissue cells. The main cause of damage to the vessels, and the tissues in general, is the result of the accumulation of the endothelial leucocytes, which, by crowding of the vessels in the infected area, cut off the blood supply or compress nerve filaments with the production of areas of necrosis or anesthesia. Subsequent invasion of these areas by fibroblasts and the production of connective tissue gives rise to the sclerosis seen in the disease.

The last organism to be considered, the spirochete of syphilis, is the hardest to demonstrate in the tissues for two reasons; first, on account of its poor staining properties; second, because it soon dies out in a given focus. Like the lepra bacillus, it produces little toxine. The lesions which it causes are very slow in development and almost always show the phenomena of destruction and regeneration progressing simultaneously in a given lesion.

In syphilis the common vascular lesion is occlusion due to the accumulation of endothelial leucocytes and lymphocytes. Necrosis and diffuse inflammation follow as secondary phenomena. Both the intima and the adventitia are subject to primary infection. The lesion is marked, in its later stages, by the enormous accumulation of fibroblasts, which bring about the organization of the tissue infected. In syphilis the occurrence of miliary aneurysms is quite common, for the destruction of the vessel wall progresses very slowly and is accompanied by coincident regenerative efforts, so that the loss of tissue is supplied by scar formation as fast as it advances.

There is one common feature to all vascular lesions of an infectious nature, and that is the diffuse distribution of the lesions. It should be borne in mind, however, that each type of infecting organism has its tissues of predilection, and in these areas the infection is the greatest.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXIX.—How do you manage chronic ulcers of the leg? (Closed December 16th.)

CXXX.—How do you treat subacute and chronic laryngitis? (Answers due not later than January 15, 1913.)

CXXXI.—How do you treat psoriasis, and with what success? (Answers due not later than February 15, 1913.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXVIII has been awarded to Dr. Maurice Schneck, of New York, whose article appeared on page 29.

PRIZE QUESTION CXXVIII.

THE TREATMENT OF INFANTILE CONVULSIONS.

(*Continued from page 31.*)

Dr. D. E. Hottenstein, of Millersburgh, Pa., writes:

Few, if any, of the exigencies in infancy are more alarming and distressing to parents than convulsions. It is necessary to adopt active treatment immediately, for the sake of the parents as well as the little patient.

An appreciation of the causes of convulsions suggests the treatment. These patients as a rule belong to one of two classes, rhachitic or nonrhachitic. To which of these classes the case belongs can usually be diagnosticated at first sight and the prognosis given accordingly. In the first class convulsions are of serious import, while in the latter the outcome can be made favorable.

The immediate indication in treatment is the same in both classes, i. e., relaxation and clearing the *primæ viæ*. Intestinal toxemia is so frequently the cause that it is safe to assume, when a child in apparent health is seized with a convulsion, that it is of gastroenteric origin. In order to relax the child the time honored mustard bath at 100° to 105° F. still holds first place; immerse child to the neck. While in the bath there should be brisk friction of the trunk and extremities, particularly the latter. In a great majority of the cases in less than five minutes relaxation occurs and there is evidence of a return to consciousness. However, should there be no reaction in this time, remove the child from the bath, wrap in woolen blanket, place an icecap to the head, hot water bottle to the extremities, administer chloroform until relaxation *does* occur, have attendant give injection of soapy water until bowels are thoroughly washed out. If there is a recurrence of convulsion when chloroform is withdrawn, give chloral by the rectum sufficient to prevent a recurrence. It is best to attach to the syringe a small rectal tube or a large soft catheter. This should be introduced for at least nine inches, so that the solution will be carried to the descending colon where it will be retained better than if introduced simply within the anus. The initial dose should be at six months four grains, at one year six grains, at two years eight grains dissolved in an ounce of warm milk. Pressing buttocks together and pressure against the anus will prevent the solution from escaping. The effect of the drug is usually obtained in twenty minutes and it should be repeated at intervals of from two to six hours as required to control the convulsions. Continue in diminished doses as long as there are signs of nervous irritability such as twitching and involuntary muscular contractions.

As soon as the child can swallow give one tenth grain doses of calomel for six doses, and follow with a teaspoonful of castor oil. After there is a thorough clearing of the intestinal tract there is very little danger of recurrence in the nonrhachitic cases and with care in feeding for forty-eight hours the child will be normal, unless there is a continued irritation which will need attention, such as from congested gums from teething, which require lancing, constipation, which indicates modification of diet or laxatives. Phimosis indicates circumcision intestinal worms call for an anthelmintic, or there may be an infection of which the convulsions are the prodromal symptom, such as scarlet fever, pneumonia, or meningitis.

In the rhachitic children, usually bottle fed, the feeding and care of the intestinal tract after an attack are of paramount importance in preventing recurrence. The diet must be modified or perhaps entirely changed to overcome constipation or diarrhea and improve general nutrition. Fresh air, fruit juice, and codliver oil inunctions frequently bring about remarkable changes in a short time, and the tendency to recurrence decreases with the general improvement.

Dr. C. B. Weller, of Austin, Tex., writes briefly:

On arrival, a physician generally finds the family in a state of excitement, so, to stop excitement as well as the convulsions, I use a few drops of chloroform, which relieves the convulsions almost instantly, and, while I am keeping the child under the influence of the drug, I request some member of the family to make a moderately warm solution of soapsuds and water, which I use as a cleansing enema. Washing the lower bowel well generally helps to control convulsions as well as to put the bowel in condition to absorb an injection of bromide of sodium and chloral hydrate in appropriate doses for the age of the child to control convulsions (to cause retention, I hold buttocks together for a few minutes). If this does not control the convulsions, I use morphine sulphate in appropriate doses, giving it hypodermically, which also has a good effect on the circulation. If infant, between attacks, can swallow, I give castor oil to clean out the whole alimentary tract, as most of my cases have been caused by some error in diet and have been reflex from intestinal tract. If child seems to have fever, I apply icecap to head and try temperature afterward. I use mustard pack for congestion to internal organs, which causes a cutaneous hyperemia. I have found good results from turpentine stupes to abdomen in cases of intestinal cramps. I use one drachm of turpentine to one quart of hot water. This will in some cases stop cramps and inhibit reflex convulsions from the intestinal tract.

After convulsions are under control, then I make a thorough examination and try to ascertain cause and then I use appropriate remedies to remove cause, if possible, but at the same time I keep up symptomatic treatment for a day or so, e. g., chloral and bromides in appropriate doses.

Dr. Peter C. Ten Eyck, of Syracuse, N. Y., observes:

The physician will obviously lose no time in reaching a little patient who is suffering from infantile convulsions. Once on the ground his treatment will be divided into two stages, the immediate and the subsequent treatment.

Immediate treatment: Inject immediately, hypodermically, morphine sulphate, with or without atropine, suiting the dose to the age. I have never found it necessary to repeat the dose, but should do so if necessary after an hour. While preparing the hypodermic, order three pints of warm soapsuds, to each pint of which may be added to advantage when convenient three ounces of glycerin. At the same time order some ice.

Take the patient's rectal temperature. If high (and it usually is) break the ice, already ordered, into pieces the size of a chestnut, place in a thick towel, and apply to the back of the head and neck, and administer tincture of aconite, three drops of the ten per cent. solution every hour, or one drop of the thirty per cent. solution, which I carry as being less bulky.

It will be necessary to watch the temperature carefully, that the ice pack may be removed when the temperature drops to 100° F., replacing if it again rises.

Undress the patient. Place in a good warm blanket. Using the soapsuds solution and a good fountain syringe (or other syringe of good capacity), wash out the lower bowel.

It is necessary to remember that there is occasionally in the rudimentary sigmoid, a long tenacious mass of fecal matter, bent upon itself to conform to the gut, which will not break up and come away with the enema. This is easily demonstrated through the thin walls of the little patient's abdomen, and may usually be readily broken up by the little finger passed into the rectum.

Administer calomel, one tenth grain every half hour for ten doses. Also prescribe one grain of resorcin, one half grain of zinc sulphocarbolate, one and one half grain of sodium salicylate, in a drachm of some digestive ferment solution, every three hours.

The next duty of the physician is to discover, if possible, the cause or causes of the convulsions, that precautions may be taken against recurrence. This he may be unable to do at the first call; but on the following day, under the above mentioned line of treatment, a thorough examination will be possible.

The great majority of infantile convulsions will be found to be due to digestive troubles affecting particularly the intestinal tract—and these intestinal troubles depend on a variety of causes. Disorders which might be deemed trivial assume added significance when we consider the undeveloped nervous system of babies and very young children. The purely "vegetative" nerve elements of all animals (the nervous system controlling the automatic functions of the body) are the earliest developed, and of necessity most function properly from the first, and as a result of this development the functions of the various organs are properly performed under normal conditions. Those functions of the nervous system which are necessary to control these processes under conditions somewhat abnormal are developed later, particularly the inhibitive functions. Organic processes are called into action more quickly, and act with greater violence as a result of this lack of control, this lack of inhibition.

Some infants and children are predisposed to convulsions from slight causes, internal and external, while others are free under all circumstances. Fundamentally the trouble is without doubt due to an irritability of the nervous system, a neurotic element which demands the physician's attention. The little patient should be examined for possibly beginning exanthemata; nose, throat, or ear disease; phimosis with retention of smegma; worms.

Bearing in mind the quick response to external influences in the very young, it may be necessary to give some advice to the parents, not only correcting dietetic indiscretions of these little patients and their manner of living, but often changing their entire environment. This last, however, is only exceptionally necessary.

The writer has never found it necessary to repeat his initial dose of morphine hypodermically; and mentions the internal administration of chloral, bromides, and other medicines (with the exception of aconite and calomel), only to condemn them as uncertain and inefficient in the "convulsive" period of the trouble—and by the time they can be properly absorbed they are not needed.

Dr. Joseph Di Rocco, of New York, writes:

Before discussing the treatment of infantile convulsions, I cannot help enumerating the various causes that bring them on. One has to bear all these in mind, so that the treatment for the correction of the cause be afterward applied in the right direction. Convulsions may be due to these causes: 1. Predisposing; (a) the peculiar structure of the nervous system of young infants; (b) hereditary, especially on the mother's side; (c) rhachitis. 2. Exciting; (a) symptomatic, as inflammation of the nerve centres or meninges; new growths; diseases of inner and middle ear; (b) reflex, as gastrointestinal disturbance; sensitive gums; worms; phimosis; (c) sympathetic, at onset or in course of an infection or inflammatory diseases, such as diphtheria, scarlet fever, measles, pneumonia.

Working on the basis that the convulsion is from a predisposing or symptomatic cause, I resort to sedatives only, such as chloral or bromides. For example, I inject into the rectum five grains of chloral with one drachm of water (for a child of one year). Repeat this in one hour if necessary. If this does not restore to the normal condition, I resort to morphine, by injection, one sixtieth grain for a child of one year. This should not be repeated before six hours. In extreme cases, when the convulsions are not controlled by any of the foregoing means, one may have to resort to inhalations of chloroform, but personally I never had any occasion for its use.

The majority of the infantile convulsions that one sees are due purely to reflex causes. Perhaps ninety per cent. of them are due to a gastrointestinal disturbance, from food that is not adapted to the child's digestive system, whether it be material from the table or improper milk formulæ. The whole matter narrows down to two simple words, i. e., faulty feeding. It is almost invariably the bottle fed baby that has convulsions. One must bear in mind, and this is the vital point, that the convulsive condition will never be relieved until the gastrointestinal tract is perfectly cleared of all foreign material. For the convulsion itself, I place the child in a tub of hot water (up to its knees) with enough mustard in the water so as not to be too annoying to the person handling the child. Apply cold to the head. Keep the child in the water until the convulsion has stopped and the child is quiet. When the child is restored to its normal quietness give a high rectal saline irrigation. If you know that the stomach contains some foreign food material, give syrup of ipecac in half drachm doses (a child of one year); repeat until vomiting is induced. As I said before, the condition will never be relieved until the tract is perfectly clear; I give castor oil, a good dose of it. This answers the purpose admirably; acts as a broom by sweeping everything before it. The following is also of the utmost importance. Be very careful with the feeding of the child after it has had a convulsion;

no food for twenty-four hours. At the end of that period begin with a very weak milk formula (young child), or barley water (one year or older).

With convulsions of sympathetic cause, at the beginning of a disease, the fit is usually of a mild and temporary nature, and the doctor is not disturbed. But if any treatment is instituted, the use of sedatives as stated above works well. The convulsions under this cause are of importance only if they come during the course of the disease. This puts me on the lookout for complications. With such convulsions the hot pack is indicated. Likewise stimulation is called for, preferably in the form of whiskey; very hot is the best. And when there is an irritable stomach, I give it per rectum.

As I have said before, fully ninety per cent. of infantile convulsions are due to a gastrointestinal disturbance, and these will continue to come at greater or less intervals, much to the annoyance of the mother, playing havoc with the peculiar structure of the nervous system of the child; until the gastrointestinal tract is relieved of all foreign food material and until the giving of food that is adapted to the child's digestive tract is regulated. The various causes of convulsion must be borne in mind, so that after the convulsion is relieved, the cause, whatever it may be, is corrected.

Dr. W. A. L. Styles, of Montreal, Canada, observes:

The rational treatment of infantile convulsions presupposes a knowledge of the etiological and pathological factors concerned in its production. Briefly considered, convulsions are either central or peripheral in origin; typical of central type are the acute exanthemata, cerebral abscess, etc., while exemplifying peripheral factors, are gastrointestinal disturbances, foreign body in nose or ear, etc.

Treatment will be discussed under two headings, attack and after treatment.

Attack: Immediately immerse child up to neck in a warm (100° to 105° F.) mustard bath for five to ten minutes, with ice cap or cold compress to head, followed up by emptying lower bowel with a glycerin enema, given at 70° F. if high temperature is present; add, by mouth, a full dose of calomel or castor oil. The warm bath is contraindicated in syncope or advanced pulmonary disease. The foregoing treatment will answer admirably in most mild cases.

Should convulsions recur, introduce per rectum one ounce of warm saline, containing chloral hydrate and sodium bromide; to an infant of three months, give two and one half grains of chloral, and three to five of bromide, while at twelve months three to five grains of chloral and five to ten of bromide are given; this to be repeated at hourly intervals for two or three doses. Ethyl carbamate one and one half grain, four times daily, at six months, often succeeds when the chloral bromide combination fails. Relief may only come when antipyrine (gr. ss. at six months) is given, with sodium bromide, four times daily. For the rapid control of convulsions, we have two dependable remedies in chloroform and morphine. Chloroform inhalation invariably affords immediate relief, though it may tend to depress a heart already embarrassed by toxemia, in which case ether may be substituted.

Should convulsions continue after withdrawal of chloroform, or despite foregoing treatment, morphine sulphate is to be resorted to hypodermically, gr. 1/48 to 1/24, the former amount for child of six months, the latter when twelve months old; may be repeated half hourly for two or three doses, as necessary.

After treatment is prophylactic and curative in character. After subsidence of the convulsion, we concern ourselves with the etiology of the case; peripheral factors are removed, and cerebral or circulatory disturbances, acute infections, etc., are treated in the usual manner.

Absolute rest in bed, with quiet surroundings, along with a light dietary, daily bowel elimination, and a three day chloral bromide, or antipyrine bromide, treatment to ward off recurrence of seizures.

Hyperpyrexia is to be treated along the usual hydrotherapeutic lines, being a prolific factor in inciting convulsions.

Possible secondary attacks are best guarded against by general tonic treatment—nutritious, digestible food and fresh outdoor air.

Dr. W. T. Parrott, of Kinston, N. C., states that—

Specific treatment depends upon the etiology. I employ then a basic treatment "applicable in all" cases, and later a treatment directed against the cause. When called to see a case of convulsions, one has very little time to work out the cause, hence one must be prepared—if possible—to employ measures to relieve the immediate symptoms until a diagnosis can be made and specific treatment inaugurated.

Regarding, then, what I am pleased to term a basic treatment, applicable to all during the paroxysm, I beg to submit the following plan:

A mustard bath, made by quickly stirring a tablespoonful of mustard in six gallons of water, is hurriedly prepared; in lieu of this, I sometimes use plain water, then place the child in the tub with hips and feet elevated and head somewhat lower; I believe the position does good, although if I fear cerebral hemorrhage I do not lower the head. This postural plan works well even without the bath. While the child is in the mustard bath, I am arranging for a high rectal enema, and after this is completed, I give a large dose of castor oil with a small amount of croton oil, provided there is no nausea and vomiting. If there is, which is often the case, I immediately go on broken doses of gray powder and the digestive agent from the gizzards of poultry. In the meantime, I order a mixture of sodium bromide and chloral hydrate and two ounces of mucilage of acacia per rectum. If this fails to control the spasms, I resort to chloroform inhalations and to morphine only *en dernier ressort*, in one thirtieth grain doses, but I have rarely been forced to do this.

During fourteen years of work with children, I have, with one or two exceptions, found this basic treatment thoroughly satisfactory. As soon as the convulsions have been controlled, I make an attempt to locate the cause and apply specific treatment. The exanthemata, urticaria, pertussis, uremia, phimoses, intestinal toxemia, rhachitis, hyperpyrexia, worms, birth trauma, acute nephritis, dentition (?), onset of acute intestinal infections, or epilepsy being the cause, I employ standard treatment for each condition.

In the south, I have found the malarial infections at the bottom of more cases of convulsions in children than any other cause and in these specific treatment is highly satisfactory. I invariably give the quinine hypodermically until four or six injections are given, three hours apart, varying the doses with the age of the child; continuing the use of quinine by mouth until every vestige of the malarial plasmodia has been eradicated—usually in not less than three weeks.

To resume: First, a basic treatment, applicable in every case of infantile convulsions and designed to *relieve* the immediate condition; second, specific treatment, designed to remove the cause and to be inaugurated as early as this can be determined.

Dr. Hartwig Kandt, of Brooklyn, New York, says:

When called to a case of infantile convulsions, my first effort is to stop the spasm, then to prevent recurrence by eliminating the cause. If placing the baby in hot water, with or without mustard, is ineffectual, I administer chloroform and give chloral, grs. v, in one ounce of water by rectum. If I am suspicious of some irritant in the stomach, I give lavage. Every patient gets a colonic irrigation of salt solution (about four drachms of salt to two quarts of warm water).

While giving first aid, I study my patient and inquire into the history so as to ascertain the cause of the convulsion. As a rule this will lead to a confession of overfeeding or improper food, and the next thing is invariably an order for a generous dose of calomel or castor oil. Even if there is no special reason for it, this treatment will do no harm. For after care I advise rest, warmth, and a little more prudence in regard to diet, allowing only the lightest food (barley or albumin water) for the next twenty-four hours. If there is evidence of rickets, the proper diet and medication must be prescribed.

Where I can eliminate the gastrointestinal tract as the causative factor, I look for reflex causes of irritation and try to remove them. The nervous instability normal to every infant is occasionally so much intensified that the presence of a foreign body in the nose or ear, a phimosis or paraphimosis, intestinal parasites in large numbers, dentition or diseased gums, or earache may bring on a paroxysm by reflex irritation. At times the thermometer will give a clue, high fever not infrequently causing convulsions in an infant. In this case I reduce the temperature by alcohol sponges and an icebag to the head to prevent recurrence.

As I said before, the great majority of all cases of convulsions originate in the gastrointestinal tract, but it must not be forgotten that sometimes we have to deal with much more difficult problems, as eclampsia, neonatorum the intoxications of lung, heart, and kidney disease, otitis media, epilepsy, meningitis in all its forms, and finally brain injury due to traumatism. Here the simple means mentioned will be of little or no value in arresting or preventing the convulsions.

Dr. N. Binderman, of New York, relates:

Immediately upon arriving, I take the child from the frantic mother or nurse, as the case may be, lay it upon a pillow with the head low and the buttocks raised, and place some object between its teeth to prevent it from biting the tongue. The handle of a toothbrush answers well this purpose.

While doing this, I take a brief history, asking the most composed member of the family the following questions: "How long is it since the child is in convulsions? Is it the first time to-day? Did it ever happen before? Did it vomit? Did it have a fall? What do you feed it on?"

At the same time I get the rest of the family busy, so as not to interfere with me by their presence, likewise to enable me prepare some of the things which may be necessary later on. One I order to prepare a hot bath, another to get a fountain syringe ready for a hot enema, and a third one to go to the drug store and get four ounces of mustard and a prescription, containing chloral hydrate and potassium bromide, three and ten grains respectively. This is the dose I give to a child of six months.

All this should take about three minutes, during which time the convulsions will, in the majority of cases, cease. If, however, they do not, I place the child into a hot mustard bath, at a temperature of about 110° F. While the patient is in the bath, I administer a hot enema. If these measures fail, I administer a few drops of chloroform by inhalation.

As soon as the convulsions are over, provided the child is awake, I make a thorough examination, going over the lungs, abdomen, reflexes, throat, and pupils. If I find any abnormal physical signs in these regions, or a rise of temperature, I tell the parents that this may be the onset of an acute disease, and order the appropriate treatment. If the signs are negative, the after treatment will depend upon the condition of the patient.

If it is quiet or well asleep, I order fractional doses of calomel, to be given to the child after it wakes up, to be followed by a saline cathartic. If, on the other hand, the child is restless, I make use of the prescription mentioned. This is to be dissolved in a small quantity of warm water and injected high up into the rectum. The buttocks should be raised and held by hand, so as to prevent its escape. If necessary this treatment should be repeated after one hour.

If the child does not retain this medicinal enema, I add a few drops of tincture of opium. This same after treatment I apply if the convulsions have stopped spontaneously. If a hot bath is not feasible, as is frequently the case in poor houses, I substitute a hot pack made of a blanket wrung out of hot water to which a little mustard has been added.

(*To be concluded.*)

Therapeutical Notes.

Drum Membrane Anesthesia.—E. Terry Smith, in *Transactions of the American Otological Society*, 1912, states that he uses as an anesthetic in paracentesis for otitis media a mixture of the crystals of menthol, cocaine, and phenol. These are rubbed together and form an amber colored fluid which, when applied to the drum, rendered the operation painless. Since he has been using this mixture the number of cases that go on to recovery with simply a serous discharge has been almost doubled.

Treatment of Exophthalmic Goitre.—S. Solis-Cohen, in the *American Journal of the Medical Sciences* for July, 1912, states that under medical treatment one may reasonably hope for the recovery of not less than seventy-five per cent. of patients exhibiting Graves's syndrome, and for permanency of the result in at least eighty per cent. of these. Rest, the most important measure of all, should include relief from worry or other mental disturbance, as well as from eye strain and other sources of reflex irritation. As in tuberculosis, it is best for the patient to remain in the open air continuously. In many cases Cohen has found a diet consisting largely of raw or underdone broiled or roast beef and hot water to be useful. One or two glasses of the hot water should be taken an hour before meals, and it should also be used between meals *ad libitum*. A minimum of sugars and starches, a sufficiency of green vegetables and fresh fruits, and milk and eggs, judiciously used, constitute the other essential features of the diet. In those patients who do not tolerate the usual large amount of beef, pains should be taken to ascertain the articles of food best suited.

A potent influence in controlling some of the symptoms is reeducation of the vasomotor taxis, by means of alternate hot and cold applications. After cooling the head and neck, the entire body should be sponged with water at 108° to 112° F. and this immediately followed by a "cold friction rub" with water at as low a temperature as can be borne.

In respect of drug medication, Cohen finds thymus gland in doses of 0.5 to 3 grammes daily, persisted in for months, frequently beneficial. The additional use, conjointly or alternately, of adrenal preparations, gives even better results. Intramuscular injections of a preparation of the posterior lobe of the pituitary will also often cause progressive improvement. Wherever the systolic blood pressure is below 100 mm. Hg, either a pituitary preparation or epinephrine should regularly be given, with or without the thymus. Thyroid gland has, paradoxically, been known to do good in some cases, but should be used with the utmost caution. Parathyroid extract, in doses of from 0.005 to 0.025 gramme of the desiccated commercial preparation, given thrice daily for limited and recurrent periods, is also useful in many cases, especially in controlling tremor and allied nervous symptoms; its effect seems to be enhanced by combination with a calcium salt.

Intestinal antiseptics appear to be useful auxiliaries to treatment. In addition, it is well to wash out the colon thoroughly with hot saline solution once or twice weekly, and to give occasionally a course of calomel and salts, or castor oil.

Treatment of Influenza.—Glenn I. Jones, in the *Journal of the American Medical Association* for October 5, 1912, maintains that the first step in the treatment of this affection should be the removal of the immediate cause by destruction of the bacillus in its avenues of invasion. In the morning the nose and throat should be thoroughly cleansed with a spray of Dobell's solution or of one to 400 phenol solution at a temperature of 85° to 90° F. The nose and throat should then be swabbed with:

℞ Balsami peruviani, ...grs. x (0.6 gramme);
Ichthyolis, ...grs. v (0.3 gramme);
Glycerini, q. s. ad......................℥ii (60 c. c.).
Misce.

In the evening, the spray of Dobell's or phenol solution should be repeated; creosote, two drachms (eight c. c.) in a quart of water, inhaled for one half hour; the nose and throat swabbed with epinephrine solution, and fifteen minutes later, the last procedure repeated with a ten per cent. solution of an organic silver preparation.

Treatment of Hepatic Colic.—Ramond, in *Nouveaux Remèdes* for September 8, 1912, is credited with the following formula for a local application in hepatic colic:

℞ Extracti opii, ...
Extracti belladonnæ foliorum.
Extracti conii (U. S. P. '90), ...āā 2 grammes;
Extracti hyoscyami, ...
Camphoræ, ...5 grammes.
M. ft. emplastrum.

Isolation in Psychoneuroses.—D. Pachantoni, in *Revue médicale de la Suisse romande* for July, 1912, observes that complete isolation, while a very valuable therapeutic measure in these conditions, is frequently both a hardship to the patient himself and a source of opposition on the part of his family. In some cases, indeed, absolute isolation may prove useless or even harmful. For these reasons the author advocates only partial isolation in psychoneuroses, adopting a plan similar to that of Déjerine at the Salpêtrière, Paris. Three or four patients are placed together in a spacious, well ventilated room. They must remain in bed, and are isolated from the exterior in that they are not allowed to receive letters or visitors; but they are able to see one another and to converse.

The results thus obtained were most satisfactory. The plan was resorted to whenever absolute isolation failed to overcome the patient's delirious state. Patients with hypochondriac ideas of long standing were also often placed together, and the results appeared sometimes better than those obtained by individual isolation. Each patient is able to observe, at a period when he is certain of the reality and seriousness of his own affliction, that those of his neighbors are but products of the imagination. By indirect persuasion he is thus assisted in getting rid of his own chimeric and baseless fears. Capricious, selfish patients, for years a scourge in their families, in partial isolation undergo a period of training in moderation, altruism, and sociability. On the whole, this form of isolation, employed with due circumspection, is often a useful measure. Where a mutual psychic influence is exerted among the several members of a group of patients, it is always oriented favorably, i. e., the less seriously affected patient influences the more seriously affected in a manner tending to promote recovery.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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STIMULATING REPARATIVE CELL GROWTH.

The researches for which Dr. Alexis Carrel was awarded the Nobel prize have in effect been studies of the life of the cell. Following up the work of Doctor Harrison, who grew cells of the nerve ganglions of the frog in a drop of blood plasma, Doctor Carrel and his associates have apparently demonstrated that life has its possibilities in the individual cell. Pieces of arteries have been removed from animals, kept for months, and successfully grafted on the arteries of other animals. As has already been pointed out in these columns, Doctor Carrel has found it possible to transplant organs such as the kidneys from one animal to another, though the organ thus transplanted eventually lost its functions. A still further step in the study of cellular life has been made by Doctor Carrel, who finds that the growth of the cell may be accelerated by introducing into the medium in which it lies certain tissue extracts.

Five years ago Doctor Carrel undertook a series of studies hoping to demonstrate the possibility of increasing the activity of cell formation so as to lessen the time required for the reparative process in superficial wounds. Finding it impossible to control the conditions in the living animal with sufficient accuracy he began a series of experiments *in vitro,* the results of which are made public in *The Journal of Experimental Medicine* for January, 1913.

In these experiments small fragments of the heart tissue of the chicken were placed in a mixture of blood plasma, water, and extractive from various tissues. The cellular growth of these fragments was compared with the growth of similar fragments in plasma which contained no tissue extract. The tissue extracts were made from chick embryos from six to twenty days old and from the spleen, the kidney, and other organs of adult chickens and from specimens of Rous's chicken sarcoma. It was found that under proper conditions as to temperature, etc., the extracts caused the cells to grow from three times to forty times as rapidly as did the cells immersed in the plasma alone. The extract from embryos was found most active, although the extracts from the spleen and from the Rous sarcoma were nearly as efficient in activating cell growth. Similar studies were made with the dog and with the rabbit. Apparently the results of these experiments point the way toward the acceleration of the reparative processes in wounds. If the stimulation of the cell growth by the tissue extract proves as great in the animal as it has *in vitro,* superficial wounds could be healed in less than twenty-four hours and a broken leg in four or five days.

Unfortunately, however, it was observed that the stimulant effect of the tissue extract is specific, being confined to like animals. The extract from a dog's spleen, for instance, did not stimulate the growth of chicken or rabbit cells. The practical bearing of this observation is of grave importance, indicating that we cannot expect to obtain the best results in the stimulation of reparative growth in man unless we use extracts prepared from the tissues of human beings. It would seem reasonable to hope, however, that tissues from nearly allied animals might produce satisfactory results in stimulating cell growth. No reports are made of any studies along this line, but in view of the remarkable progress which has been made by Doctor Carrel and his associates, it is not too much to expect that probably our first practical result from these studies will be the discovery of some means of accelerating the reparative processes so as materially to cut down the time required for the healing of wounds.

THE PREVENTION OF PLAGUE.

Although the following doggerel verse occurred as an inconspicuous footnote in an article by W. Colby Rucker in the *Public Health Reports* for July 19, 1912, it was in reality the text for a very scientific and complete account of the most approved methods for dealing with the plague:

First plague in rats,
 And then in fleas,
Then plague in man
 And quick decease.
No rats, no fleas,
 No plague decease.

According to the author, the problem divided itself into two parts, plague eradication and plague prevention. Under the first heading comes the killing of rats and fleas. To get rid of the former the primary requisite is starvation. Not until edible refuse is properly disposed of, and food supplies designed for human consumption, as well as granaries and hay lofts are rendered rat proof, can we hope that the rats will take poison or be attracted by baits into traps. Foremost in importance in rendering buildings rat proof is concrete construction of foundations, basements, and floorings. This is especially desirable in houses, stables, and warehouses where food products are stored. Chicken houses and yards should also be protected in the same way. Having reduced the rodents to the desperation born of starvation, they are much more readily vanquished by actively aggressive weapons.

Among the chemical poisons, arsenious acid and phosphorus are the best. Strychnine is sure, but it is expensive, and because it is often distributed on small grain, is more dangerous to children, domestic animals, and birds. Beside the well known forms of rat traps already in common use, mention is made of two new methods which promise good results. The first is by suspending bait between two heavily charged overhead wires from which the insulation has been removed for a short distance. The hungry rat thus receives the current through his body, is rendered unconscious, and falls into a tub of water, where he is drowned. This method is particularly applicable to warehouses. For use in hotels and ships there has been patented a system of tunnels and traps with a registering device which indicates the number of rats in the trap, and after a sufficient number have been caught they are driven into a pit, where they are killed with gas.

The natural enemies of rats, the cats, dogs, and weasels, are useful when plague is not prevalent, but in the presence of an epidemic they may become a source of danger because of their known liability to contract the disease themselves.

Efforts to rid the community of rodents must be accompanied by measures to exterminate the fleas. These can be destroyed by sprinkling freshly chlorinated lime in the rat nests, whereas in houses, fumigation with sulphur dioxide and washing the floors with a kerosene emulsion, together with great care in ordinary house cleaning methods are sufficient to keep them reduced to the minimum. As a pulicide, formaldehyde is worthless.

Having carried on an effective campaign against the rats and fleas, the further sanitary measures consist in a delineation of the infected zone. To get an accurate knowledge of the distribution and extent of the infection, careful inspection of the human dead from all causes should be made, likewise frequent examinations of the living who have come in contact with cases of plague both in rats and man. All dead rats should be examined, because they form an index to the extent and distribution of the epizootic. On account of their known susceptibility, guineapigs can be used as a plague barometer. Fleas love these animals, and if one is kept in the house it will quickly succumb to the disease, provided the fleas are infected. Thus in the event of the guineapig's sickness or death measures can be immediately taken to ascertain if it has succumbed to the plague, and in such event the premises can be subjected to the proper antiplague measures.

The methods of eradication of the disease naturally suggest the measures to be taken by the municipality to prevent its occurrence. These should consist in effective ordinances designed for the rat proofing of buildings, the proper disposal of garbage, and the sanitary regulation of food stores, stables, bakeries, and warehouses. Besides there should be an effective quarantine against rats. "Where ships go, there the plague will go"; therefore vessels coming from infected ports should be fumigated just prior to sailing. Here again sulphur dioxide is useful; it kills the rats as well as the fleas.

Finally, in rural districts the ground squirrels should be killed; they often suffer from the plague. True, they travel but short distances, and are almost a negligible factor in the direct conduction of the disease to man, but their "great function in the plague scheme," says Rucker, "is that of a rural reservoir from which from time to time the disease flows over to the suburban rat, thence to his city cousin, and thence to man."

PYORRHŒA ALVEOLARIS AND THE VACCINES.

The disease to which the symptomatic name of pyorrhœa alveolaris has long been given forms the subject of a valuable contribution to the *Boston Medical and Surgical Journal* for December 19 and 26, 1912, from the pen of Dr. Leon S. Medalia.

The value of the paper lies in the advice as to treatment of this resistant affection which the writer prefers to call chronic alveolar osteomyelitis, advice which seems likely for the first time to lead to definite and permanent remedial results. Doctor Medalia has treated 115 cases in all stages with a percentage of cures in the incipient stage of ninety-two per cent., in the moderately advanced stage of ninety-three per cent., in the far advanced stage of forty-three per cent. These results are of particular interest to our readers, not only on account of our repeated emphasis on the importance of the condition as a symptom of certain constitutional dyscrasiæ, but because the curative results were obtained by the use of vaccines, to which we have recently devoted a large amount of space. The coincidence is interesting, in view of the impartial discussion we have presented as to the relative merits of the stock heterogenous vaccines and the clinical autogenous, that the Boston writer uses a mixture of the two.

Local measures formed an important part of this new treatment, but these were along the old lines and have never by themselves produced results at all encouraging; they were carried out by the various dentists who sent the patients to Doctor Medalia and in many cases sent with them the statement that used alone they would be hopeless. We believe that no more striking testimony of the value of vaccine therapy could be adduced than the encouraging outcome in these cases of a disease which has hitherto resisted absolutely the most painstaking and ingenious oral surgery.

Among the author's conclusions are that the tooth sockets are enlarged medullary spaces, while the so called peridental membrane is in reality a ligament which holds the tooth suspended in the alveolar cavity; mechanical causes are responsible for starting chronic alveolar osteomyelitis, while the pyogenic bacteria, particularly the pneumococcus in chains, are responsible for keeping it up; again, and this is where our repeated opinion is corroborated, a great many rheumatic diseases, so called, are directly related to the osteomyelitis, and vaccine treatment, together with the proper dietary regimen, cures or relieves the systemic disease as well as the local trouble.

The neglect of this foul and obvious condition has long been a reproach to diagnosticians. Here the dental surgeon's work can take its proper place in relation to the physician's as an inseparable section of general medicine, working toward a result of the highest importance to the health and satisfaction of the victim. The physician will no longer carelessly waive the patient over to the dentist, to the latter's despair, but labor with him to the great comfort of the individual and the protection of the community against one of the most contagious and obstinate of pathological conditions.

TREATMENT OF CANCER BY SELENIUM.

In an editorial note printed on February 3, 1912, we made some reference to the experiments carried out in Germany with salts of selenium in the treatment of malignant tumors in mice. It will be recalled that these experiments attracted widespread attention in the medical profession. While the German scientists did not assert that they were the first to try selenium and tellurium preparations in the treatment of malignant growths, the reports published by them were, we believe, the first to appear which gave the results of actual experience in their use. It seems that the use of selenium dioxide for the treatment of cancer was proposed by Dr. Frederick Klein, of New York, as early as 1908, in a paper read by him before the New York section of the Society of Chemical Industry on November 20th of that year. In another column of this issue we print a paper by Dr. Felix von Oefele, of New York, who, it appears, was also among the first to propose selenium in the treatment of malignant tumors.

It would seem, therefore, that the theoretical considerations based on the similarity in action between arsenic and selenium had occurred to several independent investigators, and we have no doubt that even others beside those named have arrived at the same conclusion regarding the probable availability of the salts of selenium in this direction, though they may not have made any public declaration of their conclusions.

SLOW DEATH FROM LOCAL ASPHYXIA.

L. Ambard and L. Morel reported to the Paris Société de Biologie, according to *Presse médicale* for December 18, 1912, that in their opinion, beside the well known accidents of immediate general asphyxia, there were others less known connected with local asphyxia, which might be produced by the simple elastic ligation of a limb for example. In the rabbit the most marked symptom was progressive emaciation which caused death some seventy to eighty days later.

This phenomenon was well worth the attention of surgeons and anesthetics, averred the speakers, on account of the common practice of using elastic circular compression of the femoral artery in operations on the thigh. Anesthetists agreed that narcosis was not possible without a certain degree of asphyxia, and it would be of interest to ascertain, if possible, what proportion of delayed accidents after anesthesia was due to such asphyxia.

Medical Law.

X. THE PHYSICIAN AS WITNESS.

By the General Statutes of Florida, Section 3151, it is provided:

> In all actions brought in the courts of this State to recover damages for personal injuries alleged to have been sustained, it shall be discretionary with the trial court, upon motion of the defendant, to require the injured party, if living, either before or at the time of the trial of the cause, to submit to such physical examination of his or her person as shall be reasonably sufficient to determine physical condition at the time of trial and the nature and extent of the alleged injuries. The physical examination provided shall be made by a physician to be named by the court in the presence of one or more physicians or attendants of the injured party, if the party so desires. The compensation of the examining physician shall be fixed by the court in each particular case, and shall be in the first instance paid by the party petitioning for such examination but shall be taxed up as a part of the costs of the case subject to the final disposition of the same.

In an action brought by Dartha Carter and her husband against the Florida East Coast Railway Company, to recover damages for personal injuries sustained by the wife, the defendant moved for an order requiring the plaintiff to submit to such a physical examination of her person as should be reasonably sufficient to determine her physical condition at the time of trial, and the nature and extent of her alleged injuries. The court granted the motion and, under the authority conferred by the statute, appointed a physician to make the examination.

On February 13, 1912, the physician appointed by the court reported that he was unable to determine the exact and true character of the physical conditions "presenting," due to the refusal of Dartha Carter herself to consent to an x ray examination being made; such x ray examination being in his opinion absolutely necessary. The defendant applied for a continuance of the case, which was granted on the ground of the refusal to submit to such examination. On May 21st following, the physician appointed by the court again reported that the plaintiff, Mrs. Carter, still refused to submit to such examination. On June 3rd the case was again called for trial, the plaintiffs answered ready, but defendant again moved for a continuation on the ground of plaintiff's continued refusal to submit to such examination. Plaintiffs stated that x ray photographs had been recently taken by an eminent surgeon of the highest professional attainments, of Jacksonville, which exhibited fairly Mrs. Carter's condition; that these photographs were ready to be offered in court, and had been offered to the physician appointed by the court; that Mrs. Carter had at no time refused to submit to an x ray examination by the physician appointed by the court, who had not offered to take such pictures, but instead had insisted that they be taken by a photographer personally objectionable to Mrs. Carter, and plaintiffs offered to prove that the photographer designated by the physician appointed by the court was an improper person to take the photographs. To this presentation the court replied in substance: "I have made an order for an examination by Dr. L.; that order must be complied with. If you have any objections to the person designated by Dr. L. to take the pictures, you must make those objections to Dr. L. Until that order is complied with this case cannot be tried, and the motion for continuance is granted."

The plaintiffs therefore applied for mandamus against the judge, claiming that as he would not let them proceed they were remediless. The matter came before the Supreme Court in the case of State ex rel. Carter et al. v. Call, Judge, 59 Southern Rep., 789. The Supreme Court, after examining the statute above quoted determined the question of the right of the physician appointed by the court to designate another to make the photograph in the following words:

> It seems to us that under the authority of this statute a trial judge may, in the exercise of a sound discretion, on the motion of the defendant, appoint a physician, for the purposes indicated in the statute; that such physician must himself make the physical examination which the statute authorizes; that, while he may use the x ray in his examination, he has no authority to take x ray photographs of the person of the party examined without his or her consent; and much less has he authority to appoint an outside photographer to use the x ray or to take such photographs. The reasons for confining the statute to its expressed terms it seems to us, are obvious, and conspicuously so in a case like the instant one.

In commenting further upon the action of the judge in refusing to permit the case to be tried while the reports of the physician designated by the court showed a refusal to submit to the examination, the court said:

> From the pleadings before us it appears that the respondent judge, acting upon two reports, made to him by the physician appointed to examine the plaintiff, to the effect that she had refused to permit him to make an x ray examination of her person, continued the cause. This ruling was proper, if as a matter of fact the plaintiff did refuse to permit such physician to make such x ray examination; but the physician appointed by the court had no authority to make himself or to have a photograph made by another, without the consent of the plaintiff. The judge's refusal to permit the trial of the case until the plaintiff does permit such effectual examination to be made would continue to be proper.

After this decision was rendered a petition was made to the Supreme Court for a rehearing. By this petition it was made to appear that as it was impracticable for the physician appointed by the court under the statute to make a proper examination without the assistance of an expert radiologist to operate the x ray machine and make the plate under the instructions of the examining physician, the act should be so construed by the court as to allow the examining physician to have with him at the physical examination such assistances as he thinks necessary to a proper examination.

The court, after considering this question and quoting from the act above set forth, disposed of this contention in the following words:

> Under this statutory authority, which is the sole guide in the matter, if the injured party objects to the presence of other persons than the appointed physician at the physical examination, and the appointed physician cannot make a proper physical examination of the injured party without other persons to assist him, it is within the discretion of the trial court to appoint another physician, who can make the examination as contemplated by the statute; but that court is without authority to compel the presence of another than the physician appointed by him.

Upon the trial of the case of Willard v. St. Paul City Railway Co., reviewed in 133 Northwestern

Rep., 465, a physician called by plaintiff as a witness was asked this question:

> Doctor, I ask you, you heard the testimony of the plaintiff, and from that testimony and from your medical examination that you made of this plaintiff, can you form an opinion as to what caused these conditions that you found?

This question was objected to by defendant as "improper and not based on the evidence, and there is no foundation laid for the question." The objection was overruled and the witness permitted to give his opinion. Upon reviewing the correctness of the ruling, the Supreme Court, speaking through Mr. Justice Start, said:

> Technically the question was subject to the objection that it did not assume the truth of the testimony, but that objection was not made. The objection that "there is no foundation laid for the question" is too general to be of any avail, and falls within the rule, especially applicable to expert evidence, that an objection to the introduction of evidence must state the precise point of the objection, so definitely that the court may intelligently rule upon it, and the adverse party may, if the case will admit of it, remove the objection.

News Items.

Chemung County Medical Society.—This society held its annual meeting on the evening of December 27th and elected the following officers: President, Dr. William Brady, of Elmira; vice-president, Dr. R. B. Lynn; secretary, Dr. C. F. Abbott; treasurer, Dr. Herbert W. Fudge.

Kennebec Medical Association.—The annual meeting of the Kennebec County, Me., Medical Association was held recently, in Augusta, under the presidency of Dr. Donald B. Cragin, of Waterville. Officers were elected as follows: President, Dr. Sylvester J. Beach, of Augusta; vice-president, Dr. Wellington Johnson, of Augusta, for thirteen years secretary and treasurer of the association; secretary, Dr. Henry W. Miller, of Augusta; treasurer, Dr. George R. Campbell, of Augusta. A banquet followed the business meeting.

New York University Asks for Six Million Dollars.—In his second annual report to the council of New York University, Chancellor Elmer Ellsworth Brown has asked for $6,000,000 for the immediate needs of the university. The largest individual item is for $3,000,000 to be spent on the medical school, for its endowment and for the equipment of the university hospital. Chancellor Brown also asked for $1,500,000 for buildings, including $600,000 for the purchase and permanent endowment of a library.

Western Surgical Association.—At the twenty-second annual meeting of this association, which was held in Cincinnati, on December 20th and 21st, under the presidency of Dr. L. L. McArthur, of Chicago, the following officers were elected to serve for the year 1913: President, Dr. Jabez N. Jackson, of Kansas City, Mo.; vice-presidents, Dr. Joseph Rilus Eastman, of Indianapolis; and Dr. M. G. Seelig, of St. Louis; secretary-treasurer, Dr. Arthur T. Mann, of Minneapolis. This year's meeting will be held in St. Louis in December.

Society of Medical Jurisprudence.—The two hundred and fiftieth regular meeting of this society will be held on Monday evening, January 13th, in Du Bois Hall, New York Academy of Medicine. The programme arranged for the evening is as follows: 1. Consideration of communication from Arthur MacDonald, M. D., Washington, D. C., advocating support of Sutherland-Clayton bill in congress for the establishment of a laboratory for the study of the criminal, pauper, and defective classes, and urging similar legislation by State and local governments. 2. Consideration of communication from New York Association for Labor Legislation urging cooperation in the study, legislation, and administration of laws affecting diseases due to industrial occupations. 3. Report of the Committee on the Law of Insanity, by Charles A. Boston, Esq., chairman. 4. Annual reports of officers and trustees. 5. Inaugural address by the president-elect, Medical Expert Testimony, by Reynold Webb Wilcox, M. D., LL. D.

A Monument to Doctor Senn.—It is announced that Chicago physicians are planning to erect a monument to the late Dr. Nicholas Senn. It is reported that already about $12,000 has been pledged.

A Reception to Lady Aberdeen.—The Tuberculosis Preventorium held a special meeting and reception on Thursday, January 9th, at the New York Academy of Medicine, in honor of the Countess of Aberdeen, who is making a short visit to America. Lady Aberdeen is the leader of the antituberculosis campaign in Ireland.

A New Surgical Building for the University of Pennsylvania.—Plans have been completed for a new surgical building for the University of Pennsylvania, to be erected at the southwest corner of Thirty-fourth and Spruce Streets. It will be seven stories in height and connect with the present Agnew pavilion. The estimated cost is $200,000.

Associated Out Patient Clinics.—The out patient clinics of New York have organized under the name of the Associated Out Patient Clinics of the City of New York, with a temporary office at 17 West Forty-third Street. Constructive studies of the existing dispensary facilities have begun, and the New York Foundation, of which Mr. Alfred M. Heinsheimer is president, has contributed $5,000 toward the organization work of the association. The officers are: President, George L. Rives; vice-presidents, Henry S. Van Duzer, Dr. Gorham Bacon, and Dr. John Winters Brannan; secretary and treasurer, Dr. S. S. Goldwater; executive committee, Dr. Le Roy Broun, Dr. Arthur F. Chace, Rev. George F. Clover, and Dr. John H. Huddleston; executive secretary, E. H. Lewinski-Corwin, Ph. D. The members of the new organization include thirty-one of the principal hospitals, clinics, and dispensaries of Manhattan, and it is expected that the association will soon spread to other boroughs.

Personal.—Dr. George Thomas Jackson has tendered his resignation as professor of dermatology in the College of Physicians and Surgeons, medical department of Columbia University.

Dr. Yamei Kin, head of the Pei-Yang Woman's Medical School and Hospital of Tien Tsin, China, arrived in New York on December 27th. While in America Doctor Kin will deliver a series of lectures on Chinese women and the Chinese Republic.

Dr. James C. Wilson has been elected president of the College of Physicians of Philadelphia, and Dr. Richard J. Harte, vice-president.

Dr. W. W. Smithson, of Jackson, Miss., has been appointed superintendent of the State Hospital for the Insane, succeeding Dr. Nola Stewart.

The Mary Putnam Jacobi Fellowship.—The Woman's Medical Association of New York City offers the Mary Putnam Jacobi Fellowship of $800 available for postgraduate study. It is open to any woman graduate of medicine. The amount of the endowment to date will permit of a biennial award, and upon the completion of the fund, this will be made annually. The fellowship will not be awarded by competitive examination, but upon proof of ability and promise of success in the chosen line of work. Applications for the year 1913-1914 must be in the hands of the committee on award by April 1, 1913, and must be accompanied by: Testimonials as to thoroughly good health; letters as to ability and character; a detailed account of educational qualifications; a statement of the work in which the applicant proposes to engage while holding the fellowship; examples, if any, of her work, in the form of articles, or accounts of investigations which she has carried out. The committee will decide upon the award by June 1, 1913, and the fellowship will be granted from October 1, 1913, to October 1, 1914. When possible it is considered desirable that the applicant should present herself in person to the committee. Two reports will be expected from the holder of the fellowship, one to be presented about the middle of the work and a detailed report upon its completion. As a rule, the followship will be awarded but once to an applicant; in case of unusual ability a reaward will be considered. All applications for this fellowship shall be forwarded to the committee on award.

Emily Lewi, M. D., Chairman,
Martha Wollstein, M. D.
Mathilda K. Wallin, M. D.
Helen Baldwin, M. D.
Emily D. Barringer, M. D.

Births and Marriages in New York During 1912.—According to a statement recently issued by the commissioner of health, the number of births reported in the city of New York during the year 1912 was 135,625, an increase of 1,083 compared with the returns for the year 1911, but while the returns show an increase in the absolute numbers, still the birth rate for the year, 26.22 in a thousand of population, is the lowest rate since the year 1906. On the other hand, the number of marriages reported was 52,391 with a rate of 10.13, this being the highest marriage rate in five years. The number of stillbirths reported was 6,617, a decrease of 1,379 compared with the decennial averages.

Infant Welfare in Great Britain.—As a result of a public meeting called last July by Mr. John Burns, the labor member of the House of Parliament, an organization has been formed under the title of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, with offices at 4 Tavistock Square, London, W. C. The association represents an alliance between the National Conference on Infant Mortality, the National League for Physical Education and Improvement and its department, the Association for Infant Consultations and Schools for Mothers, and the Women's National and Health Association of Ireland. Mr. John Burns is the president, Sir Thomas Barlow, chairman of the executive committee, and Sir Lauder Brunton is one of the vice-chairmen. The King and Queen of Great Britain have lent their patronage to the association. A postgraduate course on the feeding and care of infants will be given in London by the association and an English speaking conference on infant mortality is being arranged for August 4th and 5th immediately prior to the meeting of the International Medical Congress.

Fourth International Congress for Physiotherapy.—This congress will be held in Berlin, March 26th to 30th, under the patronage of Prince Albert Wilhelm of Prussia. Professor His and Professor Brieger, of Berlin, are presidents of the congress, Doctor Immelmann, also of Berlin, is secretary general, and Doctor Fleischmann and Dr. Otto Strauss are secretaries. The German propaganda committee comprises distinguished investigators engaged in the particular branches of science in question. The members of the American committee will be announced later. The work of the congress has been divided into four parts as follows: Part I. Hydrotherapy, thallassotherapy, balneotherapy, and climatotherapy. Part II. Electrotherapy and radiotherapy. Part III. Kinesitherapy. Part IV. Diathetics. A provisional programme has been arranged which includes many entertainments for the visitors. American physicians who propose to attend the congress or who desire to contribute papers, should communicate promptly with the chairman of the American Members of the Permanent Committee, Dr. G. Betton Massey, 903 Professional Building, Philadelphia.

Physicians Wanted in the Indian Service.—The United States Civil Service Commission announces that an examination will be held on February 5, 1913, for men only, at various places throughout the United States, from which to secure a list of eligible persons to fill a vacancy in the Indian Service at each of the following places: Navajo Agency (Tohatchi Boarding School), $1,000 per annum; Cheyenne River Agency, South Dakota, $1,000 per annum; Santee Agency, Nebraska, $1,000 per annum; Western Navajo Agency, Arizona, $1,200 per annum. Applicants must be graduates of recognized medical schools. Students who are members of the graduating class of any recognized medical school will be admitted to examination, but their names will not be entered upon the eligible register until they furnish a certificate from the dean of the college showing that they have been graduated. Statements as to training, experience, and fitness are accepted subject to verification. Each applicant for a position in the Indian Service is required to be in good health, and must attach to his application a statement concerning the number in his family and the number that will require accommodations at the Indian school or agency in case he receives appointment. Age, twenty-one years or over on the date of the examination, but persons who are more than forty years of age on that date will not be certified for filling vacancies that may occur in the Public Health Service. Persons who meet the requirements and desire to take this examination should at once apply to the United States Civil Service Commission, Washington, D. C., for Form 1312.

Elmira Academy of Medicine.—The annual meeting of this organization was held on the evening of December 4th, and the following officers were elected: President, Dr. A. Mark; vice-president, Dr. John A. Bennett; secretary, Dr. Charles Haase; treasurer, Dr. C. G. R. Jennings; trustees, Dr. John C. Fisher, Dr. A. W. Booth; censors, Dr. E. T. Bush, Dr. A. J. Westlake, and Dr. R. B. Howland. The society elected Dr. Herman R. Ainsworth, of Addison, an honorary member. The principal features of the programme were the address of the retiring president, Dr. H. W. Fudge, and a paper on Asexualization by Dr. F. L. Christian, of the State Reformatory.

State Tuberculosis Sanatorium Urged by the Illinois Board of Health.—In its annual report, issued on January 3d, the Illinois State Board of Health again made a plea for the establishment of a State sanatorium for tuberculosis, for the purpose of caring for those consumptives who are unable to care for themselves, and to protect the public against the ravages of a disease which causes between eight and ten thousand deaths in the State every year. The report showed that for the past twelve years the State Board of Health has annually recommended the establishment of such an institution, and that an investigation into the subject was made by the board in 1900. The report further showed that the forty-fourth general assembly in 1905 passed a bill creating the institution desired, but as the appropriation was insignificant, the bill was vetoed by Governor Dineen. The forty-seventh general assembly manifested its approval of the proposition on May 16, 1911, when the senate by unanimous vote passed a bill for an act to provide for the location, erection, organization, and management of a State sanatorium for persons afflicted with tuberculosis. Governor Dineen recommended the creation of a State sanatorium in his message to the forty-seventh general assembly, and it is understood that he will act favorably on the recommendation of the State board of health in his message to the forty-eighth general assembly on January 13th.

Examination for Medical Interne, Government Hospital for the Insane.—The United States Civil Service Commission announces an open competitive examination for both men and women, on January 22, 1913, at various places throughout the United States, from which to secure a list of eligible persons to fill the position of medical interne in the Government Hospital for the Insane, Washington, D. C., and other vacancies as they may occur in positions requiring similar qualifications. The positions are tenable for one year, and pay $50 a month, with maintenance. At the end of six months, however, during which time a postgraduate course in mental and neurological diagnostic methods, etc., is given, an examination is held, and promotions to the next grade, assistant physician, at $75 a month and maintenance, are made. Beyond this there is regular advancement for men whose services are satisfactory. The Government Hospital for the Insane has over 2,900 patients and about 750 employees to care for. In addition to the general medical practice offered, the scientific opportunities are excellent and the clinical opportunities in neurology and psychiatry are unsurpassed. As considerable difficulty has been experienced in filling vacancies in the position of medical interne in the Hospital Service during the past several years owing to the limited number of eligibles available, qualified persons are urged to enter this examination. Graduation from a reputable medical college is a prerequisite for consideration for this position. Applicants must not have been graduated previous to the year 1910 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation, which fact must be specifically shown in the application. Both men and women will be admitted to this examination, although there are no vacancies for women at present. Applicants must be unmarried. Age, twenty years or over on the date of the examination. This examination is open to all persons who are citizens of or owe allegiance to the United States and who meet the requirements. Persons who meet the requirements and desire this examination should apply at once to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place where examinations will be held, for Form 1312. No application will be accepted unless properly executed and filed with the commission at Washington.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

November 1, 1912.

Salt Solution and Water in Nourishment.—Strauss found that the greater part of the salts are excreted by the kidneys, sweat and tear glands in varying amounts, depending upon the ingestion. Edema due to primary nephretic sodium chloride retention is relieved by diminishing the salt ingestion. In heart diseases and uremic conditions a decreased salt ingestion has been followed by varying results. Again, the procedure is excellent for lessening polyuria in diabetes insipidus. Water retention in the body is favored by carbohydrate diet. Withdrawal of fluid produces a loss of weight which in dogs amounts to ten per cent.; in pigeons, twenty-two per cent. It does not increase metabolism, but causes an increased proteid dissolution.

Therapy of Arteriosclerosis.—Strubell says that in treatment of arteriosclerosis, which is a chronic thickening of the intima, two procedures are possible, prophylactic and symptomatic. In the first are included physical exercise, regulation of the diet, attention to luetic changes and kidney disease, regulation of, but not total abstinence from alcohol and tobacco, combating nervous vascular cramps, which must be considered as the warning signals of so called pseudoangiosclerosis, Scotch douches and simple warm body baths. Under symptomatic treatment, the author includes iodine in organic preparation or sodium iodide in gelodurat capsules; in heart disturbances strophanthine, and titrated digitalis best given intravenously, sojourns at Marienbad, and massage. Yohimbin, often recommended, has not proved satisfactory, because it has no effect upon the bloodvessels of the splanchnic area where an effect is most to be desired, while in the brain it produces an increased blood supply in the dilated vessels, a result which is most unwelcome.

Articular Rheumatism.—Junghaus has shown that articular rheumatism can be healed by application of local warmth, Bier's hyperemia, and ichthyol bandages. Menzer treated several cases with streptococcus serum. In many cases where the salicylates failed in their action, or were not well borne, collargol in the form of an intravenous injection, two c. c. of a five per cent. solution or an enema of fifty c. c. of a five per cent. solution, gave excellent results. In giving the intravenous injection the heart must be normal, as there is a sudden rise of temperature to 40° C.; the injection per rectum is not followed by this rise in temperature, and the results are just about the same.

Tuberculosis in the Extremites.—Böcher illustrates his article by six x ray pictures showing tuberculous foci in the extremities. Beside the general treatment for tuberculosis, which in surgical cases has great value, the operative removal of all circumscribed tuberculous areas is indicated where the infection may spread to a nearby articulation from a diaphysis foci and where the operation itself does not threaten to involve the joint. The Röntgen rays will usually disclose whether or not the joint is already involved.

Bacterial Findings in Psoriasis. — Menzer found in fresh psoriasis areas near the borders in the upper cuticle layers, cocci groups three times, Munche's granules once, and acidfast bacilli once. A general and local reaction was produced when treating by streptococci vaccines, or tuberculin. He found that psoriasis patients always suffer from some kind of a constitutional disease.

Treatment of Epithelioma with Copper Salts.—A. Strauss reports two cases of genuine epithelioma and a secondary skin cancer following lupus, which were reduced to scar tissue by the use of an ointment consisting of alcohol and a combination of copper oxide and lecithin.

November 14, 1912.

Combination Therapy in Pernicious Anemia.—Brieger reports three cases of pernicious anemia which were much improved by the internal administration of arsenic and pancreatin. The general symptoms were radically improved and the blood picture, including the erythrocytes, soon approximated the normal. However, the effects were not permanent.

The Electrocardiogram.—Hering explains why there can be no normal electrocardiogram, since in man only indirect transmission is possible. Of the three varying factors, position of the heart, stimulating areas of the heart, and the indirect transmission, only the latter can be controlled, and this accounts for the great uncertainty in judging the form of the electrocardiogram taken, as it is, indirectly. It has therefore a minor clinical significance. The electrocardiogram of each person, taken under the same conditions, is somewhat different. There can be no normal individual electrocardiogram. A series of factors not yet explained and not completely under our control compel us to interpret the electrocardiogram with the utmost conservatism.

Serodiagnosis of Pregnancy.—Abderhalden, continuing his experiments, says that serum of the pregnant woman contains ferments which enables it to split off placental proteid and placental peptone; the serodiagnostic process of dialysis, described in detail, gives a positive result even fourteen days after delivery. It proves conclusively the presence of placental contents in the blood, and the introduction of placental material into the blood stream of the person to be examined, if that person was a male, for instance, might give rise to a deceptive conclusion. Observations point to the fact that placentas of different species of animals are biologically identical or are closely related. The methods described can be used in many other problems in the region of biology.

Leucocytic Inclusions in Scarlet Fever.—Kretschmet concludes: 1. Döhle's leucocytic enclosures are found in all freshly examined cases of scarlet fever. 2. The presence of these leucocytic enclosures in other diseases is rare. In diphtheria and septic processes they are of more frequent occurrence. 3. Since the diseases in which the enclosures are present can easily be differentiated from scarlet fever, the examination of the blood in this disease is of great value in making an early diagnosis. 4. The enclosures are not found in all cases of scarlet fever and are not specific. They are probably reactionary bodies of the leucocytes against the toxic products of the bacteria.

Salvarsan in Plague.—Aumann, after injecting 0.3 gramme salvarsan intravenously, increased the agglutinin of the serum to five times the original amount. No deadening effect upon the best bacilli themselves was produced.

Stomach Motility in Duodenal Ulcer.—Kreuzfuchs agrees with Moynihan that the clinical symptoms of hyperchlorhydria depend upon the presence of a duodenal ulcer. The typical finding of the Röntgen rays is the rapid emptying of the stomach after a bismuth meal.

Spread of Diphtheria and Lepra by Feces.—Delano asserts that the bacilli of diphtheria and lepra are not only excreted in more or less greater amounts through the kidneys (Conradi and Bierast), but also in the feces. In combating this disease, therefore, special attention must be given to the disinfection of the excreta.

November 28, 1912.

New Inhalation System.—Mayerhofer advocates a new inhalation method consisting of dry and finely divided sodium chloride vapor, the penetrating action of which reaches the finer tubes and the lung parenchyma. This method was tested in eighty cases. Three factors enter into the action, warm dry air, the pharmacological action of the sodium chloride in substance, which penetrates the passages as far as the respiratory air, and a particular action of the smallest sodium chloride crystals which produce a most intensive osmotic action on very small circumscribed areas of the respiratory mucous membrane. Indications for its use lie in diseased conditions of the respiratory organs accompanied by increased secretion, especially by secretory congestion, and in laryngeal tuberculosis. Contraindications are rapidly progressing tuberculous processes, a tendency to pulmonary hemorrhage, and acute pleuritic exudates. Very good results have been obtained in acute bronchial processes, chronic bronchial processes with or without emphysema and asthma, secondary catarrhs in chronic tuberculous lesions with tendency to hemoptysis, conditions associated with bronchiectasis, and in laryngeal tuberculosis.

Typhoid Infection in Rabbits.—Hailer and Ungermann observed that by direct injection of typhoid bacilli into the gallbladder of rabbits the bladder became the habitat of these bacilli for at least thirty days, and in many cases they were excreted into the intestine and mingled with the feces. In intravenous injections, on the other hand, no lasting infection of the gallbladder was elicited. Vaccination into the liver and appendix did not produce a lasting infection of the gallbladder. The virus injected into one kidney produced an infection of this organ spread out over a long period of time. The authors are undertaking experiments on human beings dealing with the growth of bacteria in the gallbladder after the formation of artificial concretions.

JAHRBUCH FÜR KINDERHEILKUNDE.

November, 1912.

Scurvy in Children.—C. Hart says, although the etiology of scurvy is unknown, there is no disease that responds more rapidly to correct treatment than this condition. He was able to cause scurvy in monkeys by feeding them condensed milk. The monkeys had hemorrhages of the gums, their extremities became painful to the touch, and hemorrhagic swellings appeared in various bones, together with fractures. Blood appeared in the stools, but never in the urine. Post mortem the typical lesions of scurvy were found, such as hemorrhages of various organs, muscle degeneration, anemia. Enormous subperiosteal hemorrhages were found in the bones of the skull and the long bones. The hemorrhages usually appeared in the region of the epiphyses, but at times the diaphyses were also involved, but not to such a marked degree.

Duodenal Ulcer.—H. Flesch states that gastric ulcer is a very rare condition in infants and children. Of much more common occurrence are duodenal ulcers. During the past few years duodenal ulcers have been reported by Helmholtz in cases of decomposition (atrophy) in infants. Entz has also collected a few cases of duodenal ulcers in infants. Flesch reports a case of duodenal ulcer in an atrophic infant, three months old; autopsy findings and a picture of the ulcer are given. In this case the temperature, a few hours before death, was subnormal, while the pulse was very rapid; this combination, a rapid pulse with subnormal temperature in an atrophic infant, points to collapse, and in this case the collapse was due to hemorrhage from the duodenal ulcer (the stools became bloody under observation). The diagnosis of duodenal ulcer was made before death. This is the first authentic case that has been reported as having been diagnosticated ante mortem, according to Flesch.

Henoch's Purpura.—A. Gura reports two cases of Henoch's purpura, in one of which there was an intussusception, and calls attention to the fact that there may be a combination of purpura and intussusception, and that the intussusception may be due to intestinal hemorrhages.

BULLETIN DE L'ACADÉMIE DE MÉDECINE.

November 26, 1912.

Etiology and Treatment of Fracture of Patella.—Le Dentu reports a case of spontaneous patella fracture occurring in a tabetic, discusses the few cases of this kind already recorded, and points out the fact that such a fracture may be the first and sole symptom of tabes in its incipiency. The almost complete absence of pain after the fracture and during manipulation of the parts is a significant feature, which should draw the attention to the possibility of disease of the spinal cord. In view of the imperfect healing of bony tissue, frequently observed in tabes, as well as the well known unusually great tendency to recurrence of patella fractures in general, the bone being covered with periosteum only on one side, the author advocates the employment, in the presene of either simple or tabetic osteoporosis of the patella, of a more secure method of wiring the bone than those hitherto followed. It consists in passing two strands of silver, platinum, or aluminum bronze wire through a single channel made vertically in the median line of both fragments of the bone, and forming with the ends of the wires two loops which are closed, respectively, by twisting on the outer and inner aspects of the bone. In the author's case of tabetic patella fracture, in which the tissue of the bone was so rarefied as to show only a faint outline in radiograms, good healing took place after this procedure. Le Dentu classifies spontaneous fractures in general into those due to local causes, such as osteomyelitis, neoplasms, and syphilis; those consisting of dystrophic changes depending upon disease of the nervous system, central or peripheral; those due to a diathesis, infection, or special physiological state, such as pregnancy; and those due to a particular fragility of the bones, as in senility and osteopsathyrosis.

LYON MÉDICAL.

November 24, 1912.

Pelvic Cellulitis with Septichemia after Wertheim's Operation.—Violet points out the fact that, besides cellulitis appearing in the second week after pelvic operations, there may occur an early septichemic form of cellulitis associated with alarming symptoms hitherto frequently mistaken for involvement of the peritoneum. There is present high fever, which may reach or even exceed 105° F., a pulse of 150, and circulatory disturbance so marked as to lead to coldness of the extremities. The absence of abdominal rigidity, respiratory enfeeblement, vomiting, and obstructive phenomena, however, permits of distinguishing the condition from peritonitis. On the second day, moreover, the temperature generally falls several degrees, and marked general improvement is manifest. Occasionally a chronic cellulitis may follow, with almost periodic exacerbations, which are finally lost after several months. A possible complication is phlebitis, from which, in turn, embolism, sometimes periodic, may originate. The prognosis is far more favorable than in peritonitis, but the alarming nature of the condition leads the author to urge that even greater attention be paid to the avoidance of infection of the pelvic cellular tissues during operations than has hitherto been the case.

PARIS MÉDICAL.

December 14, 1912.

Conjugal Aortitis.—E. Hirtz has always considered chronic aortitis to be a syphilitic manifestation and his recent studies have confirmed this opinion. He has met with several cases of undoubted conjugal aortitis and reports five of these. In view of the delicacy of the situation, he usually prescribes the blue pill of the *Codex,* which affords efficacious treatment without attracting the attention either of the possibly innocent patients or of their neighbors. The pill is composed of: Mercury, five grammes; honey, four grammes; sugar, two grammes; powdered red roses, four grammes; make into 100 pills.

PRESSE MÉDICALE.

November 30, 1912.

Pathogenesis of Paroxysmal Hemoglobinuria.—A. Gilbert, E. Chabrol, and H. Bénard, reviewing the various observed facts capable of furnishing a sound explanation of the cause of idiopathic paroxysmal hemoglobinuria, consider it probable that splenic, hepatic, and renal factors operate simultaneously in its production. The red corpuscles are rendered more fragile by the hemolysins originating in the spleen, and in their passage through the kidneys undergo further changes which terminate in the liberation of their hemoglobin. The participation of the kidneys in the process is indicated by the accompanying albuminuria and cylindruria observed in many cases.

Diagnostic and Prognostic Significance of Gallbladder Pain in Typhoid Fever.—A. D. Radulesco and C. N. Atanassin describe a new sign in typhoid fever as follows: With the patient lying on his back and breathing deeply, the examiner pushes forward the liver by inserting his left hand between the right iliac crest and costal border, and with the right exerts gentle, continued, deep, and upward directed pressure over the gallbladder. Where the sign is positive and the patient conscious, a more or less severe pain is complained of, while if he is unconscious, defensive muscular rigidity in the right hypochondrium, together with a facial expression denoting pain, are observed. The sign was found positive in every one of a series of forty-seven cases of beginning typhoid fever, and occurs earlier in the disease than all other signs hitherto described. It is almost always present at the height of the affection, and always disappears during convalescence. It was also found positive in cases of failure of cardiac compensation, in right sided pneumonia and pleurisy, and in puerperal sepsis, but in these cases the pain caused is due to abnormal sensibility in the entire liver instead of in the gallbladder area alone. Disappearance of the sign in typhoid fever always indicates that recovery is about to take place; where it persists, a relapse is to be feared. Where it returns after having already disappeared, a relapse may be unhesitatingly predicted, even though there is as yet no clinical indications of it.

SEMAINE MÉDICALE.

December 4, 1912.

Argyll Robertson Pupil in Nonsyphilitic Affections.—Félix Rose points out that in addition to its presence in parasyphilitic or actual syphilitic conditions, this symptom is undoubtedly observed in occasional cases of chronic alcoholism, diabetes, cerebrospinal meningitis, tumors in the region of the crus, the interstitial hypertrophic neuritis of Déjerine and Sottas, disseminated sclerosis, syringomyelia, and of certain mental diseases other than parasyphilitic, such as mania, alcoholic dementias, and dementia præcox. Such occurrences tend to show that the situation of the lesion giving rise to the sign is not always the same. In future pathological researches on this question, the cervicomedullary and crural regions, as well as the oculomotor nerve and the ophthalmic ganglion with its efferent nerves, will have to be carefully examined.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

November, 1912.

Fractures of Lower Extremity of Radius in Childhood.—Petroff presents a study of fourteen cases in children less than sixteen years of age. The signs of the fracture are, perhaps, not quite as typical as in adults, but are sufficiently constant to warrant the paying of special attention to this type of fracture. In but one of the author's cases did the plane of separation pass through the epiphyseal line. The prognosis is always good in these cases; all the children observed showed complete functional recovery. No plaster cast should be used, splints being uniformly sufficient.

General Paralysis in Childhood.—F. Naville reports two cases of this kind. In one, a girl, the first symptoms appeared at the age of seven, and death took place at thirteen; in the other, a boy, the onset was at six and death at sixteen years. The statement of Hirschl and others that children attacked by general paralysis were weaklings both in mind and body since birth was invalidated by at least the first of the author's cases, this child having shown at seven years a high degree of intelligence and physical activity. Both patients showed a normal gain in weight and stature until the terminal period of cachexia, in spite of the intensity of the nervous manifestations. The assertion that the distressing subjective symptoms of paresis in adults, viz., headache, anxiety, melancholia, etc., are always spared juvenile paralytics, was shown to be erroneous in the first case, in which such symptoms were prominent. Confirmation of the condition present in the author's patients was afforded by the post mortem findings.

ROUSSKY VRATCH.

October 13, 1912.

The Internal Secretion of the Sexual Glands.—K. I. Korovitsky points out the influence of the sexual glands, the testicle and ovary, not alone on the primary and secondary sexual characteristics of the individual, but the general organism. This is brought about, not through the nerve connections, but by the hormones which are secreted by the sexual glands and infused into the blood.

Bacteria in Writing Inks.—E. O. Manoyloff investigated thirty-one brands of ink. Of these. twenty-one samples were purchased in shops and ten were in use by pupils in schools. Four samples were found free from bacteria; five contained different cocci, and twenty-two contained moulds. The samples of ink were also tested on animals, with the result that twenty-seven rabbits died in from ten days to six months with symptoms of marasmus. Of the thirty guineapigs inoculated, seventeen died from septichemia and marasmus in from one week to two months and a half. The majority of inks contain moulds and in certain cases a prick with a pen that has been in use is not without danger.

Chronic Alcoholism.—R. T. Tuvim presents an exhaustive discussion of alcoholic intoxication and gives his treatment which consists principally in the administration of large doses of atropine. This drug, he avers, produces an aversion to alcohol and may be administered surreptitiously.

October 20, 1912.

The Prophylaxis of Eclampsia.—V. V. Stroganoff proposes the following method of prevention treatment of eclampsia: 1. The removal, or reduction to a minimum of outside irritants (undue handling, noise, light, pain, such as may be caused by hypodermic needle or catheterization). 2. Lowering nervous irritability by the systematic administration of morphine, chloral hydrate, and chloroform. 3. Facilitating delivery, but without force. 4. Maintaining the body functions, respiration, cardiac action, the condition of the bloodvessels, action of the kidneys and skin, in a state of highest efficiency. He regards chloral hydrate as a physiological antidote to the toxines of eclampsia.

Metabolism in Thyroidectomized Animals.—A. I. Ushenko found that following thyroidectomy the percentage relation of phosphorus to nitrogen in the urine is first increased and then diminished. Urea is diminished. Ammonia is first diminished, then increased, and again diminished before death. The amidoacids and purin bodies are increased, while creatinin is diminished. In other words, the metabolism of the tissues containing phosphorus and nitrogen is acutely disturbed, the synthetic processes being mostly affected.

The Action of Pituitrin.—M. S. Malinovsky investigated the effect of pituitrin in fifty cases of labor, using a special apparatus to record the uterine contractions. He found that the labor pains are increased, the intrauterine pressure during the pains is increased, while the duration of the pains is lessened. The pauses between pains are very much diminished. The character of the labor does not differ from the normal. In almost every case the so called *Sturmwehen* were observed. These resemble tetanic contractions, lasting about eleven minutes, but no deleterious effects were noted on either mother or child. The best effect of pituitrin is during expulsion and after the os is thoroughly dilated. When employed before dilatation is complete, or in rigidity of the os, prolonged tetanoid contractions of the uterus may result. The only contraindications to its use are diseases of the heart and kidneys.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

November, 1912.

Double Sphenoidal Sinus Suppuration.—P. Watson-Williams suggests the removal of the posterior half inch of the upper part of the bony septum, corresponding to the sphenoidal sinus, together with the sphenoidal sinus septum, in cases where both sinuses are involved, in order to insure a permanent, free opening and satisfactory drainage.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

November, 1912.

Experimental Facts Concerning Kalaazar.—R. Row previously pointed out the possibility of growing *Leishmania Donovani* of Indian kalaazar in successive cultures on certain special media. He now reports that by rubbing the virus in the form of cultures from a human source into the skin, previously scarified, of a monkey—*Macacus sinicus*—he has produced a cutaneous lesion in the animal after an incubation period of about nine weeks. By subcutaneous injection a subcutaneous lesion was produced, after an incubation period of five months. The occurrence of a general infection from these nodules has not yet been determined, but the bearing of the lesions on the possible results of a cutaneous infection by biting insects, which might act as transmitters, is of interest.

Treatment of Liver Abscess of Amebic Origin.—L. G. Fink describes an alternative method of treatment for cases where aspirating apparatus are not available, as sometimes happens in outpost hospitals. In the case in which it was tried, with excellent results, four successive operations for the evacuation of pus were performed. In each instance the abscess was first emptied by means of a large trocar and cannula, and the cavity then irrigated with saline solution, to which had been added, on the last two occasions, a drachm of tincture of iodine to the pint. Four ounces of a ten grain to the ounce solution of quinine bihydrochloride were injected after each operation, and the opening in the skin and deeper tissues closed by a single stitch. Powdered ipecacuanha was given by mouth in thirty grain doses at first, and in smaller quantities toward the end. The patient was discharged cured on the forty-second day, and there has been no recurrence. The procedure described can be done under local anesthesia. Fink states also that emetine hydrochloride should now be on hand in every dispensary, both for treatment of acute and chronic amebic dysentery and for use in amebic hepatitis and liver abscess.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 28, 1912.

Diagnostic Pitfalls Identified during a Study of Three Thousand Autopsies.— R. C. Cabot made a comparison of the clinical and post mortem findings and showed that certain diagnostic mistakes occurred frequently in the diagnosis of diseases of the respiratory, circulatory, and gastrointestinal systems. Three points were brought out: First, that there was a great number of "classic" time honored mistakes, familiar to all physicians. Some could be avoided, others were inevitable, but all should be borne in mind; second, that some common diseases were relatively inaccessible to diagnosis, in spite of all care; third, that beside the "classic" and well known pitfalls, there were some less known which needed the more to be marked "dangerous." The following figures show the percentages of correct diagnoses as proved by autopsy: Diabetes mellitus, 95; pernicious anemia and leuchemia, 95; typhoid fever, 92; aortic regurgitation, 84; cancer of colon, 74; lobar pneumonia, 74; chronic glomerulonephritis, 74; cerebral tumor, 72.8; tuberculous meningitis, 72; gastric cancer, 72; mitral stenosis, 69; cerebral hemorrhage, 67; septic meningitis, 64; aortic stenosis, 61; active phthisis, 59; miliary tuberculosis, 52; chronic interstitial nephritis, 50; thoracic aneurysm, 50; hepatic cirrhosis, 39; acute endocarditis, 39; peptic ulcer, 36; suppurative nephritis, 35; renal tuberculosis, 33.3; bronchopneumonia, 33; vertebral tuberculosis, 23; chronic myocarditis, 22; hepatic abscess, 20; acute pericarditis, 20; acute nephritis, as a terminal disease, 16. These figures represent the success and failure ratio of certain methods rather than of certain men. They are likewise an examplar of the methods of an average up to date American hospital.

Pathological Lesions of the Kidney Associated with Double Ureters. Report of a Case of Hypernephroma.—See this JOURNAL for June 8, 1912, page 1229.

Overlooked Function of Bartholin's and Cowper's Glands.—D. T. Smith finds that as soon as the act of urination is completed a contraction of the walls of these glands takes place, causing a flow of mucous into the passages to replace that which has been washed away by the voided urine, thus giving a protective covering to the bare mucous membrane. The contraction of the gland walls is supplemented by that of the walls of the urethra in the male, and in the female by the contraction of the muscles about the vaginal orifice. Furthermore, it is probable that in all cases a reflex stimulus is conveyed to the glands which causes an increase of their secretion. To the physician this condition is often one of distinct importance. In a large percentage of males the secretion is sufficiently copious in amount as to cause its discharge from the urethra as a stringy mass, which has caused many men to consult their physicians as to this imaginary spermatorrhea or submit to be shamefully robbed by conscienceless quacks, when the condition was merely a kindly effort of Nature to protect the mucous membrane of the urethra against the irritating action of the urine.

Effect on Later Development of Severe and Prolonged Illness in Infancy.—See this JOURNAL for June 15, 1912, page 1294.

Caloric Requirements of Bottle Fed Infants.—See this JOURNAL for June 15, 1912, page 1294.

Moving Picture Illustrations in Medicine, with Special Reference to Nervous and Mental Diseases.—See this JOURNAL for June 8, 1912, page 1224.

Possible Transmission of Poliomyelitis through the Dog.—H. F. Langhorst insists that poliomyelitis is undoubtedly transmitted to man through more than one intermediary. One is the biting fly. The monkey, we know, may harbor the infection for some time after having the disease and thus be a carrier. Other animals are attacked by the biting fly and thus become infected. The dog is subjected to the bite of this fly and may become infected and contract the disease in one form or another, and be an active carrier of the virus for some time. Furthermore, dogs are numerous in the countries that have suffered most with poliomyelitis; in country districts, where the disease is most prevalent dogs are also more numerous. The writer considers these facts to be especially significant in connection with two cases which he reports in full, in which dogs seemingly were the agents of transmission.

MEDICAL RECORD

December 28, 1912.

Osteitis deformans (Paget's Disease). Report of One Case with Radiographs.— S. F. Jones, observing a typical case of Paget's disease in his care, reports it on account of its rarity, and at the same time presents a careful résumé of this interesting disease. The writer's case differs from the majority of similar recorded cases in that the first manifestation of the disease appeared at the age of sixteen years, affecting first the lower extremities and later the vertebral column.

Production of Malignant Tumors from the Parasites of the Earthworm.—H. D. Walker has devoted all of his time for the past eleven years to this subject and fully believes that he has found the *fons et origio* of the disease, the manner of its production, and the proper methods of prophylaxis. He has produced malignant tumors in animals by feeding or injecting them with the parasites from the earthworm. He has also grown tumors from these parasites upon grass in sealed glass cells containing distilled water, the parasites from *Lumbricus herculeus* and small pieces of grass, which tumors he believes to be sarcoma, for when they are introduced into animals the tumors they produce in them have been pronounced sarcoma. His slogan is: "No earthworms, no cancer; plenty of earthworms, plenty of cancer." The parasites from the earthworm are left upon cabbage, celery, lettuce, etc., by the earthworm when feeding upon them. They pass out through the orifices in their skin, and find their way into the leaves through the stomata.

Cervical Adenitis in Children.—R. H. Fowler reminds us that pathological investigation has demonstrated that many cases of adenopathy are due to the tubercle bacillus. The most frequently accepted site of entrance of the tubercle bacillus is the tonsil, yet tuberculosis of the tonsil is rarely shown to be associated with tuberculous lesions of the cervical lymphatics (less than 2.5 per cent.) The infection usually leaves no trace at the site of inoculation, but invades the lymphatic glands of the neck which drain the tonsil. The indication in the line of treatment of nontuberculous adenitis is to cure or ameliorate the foci of infection which represents the causative lesions in the process. If the source cannot be demonstrated the case should be treated as one of tuberculosis. Suitable environment alone will often effect a cure. Fresh air, sunshine, and sufficient good food are requisites. The syrup of the iodide of iron and codliver oil are the best tonics. In suitable cases tuberculin is indicated. If the glands break down, open, curette, and drain. Poultices are condemned. The ice bag relieves pain and lessens suppuration. The radical operation (removal of diseased glands) should be preceded by the removal of the tonsils and adenoids, if enlarged.

Artificial Vagina by Intestinal Transplantation.—J. F. Baldwin reports a case of this operation which he has performed six times. A transverse incision is made in the perineum between the bladder and the rectum. Dissection is carried up to the peritoneum. Through an incision in this a piece of the small bowel about fourteen inches long, a little above the lower end of the ileum, is brought down, cut across, and the ends are inverted with a pursestring suture. The continuity of the rest of the bowel is reestablished. The centre of the detached loop of bowel is caught with a clamp, and drawn down into the vaginal canal, leaving the two ends flush with the flow of the pelvis. The abdomen is closed, and the portion of bowel held by the clamp is opened and each side wiped out, and packed with iodoform gauze, so as completely to fill the vaginal space, and the edges are attached to the margins of the perineal opening. After three weeks, the septum between the two loops is crushed, thus leaving but a single vaginal opening.

AMERICAN MEDICINE.

November, 1912.

The Treatment of Pulmonary Tuberculosis by Means of Graduated Rest and Exercise.—Oliver Bruce concludes that the graduated labor system of treatment is an effort at the scientific cure of the tuberculous patient. The aim of this mode of treatment, which is fully described, is to raise the amount of antibacterial substance in the patient's blood to as high a degree as possible and to retain it at that point by gradually increasing doses of his own tuberculin (antoinoculation).

Transplantation of Bone for the Correction of Nasal Deformities.—William W. Carter has arrived at the following conclusions in regard to the fate of the bone used in these operations: The bone may die in the process of transplantation; the tissues invaded may not have sufficient vitality and reparative energy to receive the bone, nourish, and incorporate it; infection will invariably cause necrosis: if the bone becomes necrosed, even if it is not expelled it will be absorbed. Contrariwise, if the technic is perfect, and the clot surrounding the bone becomes organized, a covering of conective tissue will form around the transplanted bone which will nourish it and cause its retention as a part of the living tissues of the nose.

JOURNAL OF EXPERIMENTAL MEDICINE

November, 1912.

Experimental Pneumococcic Meningitis and Its Specific Treatment.—R. V. Lamar found that an homologous immune pneumococcus serum injected into the spinal canal of a monkey infected with virulent pneumococci, exerts a restraining influence. When employed early it prevented, exceptionally, the occurrence of infection and thus saved the life of the animal. If given later it at first retarded the disease but subsequently exerted no beneficial action and was powerless to save life. A mixture of sodium oleate, immune serum, and boric acid exerted regularly a more powerful action than immune serum alone. It not only prevented the occurrence of infection but also, when administered repeatedly, arrested the progress of an actually established infection and led often to the enduring and perfect recovery of the inoculated animal.

Pigment Formation in the Liver during Autolysis.—T. P. Strunt points out that inasmuch as most of the pigment in hemochromatosis contains iron in an easily demonstrable form, it has been generally assumed that it had its origin in the hemoglobin of the red blood cells, a primary disease of the blood, or some alteration of the blood associated with excessive intravascular destruction of the red blood cells has been invoked to explain the unusual accumulation of hemosederin, and he takes the position that there is little justification for the assumption of a primary blood dyscrasia. Experiments were undertaken to determine the possibility of the formation of hemosiderin within parenchymatous cells in the absence of blood. Rabbit liver was first thoroughly perfused with Locke's solution, then placed in a moist chamber under aseptic conditions and allowed to undergo autolysis. The results showed that iron containing, as well as other kinds of pigments, may be found during the autolytic degeneration of parenchymatous cells independently of the hemoglobin in the blood stream, and hence may be derived from the proteid constituents of the cell itself.

Toxic Substances Produced by Pneumococcus.—R. C. Cole found that the filtered blood serum of rabbits infected with pneumococci is not toxic. Experiments, however, showed that extracts of pneumococci prepared by keeping emulsions of the bacteria in salt solution at 37° C. for varying periods of time may be toxic, and when injected intravenously into guineapigs may produce a train of symptoms followed by death resembling that seen in acute anaphylaxis.

Protective Substances in Human Serum during Lobar Pneumonia.—A. R. Dochez has demonstrated that protective substances are usually present in the blood of patients recovering from lobar pneumonia, also that the appearance of these bodies when demonstrable, coincides rather sharply with the period of critical fall in temperature and the disappearance of symptoms.

Coagulation Time of Blood in Lobar Pneumonia.—A. R. Dochez, from a study of twenty cases of lobar pneumonia, finds that the coagulation time of the blood is generally prolonged during the acute stage, returning to normal during the period of convalescence.

JOURNAL OF MEDICAL RESEARCH.

November, 1912.

Pertussis.—Mallory and Hornor report the examination of the trachea and lungs from three patients who died of whooping cough. They found minute bacilli present in great numbers between the cilia of the epithelial cells lining the trachea and bronchi and possibly the nose also. These organisms apparently interfere with the normal movements of the cilia and possibly lead to their destruction. This prevents the normal removal of secretion, thus causing a continuous irritation which results in coughing. The authors believe that the bacillus of Bordet and Gengow is fairly generally accepted as the cause of whooping cough; also that the organism present in their cases is probably identical with the above mentioned bacillus.

The Giant Cell in Tuberculous Lesions.—A. M. Burgess, as a result of injecting various foreign substances into guineapigs, among which was a fatlike substance extracted from the bodies of tubercle bacilli, believes that foreign body giant cells are formed by the fusion of endothelial leucocytes about the injected material.

Chloroma.—A. M. Burgess, from an examination of one case and a study of the literature, holds that the tumors to which the term chloroma has been applied do not constitute a pathological entity. He considers that they represent a part of the pathological process in one type of acute myelogenous leuchemia.

Complement Fixation in Tuberculosis.—A. T. Laird, as a result of a series of tests, concludes that the complement fixation reaction with antigen derived from tubercle bacilli is at present of comparatively little diagnostic value.

Experimental Typhoid Carrier State in Rabbit.—J. A. Johnston, from the results obtained in his experiment, states that vaccination certainly seems to be indicated as a means of treatment in the human carrier, and also as a prophylactic agent in the prevention of such carriers. He also suggests that a routine examination of the stools and urine of all typhoid convalescents should be required by municipal health authorities until successive cultures are negative.

Standardization of Vaccines.—J. G. Callison calls attention to the unsatisfactory technique of comparing the number of bacteria with normal blood, and remarks that as usually carried out the result is little better than a good guess. He advises the use of the hemocytometer and for the purpose of dilution uses the following solution: Hydrochloric acid, two c. c.; bichloride of mercury (one to 500), 100 c. c.; acid fuchsine, one per cent.; aqueous solution, enough to color.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

November, 1912.

Myasthenia gravis.—M. A. Starr, in recording two cases of myasthenia gravis, takes occasion thoroughly to review the literature on the subject, and calls attention to several erroneous views which are current regarding this disease. A majority of the reported cases have occurred between the ages of twenty and forty years; but no age is exempt, it having been reported in patients as young as three and as old as seventy-two years. In about one third of the cases the first weakness noted was felt in the arms or legs, cranial nerve symptoms appearing only some time later. Headache is a common symptom to which little attention has been given. Many other general considerations of importance are presented.

The Relations of the Fifth Nerve.—M. A. Bliss offers a preliminary statement concerning unfinished work in investigating the anatomical relationship of the fifth nerve to the cavernous and accessory sinuses. This relationship varies much in different individuals, and may explain obscure pains and neuralgias in the distribution of the fifth nerve in some cases. Decalcified heads are examined post mortem, and it has been possible to show all three branches of the trigeminus in relationship with diseased sphenoidal and postethmoidal sinuses.

Terminal States in Pellagra Resembling General Paresis.—E. D. Bondurant reports five cases of pellagra in which the clinical picture resembled more or less paretic dementia. One case was clinically indistinguishable from paresis except that the blood and spinal fluid were negative. One case was complicated by a previous luetic infection.

Acute Infectious Transverse Myelitis Due to Virus of Poliomyelitis.—B. S. Sachs contributes the clinical report of an unusual case of poliomyelitis occurring in a young woman of eighteen years, in whom gradually, over a period of three days, developed symptoms of a complete transverse myelitis involving about the middle of the dorsal cord. Improvement was noticed on the sixth day, and recovery was practically complete in about seven weeks. Of particular interest in this case was the blood test, which showed the presence of neutralization power against poliomyelitis virus, thus establishing the positive diagnosis.

JOURNAL OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

November, 1912.

The Lingual Tonsil.—J. H. Johnson believes: 1. The lingual tonsils are glandular organs and secrete lymphocytes; they lubricate the surface, and while in normal condition are important organs of protection. 2. The simpler throat affections require the vital organs to be carefully guarded. 3. The numerous reflexes result from diseased lingual tonsils and lingual varix, which are greatly helped or cured by proper treatment. 4. The lingual tonsils may become diseased and changed from organs of protection to organs of infection, and when they become such they should be removed.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

November, 1912.

Emetic Action of Digitalis Bodies.—R. A. Hatcher and Cary Eggleston state that the view generally held that the emetic action sometimes occurring in the chemical use of digitalis bodies is due wholly or chiefly to a direct irritant action on the gastric mucous membrane is erroneous. The conclusion reached from their experiments in dogs and cats, in which doses proportionally as small or even smaller than those used therapeutically in man were employed, was that the emesis seen after oral administration is due mainly if not exclusively to an action on the vomiting centre in the medulla. The emetic activity, when the drugs were given by mouth, was found to correspond more or less closely to the absorbability of the different digitalis bodies used. All the substances tested, including several digitalis and strophanthus glucosides, convallaria and squill, induced emesis in cats more promptly and in smaller doses after intravenous administration than when given by stomach.

Epinephrine and the Bloodvessel Walls.—A. L. Tatum confirmed the finding of Trendelenburg that blood serum will protect epinephrine from oxidation and extended this observation to defibrinated blood, hirudin blood, and hirudin plasma. A solution of egg albumin, however, was found not protective. When solutions of epinephrine in Locke's solution and serum were oxygenated in the presence of fresh artery wall, the epinephrine, as well as the pressor substances that are found in serum and are measured by the vasoconstriction produced on perfusion through the peripheral vessels of the frog, were found rapidly to disappear. In a preparation with vein wall instead of artery wall, about thirty per cent. of the constrictor action of the original solution remained after one hour of oxygenation.

Action of Quinine on Leucocytes.—G. B. Roth found that quinine, given to dogs in single doses of 0.05 to 0.15 gramme per kilogramme of body weight, either by stomach or subcutaneously, produces changes in the number of leucocytes which can be divided into three phases. The preliminary stage of leucocytosis appears shortly after the drug is given and is no doubt caused by contraction of the spleen and other tissues acted upon by the drug, the increase affecting mainly the lymphocytes. An hour or two later the second or leucopenic phase appears, with reduction of both lymphocytes and multinuclears, but mainly the former. This is followed by a third stage of secondary leucocytosis which is quite marked; the multinuclears are alone increased, the lymphocytes remaining low or continuing to decrease in number. When the drug is administered continuously for weeks the blood changes are the same. In man Roth, after giving from 0.6 to one gramme of quinine hydrochloride or sulphate in capsules, observed an actual decrease or an inhibition of the usual leucocytosis of digestion. As for the kinds of leucocytes affected, there was usually a slight increase in the lymphocytes, followed by a marked decrease. The multinuclears were little affected at first, later increased in number.

LONG ISLAND MEDICAL JOURNAL

November, 1912.

Meningitis.—F. C. Clark reports on the records of eighty-five cases of epidemic cerebrospinal meningitis and remarks that the prognosis is invariably bad. When antimeningococcic serum is used the outcome of a case is altogether problematic. Serum has given brilliant results, and again it has been ineffective as a cure, but has simply prolonged life for a chain of complications to ensue which cannot be paralelled. Favorable conditions for the use of serum are: 1. The onset and end of an epidemic; 2, adolescence; 3, early treatment before coma, delirium, or complications; 4, normal blood pressure and slow pulse; 5, absence of rash; 6, normal temperature; 7, spinal fluid showing little turbidity and a predominance of intracellular meningococci; 8, disappearance of extracellular and decrease in intracellular meningococci on the use of the serum. In the series of eighty-five cases there were 43.5+ per cent. of deaths. Before the use of the serum the mortality ranged from fifty to ninety per cent. The serum should be given in maximal quantities after the removal of as much spinal fluid as possible. It should never be given in an amount greater than that of the removed spinal fluid. It should be given daily. The administration of the serum should be slow and the respiration and blood pressure should be the guides for its cessation. Daily treatment should be continued for temperature, cerebral irritation, and so long as the meningococcus is present.

Toxemia of Pregnancy.—E. E. Cornwall believes that the active toxines in this condition are precisely the same as are to be found in the course of any normal pregnancy and that the toxemia becomes pathological only when their quantity is greater than the maternal organism can take care of without damage. Aside from the quantity of toxine produced, the functional capacity of the liver and kidneys and the toxine tolerance of the individual tissues are of great importance. All these factors are probably much influenced by the state of the ductless glands and also by the salt content of the tissues. Calcium deficiency on the one hand, and perverted thyroid activity on the other are the chief of these factors. From these remarks Cornwall passes to the conclusion that the best way to treat the toxemia of pregnancy is never to let it develop. This is to be accomplished by the removal from the diet throughout pregnancy of all food of animal origin with the single exception of milk. This is based upon the conception that the most important single element of danger in the toxemia of pregnancy is the chronic intestinal putrefaction with its resulting formation of toxines.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

November, 1912.

Treatment of Gastric Neuroses.—See this JOURNAL for August 3rd, page 253.

High Frequency Current in Treatment of High Blood Pressure.—See this JOURNAL for July 27th, page 200.

High Blood Pressure in Toxemias of Pregnancy.—See this JOURNAL for July 20th, page 150.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

November, 1912.

Mastitis from a Pediatric Standpoint.—R. A. Strong concludes that the breast milk of a nursing mother should be examined at regular intervals as a routine practice, especially in all cases showing a disturbance. In artificial feeding the child should be started on very low percentages and then gradually increased up to the caloric requirements. In all cases one should bear in mind the possibility of returning to breast feeding, and should use means to conserve the breast milk with this object in view. Incidentally, in order to keep up the supply of breast milk, it is absolutely necessary to empty the breasts at least twice daily. Massage has many advantages, but the massage should be gentle, on account of possible trauma and an increase of the inflammatory process. The best method of treating mastitis, according to the writer, is the use of Bier's suction apparatus, which relieves pain and hyperemia, removes the milk, and quickly softens the gland. The cup should be applied three or four times in a day for twenty to thirty minutes, allowing the air to be let in every five minutes and the suction renewed.

Further Word on the Ipecac Treatment of Amebic Dysentery.—S. K. Simon's critical analysis of fifteen cases of amebic dysentery treated with ipecac shows in each case a uniform and highly favorable result. In no case was there a suggestion of a recurrence of the dysenteric attacks since the discontinuance of the ipecac. The interval elapsing in these cases varied from six months to four years. The essential points in the treatment as used by Simon include absolute rest in bed for a period of at least two weeks, a proper regulation, and restriction of the diet, the use of the best variety of Rio ipecac in a pill properly coated with salol (a three hour fast preceding the administration of the pills, containing sixty grains at first, or in severe cases 100 grains, each succeeding evening reducing the dose by five grains or one pill), and the employment of bowel irrigation or flushings should not be attempted during the administration of the ipecac, as it would wash the drug out of the large bowel and defeat the object of the treatment.

NEW YORK STATE JOURNAL OF MEDICINE.

November, 1912.

Tropical Climate.—J. M. Phalen summarizes the effects of tropical climate thus: Loss of weight, lowered blood pressure, increased temperature, increase in pulse and respiration, increase in red blood cells, and reduction in hemoglobin, reduction in polynuclear leucocytes, with still greater loss of phagocytes, and depression of the activity of the nerve cell. The probable causes for these phenomena are the sunlight, particularly its chemical rays, and heat plus humidity.

Surgery in Epilepsy.—G. K. Collier concludes that: 1. Surgery can be of benefit early in the patient's life, but little can be expected from it in cases of long standing. 2. Operations for the relief of epilepsy are disappointing and seldom curative. 3. All abnormities calling for surgical treatment should receive attention. 4. Patients under surgical treatment should be most carefully observed, both before and after operation. 5. Medical treatment should be continued. 6. No epileptic should be considered as having recovered until two years at least after the operation. 7. Both lumbar puncture and venesection are of value in the treatment of status conditions in conjunction with other methods.—J. F. Munson suggests considerable reservation prior to approving surgical intervention and believes that the surgeon should look to his technic before operating lest the results of his manipulation be worse than the original condition. In a large number of cases there is some underlying condition which is in no way amenable to relief by surgery, such as a strong neuropathic taint, alcoholism, venereal excesses, etc.—E. A. Sharp holds that clots on the brain, particularly those which result from birth traumatisms, should be surgically removed at once, as they not infrequently lead to scars and provide sources of irritation which may lead to the development of epilepsy. At a later stage operation is not usually successful.

Hereditary Chorea.—E. P. Ballantine observed six cases of this condition. It is characterized by the onset of choreic symptoms during adult life, mental derangement, slow progressive development, unknown cause, marked hereditary character, and failure of response to any form of treatment. Her six cases were typical, and in one of these five brothers and sisters all had chorea, and six of the seven adult brothers and sisters of the preceding generation were similarly affected.

Hormonal.—J. T. Pilcher has found that hormonal is of considerable value in postoperative cases, but that its side actions are likely to appear in patients who are already deeply shocked. It is not without dangers, and severe collapse has followed its use.

Prolapse of the Rectum.—A. V. Moschcowitz regards prolapse of the rectum as being in the nature of a true hernia; that is, a portion of the rectal wall begins to bulge downward into the rectal cavity, having escaped from the support afforded by the abdominal or transversalis fascia, exactly as is the case in any abdominal hernia. The condition, once started, is likely to progress until finally the rectal wall which is prolapsed escapes from the anal orifice. He illustrates his conception by some very clear diagrams. He treats the condition by a median abdominal incision, with the patient in the extreme Trendelenberg position. Through the incision he pulls the rectum up and has it held taut. Pagenstecher, or silk sutures are next passed circularly around the cul-de-sac of Douglas and tied. The lowest suture lies about one inch above the lowest point of the cul-de-sac; six to eight similar sutures are placed above this at intervals, and continued as long as the peritoneum will come together, thus obliterating the cul-de-sac. It is advisable to include the pelvic fascia in the sutures where possible. In the female the sutures are also anchored to the body of the uterus when this is reached. The sutures should catch the serous coat of the rectum to prevent the later formation of another hernia. No other treatment is employed and the abdominal wall is closed. The bowels are not confined. The results so far have shown 100 per cent. of cures.

Gallstones.—See this Journal for November 9, 1912, page 933.

OPHTHALMOSCOPE

November, 1912.

Salvarsan and the Eye.—In the discussion on salvarsan in diseases of the eye at the annual meeting of the British Medical Association, A. M. Ramsay described neosalvarsan as a substitution product of salvarsan that bears the number 914 in Ehrlich's laboratories. It is a condensation product of formaldehyde sulphoxalate of sodium and salvarsan. It is a yellowish powder readily soluble in distilled water, and consequently has an advantage over salvarsan in being much more easily prepared for injection. An amount of neosalvarsan corresponding to 0.1 gramme of salvarsan is dissolved in the proportion of 0.1 gramme to fifteen c. c. of freshly distilled water, which should be under 22° C. The solution must not be shaken violently or exposed to heat and should be prepared just before injection, as neosalvarsan becomes oxidized even more readily than salvarsan and forms compounds that are highly poisonous. He finds no difference in the therapeutic effect of the two preparations, but it has been asserted that neosalvarsan is more active and less liable to be followed by undesirable after effects. In acute syphilitic diseases of the eye it brings the disease quickly under control and if given in time prevents permanent damage, but he doubts if it is really curative, and obtains his most trustworthy results when salvarsan is combined with a mercurial treatment.—S. H. Browning has obtained good results from the use of the preparation in sympathetic ophthalmia, the blood count becoming normal and the eye quiet.—J. Igersheimer gave an account of his experiments on cats with neosalvarsan, and of his clinical experience therewith. He prefers neosalvarsan for affections of the anterior parts of the eye, salvarsan for affections of the retina and optic nerve, especially when the nervous system is attacked in any way.

PENNSYLVANIA MEDICAL JOURNAL.

November, 1912.

Cervical Adenitis.—G. M. Dorrance treats this condition with open air and forced feeding, removal of the primary source of infection, and one or more courses of x ray treatment. The x ray treatment consists of approximately two exposures weekly of about fifteen milliampère minutes each, with the anode twelve inches from the skin. The rays are filtered, either through sole leather or aluminum. Sheet lead protects the patient, except in the area for treatment. At the first symptoms of blushing of the skin the treatment should be interrupted for two weeks.

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Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of Queens, April 1, 1912.

Dr. L. Howard Moss in the Chair.

Eye Strain in Children.—This paper, by Dr. Elliott W. Shipman, of Richmond Hill, will be published in the Journal.

Dr. J. Scott Wood, of Brooklyn, said he was thoroughly in accord with the views of the reader of the paper in regard to the examination of the eyes of the children in the public schools. This should be done by competent ophthalmologists, but as a matter of fact the medical school inspectors in New York to-day were not ophthalmologists. The shortcomings of these men in regard to the childrens' eyes could be seen at any ophthalmological clinic. Many erroneous diagnoses were made, and not infrequently cases were met with in which there was no disorder of the eyes. The matter of wearing glasses was of great interest, and the question always arose, When ought glasses to be prescribed for a refraction error? The majority of ophthalmologists were agreed, he believed, that this should be done at as early an age as possible, say three or four years. Mothers sometimes noticed that at times their children's eyes turned a little, or, as it was commonly expressed, there was a kink in the eyes. Now, unless such a condition were corrected promptly it was likely to develop later into hypermetropia or astigmatism. The eyes might become amblyopic, and when this derangement was once established it was difficult to correct. As to the advisability of employing prisms in low degree of muscular insufficiency he was somewhat doubtful. In his own experience prisms for continuous use had not proved very satisfactory. In the paper Doctor Shipman, probably from a feeling of modesty, had not referred to one matter which seemed to him of great importance, namely, the practice, now common (and even among some physicians) of sending children to opticians. This was all wrong because these men were not competent to do refraction work properly. For one thing, many cases could not be diagnosticated correctly without the use of drops, and opticians were prohibited from employing mydriatics. Innumerable instances were met with in which the refracting optician had selected wrong glasses, and not infrequently the eyes of patients were damaged by them. This was a point which ought to interest the general practitioner, as well as the ophthalmologist.

Dr. William H. Bates, of Manhattan, said that a great deal was taught and was laid down in the textbooks which was not true. He agreed with Doctor Shipman that trained ophthalmologists should be employed to inspect the eyes of school children; but he would go further than this. Giving glasses to young children did not always cure or help them. For the past few years he had examined the eyes of from 1,500 to 2,000 school children every year, and he had also followed up the children from year to year. He had studied children who had been "refracted" by other ophthalmologists, by opticians, and by himself, and he found that in the course of time their eyes had changed; so that many of them, including cases of hypermetropia, astigmatism, and myopia, were able to give up wearing glasses. He had tested the eyes of a number of infants at birth and days, weeks, and years later, employing a solution of atropine sulphate of the strength of sixteen grains to the ounce, and in different instances he had found hypermetropia and myopia. Moreover, he had seen these conditions disappear. The ophthalmologists ought to go into the public schools to study the childrens' eyes, and thus get possession of the real facts. As a result of such study the time was coming when our people would be able to do with fewer glasses than at present. It had been definitely ascertained that uncivilized races had perfect vision; but when these came to live in houses and were subjected to the influences of civilization they commonly became affected with myopia, hypermetropia, or astigmatism. What was needed at present was a more general and careful study of ocular conditions in the young. From this the medical profession would one day know enough to prevent the disorders now so prevalent.

Dr. John E. Virden, of the Bronx, said that the medical school inspectors had done a great deal of good, but they did not get at the root of the evil. He believed that for entrance to the public schools there should be required not only a certificate of vaccination, but also a certificate of vision. This would save some children from blindness and many from the truant school. If glasses were needed, we could not begin too early with their use; for thus there would be the less trouble with the eyes later on. The refracting optician was a curse to humanity. The time would come, he had no doubt, when he would be abolished, but this would not be until more men were able to estimate refraction than was now the case. All professed ophthalmologists to-day were certainly not competent in this regard. Much less so were the opticians, who had pursued a short course of training in which there was a little about refraction and much more about how to sell glasses. These men were in reality practising medicine without a license, and their work should be stopped.

Dr. A. Ernest Gallant, of Manhattan, spoke of the unreasonably high prices which some institutions charged for the glasses which they sold to patients and said that at the Amity Dispensary, where he had to audit the accounts, he had arranged that the price to the patient should be only twenty-five per cent. more than the cost price of the glasses. On account of breakage, etc., however, the actual excess was only about ten per cent. He did not believe in physicians connected with such charitable institutions helping them to make money out of the poor. There was, he thought, too much commercialism about these institutions.

Doctor Shipman, in closing, said that as to the charges for glasses at institutions, from observation he knew of two or three where to the extremely poor, glasses were furnished free.

Abdominal Distress in Children beyond Infancy.—This paper, by Dr. Le Grand Kerr, was published in the Journal for June 1, 1912.

Dr. William Shannon, of Manhattan, said that Doctor Kerr had admirably focused for us conditions which were met with every day. In children, pneumonia and pleurisy were almost invariably characterized by abdominal pain, and if the thoracic affection were on the right side it might be mistaken for appendicitis. On the other hand, appendicitis was sometimes thought to be intestinal indigestion or trouble due to worms. Notwithstanding all the warning we had had in regard to the matter, he was inclined to believe that appendicitis occurred more frequently than was generally supposed to be the case. The scientific young practitioner of the present day was rather too apt to neglect the minute study of the clinical symptoms presented by a case, and in making his diagnosis to depend too much upon blood count and other laboratory findings. Having mentioned one or two illustrative instances of this, he spoke of the rapidity with which appendicitis sometimes developed and advanced to an alarming stage. This was well shown in the case of a little daughter of his own, only a day or two previously. Doctor Shannon went on to say that he was in favor of operation in every case in which we could make the diagnosis of appendicitis. In children this affection was apt to prove rapidly fatal on account of special anatomical characteristics, and if perforation occurred the resulting peritonitis spread far more quickly than in the case of adults.

Dr. Eli Long, of Manhattan, said it was certainly true that it was necessary to bear quite a number of affections in mind in endeavoring to get at the real condition present. The differential diagnosis between appendicitis and lobar pneumonia was often difficult, and sometimes impossible. Here there was only one thing which would help, and that was experience. He was especially interested in the allusion to floating kidney in children. Personally, he had been trying for years to find one, and had not yet succeeded. In adults it was generally the case that when we had a movable right kidney the condition was accompanied by appendicitis, but he did not know how this would be in children. He was also much interested in Doctor Kerr's statement that recurring bilious attacks, so called, were sometimes an indication of appendicitis. He had at present under his care a little patient who suffered from such attacks, and he would now make a special effort to find out, if possible, whether an old appendicitis was at the bottom of the trouble.

Dr. Ransford E. Van Gieson, of Brooklyn, said that, having been in practice for nearly half a century, he had a good deal of experience, and yet he still found himself sometimes in doubt in regard to the presence of appendicitis or, at its commencement, of a right sided pneumonia. On account of the frightful rapidity with which appendicitis often advanced in such subjects, any child under nine years of age should be given the benefit of the doubt; so that if the evidence present were in favor of appendicitis, immediate operation was called for.

Dr. Lewis M. Silver narrated four cases which had come under his observation. The first was that of his own daughter, now eighteen years old, who, when three and a half years old, was operated on for a rapidly developing appendicitis. The second was that of a child three and a half years old, still in his care, in whom he had made the diagnosis of pyelitis, but whether this was in the right or the left kidney he was unable to say. At first he thought the patient might be suffering from malaria, as there were recurring exacerbations of temperature, but he then found the urine loaded with pus. A specimen of this and also a specimen drawn later with the catheter were sent to Doctor Sondern, who reported that neither specimen contained tubercle bacilli and that colon bacilli were found in the first, but not in the second. The third patient was a boy of ten years in whom he diagnosticated rupture of the kidney. He had been injured while sliding down hill on skates in Central Park, and when seen was suffering from severe shock, while the urine was almost pure blood. The fourth was a very obscure case which he saw at the Vanderbilt Clinic. The history was indefinite, and the patient, ten years old, was evidently in a state of shock. Examination showing that the abdomen was distended, he at first supposed this to be due to an overdistended bladder; but such was not the case. As the condition present seemed very serious, he advised that the child should be taken to Roosevelt Hospital. This was not done, however, and he afterward learned that a fatal result had occurred within two or three days.

Stated Meeting, April 15, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Abbott's Method of Correcting the Fixed Spinal Curvature.—Dr. Dexter D. Ashley read this paper, which was published in the Journal for April 27, 1912.

Dr. Reginald H. Sayre said this was certainly a most intelligent way of improving the condition of the spine. For a number of years he had been accustomed to have patients with lateral curvature practise certain movements which were of the same character as those of sailors when engaged in hauling up a heavy cable, which had the effect of arching the spine well, and nothing else that he had ever done had proved so satisfactory in this class of cases. What, therefore, he had been able to carry on for only a very short time each day, Abbott had now discovered how to keep up for the whole twenty-four hours. There could be no question whatever, he thought, that Abbott had made a very great advance when he found a method of putting up his patients in a position which, in very homely phrase, was like that of cats on the back yard fence with their backs up. It was extremely difficult, however, to apply pressure to so many vertebral bodies in one direction and yet not affect in any way the other vertebræ. The state of affairs was different from that met with in club foot, where the problem was much simpler, and he was therefore not so optimistic as Abbott appeared. There were, he believed, certain cases which could not be improved.

Doctor Ashley said that "keep your back up like a cat" was exactly what he had been telling his patients. The arching of the spine was what was required, and Doctor Sayre's remarks had shown how many of us approached the idea in different ways. Personally he had often thought that if he could only hold his patient in the desired position he could effect a cure, but before Abbott's discovery he had lost faith in the possibility of doing this by means of a plaster of Paris jacket.

The Female Perineum from a General Surgeon's Standpoint.—Dr. Robert T. Morris said that many years ago he was impressed by the fact that most of the perineal operations dealt with fascia alone, and did not appeal to the general surgeon, who liked to have muscles actually in sight, when any repair was to be made. Dissections which he had made of ruptured perineums showed that atrophy of most of the muscles and fascia took place rather rapidly after the perineum was torn. The pubococcygeal portion of the levator ani muscles remained plump and in good condition, because of their continued action in other work, after the perineum had been ruptured. In ordinary cases of ruptured perineum he made a horseshoe incision with the arms extending between the labia, placed a finger in the vagina, and felt the large, round portion of the levator ani, stabbed a pair of scissors through one side of the horseshoe incision down to this point, opened the scissors *in situ;* repeated the process on the opposite side; cut intervening fascia, and then sutured the levator ani muscles in the midline, with three or four interrupted kangaroo tendon sutures. A continued suture next united the fascia which carried any remains of the transverse perineal muscles and of sphincters.

Where the external sphincter of the anus was completely torn, he made a second horseshoe incision, with the arms pointing downward, exposed the blunt ends of the torn sphincter ani, united them with one or two kangaroo tendon sutures, and then completed the regular operation. This made a very strong, durable, accurate, perineal repair, which could be performed easily in ten minutes without any hurry. The perineum should be repaired before degenerative changes had taken place in muscles and fascia that had been thrown out of commission. Immediate repair of the recently torn perineum could not be made so accurately because of the bruised and torn tissues. Immediate repair was desirable, however, in these cases because we usually get primary union if there was a good flow of normal lochial fluid, Nature's antiseptic, which bathed the parts freely. If union were missed, or if it were not attempted at this time, the accurate anatomical operation was to be done later.

Dr. Ransford E. Van Gieson said that prevention was sometimes better than cure. Many years ago he had suggested and practised the plan of inserting two or three sutures through the perineal body in cases where it seemed probable that rupture was going to occur. If this did take place, the sutures were tied, but if not, they were withdrawn. He had never published any account of this procedure, and within the last three or four years he had seen the measure advocated by some one in the medical journals.

Surgery from the Pediatric Standpoint.—Dr. Le Grand Kerr said that while an accurate diagnosis was most important, it was not all important. There still remained another most important factor, namely, what would be the probable outcome of the injury or disease and what estimate could be placed upon the probable course and termination if an operation was undertaken? To appreciate fully what the final outcome might be often entailed a close acquaintance with many facts which at first sight seemed to have no direct bearing upon the disease or injury; yet these might be such as to entirely change the usual interpretation of symptoms. The first requirement of a pediatric surgeon was a broad clinical experience with surgical conditions and a perfection of technic acquired through actual contact with many cases. This experience would teach him that an operative procedure in the child required more preliminary planning, more rapid operating, and infinitely more gentle handling than a similar procedure in an adult. To the knowledge which he already possessed of the details of scientific surgery he should add a further knowledge of and love for children. There were two ways in which these requirements might be met; first, by acquiring a sufficient knowledge of children and their diseases, not only from books, but through years of experience, and, second, by making use of the trained pediatrist.

Just as soon as the immediate institution of some surgical procedure was made the paramount consideration in a child, whether it was in need of it or not, there were brought into play other factors which might be made more serious by interference or which markedly influenced the end results and finally forced themselves to attention, although they had been treated with scant consideration in the beginning. It was not a common practice among surgeons to obtain any detailed history of the possibility of exposure to infection previous to an elective operation, and, as a matter of fact, many had admitted that they were unfamiliar with the periods of incubation of the various exanthemata. Yet he had observed several serious and some disastrous results which might have been entirely avoided if such a history had been secured in time. It could readily be appreciated that the development of a disease like measles, scarlet fever, diphtheria, or whooping cough, closely following an operation or occurring during convalescence, would materially influence the results, and it was not alone that the complication was itself serious, but all infections in children were more severe when there was the added depression consequent upon any surgical procedure. Again, many children who were not in good physical condition were brought to the surgeon for the correction of a deformity, the removal of a slowly growing growth, or other elective procedure. While they might survive the operative procedure, this often suffered in repute because there was not the return to normal efficiency which the parents expected; a result which could have been obtained by proper attention beforehand. Even under conditions apparently entirely surgical the surgeon could not feel the same security in cases occurring in children that he did in those among adults. This was well illustrated in the recognition of both acute and chronic appendicitis. While not so in every instance, it was commonly the case that an accurate and complete diagnosis was essential to the institution of adequate treatment, and, as a consequence, children suffered in treatment from too much or too little surgery. The inevitable result was that as far as operative relief was concerned, to the lay mind its results were questionable in children.

Dr. Godfrey L. Pisek said that Doctor Kerr's contribution was timely, as well as valuable. Fortunately in a city as large as New York there was afforded an opportunity of carrying out some of the suggestions made in the paper. There was a distinct surgery of childhood, and a man who regarded a child as merely a little adult was not competent to do surgical work on children. He believed the time was coming when there would be a chair of surgery of children. For one thing, the anatomy of the child differed from that of the adult. The surgeon, he thought, had taught the pediatrist to be conservative, because he (the surgeon) had not been careful enough in regard to details. The surgeon should be able to recognize congenital abnormalities. He should not be simply a mechanic, saying when called to a case, "Tell me what you want, and I will do it." This was not right, for he should know something about children and their ailments. Some men had had a large mortality and others few or no fatal cases, and it could scarcely be doubted that the manner in which these infants were fed had had much to do with these results. Having referred to the importance of x ray examinations, Doctor Pisek concluded that we should always bear in mind the fact that from a surgical point of view, as well as others, the child was an entirely different problem from the adult.

Dr. Franz Torek said that the importance of thoroughly investigating the general condition of the patient applied to all surgical cases, whether in the child or the adult. Doctor Kerr had done well in telling us not to forget that a child upon whom it was desired to operate might possibly be in the incubation stage of some infectious disease, and it was certainly advisable always to inquire carefully whether the child or any of the family had been exposed to the risk of contagion. Sometimes, however, in spite of all precautions, these infectious diseases took us by surprise. As to the diagnosis of appendicitis, he had been called upon to operate in at least six cases where he found, instead of appendicitis, some pulmonary trouble, perhaps more frequently pleurisy than pneumonia. As to the question of shock, he could not quite agree with the reader of the paper. He had been brought up to be greatly in fear of shock, but, as time went on and his experience increased, it had lost some of its terrors for him. He thought that if in the case of children we were to substitute for shock the word hemorrhage it would be getting nearer the truth. The losing of blood was a matter of the gravest import to a young child, and it was therefore highly desirable that in operating on such subjects surgeons should be extremely careful to prevent all bleeding. He believed that if this were borne in mind we would hear less about shock.

Dr. William Shannon said he thought the most expert surgeon could not take offense at anything which had been said this evening. Due credit had been given to skill and technic. He did believe, however, that the pediatrist could often be of service. A correct diagnosis was essential not only for medical but for surgical therapeutics.

Dr. A. Ernest Gallant said that in 1891 he had spent some time at the country branch of the New York Infant Asylum at Mount Vernon, where there were some 400 children ranging in age from ten days to four years, and as a result of the knowledge of children and their ailments which he gained from this experience he believed that he had since lost a number of surgical fees. A man who had not thus spent some time working among children would certainly sometimes perform operations which were not called for, and, in his opinion, any one who did not understand children was not fit to do surgical work on them. He was very glad to hear Doctor Pisek speak of the anatomical differences between the child and the adult. There was a great lack of knowledge regarding the anatomical peculiarities of early life, and it was also very difficult to secure such knowledge. He had discovered this when, some time ago, he was trying to learn something of the comparative anatomy of the adult and the child, for he could find very little upon the subject in the whole library of the Academy of Medicine. As to the matter of shock, he had always supposed that children stood shock well. It was true that he had seen some nearly killed by chloroform, but he would not consider this as shock. He still believed, however, that in the case of children chloroform was preferable to ether as an anesthetic. The surgeon, in his opinion, should make his own diagnosis. In a number of instances where he had been called in the attending physician had told him what was the matter with the patient and what he wished done, but while he was willing to take into consideration the points thus given him, he always liked to form his own opinion of a case. The main point in Doctor Kerr's paper was that the surgeons and the pediatrists ought to get together. He believed that he was right, and that when there was more of this coming together there would be fewer mistakes and also fewer operations.

Dr. Alfred Kahn said that in every case we had to be guided by the conditions present, and that we could not always tell what was going to be the result. Reference had been made to status lymphaticus. Who could say whether this was going to occur from the anesthetic? In the future he believed that the surgeon would be more of a mechanic, to be called in to do a special thing. As to the general condition and requirements of the child, the best judge undoubtedly was the general practitioner, who had known and cared for it from infancy.

Doctor Kerr, in closing, said in reference to Doctor Torck's point that infectious diseases sometimes came upon us as a sudden surprise, that this was because the child had not been under sufficiently careful observation. All children were liable to contract the exanthematous diseases, and in every instance the question of exposure should be considered. In order to avoid shock in cases requiring manipulations of considerable length, such as extensive burns or scalds, he thought that several short periods of anesthesia were much better than one long, dangerous one. One of the most common causes of shock was the pulling and handling of the tissues, as in the careless use of hemostats, etc., during an operation. He was glad to say that in two of the hospitals with which he was connected the pediatrist now saw all patients under twelve years of agé, whether medical or surgical; in the latter conferring with the surgeon. As one result of this plan, there had not been in the two years since its adoption a single operation for appendicitis in either of these institutions where appendicitis was not really present. In another hospital where he served, however, only the medical cases under twelve, but not the surgical, were allotted to the pediatrist, and here there had been a number of instances in which mistakes were made. He had taken care to observe the work of a number of careful and conscientious surgeons, and he had convinced them of the need of cooperation in children's cases.

Letters to the Editor.

THE NEW YORK STATE NURSES' ASSOCIATION AND THE NURSES' PRACTICE ACT.

Jamestown, N. Y., *January 7, 1913.*

To the Editor:

The recommendation of the New York State Nurses' Association to have the Nurses' Practice Act so amended as to "debar those who have not had institutional training from practising as nurses," referred to editorially in the New York Medical Journal for January 4th, will debar from New York State ninety per cent. of its nurses. Such a result is so profound in its importance as to demand the most searching inquiry into the reason for depriving these women of a livelihood and the family of limited means of a competent nurse.

From whom does this demand for the "closed shop" in the nursing world come? Not from the medical profession, because far more than half of their cases to-day (the United States census of 1900 gave only ten per cent. of nurses as trained) are in charge of nurses who would be debarred by the proposed law. Manifestly not from patients because they are employing far more practical nurses than hospital nurses.

Any investigator of nursing conditions will find that the entire question of the demand for a nurse resolves itself solely into the fitness of the individual. If she is competent in the sickroom and possesses the real nursing qualities, many of which have nothing to do with hospital training, patients will demand her services without regard to the means by which she gained the mastery of her art.

The patient or physician, when seeking a nurse, selects the one who is successful, whether she is called trained or untrained, professional or nonprofessional, hospital or practical. It matters not what her training, nor where she received it, if she is proficient and expert in her qualifications for the case in hand. Whatever her training and wherever found, she is the nurse who will supersede all others.

Concerning registered nurses (R. N.) A. S. Kavanagh, D. D., superintendent of the Methodist Episcopal Hospital, Brooklyn, N. Y., says: "As a rule we think the much coveted R. N. is a meaningless appendage in private work where the doctor or the patient or both, will select the nurse without regard to the presence or absence of R. N. Indeed, frequently she is selected without regard to whether she is a graduate or not."

Furthermore, it is estimated that eighty-five per cent. of the sick are unable to secure hospital nurses because of the prohibitive nursing wage rate of $25 a week or more. Certainly the great proportion of the populace does not wish its nurses who will work for $10 to $18 a week debarred by this closed shop movement. In the city of Jamestown, where the average weekly income is estimated at not more than $12, the organized hospital nurses have recently advanced their charge to $25 a week. Would such a community vote to debar all other nurses? The answer is too obvious for discussion.

What will be the effects of compulsory registration? A law such as proposed would necessarily leave the majority of the people without nurses, because there are not enough hospital graduates to supply the demand, and because the average family cannot pay $25 a week, even if there were enough nurses at this rate. Furthermore, the law will debar thousands of earnest, capable nurses of their vocation. This is not an idle statement, but a statement based upon facts. Scores of small hospitals, registered hospitals, and sanitariums are graduating efficient trained nurses, but these nurses cannot comply with the requirements of the registration law. Hundreds of New York State women, many of wide experience in the sickroom, have increased their efficiency by a correspondence course in nursing. The majority of these women could have studied nursing in no other way. Their work is immeasurably superior to that of the untaught nurses, and there is ample evidence that as a class their work falls but little below that of hospital graduates.

If it is found that as a class, these home trained nurses can give comfort to the patient and intelligently carry out the orders of the physician, their work merits recognition and assistance to greater usefulness. No law should debar the public from having the privilege of securing them to care for the sick, nor should this useful class be handicapped in any way either by closed shop methods or by denying them the title of "nurse"—a term as old as humanity itself.

A writer in the *Dietetic and Hygienic Gazette,* commenting on correspondence schools for nurses, says: "Many women, undoubtedly, are improving this opportunity of studying nursing because there is no way for them to secure the advantages of the hospital training school. We believe there is no question of their inferiority compared with the graduates of the hospital training school; the real question is whether they have improved themselves as nurses by their correspondence study. . . . According to the most reliable statistics, the untrained nurses outnumber the trained nurses in actual service in this country by about nine to one. . . . Is the correspondence school doing a good work for this class of nurses? If it is, it has demonstrated its right to teach nursing—not in competition with the recognized training schools, but in alliance with them, meeting the needs of those who are crowded out of the training schools, and thus doing a most useful supplementary work."

The writer of this article is associated with The Chautauqua School of Nursing, which conducts a home study course in nursing. More money and more time have been spent in perfecting the text and illustrative matter of its study material and in enhancing its teaching value than have ever been devoted to any work on nursing. The study material is practically a cyclopedia of the art. The very fact that a woman possesses the intelligence to master so exhaustive a course by her unaided efforts is of itself evidence that she has the character and at least some of the personal qualifications which make her presence in the home and sickroom desirable.

Now that the work of this school has been actively prosecuted for more than a decade we believe the time has come to answer these questions in the light of actual results. If such a school as ours is carrying on a work detrimental to the public welfare it should be considered as being against public policy and the facts should be known. If, as we hold, the economic value of its work takes rank with that of institutional training by providing competent nurses for those patients who cannot meet the wage demands of the organized hospital graduates, then this fact should be known.

In justice to these nurses, to their patients, and to the physicians who have assisted them, we make the formal proposal that a group of three physicians, of whom the supervising editor of the NEW YORK MEDICAL JOURNAL shall be one, make a thorough investigation of the status of the nurses in New York State who have been taught by this school and publish the results of such investigation. We will afford such investigators full access to our records and study material and give them every facility whereby they may gain and tabulate the actual facts from the physicians and patients for whom this large number of women have nursed.

Believing that you will agree with me that this is a situation which demands facts and not opinions, I ask your serious consideration of this proposal in the belief that it is entitled to your cooperation. In this event I ask that you will secure the assistance of the two other investigators.

JOHN M. BROOKS, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Surgery of the Brain and Spinal Cord. Based on Personal Experiences. By Professor FEDOR KRAUSE, M. D., Geh. Medizinalrat, dirigierender Arzt am Augusta Hospital zu Berlin. English Adaptation by Dr. MAX THOREK, Surgeon in Chief, American Hospital, Chicago, Consultant to Cook County Hospital, Chicago, etc. Volume II. With Ninety-four Figures in the Text, Fourteen of Which Are Colored, Twenty-seven Colored Figures and Four Half Tone Figures on Fifteen Plates. Rebman Company, 1912. Pp. xxviii-283 to 819.

Volume III. With 42 Figures (3 of which are Colored) in the Text, and 47 Colored Figures on 22 Plates. New York: Rebman Company, 1912. Pp. xx-821 to 1201. (Price, $7 for each volume.)

This beautiful work of Krause deserves only commendation. It represents a wealth of material observed previously, at operation, and post mortem. It is not a textbook, but a series of most instructive and accurate observations made by the author and his numerous assistants. There are beautiful illustrations of conditions found at operation or post mortem examinations, in which one is able to make out the anatomical structures as clearly as if present at the operation or autopsy. Beside this, the technic of the usual up-to-date operative procedure is illustrated most clearly by diagrams and colored plates so that the student finds a most helpful guide in his operative surgery instruction. The language of the text is brief, instructive, and clear. The surgeon about to perform any particular endocranial operation will profit greatly by a study of similar cases described and depicted in these volumes. The immense material of Krause's clinic and allied clinics makes it possible for him to furnish the surgeon and student with a description of representative cases of practically all forms of endocranial disease necessitating surgical interference. The book has therefore almost the value of a visit to his clinic, with the advantage that the whole field of neurological surgery is covered. The book is of great interest and worth, not only to the general and neurological surgeon, but also to the eye, ear, nose, and throat specialists and to the syphilologists.

Manual of Human Osteology. By A. FRANCIS DIXON, M. B., Sc. D., University Professor of Anatomy and Chirurgery, Trinity College, Dublin. Illustrated with 178 Figures, Many in Colors. New York: William Wood & Co., 1912. Pp. xii-316. (Price, $3.)

Dixon's manual of osteology is most thorough. Attention is attracted at the very beginning in the perusal of the illustration index, which is unusual, because of the detailed manner in which it is given. The value of such an arrangement is very apparent. The plan of illustrating with shadowed white and black, supplemented with colored outline drawings for muscular attachments for the majority of bones, is particularly good, permitting the student to form a complete image.

Another feature of value is that the standard modern terms in the text are given first, the older terms following in italics. This puts the emphasis upon the true scientific language, Basel nomenclature, and at the same time allows of easy collateral reading. The descriptions are in clear, terse English, the style is easy, all unnecessary verbiage being eliminated. It is an excellent textbook to put into the student's hands.

Guide to Midwifery. By DAVID BERRY HART, M. D., F. R. C. P. E., Lecturer on Midwifery, School of the Royal Colleges, Edinburgh, Formerly Obstetric Physician, Royal Maternity and Simpson Memorial Hospital, Edinburgh, etc. With Four Illustrations in Colors and 268 Diagrams. New York: Rebman Company, 1912. Pp. xxiv-765. (Price, $6.)

This volume, written by one who has evidently been a keen observer, and has had extensive personal experience, constitutes a clear and complete exposition of the subjects pertaining to modern midwifery. While the method of construction of the book is unusual, it is interesting; the essential facts relative to the subject, are briefly and concisely stated in a manner that cannot fail to interest the reader and simplify the work of the medical student, when the work is used as a textbook, as originally intended.

The guide has been arranged in two parts. Part one is devoted to midwifery from a modern standpoint with explanatory notes appended to various chapters, regarding the character of specimens to be examined, and practical work to be done, in order that "the student may know the thing itself." Part two consists of numbered notes and discussions to chapters in part one, elucidating difficult points and, the summarizing of new operations, with descriptive charts. also, the various views and theories pertaining to the subject under discussion.

Exception may be taken to the author's views of the normal termination and management of occipitoposterior positions. Porter's method of anterior rotation of the occiput practically always succeeds in the absence of decided disproportion.

One of the many commendable features of the book, is the emphasis placed on the importance of practical knowledge of the subjects, obtained only by the examination of the proper specimens in the laboratory and museum, the use of the phantom, etc., and the examination of the living subject in the hospital.

One chapter is given on Evolution in Obstetrics, in which the author points out that the importance of Darwinism, Weismannism, and Mendelism in relation to practical points, is very great.

Contribution a l'étude du traitement du cancer du testicule. Par le Docteur C. Osorio Mascarenhas, ancien interne des Hôpitaux de Paris. Paris: Société générale d'imprimerie et d'édition Levé, 1912. Pp. 223.

This *thèse de Paris* is an unusually good one and covers fully the important modern observations on the treatment of cancer of the testicle, concluding with a detailed description of the thirty-one cases that have been submitted to the radical operations to remove abdominal glands that are most likely to be secondarily invaded. The author concludes that this radical operation is required in all cases that show any infiltration of the spermatic cord. The incision runs to the anterior superior spine and then to the costal margin. Retroperitoneal operation discloses the spermatic veins up to their entrance into the renal vein or vena cava. All the fascia surrounding these vessels between the ureters and the great vessels is excised. Of the thirty-one patients submitted to radical operation, three were apparently syphilitic, and only six lived for more than two years; none passed the three year limit.

Entomology for Medical Officers. By A. Alcock, C. I. E., M. B., LL. D., F. R. S., Lecturer on Medical Entomology, etc., at the London School of Tropical Medicine; Lately Superintendent of the Indian Museum and Professor of Zoology in the Medical College of Bengal, etc. London: Gurney & Jackson, 1911. Pp. xx-347. (Price, 9s.)

The purpose of this work is to provide a general description of *Arthropoda* concerned with tropical diseases. Without trespassing upon the domain of the physician or even the pathologist and sanitarian the author treats in successive chapters, the mosquito, moth midges, gnats, gad and robber flies, hover flies, house flies, fleas, lice, ants, bees, wasps, beetles, moths, butterflies, cockroaches, ticks, mites, spiders, scorpions, centipedes, and various other less familiar animals capable of evoking pathological conditions in the human organism. While the great bulk of the text is purely descriptive, the purpose being to enable medical officers to identify the various organisms in all stages of development, the best measures to prevent their pullulation and harmful effects are, in some instances given. The work is, on the whole, a very valuable one and fulfils admirably the purposes for which it was intended.

Present Sanitary Condition of New York Harbor and the Degree of Cleanness Which is Necessary and Sufficient for the Water. Report of the Metropolitan Sewerage Commission of New York, George A. Soper, president. August 1, 1912. Pp. 457.

The proper disposal of the sewage of a compact population of over seven millions is a sanitary problem of the first magnitude, and it is to a solution of this problem that the Metropolitan Sewerage Commission has addressed itself. We wonder how many people ever stop to consider how New York's sewage is disposed of, and whether the present method is proper. To any one interested in sanitary science, the reports of the Metropolitan Sewerage Commission present a valuable array of facts and observations concerning the sewerage of New York city and vicinity. But what is more to the point, these facts are marshalled in so interesting a fashion that the reports make fascinating reading.

Like its predecessor of 1910, this report is divided into three parts, devoted respectively to the Present Sanitary Condition of New York Harbor, to the Degree of Cleanness which is Necessary and Sufficient for the Water, and finally, to Tables and Plottings of Original Data Relating to Microscopical Examinations, Numbers of Bacteria, and Dissolved Oxygen.

Using the amount of dissolved oxygen as an index of pollution, or rather of the capacity of the harbor water to digest the sewage poured into it, the commission finds that parts of the harbor are already dangerously overloaded with sewage, notably the Harlem river, lower East river, and Newark bay. Measured by bacterial counts, the condition of the Harlem river far surpasses the rest of the harbor water in the degree of pollution. In order to determine the course of the sewage poured into the harbor experiments were made with floats liberated in various parts of the harbor and followed for as long as two days. The results were highly interesting and showed that the sewage probably flowed back and forth several times before reaching the lower bay and the ocean.

The opinions of the various experts on the degree of cleanness necessary and sufficient for the water are extremely interesting. The scientific medical man will particularly enjoy reading the opinion of Doctor Chapin, the genial health officer of Providence. Altogether the report is an excellent presentation of work in which all physicians should be interested.

Anæsthesia and Analgesia. By J. D. Mortimer, M. B. (Lond.), F. R. C. S. (Eng.), Anæsthetist to the Royal Waterloo Hospital, Throat Hospital, Golden Square, etc. London: Henry Frowde and Hodder & Stoughton, 1911. (For the University of London Press.) Pp. x-276.

This little manual presents the advantage of being written by a man of considerable practical experience. This renders him judiciously conservative in the adoption of newer methods, though the spirit manifested is one suggesting readiness to use these methods should events prove them to be preferable to older ones. Spinal anesthesia, for example, is relegated to the rear in the sense that in the author's opinion it should be resorted to only when the ordinary anesthetics cannot be used. The salient features of each subject being given in bold type, while the text is clearly adjusted to the needs of the untrained physician or student, the knowledge conveyed is essentially practical and eminently satisfying for those who wish to gain a clear insight into the question as a whole.

BOOK AND MAGAZINE NOTES.

The object of E. H. Randle, A. M., LL. D., author of *Plurality of the Human Race*, has been apaprently to prove the inadvisability of allowing the various races of men to intermarry, and upon this text to preach exclusion of Africans and Asiatics from our shores. The first 114 pages seem to be addressed to devout believers in Hebrew and Christian revelation, the remainder of the book to those who reason upon the theory of evolution. The latter, we think, have little doubt of the plurality of mankind. The book itself is interesting and the philological speculations beginning on page 131 will be found notably entertaining to those who are concerned with the history of language.

Volume VII of the Practical Medicine Series for 1912 is devoted to *Pediatrics and Orthopedic Surgery* and is edited by Isaac A. Abt, M. D., with the collaboration of May Michael, M. D., as to the first part, and by John Ridlon, A. M., M. D., and Charles A. Parker, M. D., as to the second. We have the same high opinion of this volume as of others of the same series, all excellent works of reference for the busy man. Due credit is given to the various medical publications from which the information is mainly derived, including the New York Medical Journal.

Outlines of Physiology (Philadelphia: P. Blakiston's Son & Co., 1912; price, $1.50), by Edward Groves Jones, A. B., M. D., and Allen H. Bunce, A. B., M. D., occupies a place somewhere between an ambitious treatise and a quiz compend. On the whole the work has been very well done, and for the freshman student these outlines, being traced in an interesting style that was hardly to be expected in so modest a volume, will serve very well until he is able to fill in the shading, so to speak, by his later work in the laboratory and during his second year. The difficult subject of reproduction is particularly well managed and the chapters on food, digestion, and assimilation are complete.

Meetings of Local Medical Societies.

MONDAY, *January 13th*.—Society of Medical Jurisprudence, New York; New York Ophthalmological Society (annual); Association of Alumni of St. Mary's Hospital, Brooklyn; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *January 14th*.—New York Academy of Medicine (Section in Neurology and Psychiatry); Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay Medical Society; New York Obstetrical Society; Jamestown Medical Society; Rome Medical Society; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, *January 15th*.—New York Academy of Medicine (Section in Genitourinary Diseases); Women's Medical Association of New York City (Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society; Buffalo Medical Club; New Haven, Conn., Medical Association; New Jersey Academy of Medicine (Jersey City).

THURSDAY, *January 16th*.—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Aesculapian Club, of Buffalo, N. Y.

FRIDAY, *January 17th*.—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society (annual); Saratoga Springs Medical Society.

Official News.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the two weeks ending January 4, 1913:

Archer, William M., Jr., First Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence. **Baker,** Carrol R., First Lieutenant, Medical Reserve Corps. Will proceed to Fort Constitution, N. H., for temporary duty. **Chase,** Chauncey L., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Dade, Fla., and will proceed to his home; granted leave of absence for one month and ten days. **Clark,** Albert P., Lieutenant, Medical Corps. Granted twenty-five days' leave of absence. **Connolly,** P. B., Lieutenant, Medical Corps. Ordered to proceed from Fort McPherson, Ga., to Fort Morgan, Ala., for duty with the 75th Company, Coast Artillery Corps, to San Francisco, Cal. **Cullen,** Charles W., First Lieutenant, Medical Reserve Corps. Will proceed to the Walter Reed General Hospital, Washington, D. C., for observation and treatment. **Etter,** Harry B., Lieutenant, Medical Corps. Ordered to report at Fort Bliss, Texas, for temporary duty in the field. **Garcia,** Leon C., Captain, Medical Corps. Relieved from the transport *Logan* and ordered to proceed to the United States for further orders. **Holland,** J. H., Lieutenant, Medical Corps. Relieved from duty at Fort Bliss, Texas, and ordered to proceed to Fort Douglas, Utah, for temporary duty. **McCord,** Donald P., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort William H. Harrison, Mont., and will proceed to Fort Dade, Fla., for duty. **Mills,** R. W., Lieutenant, Medical Corps. Relieved from duty at Fort Sam Houston, Texas, and from treatment at the Walter Reed General Hospital, Washington, D. C., and ordered to Plattsburg Barracks, N. Y., for duty. **Page,** Henry, Major, Medical Corps. Left Fort Moultrie, S. C., on ten days' leave of absence. **Reddy,** J. J., Lieutenant, Medical Corps. Reported for temporary duty at Fort Hancock, N. J. **Sherwood,** John W., First Lieutenant, Medical Corps. Relieved from duty at Fort D. A. Russell, Wyo., and ordered to Fort Bliss, Texas, for duty. **Smith,** Lloyd L., Captain, Medical Corps. Granted twenty days' leave of absence about March 8th.

The following officers of the Medical Corps are detailed to take the course in the Army Field Service and Correspondence School for Medical Officers, Fort Leavenworth, Kan.: Majors William H. Wilson, Thomas J. Kirkpatrick, Henry Page, Bailey K. Ashford, Weston P. Chamberlain, Albert E. Truby, Joseph H. Ford, Louis T. Hess, Christopher C. Collins, Benjamin J. Edgar, Jr., Samuel M. Waterhouse, Eugene H. Hartnett, Charles E. Marrew, M. A. W. Shockley, Sanford W. Wadhams, Chandler P. Robbins, William J. L. Lyster, Edward F. Geldings, Arthur W. Morse, Frank C. Baker, Charles R. Reynolds, Paul C. Hutton, Frederick A. Dale, Jay Ralph Shock, Frank T. Woodbury, Henry H. Rutherford, John A. Murtagh, William W. Reno, Horace D. Bloombergh, James F. Hall, Edward R. Shriner, and Douglas F. Duval.

The following officers of the Medical Corps are detailed to enter the Army Field Service and Correspondence School for Medical Officers, Fort Leavenworth, Kans., for the purpose of taking the course in the Field Service School: Majors Henry Page, Edward R. Schreiner, Douglas F. Duval, William W. Reno, Horace D. Bloombergh, and James F. Hall.

Births, Marriages, and Deaths.

Born.

Cole.—In Washington, D. C., on Monday, December 23d, to Captain Clarence Le Roy Cole, Medical Corps, United States Army, and Mrs. Cole, a son.

Married.

Allen—Cochenour.—In Pinckneyville, Ill., on Tuesday, December 24th, Dr. B. Allen and Miss Edith Cochenour. **Barnett—Hensel.**—In Philadelphia, on Monday, December 30th, Dr. Charles Barnett and Miss Sarah L. Hensel. **Faith—Smith.**—In Dodson, La., on Sunday, December 22d, Dr. James F. Faith and Mrs. Alma Smith. **Strousse—Myer.**—In Philadelphia, on Thursday, December 26th, Dr. Leo Strousse and Miss Essie Myer.

Died

Bailey.—In Lansing, Michigan, on Wednesday, December 25th, Dr. Orla Stair Bailey, aged fifty-three years. **Beach.**—In Pasadena, Cal., on Wednesday, December 11th, Dr. Eliza J. Beach, aged seventy-seven years. **Dorsey.**—In Sedro Woolley, Wash., on Tuesday, December 24th, Dr. William A. Dorsey. **Dryden.**—In St. Louis, Mo., on Wednesday, December 25th, Dr. John L. Dryden, aged forty-nine years. **Farrell.**—In Malden, Mass., on Wednesday, January 1st, Dr. George Louis Farrell, aged forty-five years. **Guerin.**—In Memphis, Tenn., on Thursday, January 2d, Dr. John Guerin, of Chicago. **Jackson.**—In Fall River, Mass., on Wednesday, December 25th, Dr. Amos Messer Jackson, aged seventy-two years. **Jenks.**—In Aurora, Ill., on Tuesday, December 24th, Dr. Frank H. Jenks, of Rockford, aged forty-nine years. **King.**—In Riddlesburg, Pa., on Friday, December 20th, Dr. Albert H. King. **Marsh.**—In Galion, Ohio, on Thursday, December 26th, Dr. Guy C. Marsh, aged forty-eight years. **Penning.**—In Baltimore, on Sunday, December 29th, Dr. Oliver Parker Penning, aged forty years. **Post.**—In Port Crane, N. Y., on Wednesday, December 25th, Dr. Frank R. Post, aged sixty years. **Sellew.**—In New York, on Sunday, December 29th, Dr. Frederick S. Sellew, aged fifty-four years. **Tainter.**—In Callao, Mo., on Friday, December 27th, Dr. Paul R. Tainter, aged thirty-five years. **Wachter.**—In Baltimore, on Thursday, December 26th, Dr. Millard M. Wachter, of Long Island, Kansas, aged fifty-seven years. **Watson.**—In Utica, N. Y., on Thursday, January 2d, Dr. William Henry Watson, aged eighty-three years.

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Original Communications.

SUPERFICIAL METASTATIC GROWTHS IN THE DIAGNOSIS OF DEEP SEATED MALIGNANT TUMORS.*

By W. Wayne Babcock, A. M., M. D.,
Philadelphia,
Professor of Surgery, Temple University.

When a malignant tumor is discovered in the body, it is customary to look for metastatic growths along the efferent lymphatic or vascular paths. In certain situations, notably within the abdominal cavity, if there is clinical evidence indicating the possible presence of malignancy, it has long been the custom of the clinician to search for enlarged lymph nodes above the left clavicle. The presence of such a lymphatic enlargement increases the probability of intraabdominal malignancy, but it is not uncommon for the clinician to verify his suspicions by then having an exploratory abdominal incision made. In the mouth or upon other mucous membranes new growths associated with lymphatic enlargement are not infrequent. The conventional method is to excise bits of tissue from the primary enlargement in order to prove by microscopical examination the nature of the growth. The purpose of this communication is to indicate that frequently such apparently direct methods of examination are in reality indirect and at times decidedly objectionable. In diagnosticating a new growth within the abdomen, for example, it is important to decide two things: First, the malignancy or nonmalignancy of the condition; and, second, if it is malignant, to determine whether it has passed beyond the stage of operative relief. An abdominal section with the exposure of a primary growth may give one very imperfect information. How frequently is one unable to tell by the intraabdominal examination whether the stomach is the seat of sclerotic ulcer or a carcinoma?

A resection of a part of the growth increases the operative danger, and the part removed may be unwisely selected so that the area in which there is beginning malignant degeneration is not revealed. The suture of the infiltrated tissue may be difficult and the danger of hemorrhage, infection, or leakage considerable, and no matter how carefully this examination is made, the condition as to remote metastasis is not always proved. In such a case I reverse the usual procedure and select an enlarged lymph node or other apparent secondary growth as giving the most valuable information. Here we find focalized the essence of malignancy. With an accessible primary growth, near the surface of the body, the excision of a portion of tissue for examination may involve some risk of hemorrhage and of the dissemination of malignancy, while the tissue removed is often so necrotic or so infiltrated that the diagnosis is uncertain. At the present time, I have under my care a patient with a growth upon the tongue from which microscopic sections have been obtained, and have been examined by two well known professors of pathology; and each has given a different diagnosis. In this case a third and later examination made from a bit of enlarged gland in the neck, not only indicates the condition, but to some degree shows the extent of the metastasis and other features.

My contention, therefore, is this, that when superficial or subcutaneous nodules appear in patients who are suspected of harboring a malignant tumor, that often the most direct way in which the diagnosis may be ascertained and the conditions of metastasis proved, is by cocainizing the area and, by a very slight operation, removing a part or all of the nodule and subjecting it to microscopical examination. In this way one avoids the dangers that may attend the removal of tissue from the primary growth, and may absolutely prove the condition of inoperable metastasis. Obviously, superficial secondary growths are far from being invariable, yet if careful search is made, superficial metastatic manifestations will be found more frequently than is often suspected.

Some years ago a patient applied to me for loss of power in the right thumb; a few days later the entire arm became weak; vomiting without nausea occurred, and secondary headache developed. On shaving the man's scalp preparatory to operation, a number of reddish papules, two or three millimetres in diameter, were observed upon the scalp over the left motor area. A craniotomy was done, a subcortical sarcoma excised from the motor region, and later an examination of one of these scalp nodules showed it to be a metastatic sarcoma. Had I but simply excised one of these cutaneous nodules, and examined it, it would have proved the nature of the patient's motor lesion, and a very useless operation might have been avoided, for a generalized sarcomatosis soon developed. In this case, the first metastases were, as often happens, in the skin over the primary lesion. Recently, I saw a patient suffering from severe abdominal pain, weakness, and some emaciation. The most thorough examination

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*Read before the Philadelphia Pathological Society, March 28, 1912.

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by a very capable internist revealed no cause for the condition. The abdominal and rectal examinations were negative, and an examination of the gastric contents, urine, stools, and blood gave no clue to the nature of the disease. Finally, the patient was admitted to the hospital for an exploratory abdominal section. There was found a subcutaneous nodule, about one centimetre in diameter, near the eighth costochondral junction on the left side. The patient considered this unimportant, but said that it had been present only two or three weeks. An exploratory section showed a small carcinoma of the sigmoid bound down in the hollow of the ileum, and diffuse small metastatic peritoneal growths. The examination of the nodule from the chest wall, and of a minute mesenteric nodule showed the characteristic alveoli of an adenocarcinoma. In this patient, had we simply excised the subcutaneous nodule under local anethesia, the patient might have been spared the useless abdominal operation and the necessity of hospital treatment.

The metastasis may also direct the method of surgical attack. Thus a middle aged man, with a large firm mass in the left hypochondrium, was referred to the hospital after very careful study by an internist for a presumable growth of the left kidney. The situation of the growth and the study of the secretions suggested that the man did not have what otherwise would have seemed probable, that is, a carcinoma of the stomach. In this case, were the condition inflammatory or a tumor of the kidney, a lumbar and probably extraperitoneal incision would have been desirable, while, were the growth one of the stomach, a median abdominal section would have been necessary to obtain the best access. Instead of incising over the growth, however, we first removed, under cocaine anesthesis, a firm, rather nodular lymphatic enlargement above the left clavicle, and the man was able to leave the hospital shortly afterward with a proved diagnosis of "carcinoma of the stomach, inoperable, and with distinct metastatic growths."

In carcinoma of the liver or peritoneum, metastasis may occur along the round ligament and a secondary subcutaneous nodule be found at the umbilicus. In carcinoma of the breast but little attention is often given to the very characteristic metastatic skin eruptions. The bluish or scarlet macules, or the dusky reddish papules that occur in the skin overlying a carcinoma, all may have their malignant nature proved by the removal of an involved bit of skin. This type of metastasis almost invariably indicates a hopeless and inoperable form of carcinoma.

At times the metastatic nodule is discovered accidentally, and enables one to forecast the patient's future. As an example, some years ago, a patient was sent to this city from a distant point, to be operated upon for appendicitis. In the removal of the appendix a firm, enlarged mesenteric gland was felt and removed. To my surprise, on microscopical examination, the picture of a secondary growth, similar to that from a carcinoma of the stomach was seen. As the patient was a rather young woman, and apparently had been relieved by the operation, the friends were surprised at the gloomy prognosis. Several months later marked symptoms referable to the stomach developed and not long after the patient died. No test or single method of diagnosis could have told as much as this single metastatic nodule. The value of the examination for superficial metastatic growths is so obvious as to seem scarcely worthy of this emphasis, and were it not for the fact that the importance of this little method seems to be so often overlooked, I should ask pardon for bringing it to your attention.

Superficial metastases are often absent, but when they are present, it seems to me a waste of scientific energy for those who do not need the experience or mental exercise to spend days and weeks in metabolic tests, repeated physical examinations, and much deductive reasoning, when almost by a snip of the scissors a bit of tissue may be secured that may give absolute evidence as to the character of the disease.

Finally, it is to be observed that purely negative evidence is of little value, for an enlarged lymph node tributary to an area containing a malignant growth may, under the microscope, fail to give the picture of metastatic involvement.

2033 Walnut Street.

EDEMA OF THE LIDS.

By George W. Vandegrift, M. A., M. D.,
New York,
Instructor in Ophthalmology, Cornell University Medical College;
Assistant Surgeon, Eye and Ear Infirmary.

Edema of the lids is a condition that is brought frequently to the attention of the general practitioner, and a knowledge of its many manifestations is of practical value. It is often well to recall to mind that which perhaps we have dismissed temporarily amidst the rush of other matters; and this is the apology for the following brief outline.

Edema of the lids may be inflammatory or noninflammatory, due to conditions in the lids themselves, in the eyeball and annexa, or in the general system. To know its many causes is of value in diagnosis and prognosis, not only of minor diseases and injuries, but also of major diseases of the eyeball, orbit, and remote organs. Inflammatory edema may be due to:

1. Lid abscess which arises from local infection, injury, or erysipelas.

2. Chronic dacryocystitis, which, when acute, will produce an edema commensurate with the violence of infection. History of a chronic dacryocystitis and the location of the point of maximum intensity or suppuration over the sac, about three mm. below the internal canthus, establish the diagnosis (Fig. 1).

3. Hordeolum or stye, an infection of a hair follicle. This is the most frequent cause of edema of the lids. No matter how intense the edema may be, the diagnosis is easy because the suppurating point is on the lid margin and the tip contains a hair. A stye at either canthus produces a more violent edema than at any portion of the lid margin, for here the pus is more closely confined by the configuration of the lid (Fig. 2).

4. An acutely inflamed chalazion or Meibomian cyst produces a slight edema. Under ordinary con-

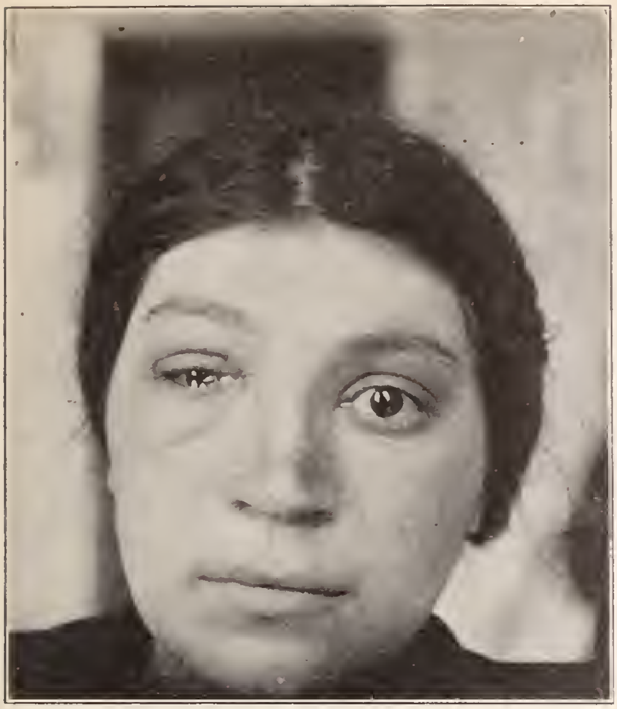

Fig. 1.—Abscess of lacrymal sac.

ditions a chalazion will not cause edema. The diagnosis of a chalazion is made easily, for its suppurating point is on the palpebral conjunctiva, and not upon the lid margin, as that of a stye.

5. Periostitis of the margin of the orbit, most frequently of syphilitic origin. It may be recognized as a tender mass connected with the underlying bone (Fig. 3). This condition is found frequently in the region of the lacrymal sac in children suffering from inherited lues.

6. A furuncle developing on any part of the skin of the lids. Such a condition is easily recognized.

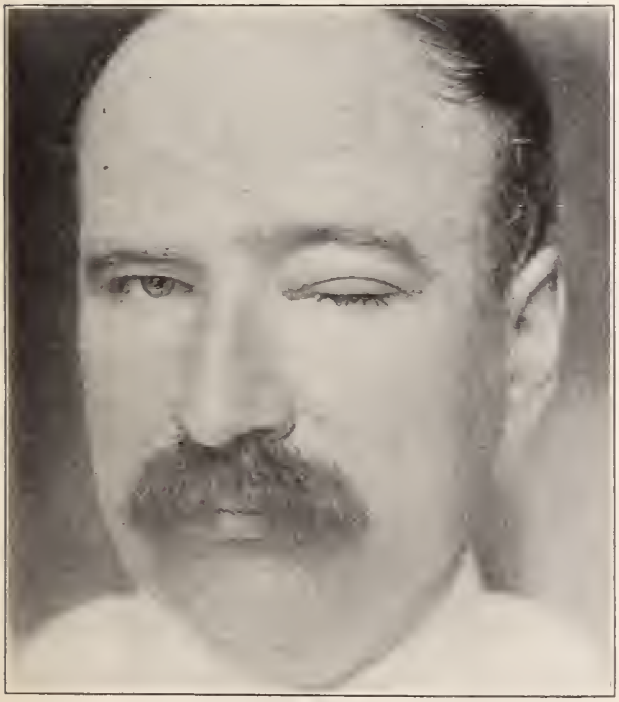

Fig. 2.—Hordeolum at inner angle of upper lid.

7. Erysipelas elsewhere on the face produces a migratory edema of the lids, indurated and noncircumscribed that may remain as a simple edema or develop into a true erysipelas.

8. The sting of an insect frequently causes a very marked edema, which develops suddenly over night. The swelling may be so great that the lids cannot be opened. Often on the edge of the lid the mark of the insect's wound can be seen. The condition usually lasts a few days only and is not of serious import.

9. Inflammations of the conjunctiva, iris, and ciliary body at times may cause an edema, confined to the margin of the upper lids. Also an irritation of the cornea as from a foreign body will produce edema.

10. Severe blepharospasm that accompanies acute conjunctivitis, blepharitis, or ulcer of the cornea. The edema is usually severe. This condition is found almost entirely among children of eczematous diathesis.

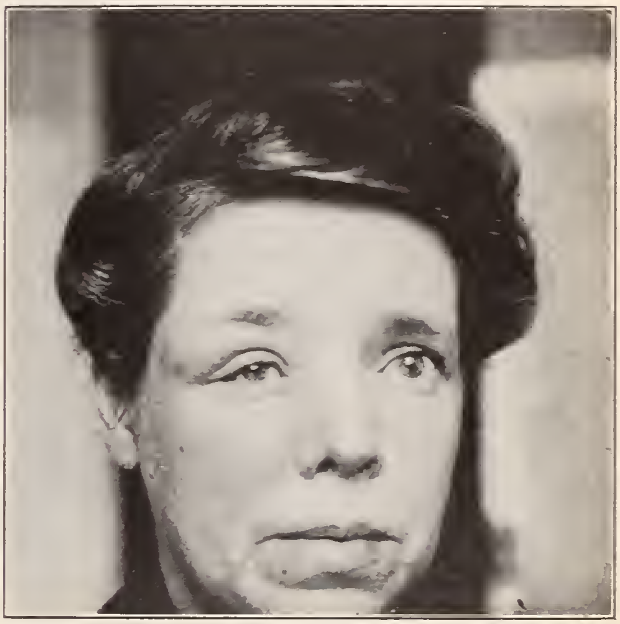

Fig. 3.—Syphilitic periostitis at outer angle of orbital margin.

11. Violent inflammations of the interior of the eyeball, of Tenon's capsule, abscess or tumor of the orbit, thrombosis or aneurysm of the cavernous sinus. It may be inflammatory or static, according to the etiological condition. Other symptoms are present to aid diagnosis.

12. Tarsitis, a manifestation of tertiary syphilis, is always accompanied by inflammatory swelling over the tarsal cartilage, usually of the upper lids. The condition is seldom unilateral (Fig. 4).

13. Dermatitis from rhus toxicodendron produces usually a marked swelling when the lids are involved.

Noninflammatory edema may be due to:

1. Angioneurosis, a condition that produces a transient but marked edema. It is due probably to intestinal intoxication. In women its presence has been noted at the menstrual period.

2. General circulatory disturbances as from kid-

ney lesions, causing an edema usually of the lower lids, noticeable in the mornings. A similar edema may accompany the acute infectious diseases of children. It is also a symptom of overdoses of arsenic.

4. Catarrhal inflammation of the accessory nasal sinuses. This is often accompanied by edema of the lids which may be transient, and confounded with angioneurosis. Such a transient edema should direct attention to the sinuses. It is present also with coryza.

Certain conditions simulate edema, such as tumors of the lid, for example, dermoid cyst of the outer angle of the orbital margin. Palpation establishes the diagnosis. Emphysema may appear to be an edema pure and simple. It is due to displacement of air into the tissues of the lids from the nasal cavities through a fracture of the inner wall of the orbit, caused by a violent cough, sneeze, or blowing of the nose soon after the injury has been sustained. A diagnosis depends on the feeling of crepitation the air imparts to the palpating finger. The condition often is accompanied by ecchymosis.

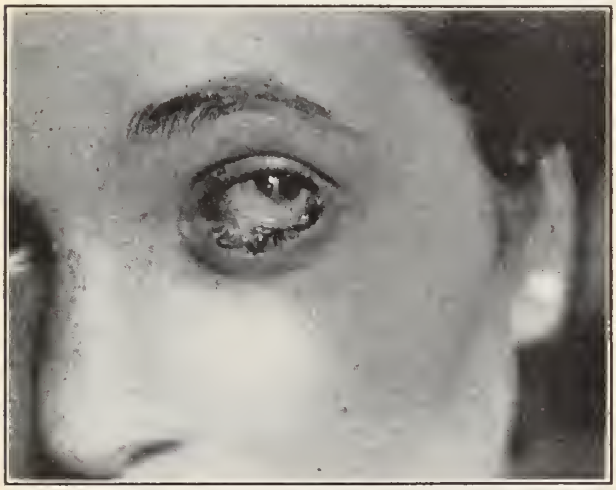

FIG. 4.—Syphilitic tarsitis.

A detailed description of the treatment of these many manifestations of edema of the lids is hardly relevant to the purpose of this paper. Such an account would carry us far afield into general medicine and surgery. The important point for the present is to impress upon our minds the significance of all these various phases, a significance that bears not only upon trivial affections, such as styes and chalazia, but also upon such vital matters as ethmoiditis, brain lesions, and chronic Bright's disease. Confronted with a case of lid edema, we must not forget that it may be the danger signal of a very serious disease and not a simple local affair. To describe the treatment of these grave conditions is not in place here, but there are many of the less serious manifestations, such as we meet in every day practice, a brief description of which may not be amiss.

Abscess of the lid. After determining that the condition is that of ordinary abscess and not an acute dacryocystitis, an incision is made in a direction parallel to the orbicularis fibres. If the abscess is at the outer angle of the orbit it may be connected with the lacrymal gland. If it is situated at the inner and upper angle of the brow a careful probing is necessary to ascertain the presence of frontal or ethmoidal sinusitis. An abscess of the lacrymal sac is opened through the suppurating area of the sac immediately below the internal canthus, in a line parallel with the nose. The cavity is then treated along usual surgical lines until all acute signs have subsided, when the sac may be extirpated. If the case has been seen before the development of pus the edema may be subdued by frequent, ice cold applications.

The edema that accompanies a *hordeolum* quickly subsides when the suppurating tip of the stye has been incised. The suppurating point of an acutely inflamed *chalazion* is found on the palpebral conjunctiva, and the lid must be turned that the incision may be made properly. The edema that results from the *sting of an insect* is best treated by frequent, ice cold, boric acid applications. At times suppuration develops when an incision becomes necessary.

The edema that sometimes complicates *eczematous conjunctivitis* and *keratitis* is most stubborn to treatment. Rarely does it surrender to hot or cold applications; and after trying our patience and resources it gradually disappears as the underlying disease passes away.

147 EAST EIGHTEENTH STREET.

BISMUTH PASTE IN THE EAR AND NOSE.*

By GEORGE M. COATES, A. B., M. D.,
Philadelphia.

On March 14, 1908, Dr. Emil G. Beck, of Chicago, published an article in the *Journal of the American Medical Association* entitled A New Method of Diagnosis and Treatment of Fistulous Tracts, Sinuses, and Abscess Cavities. This method, now well known, was the filling of the cavities with a bismuth paste of his own formula, and so remarkable were the results obtained in many cases that the new procedure received speedy recognition by surgeons all over the country. Dr. Joseph C. Beck has been most active in determining its value in diseases of the ear, nose, and throat. Originally intended for diagnostic purposes in x ray photography, it was soon found that old sinuses which had been injected to distention in order to determine their various ramifications, showed a marked tendency to heal without further treatment. This healing property has been attributed by different observers to two main causes.

Ridlon and Blanchard believe that the mechanical action of the paste in distending the cavities produces the cure. Don, Ryerson, and Dunning suggest that the curative action is due to the liberation of nitric acid from the subnitrate of bismuth by contact with organic acids, inhibiting the growth of microorganisms. Beck believes that both of these may be true, but that its marked chemotactic power produces a local leucocytosis and that thus, indirectly, it has a phagocytic action. The technic is simple. The bismuth paste is injected into the cavity to be treated, which has not been previously prepared for its reception (i. e., washed out), until the cavity walls are distended. It is retained by a simple dressing, allowed to harden, and repeated if necessary at intervals of a few days. Two formulæ are used:

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*Read before the Section in Otology and Laryngology of the College of Physicians of Philadelphia, October 16, 1912.

No. 1. (For ordinary use.)

Bismuth subnitrate (arsenic free),	33 percent;
Petrolatum,	67 per cent.

No. 2.

Bismuth subnitrate,	30 per cent.;
Petrolatum,	60 per cent.;
Paraffin (120° melting point),	5 per cent.;
White wax,	5 per cent.

NOTE. This second formula is used in cases where it is difficult to retain the softer mixture of No. 1.

It is not my purpose to take up this method in detail in its application to general surgery, but only in its relation to ear, nose, and throat diseases, and to add a few experiences of my own in its use in about fifty cases of different kinds.

I began the use of this method shortly after the publication of Emil Beck's original article, my attention being called to it by Dr. Alexander R. Craig, instructor in my service at the Philadelphia Polyclinic. The first case in which I used it was a large subperiosteal abscess containing half an ounce of pus located about 2.5 inches posteriorly to the external auditory meatus. This abscess was incised, a large area of denuded bone discovered, but no connection with the mastoid could be determined. In spite of treatment this abscess cavity persisted for over two weeks, the bone continuing bare and the discharge of pus profuse. At this time the cavity was filled with bismuth paste, formula No. 1; the external wounds closed almost at once and complete resolution followed rapidly. I may say here that I have never used formula No. 2, No. 1 having always proved satisfactory.

Struck by the results in this case, it occurred to me that it would be a useful dressing for postoperative mastoid wounds. We all know that frequently our simple mastoid operations run a somewhat tedious course of healing of several weeks' duration, and the occasional difficulty of inducing the closure of the sinus when it has become too small to be easily packed. It is in this class that I have had great success in about twenty cases by the injection of the paste. I prefer to wait until suppuration in the middle ear has ceased, then discontinue packing, and inject the sinus without previously having cleansed it. For this purpose an ordinary glass syringe with an olive tip is used.

Formerly I heated the bismuth mixture in a water bath until it could be drawn into the syringe, then allowed it to cool until just thin enough to pass through the nozzle. Where a large cavity with many ramifications is to be filled, this is the best plan in order that all recesses may be filled by the liquid. Where, however, we have a simple cavity I now usually fill the syringe by removing the plunger and packing it with the cold mixture which is not too firm to be forced in a small ribbon from the tip. The tip of the loaded syringe is placed against the opening of the sinus, a little cotton wrapped around to prevent the escape of the paste, and the cavity filled until paste leaks from beneath the cotton. A plain gauze dressing is applied to retain it. Usually the discharge of pus ceases at once, being replaced by a thin serous fluid. In a number of my cases only one injection was necessary, the external wound closing permanently in a day or two. In the other cases several subsequent injections were necessary at intervals of a few days, but I am sure that the time of convalescence was very materially shortened by this method. It is besides very much more agreeable to the patient than continued gauze packing, practically doing away with all pain. In this respect it is an ideal after-treatment for children who have undergone the simple mastoid operation.

In cases that do not heal at the first or second injection, granulations will form at the edges of the skin wound. These should, of course, be reduced in the usual way by applications of silver nitrate, sixty grains to the ounce, and will soon shrivel up and disappear. I have had no failures from this method, and if there are any such they must be due, according to Beck, to necrosed bone still remaining in the mastoid cavity. A possible danger would be where the sinus, nerve, or meninges are exposed, as paste finding its way between these structures and the walls would probably cause pressure symptoms similar to those produced by a blood clot in the same position.

I have used this dressing in four cases where the sinus or dura was exposed without untoward symptoms, having simply waited until I felt sure that granulations had so closed over the bare areas that the paste could not gain entrance. In two cases the paste passed through the aditus antri into the middle ear owing to too much pressure being used with the heated paste. This is another reason why I prefer the cold paste in these cases, though no harm resulted from its presence in the middle ear, it apparently being soon absorbed. Beck reports similar experiences. He also recommends its use as a primary dressing instead of the blood clot, but with this method I have had no experience, preferring to drain in the usual way for a short time, though I have decreased this period to a week or ten days.

This method was used in only two cases of radical mastoid operation in both of which epidermatization of the mastoid portion of the cavity was proceeding slowly and where there was a good deal of discharge. Bismuth paste was packed into these posterior cavities with the result that the discharge became at once odorless and much more scanty, the bare spaces quickly skinned over, and scabbing ceased.

In eczematous conditions of the external auditory canal packing with the paste has given good results in a number of cases, but these I have not followed up closely. Also in diffuse or circumscribed cellulitis of the canal I am inclined to think that the results are better than those obtained by former methods. Any pus collections should be opened, as they occur, the paste injected into the cavities, and the canal filled. In dispensary cases which we cannot watch closely and where the canal often gets very foul with retained pus, a great deal of trouble and worry is obviated by this method, as the canal stays sweet and clean.

I have used the paste successfully in two frontal sinus cases. The first was a radical operation, though not a Killian, as the entire supraorbital ridge was necrotic when the patient was first seen. Drainage was made through the orbital plate of the ethmoid, the anterior ethmoidal cells being removed and obliteration of the sinus obtained, except for a small pocket above the inner canthus of the eye which continued obstinately to discharge through a fistulous tract in the skin incision. Two injections of paste stopped this in a few days, and there has been no recurrence in the two years since operation.

The second case was that of a lad of fourteen years who presented himself with an orbital abscess of large size, causing great exophthalmos. The Killian incision was made, the pus excavated, the inferior wall of the frontal sinus, which was necrotic, removed, and drainage established through the orbital plate of the ethmoid, the interior wall of the frontal sinus being left in situ on account of its being an acute case. A sinus persisted for some weeks, opening through the middle of the brow. A large quantity of pus was discharged through this as well as through the nose. Injections of bismuth paste very greatly lessened this discharge and relieved it of its odor, and several times the sinus closed, only to reopen. After five weeks' treatment the fistula was still open, though the discharge was slight, when a sequestrum was discovered. A long, thin plate of bone from the lower border of the supraorbital ridge was removed, and the sinus at once closed and has remained so for two years. The exophthalmos gradually diminished but a little still remains.

I have used the paste to advantage in epistaxis resulting from ulcerations of the anterior portions of the septum, by simply injecting the cold paste into the anterior nares and closing them with a plug of cotton. In a number of cases it has slid down through the choana and been ejected—but no harm would come even if the patient swallowed it—and it has been satisfactory in checking recurrent hemorrhage and scab formation. For the same purpose I have used it after both inferior and middle turbinectomies. It does not seem to interfere with drainage, most of it coming away in a short time, and it materially checks the secondary bleedings, infection, and synechia formation. In the case of inferior turbinectomies I have used it mostly in connection with gauze packing or with Bernay tents. In submucous resection of the septum, where there has been undue traumatism resulting in continued scabbing, it is a most useful secondary dressing, reducing the scab formation to the minimum. Beck does not advise it as a first dressing, fearing that some of the paste may be introduced between the flaps and prevent primary union.

There have been no mishaps in any of the cases in which I have used the bismuth paste. In case it is desired to remove it from a cavity that has been filled, this can be done by injecting some olive oil, waiting twelve hours, and then aspirating the emulsified liquid, though I have not been compelled to resort to this procedure, which might be necessary in a case of poisoning by absorption. The danger of poisoning would seem to be remote if reliable bismuth subnitrate is used in the preparation of the paste, and when it had occurred it was formerly attributed to arsenical contamination. A few such cases have been reported, I believe, in the injection of sinuses, but most of them have happened when large quantities had been placed in the stomach for x ray diagnosis. For this reason the bismuth subgallate is now being used at the Pennsylvania Hospital in all stomach work.

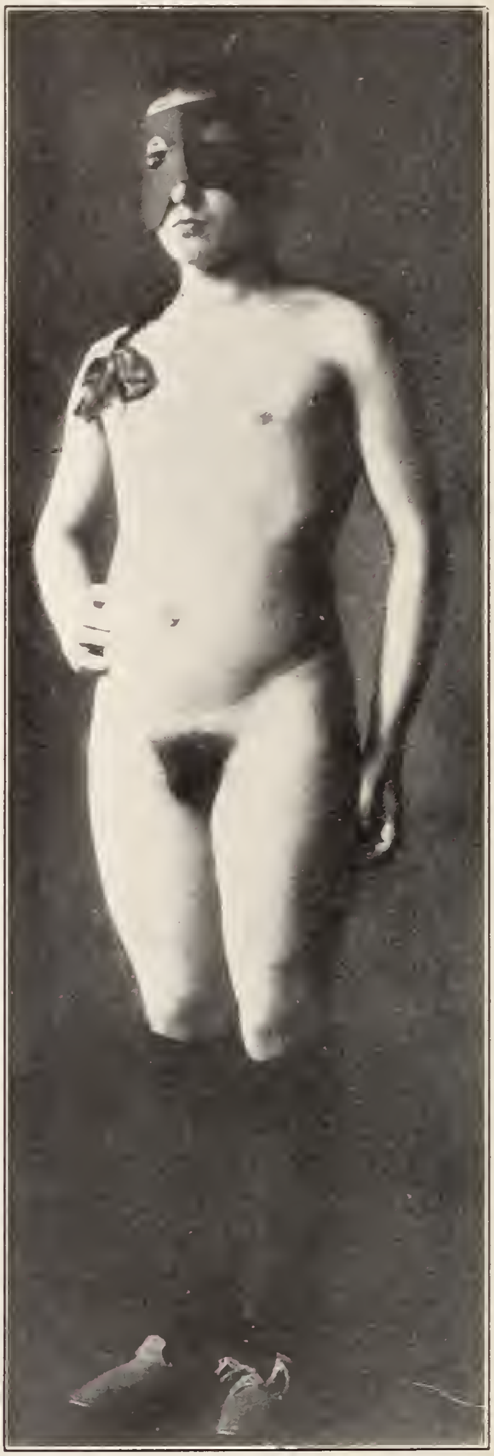
FIG. 1.—An hermaphrodite? (Mills).

In some instances the symptoms of nitrite poisoning from the nitrites liberated in the intestines

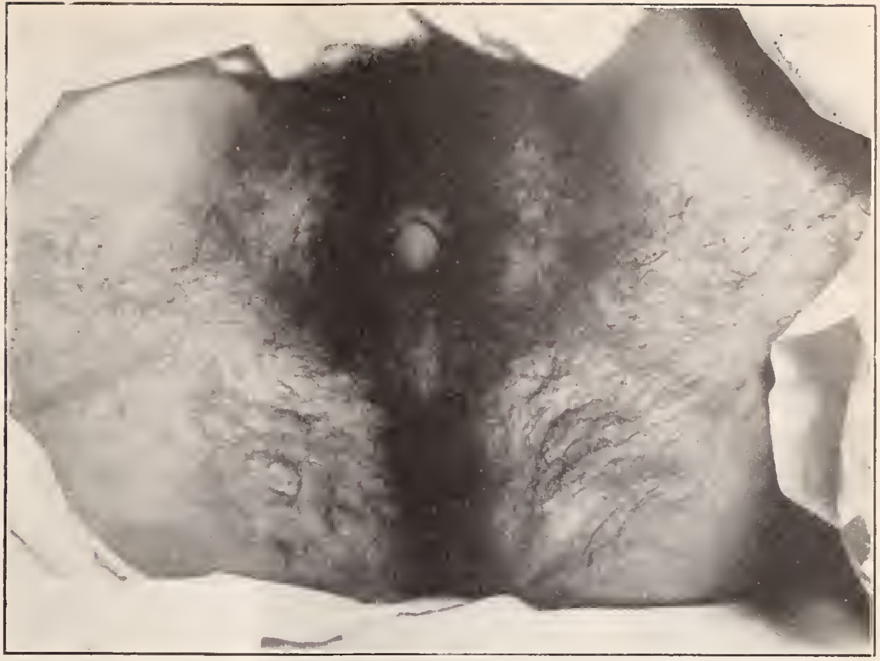

FIG. 2.—Showing genital, perineal, and anal regions (Mills).

from the bismuth subnitrate, and in the other few the typical symptoms of poisoning by metallic bismuth have been reported. In case symptoms do appear, the paste should be removed at once.

In view of the low power of absorption in the abscess cavity walls which we are called upon to treat, and the comparatively small amount of bismuth brought into contact with these, I think poisoning from this source must be very rare.

Last winter, at the Pennsylvania Institution for the Blind, for a period of three months, I treated all my cases of chronic suppurative otitis media by filling the middle ear and canal with paste. Joseph Beck had tried this method without obtaining anything special in the way of results, and neither did I. These children I see only once a week, a very competent nurse carrying out the ordinary home cleansing treatment. The treatment by paste injection certainly lessened the discharge and the odor, making syringing unnecessary, but of the ten or twelve cases in which I experimented, in none did it effect a cure or lead to any permanent improvement. It is very difficult or impossible to pack the ear with the glass syringe, as the retained air prevents the entrance of the paste. With a long nozzle ear syringe it may be introduced, however, to the posterior part of the cavity, withdrawing it as the filling progresses, and afterward pressing the whole mass tightly in. The packing is never so tight that the diminished pus cannot easily drain through somewhere.

In this paper I have attempted more to summarize my results than to give a detailed case report, and to bring out the main points of the technic, hoping to elicit discussion and hear the experience of other members of the section in the use of this still comparatively new method.

2032 CHESTNUT STREET.

AN HERMAPHRODITE?

BY WALTER SANDS MILLS, A. B., M. D.,
New York,
Professor of Medicine, Homeopathic Medical College and Flower Hospital; Physician, Metropolitan Hospital, Department of Public Charity.

Several years ago there entered my service at the Metropolitan Hospital a young German girl suffering from epilepsy. The patient presented some genital peculiarities, and it has always been my intention to place the case on record. I neglected to do so at the time, and had nearly forgotten it until recently I came across my notes, made at the bedside, and some photographs that were taken under my direction. I therefore present the case now.

CASE. The patient entered the Metropolitan Hospital, September 1, 1905. She was an apparently well developed and matured girl. She gave her name as a girl; her age as fifteen years; her birthplace Germany; her occupation that of a nurse girl.

The family history was good. She had several brothers and sisters in good health. For several months the patient had been employed as a nurse girl. During the preceding four or five weeks she had had a number of epileptic seizures. On account of these she had lost her position and had come to the hospital for treatment.

Although rather mature and with rather a heavy voice the patient said she had never menstruated. She gave a history of occasional nosebleed, and of more or less indefinite abdominal discomfort.

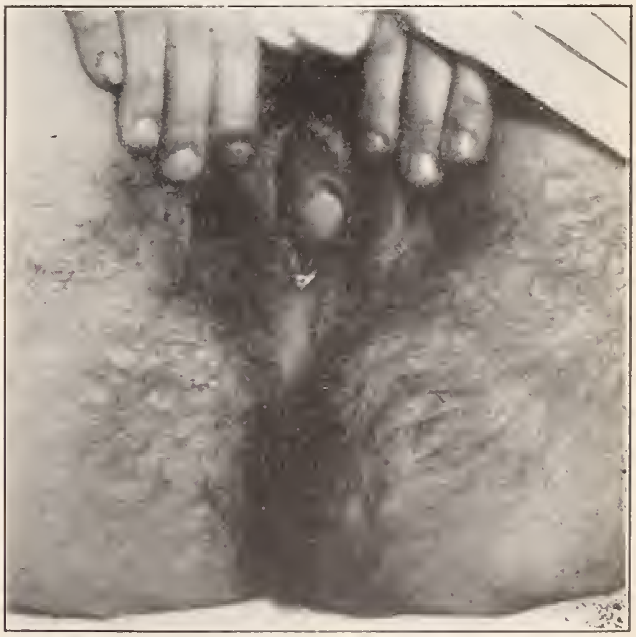

FIG. 3.—Showing penis shaped organ, occupying position of clitoris.

On examination I found the general conformation that of a male. The height was fifty-six and a quarter inches. The chest and back were entirely masculine in appearance. There was no semblance of mammary glands, simply small nipples as in the male. The chest measured thirty-two and a quarter inches on inspiration and twenty-nine and three quarter inches on expiration.

The hair on the mons veneris ended in a well defined horizontal line, as in a matured woman, and was profuse in quantity. When the patient was placed on her back on the examining table, and with the legs and thighs flexed, and the thighs separated as for a vaginal examination, the entire genital, perineal, and anal regions were found to be covered with a large quantity of coarse black hair, as is sometimes found on a hairy man.

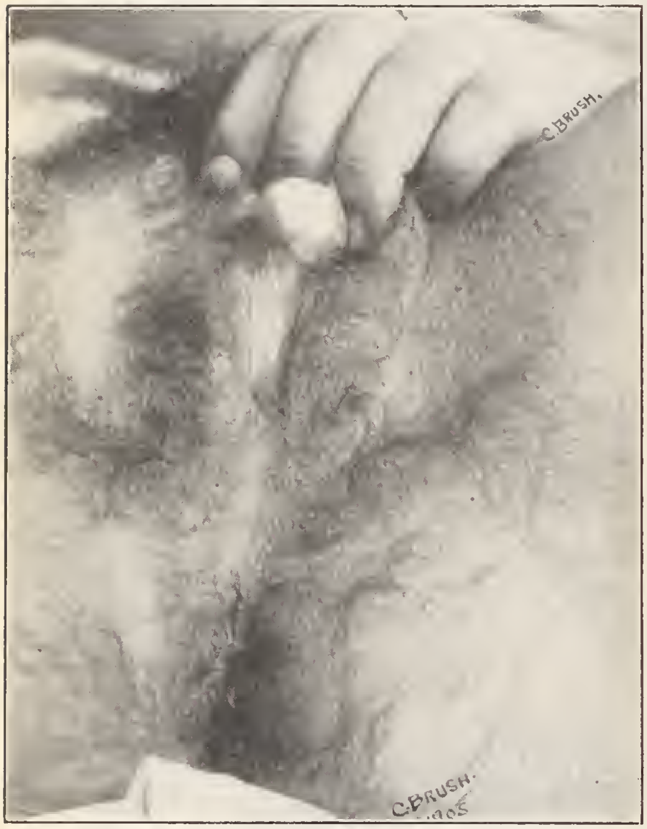

FIG. 4.—Showing orifice of urethra and rudimentary vagina through slit in the skin of perineum.

In the midst of this, near the pubes, lay a well formed, penis shaped organ. On separating the parts a little this was found to occupy the position of the clitoris. It was one and a half inch long. It had at the end a well developed glans and a long prepuce. There was no opening in the glans. Instead of a frenum, something resembling the labia minora came together on the under side at the glans. There was no trace of scrotum or testicles. As the patient lay exposed the covering of the penislike organ was skin. On lifting the organ up, the covering of the under side was more like mucous membrane, and the exaggerated labia minora, or what resembled them, were of mucous membrane. There was no sign of labia majora.

Below the root of the penislike organ was a slit in the skin of the perineum about an inch long. By stretching this opening as far as possible, the orifice of the urethra could be seen at the depth of about an inch. To this point two fingers could be inserted. There was a band or constriction also at this point which permitted of the insertion of only one finger. On passing the index finger as deeply as possible, there appeared to be ample room beyond the constriction. Something that felt like a small cervix, without an opening, could be palpated. A rectal speculum four inches long could be inserted to its full length, but could not be spread open when in place. The lining of this rudimentary vagina was perfectly smooth mucous membrane and contained no rugæ like the normal virgin vagina.

I was unable to make further studies on the case because the patient was deported after a few days in the hospital, and returned to Germany on account of the epilepsy. It would have been interesting to have learned something of the sexual life of the individual.

This is the only case of apparent hermaphroditism I have ever seen, and the proper sex can only be a matter of speculation. The patient had a woman's name, and had been brought up as a girl. She had long black hair which she wore in a braid down her back like a girl of her age. The anatomical characteristics were as described.

324 WEST EIGHTY-NINTH STREET.

THE TREATMENT OF PELLAGRA.*

Its Present Status.

BY GEORGE M. NILES, M. D.,
Atlanta, Ga.

I regret that in this study I cannot build up a logical therapy upon a proved etiology, nor can I base my conclusions upon constant and distinctive pathology.

These momentous questions are still *sub judice*, though the number of eager brains and willing hands now delving at this problem afford an earnest of its solution in the not distant future.

While, of necessity, we are waiting a definite and convincing answer to some of these etiological and pathological inquiries, the pellagrins are at our doors and within our gates clamoring for relief. They care not for the claims and counterclaims of the zeists and antizeists; they never heard of Sambon and his protozoan theories; and they are as little concerned for the sociological issues involved, as for the forty-seventh problem of Euclid. What they desire, nay *demand*, is therapeutic action; and the wavering theorist who hesitates to minister to these sufferers because all is not clear, as well as the dismal pessimists who see nothing but defeat and death—these should take their doubtful talents into other fields, leaving this battle to the resolute and courageous spirits who are willing to fight, even if much of the way is as yet shrouded in darkness.

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*Read at the Triennial Conference for the Study of Pellagra, Columbia, S. C., October 3 to 5, 1912.

I desire in this connection to submit a line of treatment, embodying suggestions from a number of observers of large knowledge, and built upon my own experience in the care of considerably over three hundred cases. This seems to be yielding satisfactory results, which cannot be explained away by the *post hoc* reply of possible critics, but afford a reasonable inference of *propter hoc.*

This method of treatment rests upon the four basic supports of hygiene, diet, drugs, and hydrotherapy, the whole of which I endeavor to permeate and leaven at all times with a hopeful and helpful psychotherapy.

The hygiene of pellagra is similar to that of other exhausting diseases, with two exceptions. Any form of alcoholic intemperance seems to exert a more malign effect than in any other malady. While an occasional alcoholic stimulant, well diluted, may find a questionable place in conditions of extreme weakness, I should hesitate to give a favorable prognosis in any pellagrin of convivial habits. I have on more than one occasion seen death quickly follow an alcoholic debauch in apparently convalescent patients.

Another hygienic precaution is the avoidance of sunlight, or even a bright light during the spring and summer months, to which may be added the danger of getting overheated. The sun's rays, either direct or indirect, possess a peculiarly irritating effect for the skin of pellagrins, the actinic power being most marked in the early spring. I have many times observed a rekindled erythema follow an exposure of less than half an hour.

A short time ago, a female pellagrin under my care went in the kitchen in the temporary absence of the cook, and prepared a single meal. She had shown no dermal signs of the disease for over two months, yet on the next day an acute erythema of the hands and face developed.

Pellagra flourishes in hot weather, and languishes in cold weather, and whenever it is practicable to place these sufferers in a cool environment, and keep them in it, they fare much better.

The dietetics are somewhat different from that of other diseases with disordered digestion, in that the gastrointestinal manifestations are not a pathological entity, but the expression of a centralized irritation, plus the elimination of toxines through the gastrointestinal mucosa.

Until the theory is exploded that pellagra is due to some toxic substance in spoiled corn or corn products, I feel that we are in duty bound to give our patients the benefit of the doubt by excluding such articles from the diet.

The early diarrhea, being mainly of central origin, and to an extent compensatory, does not require a too limited regimen, nor does such seem to help the disordered bowels. The woody vegetables, and those yielding a large amount of residue, are mechanically contraindicated at any time diarrhea is present, but care should be exercised that they are replaced by other nourishing articles. It seems that all along the course of the disease the flesh proteins are specially well borne, and even in those cases where there is much gastrointestinal irritation they agree better than in a like amount of irritation from other causes. Tender broiled steak or roast beef or mutton may be given once or twice daily; or, if the mouth is too sore to chew, either scraped beef or that ground in a sausage mill is suitable. This also applies to the white meats. Eggs are generally permissible, though in flatulent conditions it is well to use only the whites, which may be prepared in various appetizing ways, limited only by the ingenuity of the nurse. Sweet milk is valuable when it agrees, but unfortunately many pellagrins show an idiosyncrasy against it. Flatulence frequently follows its ingestion, and in some patients the stomachs furnish enough rennin to coagulate the milk promptly, but are tardy in disintegrating the curds, so there is present a sense of weight and discomfort in the epigastrium. Peptonizing the milk generally obviates this, but very few pellagrins relish peptonized milk.

The custom of certain medical wiseacres blindly to advise the daily consumption of fabulous amounts of milk and eggs, without investigating the patient's digestive ability, "though it make the unskillful laugh, cannot but make the judicious grieve."

Fresh buttermilk, or the artificially soured milk, or lacteal champagne, is useful, seldom upsetting the stomach or intestines. Where constipation is in evidence, oatmeal, tender vegetables in purée form, thoroughly baked Irish, not sweet potatoes, or cereals with but little sugar, will aid intestinal peristalsis. During the whole course of pellagra the invalid should be nourished to the limit of assimilation, and in most instances the gastrointestinal tract will "stand for" and care for more aliment than when similarly inflamed from other diseases. The problem of bodily upkeep should never be disregarded in pellagra.

I am sorry to observe that some of our nihilistic medicos have included pellagra in the list of maladies unresponsive to drug therapy, and from their limbo of gloom we catch sundry reverberations of discouragement and ridicule aimed at the cheery optimists who can look beyond "scar tissue" and discover some of Nature's compensatory powers. The narrow and prosaic mentality that can discern no ray of hope in the presence of trophic change or scar tissue would deny a one legged man the right to walk with a crutch or artificial limb, or a congenital myope the privilege of corrective glasses.

Permit me briefly to mention the principal drugs I now employ. Hypodermically I use the ampoules of iron arsenite solution (sixteen minims) and sodium cacodylate solution (three quarters of a grain) on alternate days, injecting them under careful aseptic precautions, and giving one daily for about two weeks. After that I give an ampoule every second day, still alternating them. After the acute symptoms seem to be controlled, I continue giving two injections weekly (still alternating) for several months. Frequently, when there is marked anemia, instead of the arsenite of iron, I use one c. c. ampoules of green citrate of iron, each ampoule containing two grains of the drug. I do not approve of the very large doses of sodium cacodylate, though some clinicians favor them.

Internally I use a combination of potassium iodide and Fowler's solution, in the proportion of five to three. Beginning with five drops in water, three times daily after meals, each day the dose should be increased one drop, until symptoms of arsenical saturation are manifested. This generally appears when twenty to thirty drops are being taken. When there is puffiness about the eyes on arising, I stop the drops for one day, beginning again at the minimum dose of five drops and increasing as before. This procedure I continue until the eruption and sore mouth are abated, and then keep it up in eight to twelve drop doses for several months. Should there arise a gastric or intestinal intolerance, a complication occasionally in evidence, it may be necessary to reduce the proportion of Fowler's solution to one or two in eight instead of three as originally suggested.

For the frequent diarrhea I have obtained satisfaction from bismuth betanaphtol and resorcin, given with milk of bismuth as a vehicle. This failing, I give tannigen, protan, or heavy doses of bismuth subgallate, or, as a last resort, powdered opium.

For the infrequent constipation, either castor oil, phenolphthalein, or enemas will serve, drastic cathartics being inadmissible.

For the sore mouth, a solution of thymol, one grain to the ounce of water, a little alcohol being used as a solvent, will generally prove sufficient; also a twenty-five per cent. solution of boroglycerin is helpful. For the aphthous spots in the mouth or on the lips or tongue, an application of silver nitrate (twenty grains to the ounce of water) is in most instances efficacious.

I have ceased using stomach lavage, except in rare instances, where a great excess of sticky mucous is constantly arising.

The simple erythematous rashes on up to sloughing conditions of the hands and feet, may be benefited or cured by the bland ointments, such as the oxide of zinc ointment, or a five per cent. ointment of boric acid. Raw or weeping surfaces are soothed by a lotion of calamine and oxide of zinc in lime water, to which may be added a little rose water or other pleasant adjuvant.

For the intense burning of the hands and feet, so often and bitterly complained of, either ice cold compresses of a mild solution of bichloride of mercury, applied at frequent intervals to the unbroken skin, or baths of hot mustard water, will afford marked relief. Two or three grain doses of acetanilide, when the heart action is fairly good, will greatly aid the various neuralgic pains, while brisk rubbing with petrolatum, to which has been added capsicum or menthol, is indicated for the pseudorrheumatic pains in many joints and muscles.

After the erythema has subsided, leaving a rough and harsh surface, alcohol rubs at frequent intervals will facilitate the disappearance of this horny layer.

I do not consider that salvarsan has "made good" in the treatment of pellagra, though some still laud it in high terms.

Transfusion of blood from either healthy donors or healed pellagrins is still an available method in selected cases. Some remarkable improvements have followed its use, especially as performed by Dr. H. P. Cole, but its difficult technic, as well as other obstacles, will probably prevent its general employment.

Drainage of the gallbladder, appendicostomy, and other surgical "stunts" have their advocates, but will hardly prove popular, the pellagrins generally being of the opinion that they would rather bear those ills they have than fly to others that they know not of.

Special treatment of the purely mental symptoms will not be covered here. Should such predominate, deepening into melancholia, or lapsing into dementia, the patient should be placed in an institution for the mentally sick, as these unfortunate invalids are subject to such varying moods, suicidal and other, that it is often impracticable safely to care for them at home.

The effects of hydrotherapy in pellagra have in many instances proved so beneficial that some form may with propriety be invoked in nearly every case. Hot or cold baths, simple or medicated douching, packs, moist or dry rubs, accompanied by special massage, have established their worth. These bring about increased oxidation of the tissues, more rapid elimination, greater metabolic activity, sharpened appetite, improved digestion and assimilation, and a noticeable tonic effect on the whole living organism.

Explicit directions for the different baths cannot be included in a brief paper, but will be found *in extenso* in Hinsdale's excellent work on hydrotherapy. I might also say that many of our sanitariums now have well equipped departments for hydrotherapy, with expert attendants, and whenever possible it will be wise to aid in this manner Nature's efforts to eliminate this intangible, but no less consuming toxine.

Lastly, I wish to discuss that refinement of treatment, psychotherapy, for in this we have an agent sadly neglected. Just now, when there seems to be prevailing in our country a widespread pellagrophobia; when the unhappy victim finds most hospitals closed to him, while he is *persona non grata* in hotels and boarding houses, and where even nurses seem alarmed at its mere mention, can we wonder the knowledge of its presence fills the sufferer with dire forebodings? Much of this phobia is due to unwise words of physicians, perhaps lightly spoken, but which make a deep and unfavorable impression upon the mentality of the already perturbed pellagrin.

Recently there came under my care a well nourished young man with a well marked case, who informed me that his family physician, upon seeing the slight erythema upon his hands, remarked in an ominous manner, "Well, old fellow, you've got it." That was enough thoroughly to demoralize this patient, who at once began to conjure up images of pain and sorrow; who saw himself a pariah and an outcast with not a ray of hope ahead. He was thinking that perhaps it would be best with his own hands to shuffle off this mortal coil, and while in this frame of mind I saw him.

I first assured him that his family and friends incurred no danger by his presence. I next told him that in all probability his case was curable, and by these assurances, given in a cheerful and confident manner, I gave him energy and pluck to make a fight, which he had previously considered hopeless. Though pellagra is at all times and in all phases a serious malady, we should be slow to give an unfavorable prognosis, except in extreme cases.

"Apparently some regenerations may take place in diseased organs of highly organized type, if the patient's condition is kept up to the highest point of nutritive efficiency." (Walsh.) I have in mind a young lady, who is now apparently well, who, two years ago, seemed in a hopeless condition as far as my judgment indicated. This taught me a salutary lesson. Certain compensatory influences may be set in motion and kept so by drugs and other material agencies, but oftener they can best be sped along by keeping the body built up and the mind cheered for a prolonged period, so that new centres may be educated, while Nature is getting accustomed to the useless ones.

I have in several instances seen pronounced psychoneuroses seemingly arise from discouragement, from sluggish conditions developing in the bodies as a consequence of lack of hope, and from denial of air and exercise accompanying the settled gloom of despair. In pellagra, as many other complicated disease pictures, there are a multiplicity of intercurrent ills coming up at frequent intervals. Many of these can promptly be alleviated, and by so doing the physician can produce in the sufferer a much more sanguine frame of mind, even if the main lesion is untouched. As one writer has fittingly expressed it, "Though nothing can be done for the disease, much can be done for the patient." It is along this line that the Eddyites, the mental healers, and the quacks get their occasional spectacular results.

They do not admit the incurability of any ill, but by cheerfully promising a cure, by relieving some minor discomforts, and by replacing morbid introspection with novel sensations, some invalids find their lot so much more tolerable that they know they are better, if not cured. It is also reasonable to believe that by suitable suggestions we can delay, if not arrest nerve degeneration, for a buoyant body and hopeful mind can present a firmer bulwark against the inroads of cellular destruction.

When assuming the management of a case of pellagra, the patient should be informed that very many have been cured, and that, according to the best authorities, he need not be isolated nor cast out from those he loves. He also may be assured that strict attention to hygienic and dietetic precautions, plus other treatment instituted, will keep his body in the highest state of efficiency and will greatly brighten his prospects. While taking cognizance of the numerous and easily managed intercurrent ills, so as to promote his comfort, we should at all times endeavor to instil a spirit of courage and optimism, so that the higher psychic centres, untrammeled by fears or obsessions, may exert their best influences over the lower centres, vegetative and otherwise.

It will demand both effort and tact on the part of the physician to keep this up, but the results will more than repay him. Even should signs of serious trophoneuroses be evident, much can be still accomplished by cheerful suggestion and warm hearted encouragement.

I am anxiously seeking more light in the treatment of pellagra, and should coming discoveries show me wherein I err, I shall gladly cast aside my old therapy for the new. At present, however, I feel that the line of treatment herein advanced offers as much or more promise than any so far brought forward, and I lay to my soul the flattering unction that my methods are justified by tangible results and worthy of consideration.

920 CANDLER BUILDING.

RHINOLOGY AND LARYNGOLOGY IN GENERAL PRACTICE.*

By WILLIAM FERGUSON, M. D.,
New York.
Laryngologist, House of Refuge; Assistant Surgeon, Throat, Nose, and Lung Hospital.

It is not the intent of the writer to go extensively into this subject, as that would constitute a textbook, but rather to bring to your attention a few cardinal points which I hope may assist you in diagnosis and treatment. This is a very wide subject and only a few of the conditions can be gone into with any detail.

Can the general practitioner benefit himself in any way by the more careful consideration of the conditions present in a patient's nose and throat, whether his complaints refer to those special regions, or, in the case of recurring obscure symptoms, that previous treatment has failed to relieve? In a climate such as we have, which predisposes so much to catarrhal conditions of the nose and throat, I think he would add greatly to his own success and his patient's comfort and confidence.

The equipment consisting of two screw top seats, a tongue depressor, nasal speculum, two or three slender applicators, two laryngeal mirrors, a head mirror, an adjustable gas bracket fitted with an argand burner and McKenzie condenser, some absorbent cotton, a four per cent. solution of cocaine and solution of epinephrine, simple and inexpensive. The time occupied in making such examinations is trifling, considering the insight one gains into troublesome night coughs, asthmatic attacks, recurring quinsy, nausea, obscure neuralgias, recurring earaches, and many other distressing symptoms daily brought to the attention of the physician.

In examining these regions you will find the mouth and pharynx the easiest. An unruly tongue can always be controlled by applying the tongue depressor evenly and using gradual but firm pressure; if placed too far back it causes retching. The larynx and nose are next in order of difficulties, and last comes posterior rhinoscopy. However, if you succeed in obtaining a view the picture is less complex than when viewed anteriorly.

Considerable can be learned from the teeth. With the upper centre incisors placed in a V shaped position, the molars lying in a straight line instead of a gentle curve, and a high vaulted palate, adenoids are indicated in children.

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*Read before the Bronx Medical Society, March 13, 1912.

A suppurating lower wisdom tooth may explain a recurring quinsy. Always examine the adjacent mucosa at this point, as here in specific cases we frequently find a small ulcer. A carious bicuspid or molar tooth may produce mucopurulent nasal discharge from infection of the antrum, or may produce Ludwig's angina, recognized as a hot, brawny induration in the floor of the mouth due to *Streptococcus pyogenes aureus*. Again such a suppurating tooth may cause much harm by keeping up continuous nervous irritation and produce a kind of chronic toxemia through the swallowing of septic pus.

It is the little things we are likely to overlook. I remember a patient with suspected tuberculosis who came to my notice complaining of loss of weight, vague stomach symptoms, loss of appetite, and raising blood stained mucus on getting up in the morning. My examination of the lungs and larynx was negative, but I found several suppurating teeth, one of which was full of granulation tissue and surrounded by spongy gums. The patient's habit of sucking with his tongue produced the blood stained mucus. The removal of the offending teeth cleared up the case.

Anteriorly, under the tongue, we may find several conditions. A tender, swollen portion of mucous membrane arching upward indicates an enlarged sublingual gland; a firm mass on one side of the frenum, a salivary calculus, and an obviously cystic swelling a ranula.

An elongated uvula may account for nausea and distressing night cough. Before you take any surgical steps for the relief of this condition, it is advisable to treat any nasopharyngeal catarrh present, as this may be responsible for a relaxed velum palati. It may be necessary to relieve the portal circulation. Where we see the soft palate hanging far forward and sluggish in its movements, we may expect to find adenoids, polypi, or posterior hypertrophies of the turbinates, or this condition may be due to peripheral neuritis following diphtheria.

The most important condition of the nose and throat calling for early diagnosis is syphilis. This disease is at times so insidious in onset, and the patients are so indifferent to local discomfort, that perforations, adhesions, and permanent scarring and damage may be done before the condition is recognized and treated. You are not likely to overlook the dusky red injection of pharyngeal syphilis, as it is accompanied with considerable dysphagia, but the shallow symmetrical reniform ulcers on the tonsils, which are among the earliest and most constant signs of secondary syphilis, are often quite painless and are easily overlooked.

The primary sore is rarely found in the nose, more frequently in the mouth. When on the tonsil it may be difficult to distinguish it from diphtheria or Vincent's angina. It's being only found on one side, presenting a yellow, dirty, sloughing appearance with early enlargement of glands at angle of jaw, the tonsil itself always very inflamed and enlarged, may aid us in diagnosis.

The secondary syphilitic lesions in the nose are not easily distinguished. A persistent coryza, which does not exhibit as much discharge as the ordinary coryza, and one nostril more deeply congested than the other, lead us to suspect syphilis; mucous patches may occur, but are rarely seen.

In the pharynx the mucous patches may be seen on the velum palati, pillars of the tonsils, and the tonsils themselves; at first they have a slightly raised opalescent appearance. You may overlook them in a strong reflected light; it is best distinguished by daylight. Later they may assume a dirty white appearance, as though the mucosa had been touched with silver nitrate; they are distinct and do not blend with the surrounding tissues. You will discern a fine injected zone around each patch. On either side at the base of the uvula is a favorite seat, and here they frequently give a notched appearance to the palate. These mucous patches may be seen about the sixth week and as late as two years after infection, also with the tertiary lesions; and they tend to recur.

Early tertiary manifestations in the nose may be suspected when the patient complains of stuffiness on one side which does not intermit, and is accompanied with pain, worse at night. On examining such a nose one side is found to be more deeply congested and swollen than the other, and this swelling is practically uninfluenced by cocaine. In the pharynx tertiary lesions are seldom discovered before damage is done. If seen early the deeply congested elastic swelling is to be distinguished from other conditions by the insidiousness of onset and lack of acute symptoms or enlarged glands.

As these conditions are simply local manifestations of a constitutional disease, we must look for secondary and tertiary symptoms in other parts of the body and, if in doubt, do a Wassermann test. When we see a sore mouth or throat, the cause of which is not obvious and which resists ordinary treatment, we must always think of syphilis. One might parody the old axiom of the surgeon, "When in doubt operate," by saying "When in doubt treat for syphilis."

In rheumatism or gout we may have a painful throat without any sore being discernible. Here the pain probably arises in the muscles of deglutition or aponeurotic structures of the pharynx. Nevertheless, such an error is excusable, for the drug treatment of most diseases is vastly less important than that of syphilis. In a normal throat we see the faucial tonsils lying between the pillars, on either side, small in size, and not protruding beyond the medial line of the pillars; the posterior pharyngeal wall looks smooth and moist.

Acute lacunar tonsillitis is readily recognized, but some cases due to mixed infection, are difficult to distinguish from diphtheria, except by bacteriological examination. Aside from local signs the pronounced asthenia of diphtheria is very suggestive.

Circumtonsillar abscess is probably the most painful affection of the throat, and at times the confidence of your patient may be strained by ineffectual attempts to give relief. The use of salicylates internally, a mouth wash of concentrated bicarbonate of soda solution to remove sticky mucus, and a pad of absorbent cotton externally, at the angle of the jaw, is about all one can do to give relief until pus forms. To reach the pus, select a point three eighths of an inch external to the medial border of the anterior pillar, and slightly above the line of junction of the uvula and soft palate; a knife inserted at this point and carried downward will invariably demonstrate pus, even though the pus be burrowing backward. Should the case be that of an adult and rather protracted and subacute in character, and you have made your incision properly with no results, you must bear in mind the possibility of malignant growth.

Chronic hypertrophied tonsils with unhealthy crypts are the every day problem. Are they to be cut off or enucleated and what are the indications? In young children the skilled operator may remove the entire tonsil with the tonsillotome, but in the adult this is not always possible, portions of the tonsils with unhealthy crypts remaining to work further mischief. Complete enucleation I believe to be the proper procedure. The tonsils may be so hypertrophied and diseased that no doubt arises as to their removal, but frequently the tonsil is imbedded and greatly hypertrophied backward and downward and the anterior pillar so closely applied that no tonsil protrudes medially. One obtains a much better idea as to the character of the tonsil by palpation.

When the tonsils produce ear symptoms, reflex cough, mouth breathing; are constantly subjecting the patient to attacks of tonsillitis; where we have enlarged tender glands in the neck, where the tonsil is submerged, small, with diseased crypts, and associated with attacks of laryngitis; where follicular pharyngitis is present to the exclusion of adenoids, nasal disturbance, and gout; and when we have recurrent, acute, articular rheumatism following acute tonsillitis; I believe the tonsils should be removed.

One important state, I have omitted, as an indication for the removal of tonsil is mental delinquency. This is now claiming the attention of institutions for boys of this class, and I have had the opportunity in my service at the House of Refuge of following such cases and noted the remarkable improvement obtained.

Adenoids are very "popular." All aural symptoms in children, earache, deafness, otorrhea, should excite your suspicions and for the same reason snoring, croup, snuffles, and hoarseness call for immediate investigation of the nasopharynx. Deformities of the jaws and irregularity of the teeth have been referred to, but deformities of the chest are also associated with adenoids. The simplest and most direct method of diagnosis is by palpation: Holding the child's head with the left hand and pressing in the cheek to prevent being bitten, pass the right index finger quickly up behind the palate and you will readily note the difference between the smooth, firm, normal vault and the soft velvety feel obtained when adenoids are present. It is always advisable to protect the finger with a rubber tip, as there may frequently be a syphilitic ulcer on the posterior surface of the soft palate which may produce no symptoms until the palate is perforated.

It is scarcely necessary for me to advise the removal of adenoids, but just one point to bear in mind: After their removal, if hoarseness persists, examine the larynx for papilloma, a not infrequent occurrence in children.

In cases where the patient complains of a lump in the throat, sticking pains about the root of the tongue, cough, and seems unduly nervous, the laryngeal mirror may show an enlarged lingual tonsil, lying between the epiglottis and the circumvallate papillæ; suppurating teeth may be the cause.

Mucopus or pus bathing the posterior pharyngeal wall in children indicates adenoids, in adults suppuration of the posterior nasal sinuses.

As to atrophic changes in the pharynx you are probably all conversant with its dry, glazed, varnished appearance due to very chronic suppuration in the nose. You may see in delicate anemic women, a dry pharyngitis due to collapse of the erectile tissue in the nose, but the absence of crusting and suppuration will distinguish the two classes of cases. In diabetes we get a troublesome, dry, inflamed pharynx; the examination of the urine will explain this condition.

In taking up the study of conditions found in the nose, the physician must ever keep before him its physiological function. We may consider it the laboratory in which is prepared the food for the lungs. It warms, filters, and moistens the inspired air, and anything that interferes with its function, either disease or operation, is of serious import. The functioning mucosa includes the area covering the lower turbinates and the lower and the posterior border of the middle turbinate, so in general practice the physician may satisfactorily confine himself to these regions and the adjacent septum.

On viewing the nose externally, we may notice that it appears broadened at the root, that the eyes are congested and watery, and the patient complains of weak sight; this would suggest ethmoiditis. In young children we may have a protrusion of the eye, or a fistula above the inner canthus, indicating ethmoid abscess. When the bridge of the nose looks sunken, the tip soft and can nearly be flattened against the face, we have old suppuration present. With the reverse picture the nose narrow, tip unduly firm, and entrance slightly blocked, we may have lupus.

Stuffiness of the nose, mouth breathing, with dry tongue and lips, headache, nausea, and hoarseness are probably due to hypertrophic or hyperplastic rhinitis associated with septal deflection and spurs. On examining such a nose you may distinguish the deflection of the septum, but mistake the spur for the floor of the nose, so closely is it applied to the turbinate. If you use your cocaine spray and again examine, you will readily make out the spur running backward along the vomer. Such error may be avoided if you remember that in the position you place the patient's head for examination, the floor of the nose has a downward and backward direction. Such conditions as mentioned can be relieved only temporarily by astringent solutions and sprays. Permanent relief can be obtained only by complete removal of the spurs and deflection. Many of our chronic, dry, catarrhal conditions of the middle ear, with their annoying tinnitus and deafness, are associated with these nasal deformities. Should the patient have any latent or incipient tuberculosis, nasal operations are contraindicated, unless obstruction calls for immediate relief.

One of the most frequent conditions you are called upon to treat is epistaxis; it may be of local or constitutional cause. The most frequent situation of the bleeding point is quite within reach on the lower and anterior surface of the septum. Usually after clearing out the clots the application of hydrogen peroxide or epinephrine will control the bleeding. It is advisable later to cauterize the bleeding point.

Probably the most distressing disease and for which little can be done is atrophic rhinitis. You are all familiar with the offensive discharge and crusts of this disease, the entire interior of the nose at times being hidden by them. I will not go into the symptoms, you cannot mistake them; but just a word regarding treatment. Keep the nose clean. Sprays are no good; prepare a powder, one part of salt, two parts bicarbonate of soda, using one teaspoonful of this powder to a pint of water. Instructing your patient to bend his head downward horizontally to the floor, keeping his mouth open, syringe the nose thoroughly with a piston or fountain syringe. Only such a method will cleanse the nose of all offensive material. After cleansing you may apply antiseptic pastes or bismuth ointment, grains twenty to the ounce of petrolatum, or some medicated liquid petrolatum. In this way you may keep your patient fairly comfortable.

It is understood I am now speaking of simple atrophic rhinitis to the exclusion of atrophic rhinitis due to syphilis, lupus, or suppurative accessory sinusitis, from which conditions you must make your differential diagnosis. In some selected cases, where the sinuses have not shown evidence of involvement, I have obtained most satisfactory results by operation, removing spurs and deflections. The new circulation thus established evidently revives and invigorates the entire mucosa. Some of these cases I have reviewed after a lapse of over a year and found no return of pus, crusts, odor, dry throat, or laryngeal trouble. This paper will not permit me to go more deeply into this subject, but I am confident that relief can be given in early selected cases by operation.

Frontal headache following influenza, with feeling of stuffiness or pressure about the root of the nose, frequently indicates frontal sinus disease. Persistent headache about the root of the nose and over the eyebrow should draw your attention to the head of the middle turbinate bone, which you will probably find enlarged, of granular appearance, and pressing against the septum. Here you have ethmoiditis. These patients complain of an excessive nasal discharge mostly mucous, and frequent colds, during which the discharge contains pus, the discharge going backward into the throat as well as forward from the nostrils.

Polypoid growths of a bluish gray color, which may be found protruding into, or blocking the middle meatus may explain obscure asthmatic attacks and laryngitis.

The most common form of ulceration in the nose is the small traumatic ulcer on the anterior and lower portion of the septum, which is generally associated with the too frequent use of the finger nail to remove a nasal crust. We may have the syphilitic ulcer due to breaking down of a gummatous deposit on the vomer. The tuberculous ulcer is more frequently found on the cartilaginous septum.

A vascular looking mass at the anterior nares is suggestive of sarcoma.

In anemic, scrofulous children, when your attention is called to snuffles, an irritating nasal discharge, poor appetite, and a tendency to sleep a great deal, always take the temperature and examine the fauces, as nasal diphtheria may come on very insidiously and the patient become septic before the condition is recognized.

In a short paper on such a broad subject much must be omitted and what is reviewed can only be done very superficially. I hope, however, the suggestions made here may encourage you to study these regions as a routine practice.

40 East Forty-first Street.

INCIPIENT TUBERCULOSIS OF THE LARYNX.

Submucous Cauterization as a Method of Treatment.

By R Pettit, M. D.,
New York.

Of all the infections of the upper air passages (excluding the various forms of tonsillitis), tuberculosis of the larynx is the most frequent as well as the most painful. Statistics vary, but conservatively estimated about thirty per cent. of all cases of pulmonary tuberculosis present some manifestation of the disease in the larynx, and often the clinical picture of phthisis is entirely altered, and for the worse, by the changes which have taken place in the mucous membrane and deeper structures of this organ.

It is my intention to call the attention of the profession to a method of treatment successfully pursued by myself while assistant on the Vienna nose and throat clinic of Professor Chiari, which has healed from seventy to eighty-five per cent. of the cases in which it was applied. The method consists of submucous cauterization of the diseased tissues, in a manner subsequently to be described, and while not original to the Vienna clinic, it has not appeared, to my knowledge, in any of the literature on the subject, and the good results obtained justify its recognition as a valuable method of procedure in combating this important and widely prevalent disease.

PATHOLOGY.

The tubercle bacillus, after penetrating the epithelium of the mucous membrane, produces first, as in other parts of the body, a proliferation of connective tissue cells in the submucous layer, which quickly are transformed to giant and epithelioid cells, and gathering together form nodules or miliary tubercles, which are surrounded by an area of small celled infiltration. By this process of aggregation of tubercles results the tuberculous infiltration, and after caseation or fatty degeneration of the tubercle has occurred, as a rule the overlying mucosa deprived of its blood supply, necroses and the tuberculous ulcer is produced.

The most frequent site of this process in the larynx is the posterior end of the vocal cord, and the interarytenoid space, less often the false vocal cords, the aryepiglottidean folds, and the epiglottis. The first sign of its presence on the posterior wall consists of thickening, which may be diffuse or circumscribed, and we may find small nodules the size of the head of a pin, a well defined infiltration, or a cone shaped tumor projecting into the lumen of the glottis, reaching forward as far as the middle of the true cords, interfering mechanically with the motor functions of the larynx, so much so as frequently to render the operation of tracheotomy necessary. On the posterior wall the infiltration is usually circumscribed; on the false cords and aryepiglottidean folds it is diffuse. And examination reveals a unilateral sausage shaped swelling, whose surface is nodular and irregular, which projects sidewise into the lumen of the larynx and often shows a sagittal crease, produced by the false cord of the other side marking the location of future ulceration. When the infiltration is limited to the region between the true and false cords, we may see a polyplike mass, drawn into the glottis and subglottic space by inspiration, and expelled by expiration; the so called prolapse of the sinus of Morgagni, which only with difficulty is distinguished from a soft fibroma. Tuberculosis of the larynx may also manifest itself as pale granulations or papillary excrescences, most often seen in the retiring angle between the true vocal cords, and often exhibiting an oscillatory movement in the respired air.

Ulceration may start as such or be the end result of caseation or fatty degeneration of an infiltrate and the necrosis and sloughing of the overlying mucosa. When ulceration is present, the subjective symptoms, before slight, increase in severity. There is more or less inflammatory reaction in the adjacent tissue, the whole laryngeal mucous membrane may be swollen and red, secretion is increased, and a tenacious mucus clings to the true cords, which are often split by a longitudinal fissure into two hypertrophic nodular folds. Edema frequently appears and can without involvement of deeper structures give alarming symptoms of stenosis. The tuberculous ulcer has a characteristic appearance; its edges are thin, irregular, undermined, and have a peculiar nibbled look, presenting at times long, pronglike processes. A rather large or a diffuse infiltrate can undergo necrosis at several points simultaneously, and small ulcers, spreading out and becoming confluent, with small miliary nodules on their floor and in the neighboring mucosa, are pathognomonic. The breaking down of deep lying submucous infiltrations gives rise to crater shaped ulcers.

A rare if not uninteresting form of incipient tuberculosis of the larynx is a unilateral catarrh. The simple reddening of one vocal cord should at once direct the physician's attention to the patient's lungs, and further observation of the affected cord usually reveals, some weeks or even days later, a slight superficial ulceration.

SYMPTOMS.

The symptom *par excellence* is hoarseness, which may be sudden in onset and intermittent, or may develop gradually and be continuous. It is caused principally by the mechanical interference with the closure of the larynx, due to a tumor, infiltration, or granulation on the posterior or lateral wall, or it may be due to swelling of the cords or to ulceration, causing pain and reflexly inhibiting the movements of coordination. Ankylosis of the cricoarytenoid joint, and the weakened condition of the intrinsic muscles of the larynx, which exhibit different stages of degeneration and atrophy, and the accumulation of secretion contribute to the same result. Irritability and tiredness of the voice, i. e., inability to use the voice over a moderate period of time, is a suspicious symptom. A complete loss of voice as one sees in severe forms of dry catarrh never occurs at this stage.

Spasmodic attacks of coughing are partly due to the associated pulmonary condition, but are most frequently seen in those cases where there are long, toothlike, freely movable granulations, which float about in the respired air and are brought into contact with the mucosa of the glottis and subglottic space.

Pain is not present until ulceration occurs, and depends largely upon the extent as well as the situation of the former. Ulceration of the epiglottis causes the severest dysphagia, and next in importance are the ulcers of the posterior wall, which may extend back to the anterior wall of the esophagus. Involvement of the cords, particularly the anterior part of the true cords, gives rise to little discomfort. The pain may at times, in laryngeal ulcers, be referred to the ear, owing to the communication of the auricular and superior laryngeal branches of the pneumogastric nerves. Different paresthesias are occasionally complained of, such as feeling of a ball in the throat or a scratching sensation or of a stabbing pain, which, however, has no definite relation to the lesions present.

DIAGNOSIS.

The diagnosis in most cases can be made by the appearance of the lesions described above, and as a general rule, I have found that a thickened pachydermatous patch in the interarytenoid space is very likely to be tuberculosis; *if there are demonstrable lesions in the lungs, it is tuberculosis.* In doubtful cases, without pulmonary signs, it is wiser to remove a small section for microscopical diagnosis, before proceeding to more radical measures, or tuberculin may be employed, looking for a local reaction, as increase in a unilateral redness or swelling, as well as the general one of fever and malaise. Tubercle bacilli may also be found in the sputum, when signs of changes in the lungs are lacking. The general appearance of the patient, the history, and often the anemic condition of the palate, as well as of the throat in general, are of moment.

Occasionally a diffuse infiltration, spread along the entire extent of one vocal cord, resembles closely the thickening which follows a long standing catarrh, but its unilateral disposition, the history, and the pulmonary condition point to the diagnosis. The differentiation between a beginning tuberculous infiltrate and a gumma is often difficult. In the latter, however, the mucous membrane of the larynx is reddened and swollen, there is more subjective disturbance, the pharyngeal mucosa has an angry appearance, and often distinctive signs of syphilis in the nose, palate, or pharynx, such as perforation of the bony septum or palate, extensive ulcerations, or cicatrices are present. The most frequent site of a gumma is on the posterior part of the false cord, in immediate proximity to the vocal process; a beginning infiltration, on the other hand, is most often in the interarytenoid space or on the true cords, and is a multiple lesion, i. e., is often accompanied by superficial ulceration on the cords further forward, while a gumma is single. The Wassermann reaction in the therapeutic test of mercury and iodides is, in obscure cases, particularly in those cases where both infections are present, decisive.

A beginning infiltrating carcinoma may also present difficulties of diagnosis; its site, however, is usually in the anterior part of the larynx, and the disturbance of the motility of the cord is out of all proportion to the apparent size of the lesion, due to deeply penetrating carcinomatous strands. In cancer of this type and in this stage of development, as in gumma, the vocal cords are free from ulceration. A beginning tuberculosis of the larynx of the granulating type may strongly resemble a papilloma; the latter, however, is diffuse, and is spread over nearly all the visible mucosa, while in tuberculosis the small miliary nodules at the base of the excrescences, as well as in the surrounding tissue, are rarely absent.

After ulceration in laryngeal phthisis has occurred, fewer difficulties of diagnosis will be encountered. The tertiary syphilitic ulcer results always from the breaking down of a gumma, has sharply defined, punched out edges, and its floor is covered with a characteristic *speckigen* membrane; the loss of substance is of the same extent, through all layers of the mucous membrane, hence the deep appearance of the ulcer. Redness and swelling of the surrounding mucosa are more intense than in gumma, while in tuberculosis the adjacent tissue may be quite pale and bloodless. Carcinomatous ulcers proceed definitely from one original point, and have irregular hard, infiltrated, everted edges. The mucous patches of secondary syphilis may resemble a superficial tuberculous ulceration. They are multiple, however, grayish white in color, and the accompanying "ham brown" erythema of the throat is distinctive. When mucous patches are present in the larynx, condylomata of the lips or of the pillars of the palate are rarely lacking. Fortunately in the great majority of cases the diagnosis of beginning tuberculosis of the larynx is easy. When, however, the lesion is of doubtful character, the signs in the lungs, the tubercle in the sputum, and finally the excision of a portion and its pathological examination will settle all dispute.

TREATMENT.

Preliminary to operation it is well to make a few local applications to the larynx of some bland, oily solution, in order to accustom the patient to endolaryngeal instrumentation, as well as to overcome any irritability of the throat, gagging or coughing, which is so often seen following the placing of the mirror against the soft palate. When extreme irritability is present I have the patient practise at home holding the extended tongue with the fingers of one hand, and the bowl of a spoon against the uvula, palate, and posterior wall of the pharynx with the other. They then look into a mirror and repeat E or ah, practising deep inspirations.

For the operation, any electrode handle may be used, although the one of Shecks, following the lines of construction of the usual endolaryngeal forceps, is more convenient, since the position of the hand behind, instead of on top of the handle, prevents any obscuring of the operative field as seen in the mirror. Two electrodes following the pharyngeal curve are necessary; they should be slightly flexible, in order that the different relative position of the larynx in different patients may be compensated. The tip of the electrodes should be generally oval in shape, drawn to a rounded point at the distal extremity, and fairly sharp. One tip should be transverse to the axis of the shaft, the other in the same plane. By varying the position of the handle, it is possible with these two tips to make a puncture in any desired position in the laryngeal mucosa. The direct method of operation with direct inspection of the operative field may be employed, using for this purpose a long Kirstein spatula, or a short bronchoscopic tube of any pattern, through which a straight electrode may be introduced. The slight advantage gained, however, by direct inspection of the field to be operated in, is more than compensated for by the pain, discomfort, and exhaustion of the patient caused by the hyperextension of the head necessary to the procedure, and so I have remained by the old indirect method, using an ordinary laryngeal mirror and reflected light.

Cocainization should be thorough; twenty per cent. is the best and safest solution, requiring much fewer applications, and if after three or four administrations, anesthesia is not produced, I at once proceed to a forty per cent. solution. Nothing is so harmful to these patients as the repeated application of a weak cocaine solution, to their delicate, easily injured, laryngeal mucous membranes, which is always accompanied by coughing, expectoration, gagging, and frequently vomiting, and is followed by severe pain and other symptoms of reaction.

The point of application of the electrode must be carefully chosen, and should not be exactly at the line of demarcation of diseased and healthy tissue, but far enough away from the latter, in the tuberculous mass, so that the heat necrosis will just about reach the normal, laryngeal mucous membrane. The instrument is introduced cold, applied upon the selected site, and enough current is turned on to produce a fairly bright cherry red, and pressure is applied until the tip of the electrode has sunk into the tissues, to a depth corresponding to the vertical extent of the lesion. The application is continued until the whitened cauterized area has reached the apparently normal tissues; the current is then turned off, and the instrument quickly withdrawn, care being taken to avoid the posterior pharyngeal wall, epiglottis, and base of tongue, burns in which localities causing more subsequent pain and discomfort than the operation itself.

Immediately after operation one sees a whitened area, in the centre of which, corresponding to the site of puncture, is a brown stain. This whiteness persists for several days and is naturally accompanied by a slight amount of inflammatory reaction and pain. Healing takes place in one of two ways: either the entire cauterized area sloughs off in about a week, leaving a simple ulcer in the healthy tissue, which readily heals, or it remains *in situ* and becomes converted into a mass of dense connective tissue, which shrinks, and inside of two or three months the site of a previously flourishing tuberculoma is impossible to discover.

The submucous cauterization should not be applied in all cases of beginning tuberculosis. Superficial ulcers on the posterior wall, particularly those on the cords, do better on the old method of lactic acid applications, but when the ulcer is situated on the surface of a tumor or on an infiltrate or where there is a tumor or infiltration or granulation without ulceration, there is found its field of usefulness, and the results are eminently satisfactory. Often I have seen patients visibly dying, in an advanced stage of phthisis, in whom any operative treatment, except for experimental purposes was strongly contraindicated, entirely recover from their laryngeal trouble.

The advantages of submucous cauterization over the old method of removal of tuberculous infiltrations by curettage, are that it is easier to perform, requiring no more skill than that necessary in making any topical application to the larynx, and it is a much shorter operation, being completed in a short fraction of a minute. There is absolutely no bleeding, in itself dangerous, no aspiration of blood, no coughing or struggling, and no exhaustion, symptoms seen so frequently to attend the use of the double curette; consequently the postoperative disturbance is less. In the majority of cases the curettement of an infiltrate merely means the conversion of a sluggish granuloma into a more or less progressive tuberculous ulcer.

The only dangers are the infliction of burns on structures extrinsic to the larynx, mentioned above, acute edema and perichondritis. The former, however, may follow the topical application to the vocal cords of a bland oil. Perichondritis is a severe but exceedingly rare complication: it usually renders a speedy tracheotomy necessary, which, however, is not an absolutely unfavorable outcome, as the rest afforded thereby, not only to the larynx, but to the lungs, which can by means of the cannula expel their secretions with little or no effort and without soiling or infecting the operative wound in the laryngeal mucosa, exercises a favorable influence on the course of the disease both in the larynx and lungs.

Perichondritis or any severe inflammatory reaction of the larynx or epiglottis can be avoided by the observance of one or two cautions. The cautery should not be too hot; a white heat is dangerous. The puncture should not be too deep, nor should more than two separate punctures be made at one sitting. The immediate neighborhood of the cricoarytenoid joint should also be treated with great respect; penetration of the capsule of this joint is liable to be followed by a most intense inflammatory reaction with exfoliation of the arytenoid cartilage.

The operation is of questionable value, if not contraindicated, in the case of weak, nervous, irritible individuals in whom advanced pulmonary lesions are present; or when the patients are poorly nourished, suffering from digestive disturbance and lack of appetite. A mild intermittent fever is not a contraindication; in the presence, however, of a continuous or of a septic febrile movement the operation should not be performed.

Following the operation the patient should be put upon a fluid diet, preferably milk; if, however, milk is not well borne, albumin water, cold broths, and soups, without pepper or salt, may be substituted. Rest for the larynx is important, and if possible the patient should be made to communicate his wants entirely by writing. This is exceedingly irksome for some people, and if he or she insists upon self ventilation by means of speech, it is well to limit their conversational tone to a whisper, which causes much less strain upon the healing wound than audible articulation. On the first and second day, insufflations of morphine and an antiseptic powder of equal parts may be given, and by the third or fourth day the antiseptic powder alone is sufficient. In about a week, or when the slough has separated, instillations of menthol in oil in two or three per cent. solution should be made; this loosens and aids in expelling the secretions from the wounded surface and also has an analgesic effect upon the same. Small doses of creosote or guaiacol carbonate are also useful at this time. Tonics and the general treatment of tuberculosis must naturally not be neglected. In the event of great shrinkage of the tumor or infiltrate, but not its complete reduction, the operation may be repeated within two or three months. But such cases are rare and in the vast majority of patients, submucous cauterization of a tuberculous infiltration, tumor, or granulation in the manner above described, is followed by a speedy disappearance of the same and generally by a complete restoration of the normal functions of the larynx.

498 West 158th Street.

NORMAL HUMAN BLOOD SERUM IN THE TREATMENT OF HEMORRHAGIC DISEASES OF INFANTS AND CHILDREN.*

By J. E. Welch, M. D.,
New York,
Clinical Professor of Medicine, Fordham Medical School; Attending Physician and Pathologist, Fordham Hospital; Pathologist, J. Hood Wright Memorial Hospital.

In placing before you for consideration and discussion the subject of normal human blood serum in the treatment of hemorrhagic diseases of infants and children, I desire to deal with certain reasons for the use of this particular serum; then briefly review some of the hemorrhagic conditions with citation of very concise histories, and last to mention theories in explanation of the therapeutical action of this remedy.

It has long been known that the subcutaneous, intraperitoneal, or intravenous injections of milk, white of egg, raw beef serum, and several other substances having a proteid molecule, into animals, will cause severe symptoms or death. If single injections of sufficient size are made, especially into the guineapigs, death is very sure to follow. If the dose is small, symptoms may or may not immediately, but will surely follow a second injection given some days later, and are then almost sure to cause the death of the animal. In the course of immunizing experiments, Richet, several years ago, learned that certain substances, upon reinjection, failed to raise the resistance of the animal, i. e., to immunize it, but rather made it more sensitive than normal, so that as a rule death was caused by second injections. He applied the term "anaphylaxis" to this condition of lessened resistance. Further research in this line of investigation developed the fact that foreign proteids are universally capable of producing the *anaphylactic* effect. The proteid molecule is the largest known, and when acted upon by acids, alkalies, ferments, bacteria, and other agents is split up into smaller molecules, of which glycocoll, alanin, aminovalerianic acid, leucin, aspartic acid, glutaminic acid, phenylalanin, tyrosin, tryptophan, prolin, oxyprolin, serin, lysin, arginin, histidin, and cystin are the chief. From this very long list of derivatives a variety of intoxications might be produced, depending upon the manner of cleavage, after being introduced into the system.

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Certain proteids, introduced by mouth, will in some individuals cause hypersensitiveness, which may be followed by certain death subsequent to future injections of the same proteid. This is explained by the theory that there is some form of indigestion with the absorption of the whole proteid molecule which has sensitized the individual to that proteid.

The subcutaneous administration of blood serum of one species of animal into another species, by virtue of its metameric proteid content, is capable of sensitizing that species in a manner similar to the above mentioned foreign proteids. Rosenau and Anderson, in their exhaustive experiments, demonstrated that the serum of any species of animal, when injected into another species, would produce the condition of anaphylaxis. The symptoms presenting were great weakness, dyspnea, convulsions, and hemorrhages of the bowel.

Studies in anaphylaxis by many others have shown the following undesirable conditions: Lowering of the blood pressure, prolonged coagulation of the blood, destruction of complement, and leucopenia. The most exhaustive studies upon the effect of foreign serum injections have been made by von Pirquet and Schick, and the term serum sickness they have applied to the symptoms developing after the injection of the various antitoxic sera. We all are very familiar with the symptoms and perhaps feel more or less anxiety when we have occasion to use these sera.

Several years ago (1902), when experimenting with normal human serum injections I observed that in my patients never developed any of the symptoms which I had been accustomed to see follow the use of diphtheria antitoxine. This observation is now recorded by others, and the general principle has been established that the serum of a species does not produce anaphylaxis when injected into the same species. I have found this true in the use of repeated injections of human serum over twelve months' time to the amount of nearly four litres.

Another observation of importance has been made in studying upon animals the after effects of anaphylaxis. The animals thus affected tend, upon recovery, to lose weight and suffer marked nutritional disturbances. With homologous serum this is not the case. I have repeatedly demonstrated to my own satisfaction the nutritive value of human serum in the case of premature infants. In several instances when these infants could take nourishment by mouth very little or not at all, and death seemed imminent through lack of alimentation, I have, through the subcutaneous injection of normal human serum, seen them gain in every respect and go on to a normal development.

Normal human blood serum as a therapeutic agent will probably always find its broadest field of application in the treatment of the hemorrhagic diseases of children and the newborn.

The infrequency of this disease and the rapidity with which it proves fatal, make it extremely desirable that we have a well known specific, easily obtainable, with which to combat it. The beginning of this condition is not always the same. The baby may be in every way apparently healthy, plump, rosy, and functioning normally. Without warning it may vomit a quantity of fresh blood, or pass bloody or tarry stools, and these may be the only manifestations of hemorrhage. The bleeding may be subcutaneous, of a petechial nature, or occur as hematomata. The umbilical stump, a divided prepuce, or the gums may be the site of hemorrhage. Fatal internal hemorrhages not infrequently occur without external manifestations, and may affect the brain or any of the thoracic or abdominal organs. These patients clinically may show icterus, or may simply grow pale, feeble, and die without adequate cause. The autopsy makes the diagnosis, and we find the hemorrhages usually within the serous cavities or beneath a serous membrane, such as the pulmonary pleura, in the pericardium, under the capsule of the liver, under the kidney capsule, or in the peritoneal cavity. Microscopical examination of the various organs at autopsy shows anemia and cloudy swelling of the epithelium of the parenchymatous organs. The epithelium of the gastrointestinal tract usually shows the most advanced changes of degeneration and desquamation. My theory as to the cause of these hemorrhages I shall give you after having recited a few histories giving the clinical picture of the disease and the effect of the human serum treatment.

The first case I shall relate has been reported elsewhere, but I ask your indulgence while I repeat it, as it illustrates unusually well an instance of internal hemorrhage without external manifestations:

CASE I. N. J. L., second child, negative family history; first child stillborn on account of difficult labor. Present labor lasted two and one half hours; breech presentation; no interference; no anesthesia; weight at birth five pounds twelve ounces. Child appeared normal, and cried lustily; no cyanosis. On the third day it was slightly jaundiced. At this time it was noted he had a peculiar cry, there were spasmodic muscular movements, and he stopped nursing. There was no vomiting; the stools became yellow and were normal. Physical examination showed a small child with skin wrinkled, cyanotic, and dusky. He was aroused with difficulty, occasionally giving a loud, shrill cry when disturbed. The fontanelles were noticed to be tense and bulging. The pupils were slightly unequal, and the eyes were turned to one side at intervals. There was rigidity of the neck and extremities at intervals. There was twitching of the muscles of the face, arms, and legs. The knee jerks were exaggerated. He would not take the breast, but would occasionally swallow fluid administered with a dropper. There were no evidences of hemorrhages into the skin or elsewhere. Lumbar puncture showed increased pressure, and one half ounce of bright red fluid was withdrawn, which contained 5,100,000 red cells, 2,400 leucocytes, and ninety per cent. hemoglobin. The specimen appeared to be pure blood and would not coagulate. The bulging of the fontanelles disappeared at the time of the puncture, but returned fifteen minutes later. Sixty hours after the onset of the first symptoms treatment by normal human blood serum was begun. During this time the condition of the child became progressively worse, so that during the last twenty-four hours he could not be aroused at all, ceased to swallow, and the lack of nourishment and loss of fluid gave him the atrophic appearance of athrepsia. He was not weighed on account of his poor condition.

At this time thirty c. c. of serum was given subcutaneously; six hours later thirty c. c. more. After the second dose the child began to show improvement. He appeared brighter and was able to nurse, and the muscular twitching was less marked. Sixty c. c. more serum was given in this twenty-four hours, at the end of which time the twitching had ceased entirely and he was nursing regularly every two hours. At the end of the second twenty-four hours the fontanelles were still bulging and another lumbar puncture was done, drawing off one half ounce of blood tinged spinal fluid, showing that active hemorrhage had ceased. Serum administration was continued for five days, the amount being diminished each day. In seven days the baby received a total of 630 c. c. administered in twenty-three doses. Improvement was continuous. At the fourth week he had regained his original birth weight. At two months he weighed eight pounds eight ounces; at three months twelve pounds; at four months fifteen pounds. At four months he appeared to be a normal child, having no spasticity; he held his head up, was able to hold objects in his hands, smiled upon provocation, and did not show signs of mental insufficiency. To-day he is a normal baby, two years old.

Case II. C. L., aged seven years; always healthy until December, 1911, when she had gastroenteritis which was accompanied by considerable jaundice. The icterus was rather persistent after the stomach trouble disappeared, but finally, after a few weeks, cleared up. Late in January, 1912, had a severe tonsillitis which produced considerable prostration and from which recovery was slow. As soon as advisable, to facilitate convalescence, she was sent to the country, where, within a few hours after arrival bleeding from the nose began. Tight packing of the nares failed to control the bleeding, though this was repeated several times, both posteriorly and anteriorly. The child grew very anemic from the loss of blood, was very restless, and showed some temperature reaction. After some hours subcutaneous hemorrhages began and affected extensively the trunk and extremities.

On the day following the appearance of the hemorrhages thirty-seven c. c. normal human blood serum was administered, on the following day forty-three c. c. and about thirty c. c. on each of the succeeding five days. Within a few hours after the administration of the first dose of serum the hemorrhages ceased and did not return. The serum administration was continued regardless of this both to prevent subsequent bleeding and to stimulate recovery from the blood already lost. Convalescence was very rapid and complete. The child is to-day healthy, well nourished, and in every way apparently normal.

Case III. Baby L., in the twentieth hour after birth, passed a large bloody stool which was followed several times during the day by other profuse blood bowel movements. The hemorrhages were so extensive as to occasion great alarm on the part of the attending obstetrician. I was asked to administer normal human blood serum more for the sake of having exhausted every known means of life saving rather than for any belief the attendant had in its efficacy to control hemorrhage. The child was extremely anemic and too weak to nurse.

Human serum injections were begun four hours after the first hemorrhage appeared, and a total of 101 c. c. were administered during the succeeding twenty-four hours, at the end of which time the hemorrhage was controlled. The serum injections were continued through the succeeding three days, at the end of which time a total of 226 c. c. had been administered. At the end of the first twenty-four hours after the beginning of the hemorrhage in this case the child's strength was so reduced that it was unable to nurse. Under the influence of the serum administration strength rapidly returned, and on the fourth day the child was put to the breast and was able to nurse normally. This child is to-day a normal healthy baby.

I will not tire you by reciting further histories. These three cases illustrate my successful experience with thirty-five patients who have been saved by this method. I wish to take occasion here to emphasize the importance of very prompt action in the case of any hemorrhage in the newborn and in those instances where there is an unaccountable rather sudden pallor accompanied by undue weakness. I was called to see baby K. at noon. The evening before he had passed a small drop of blood with the urine and had grown very weak and pale during the fifteen hours immediately following. When I arrived the child was reported dead. Autopsy showed a large hemorrhage into the right adrenal body, which had ruptured and the peritoneal cavity was full of blood. There was no free blood in the bladder, but a few submucous hemorrhages were found. The blood in the adrenal and in the peritoneal cavity showed extensive clotting.

Dr. W. M. Bradshaw asked me to see a newborn baby which had not appeared as strong as should be two or three days after birth, though a robust child when delivered. This child exhibited an increasing pallor, very prominent abdomen, and a few hours previous to death faint hemorrhagic spots appeared beneath the skin of the trunk. When I arrived the child was dead. Autopsy revealed the peritoneal cavity full of blood in which were a few clots. The hemorrhage came from multiple points in the general peritoneal surface and not from a rupture of a viscus. Cases such as these I believe are hopeless from the beginning; as in the first instance irreparable damage had been done by early rupture of the adrenal body and in the second the fatal hemorrhage was too rapid to permit therapeutical action.

The underlying condition in these bleeding cases, I believe, has to do with the endothelium lining the bloodvessels, and I think a disturbance in the balance of the ferments of these cells is the immediate cause of the hemorrhages. This disturbance I believe to be due to malnutrition. The malnutrition may be caused in different ways, but in the end has the same result. In the bleeding babies we find marked putrefaction, hypersecretion of mucus, and bad odors indicative of marked decomposition in the colon. This decomposition is accompanied by the production of toxines, which are absorbed and interfere with the nutrition of the endothelium, possibly by producing a cloudy swelling, and thereby upset the balance normally maintained between the ferments and antiferments of these cells. In a very recent case of hemorrhage in the newborn a foul odor, identical with that of the stool, was exhaled from the general skin surface. Hemorrhages so commonly reported in specific babies can be accounted for in this way, and also those occurring in individuals having a bacteriemia. The toxines of these various conditions are equally capable of destroying the normal equilibrium of the endothelium.

A long list of observations have descended to us from the literature, which seem to have well established that these hemorrhages are due to some abnormal condition of the blood itself, that it is a blood disease. The main facts in support of this conclusion are the delayed coagulation time of the blood and what appears to be an hereditary tendency. In an article entitled The Relation of the Blood Platelets to Hemorrhagic Disease, Dr. W. W. Duke has pointed out that there is a marked diminution of the blood plates in these hemorrhagic conditions and that when these are supplied by transfusion of blood the bleeding stops for a time, but with the reduction of these elements the hemorrhages will recur. The blood plates have been demonstrated to be the nuclei about which thrombi form, as they produce a ferment substance which is concerned in the formation of fibrin. Such thrombi we find naturally as hemostatic agents, instrumental in stopping hemorrhage due to bloodvessel injury.

The blood in some of the bleeding cases has a normal coagulation time, but in the greater number the coagulation time is prolonged, and in some instances decomposition takes place without clotting having occurred.

When normal serum, from whatever source, is added to the blood in any of these cases which have a much prolonged coagulation time, it will cause a prompt clotting. From this fact it has been reasoned that there is lacking in the blood of these individuals a kinase, or activating substance, which would normally cause coagulation. If this were true we should expect to find a coagulation of the blood in the hemorrhagic areas in those cases in which the hemorrhages have been controlled by the use of serum, but this is not the case. Clotting in the tissues does not occur after the use of normal human blood serum. The hemorrhage is stopped through some other process than that of coagulation, and the blood of existing hemorrhages is absorbed without having formed clots. The effect of the normal human blood serum in controlling these hemorrhages seems to be through its nutritional effect, especially upon the endothelium lining the bloodvessels.

These hemorrhages usually occur after some special disturbance of nutrition. This disturbance may be more or less chronic, with considerable wasting away of the general tissues before the hemorrhage begins. In other cases it seems to be more acute and a condition of toxemia or septichemia. In the first instance it appears to be a species of autointoxication, originating in the excessive growth of pathogenic bacteria in the intestinal tract with the absorption of large quantities of toxines; in the second instance a septichemia, with the growth of bacteria in the blood stream which produces a profound systemic poisoning. All of these conditions have the same general effect upon the nutrition of the endothelial lining of the bloodvessels. This disturbance operates to upset the balance normally maintained between the ferments and antiferments native in the cells, thereby producing conditions leading to hemorrhage. The normal human serum is a prepared food having molecules with receptors which fit the receptors of the cells of the endothelium, according to the side chain theory of Ehrlich, which in that way is capable of being incorporated into the cell body as nourishment without any energy being expended in the process of digestion. The nutrition being thus easily restored, the balance of ferments is reestablished and the hemorrhages are stopped.

In passing, just a word in regard to the injection of defibrinated blood which is advocated by some who have used it. Experiments made by Ehrlich have demonstrated that the red blood cells injected into the same species call forth a hemolytic body for their digestion and removal, which he calls isolysin. In the formation of the isolysins a certain amount of cellular energy is consumed which is just so much extra tax on the individual's capacity for general resistance. The serum is so easily obtained that I can see no reason for using whole blood, especially in babies, thereby possibly reducing the strength of the child already at its lowest ebb.

Transfusion which has been so much employed, is of value, but it is accompanied by certain dangers. Hemolysis, thrombosis, and embolism, all or any of which may lead to the death of the patient, are to be feared. It is true that these are not very frequent occurrences, but still they are common enough to make one hesitate before using transfusion if some other efficacious remedy can be employed. The disadvantages of transfusion are, first, the difficulty of the operation, which is not so simple as many suppose; second, it is frequently necessary to use the method several times on the same subject, and in this it has certainly a great disadvantage, while on the other hand normal human blood serum can be repeated frequently and used indefinitely. I do not wish to disparage too much the use of transfusion, for I believe it has a field which no other agent or measure can replace. In cases of very marked depletion from prolonged hemorrhage, in which the cellular elements of the blood are greatly diminished, I believe the only measure to use is transfusion, for in this operation we supply the cells necessary to the blood which are entirely lacking in any serum we may administer.

138 West Seventieth Street.

EYE STRAIN IN CHILDREN.*

By Elliott W. Shipman, M. D.,
Richmond Hill, N. Y.

A time worn saying, "Just as the twig is bent, the tree's inclined," is most applicable to the subject in hand. And such a bend, however slight it may be at the start, becomes more pronounced and far reaching in its results as the tissues grow and develop. It devolves upon us, therefore, as medical men by our advice and good counsel to remedy that bend early, to prop up the weak places so that the tree when full grown may be strong and sturdy in all of its component parts that it may withstand the blast in the battle of life.

Of all the five senses, that of sight is the most highly developed and differentiated, and when the eyes, through a defective refraction or imperfect adjustment, fail to work in harmony, there is brought about a condition which is an important and too commonly neglected factor in the cause and perpetuation of disease. The purpose of the eye is to receive rays of light which are focused upon the retina, where they are changed into nerve fibre stimuli, and these stimuli are conducted to the brain by way of the optic tract.

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*Read at a meeting of the Medical Association of the Greater City of New York, held at Jamaica, Borough of Queens, April 1, 1912.

In a recent issue of one of the daily papers there was an editorial article, written probably by a layman, entitled A Child is Educated through Its Eyes. There is absolutely no question of the fact that in the first few years of existence by far the greater part of the child's knowledge is taken in through its eyes, which have been aptly termed the "main thoroughfares to the brain." Is it not reasonable to assume that if these eyes are distorted in their efforts to perform their function, a malformed image is carried to the brain and a distorted impression is the result?

It is a well known fact, and it occurs all too frequently, that a child goes on for years ignorant of the circumstance that it does not receive ocular pictures of things as they actually exist in life; and the discovery of this error is brought about only by the manifestation of some distressing symptom remote from the eye itself. In the progress and advancement of educational facilities there has come about a system of medical inspection of the schools which, so far as it goes, is excellent. The recent scar of a vaccination is most diligently sought for, and if not found the child is ordered to procure one. The mouth breather is sent home, with a card stating that his or her adenoids must be removed. *Does an error of refraction of a low degree receive attention?* No. As a rule it is only the pupil who cannot see distinctly the objects on the blackboard in consequence of a high degree of error, who is sent to the ophthalmologist. Now, it is not expected that the medical inspector of a school will make use of the ophthalmoscope, the keratometer, the Maddox prisms, and their kind. But I urge most forcibly a system whereby the eyes of children should be examined when attendance at school is first begun and the result of such examination, and that, as far as possible, it has been corrected should be shown by the certificate of one who has made a study of ophthalmology. To enter the army or the navy, one of the requirements is that the visual acuity be normal.

To be enrolled in a public school it should be a requirement that the vision of the scholar is normal, or, if in error, should have been corrected prior to the child beginning its studies.

The writer has been for some years an advocate of the systematic examination of the eyes of school children by a corps of ophthalmologists; such examinations can be properly made only by those who have made a special study of the subject and given much time to it. It cannot be done by the general practitioner. Would the opinion of the eye man carry any weight regarding a serious abdominal derangement? You say emphatically, No! And yet the school medical inspector is expected to differentiate between follicular conjunctivitis and mild trachoma, to say whether a child has or has not normal vision by reviewing the children as on parade. A few of the anomalies which cause eyestrain are hypermetropia, myopia, astigmatism, and asthenopia or lack of muscular balance; and any one of these four conditions may and does cause a multitude of systemic disturbances, in addition to imposing a handicap upon the child who is endeavoring to take into its brain the knowledge for which our schools have been built up.

An eye that does not see correctly is deformed. A parent will not object to attention to the child who is afflicted with spinal curvature, hip joint disease, or club foot, but in nine cases out of ten, tell that parent that the child needs glasses to correct a deformity of the eye, and he rebels. The ophthalmologist is obliged to labor against this prejudice, regarding the placing of correcting glasses on young children.

Hypermetropia, in which the eye is shallow, and the rays of light come to a focal point behind the eye instead of coming together upon the retaina as they do in the emmetropic or normal eye, is a very common defect, and this condition of farsightedness is most frequently seen in children of tuberculous parentage (due probably to the shallowness of the orbits).

Hypermetropia cannot be corrected too early in life. It is without doubt one of the most frequent causes of sick headache, which, it has been observed, is prevalent in some families. Hypermetropia is a congenital defect and is never outgrown. A child with hypermetropia suffers from early babyhood (in many instances unconscious of the fact) from a great variety of symptoms, caused by the strain to which it is subjected in the effort to see distinctly. It sometimes sees double, or a slight cast in the eye is developed. The effort of study and close application brings on an indescribable sense of discomfort and uneasiness; and play brings a sense of peculiar relief. As a rule these children excel in out of door sports, which require but slight efforts of accommodation of vision. They are apt to boast of their power of vision and they can frequently read all of the test types made for the distance of twenty feet, without error. The suggestion of fitting glasses to such children seems absurd to the parents so long as the child sees well without them.

Now let us for a moment analyze what is happening in the hypermetropic eye which is shorter in its anteroposterior diameter than the normal eye. With the eye at rest, the divergent or parallel rays come to a point *behind the retina,* and this hypermetrope must render his lens more convex, in order to bring them to a focal point on the retina; he sees, not with ease, but with an effort of accommodation; he is calling upon his reserve force (a surplus) and sooner or later this surplus is to a great extent exhausted. Nature begins to worry, like the man with a short bank reserve. Nature hoists signals of distress for this overtaxed organ; and she is not signalling for headache powders or calomel. She asks aid for the refractive error of this eye, so that it may see without constant effort. She calls loudly, not alone for the treatment of the symptom, but for the removal of the cause.

A very marked symptom which the hypermetrope exhibits is a sense of sleepiness when he reads, even for a short time. Just a word as to the statement which we often hear, viz., if you put glasses on this patient he will become dependent upon their use. Of course he does, and why? Those glasses give relief and correct an existing eyestrain, and *no time should be lost in affording this relief.* I think it is a conceded fact and one without prejudice, that the so called sick headaches (the symptoms of which are reflex in character) are in the vast majority of cases due to some ocular defect. The central nervous system regulates and controls the functions of the various organs; and it is not irrational to infer that that central nervous system, when upset, disturbs the servants under it, in order to advance the argument that those servants themselves are the important factors in the causation of the symptoms.

The myopic or elongated eye is less liable to cause physical disturbance than the hypermetropic. Distant objects are more or less indistinct to the myopic eye in proportion to the excessive length of the anteroposterior diameter. The parallel rays come to a point *in front of the retina* and no amount of muscular effort can overcome or improve the defect in vision, except through compressing the eyeball slightly by squinting the lids. As a consequence, myopes are not subjected to the same muscular strain which the farsighted patient constantly and unconsciously exerts in order to see at a distance. Again, the nearsighted eye can read or perform most of the functions required of it, when the object is brought sufficiently close without any material muscular effort. Nearsighted children are liable to be considered precocious beyond their years, for the reason that they prefer to read rather than to play out of doors. The nearsighted eye is less liable to cause distressing disturbances of the nervous system than the farsighted one, provided that it is not accompanied by astigmatism or muscular insufficiency; and yet it should be remembered that the myopic subjects are more frequently sent to the ophthalmologist than are the hypermetropic, for the reason that in the former the defect is more apparent and is more often recognized than in the latter.

The condition of astigmatism which causes numerous reflex disturbances, is due to a state in which either the cornea or the lens has a greater curvature in one meridian than in another. In hypermetropia and myopia the eye has been considered as a sphere; but in astigmatism the rays of light entering the eye are bent more in one meridian than in the other, according to the curvature of each meridian. Now, this condition is present in practically all eyes, but when it exists in but slight degree, viz., less than one fortieth, it does not materially disturb vision nor produce reflex symptoms. The word, astigmatism, as applied to refraction signifies that the rays of light coming from a point are not reunited at a point, or that rays in the different meridians will focus at different points on the visual axis as a line. This condition when it exists to a degree greater than above mentioned is very annoying to the individual, as he will see all objects in a blurred state, distorted, and irregular in all their parts.

To astigmatism is due the fact that the stars and other lights at night have their rays, which would disappear if the curvature of the cornea and the lens was perfect. It will be frequently noticed that the astigmatic subject, whose error has not been corrected by proper glasses, will, in looking at an object, tilt his head to one angle or another in order to see more distinctly. To correct astigmatism a cylindrical glass is used, in other words a glass which has correcting power in one meridian and is neutral in the other. It is often extremely difficult properly to correct astigmatism; it requires experience and a thorough knowledge of optics, as well as a familiarity with the use of the ophthalmoscope.

Let us consider another fruitful source of trouble, heterophoria, or lack of muscular balance. Given an absolutely normal pair of eyes as to refractive power, the muscles which move those eyes in various directions, must do perfect team work. The associated power of the ocular muscles must be perfectly balanced. Each muscle has its opponent, and the opponent must be neither too strong nor too weak for its fellow. If one muscle insists upon pulling harder than its opponent, there is trouble in the central office, the brain; and Nature calls a strike in one or more of the functions of the system. Now, most of the members of the human mechanism are given a counterpart; the two may be called upon to work at the same time, but in the interval there is rest for the one or the other. Not so with the eyes; during the waking hours both are in action at the same time; and they work longer and harder than any of the other members. The muscles of the eyes are its reins, the brain is the driver. At the command of the brain the eye revolves, or remains stationary at the desired point. The tension of the muscles opposed to any movement of the eye is so modified by the brain as to insure the requisite support of the eyeball and to steady it as it moves. An eye with inadequate muscular balance is like a horse with an incompetent driver. The proper tension upon the reins is not at all times maintained as it should be, a perfect equipoise is not established between opposing forces, fixed attitudes are maintained with difficulty for any length of time, and then comes a period where the brain is tired and exhausted from its unsuccessful efforts to keep the team of fractious eyes in the roadway of duty.

Insufficiency of ocular muscles is in the majority of cases, if not in all cases, a congenital defect. It is by the use of prisms and by partial tenotomies of the overstrung muscle that this trouble is corrected. In the opinion of many ophthalmologists the wearing of prisms in these cases is beneficial if not curative, provided the error is not of high degree. This method of applying prisms appeals to the parents much more than muscle cutting.

It is not the purpose of this paper to take up the more glaring and apparent eye defects which manifest themselves at once to the casual observer, but to urge that search be made for any defect in the ocular mechanism of children, however minor it may be, for such defects, when discovered and corrected early, may mould the career of life for that small individual; and when it is considered in this light such a search is of the utmost importance.

The innervation of the ocular muscles is accomplished by three nerves. The oculomotor nerve supplies the internal, superior and inferior recti, also the inferior oblique, the sphincter of the pupil, and the ciliary muscle. The abducens supplies the external recti; and the trochlear nerve the superior oblique. The muscles of these three nerves lie upon the floor of the fourth ventricle.

Muscular disorders consist of spasms and paralyses. In general, spasms play but a subordinate part. But both spasms and paralyses point to the same local diagnostic area, and in some cases a spasm of an ocular muscle is merely the forerunner of a paralyses of that muscle. That absolute emmetropia is the exception and not the rule is shown by many investigators. Cohen, for example, found in 299 eyes under atropine not one case of emmetropia. Hansen found twenty-six emmetropic eyes in 1,610 cases; Duerr thirty in 414; and Randal states that in an examination of 1,834 eyes of school children only 7.36 per cent. were found to be emmetropic.

Given the problem that but a small percentage of children's eyes perform their functions without effort, what can be done to prop up and strengthen the weak members and to keep the normal members from becoming weak? First, it becomes our duty to look for trouble, even if it be not boldly apparent. When found, it cannot be corrected too early. There is one condition, frequently met with in young children of the poorer classes, which causes probably more refractive errors and subsequent eyestrain than all of the others mentioned, viz., phlyctenular keratitis.

We find that well nourished children who have an abundance of sunlight are not prone to this trouble. About ten years ago, when the tenement house commission was formed, it was found that there were 361,000 dark rooms in the tenements of New York; this number has been reduced to about 200,000, still an appalling number. Let us bend our efforts to bring that down to smaller figures. When the physician finds the corneal ulcer, he should not waste time with mild measures, such as boric acid solutions, but resort to more radical procedures, for the longer that ulcer remains, the more it will change the refractive power of the cornea upon which it has formed.

Up to twelve years of age, only short, daily periods of study should be encouraged. We should also endeavor to bring about a condition in the school rooms, whereby light will enter the room from at least two sides. Within the last two months, the writer visited twenty-two public schools of the primary grade, and in but three of these did he find what could be considered the adequate amount and the proper direction of light.

If a portion of the money which is now spent by the city upon children's courts could be used in the proper attention to their eyes, the moral standard might be still more improved, for the child who sees things right, might do things right.

I would discourage the attendance by young children upon moving picture exhibitions. It is conceded that these pictures have a tendency to bring out latent ocular defects and increase the weakness of the already weakened member.

Last, it may be urged that the attending family physician and the ophthalmologist work together hand in hand, and not at cross purposes, for the well being of the child.

416 Church Street.

THE ORIGIN OF MEDICAL JOURNALISM.

By Vincent Greco, M. D.,
New York,
Formerly Adjunct Professor of Medical Pathology, University of Palermo (Italy).

The origin of medical journalism is about the same as that of scientific, literary, historical, philosophical, and religious journalism. The reason is very simple; medicine, philosophy, and letters, often appealed to the same studious men, and the few periodicals that were first issued were used for universal human enlightenment, because very little was published and the number of those journals was very small.

To the Frenchman, Dionysius Sallus, counsellor in the Parliament, nearly all historians and literary men give the credit of having originated the first scientific literary journal, which was issued in Paris, in 1665, with the title: *Journal des Sçavants.*

Costantinus Wolphius (*De Photio Ephemeridum Inventore,* Wittemberg, 1689), de la Bizardière, and Mr. Junker recognize the origin of journalism in a work of Photius, patriarch of Constantinople, who, in the ninth century, wrote a book called *Bibliotheca,* in which he gave a sketch of some books read by him during his ambassadorship in Assyria. But critical men deny to this book the importance of a periodical, because it had not what was peculiar to the French journal, namely, the periodicity of publication and the résumés of the new books which were published. We must remember also that in the year 1554, in Frankfurt, some catalogues began to be printed, in which new books were announced and some news was given. But these catalogues, interesting perhaps to the business men, had no importance for the historians. We cannot give importance, for the history of scientific journalism, to the papers known under the names of *Avvisi, Spacci,* or *Gazzette* (so called from the Venetian *gazetta,* which was a piece of money, valued at two cents). They were read in manuscript during the sixteenth century and were used just to give a knowledge of the most important civil, military, and religious news. The *Journal des Sçavants,* published, as we saw, by Dionysius Sallus, under the pseudonym of Hedouwille, produced great enthusiasm and had a long and glorious life, because it responded to a need which was felt strongly at that time.

With the improvement in the art of printing, and also in all studies in the sixteenth and seventeenth centuries, with the diffusion and development of the academies, literary productions began to be numerous, so much so that it was difficult to read all the books which were published, and the need was felt of having some résumés. Not only was it desired to know what was being published, but also what was issued during the previous years in which the great knowledge gathered was little known and diffused, because the copies kept in the libraries, or by a few fortunate men, were very few. We must add also that, owing to the imperfect means of communication, it became more difficult to obtain all the books, which were being printed in great number. Human knowledge increased very much. Not all the academies, which were more numerous about the end of the sixteenth century and the beginning of the seventeenth, represented mere clubs or places of amusement where, after dinner, were recited sonnets and madrigals, but already some important academies were started, directed toward the progress of the philosophical and scientific studies. Already on August 17, 1603, by Prince Frederic Cesi, who found valuable assistants in Frank Stelluti, in Anastasius de Feliis, in John Ekius, doctor of medicine, there was started in Rome the celebrated *Accademia dei Lincei*, for the discussion of physical sciences, natural history, and mathematics.

In the year 1652 was founded in Germany the celebrated *Academia Naturæ Curiosorum*, which was very useful, as we will see, to the progress of the medical studies, and in the year 1657 was founded in Florence the *Accademia del Cimento*, which investigated the nature of bodies. Also, in the year 1660, were appointed the first meetings of the *Royal Society*, and in Paris, many years ago, was constituted the famous *Cabinet*, which formed afterward, in 1666, the *Académie de France*. I mention only the academies, where were held discussions about the sciences, because there were many others of importance, exclusively literary or religious in character, as the *Accademia pontificia*, the *Accademia di S. Luca*, the *Crusca*, founded in the year 1582.

The *Journal des Sçavants*, therefore, welcomed with a great enthusiasm, was translated into different languages and was soon imitated. In the same year, in London, Henry Oldemburg, secretary of the Royal Society, began the publication of the *Philosophical Transactions*, written in the English language and translated afterward into Latin by Christopher Sandro, into Italian in the year 1729, and also into other languages. These two periodicals represented, for a long time, the best scientific and literary journals.

Italy, however, could not remain indifferent to the new kind of publications. This country, where the first *Gazzetta* was published (1531), followed the example of the other countries. In Rome, in the year 1668, Frank Nazaro, a native of Bergamo, printed in the Italian language the first literary journal, called *Giornale de letterati* (editor, Nicholaus Angelo Tinalsi). A special edition was published also in Boulogne. This periodical was published monthly, in sixteen pages, until the year 1679. There were summarized the *Memoirs*, which were issued separately and were reviewed by the other periodicals, which, to tell the truth, in the first years, were only those mentioned.

It purposed, first, to give *"proporzionata corrispondenza, cioe' a dire una relazione delle esperienze naturali e curiosita', che si andavano osservando in Italia e dei libri, che in essa si stampavano."* It contained also an ecclesiastical, historical, natural science, and medical review; among the various medical publications, which were illustrated, we are happy to mention some of Malpighi's writings. This journal was the first of a series of periodicals which, with the same title, were issued in Italy in the succeeding years. Thus, from 1686 to 1690, was published in Parma a *Giornale dei letterati*, by John Paul Giovanelli's *Nuova Stamperia alla insegna della Palma*. Among all these periodicals, the most important was the journal printed in Venice. It proposed to show, to Italians and foreigners, what was produced in Italy. Its preface was as follows: "We see also now that our literary novelties are known in the North, before they are known to ourselves, because we have not an erudite diary." The journal of Florence extended also to the foreign publications. The programme also contained other phrases, which we like to recall. "In the extract of any book"—it was written—"you can find our judgment without passion and expressed appropriately by a man of education, who does not love the slander, but the truth." This declaration was deemed necessary, because, for a long time, the criticism also in scientific journals, was very severe; we will see afterward that same declaration was made by some medical journals, not so very old, in order to avoid the continuous discussion which took place between the various authors, and between them and the editors.

After the first *Giornale dei letterati*, published in Italy, came the turn of Germany, Denmark, Holland, with journals of special and of general character. Among the special journals, we will speak afterward of the medical only, because they are interesting to us; among the general journals, we mention first all the series of publications, which were initiated in Leipzig in 1682, and called *Acta Eruditorum* (apud Grossium et Gledischium). They, with *Supplementa* (1692-1734) and *Nova Acta* (1735-1754) constitute a valuable collection, which continued for about a century. A special condensed edition of the two first series was made in Venice (1740-1746) with the title, *Opuscula omnia actis Eruditorum Lipsiensibus inserta* (Typys J. P. Pasquale). They contained extracts from the various journals and accounts of the communications read in the academies: among the medical essays there illustrated, we remember Glisson's, Hispon's, Borelli's, Heyde's, and Walther's writings.

After the establishment of the *Acta Lipsiensa*, also called the *Acta Eruditorum*, in the year 1686, was begun in Holland another series of journals, called *Bibliothèques*. This name was not new in the literary world, but very old, having been used for a long time, just to indicate the collection of the memoirs, books, and illustrated catalogues, which were published on any special subject. Thus the *Bibliothecæ* are numerous, which were issued and continued to be issued, in more recent times, in all branches of human knowledge. I remember, among them, the *Bibliotheca medica, sive Catalogus illorum qui ex professo autem medicam in hunc usque annum scriptis illustrarunt* (Basileæ, 1590), by Gallus; the *Bibliotheca realis medica omnium* *materiarum rerum et titulorum in ordine alphabetica,* etc. (1669), by Lipenius; the *Bibliothecæ librorum variorum physico-medicæ,* etc. (Helmestadii, 1731-1752), by Boerner, and the two important series of medical *Bibliothecæ,* which were celebrated: Manget's and Haller's. Among the Manget's *Bibliothecæ* I mention: *Bibliotheca scriptorum medicorum veterum et recentiorum* (Genevæ, 1731 t. 4); *Bibliotheca chirurgica* (Genevæ, 1721); *Bibliotheca medico-pratica sive rerum medicarum thesaurus cumulatissimus,* etc. (Genevæ, 1695-97, t. 4); *Bibliotheca farmaceutica-medica* (Genevæ, 1703). Among the Haller's, I note: *Bibliotheca anatomica* (1774-1777), *Bibliotheca medicinæ praticæ* (1776-78).

The oldest periodical *Bibliothèque,* published in Holland, appeared, as we said before, in the year 1686, and continued until the year 1691. It had for title: *Bibliothèque universelle et hystorique* and was written in the French language. It contained, not only the summaries of the works which were being published, but also some old works, of Greek and Latin authors, of the Fathers of the church; it published also original articles and its subjects were physics, mathematics, medicine, humanity, etc. This journal was issued by Jean le Clerc until the year 1714, in small volumes, every six months; that year, the editor dying, it was suspended, but afterward the same book was revived, under the title of *Bibliothèque ancienne et moderne pour servir de suite aux bibliothèques universelle et choisie* (chez David Mortier).

In its second *Bibliothèque,* Jean le Clerc explained, in the clearest way, the plan he had adopted in writing his magazine. "I have no other purpose," he says, "than to speak about old and modern books, as they come to my hands, without observing any order, according to the time; but I make the extracts and I tell what I think."

Besides these *bibliothèques,* others were published periodically. Many of them do not interest us, because they do not contain medical matter. I remember among them, *Bibliothèque raisonnée* (from 1728), *Bibliotheca literaria,* of London (from 1722), *Biblioteca italica o Storia letteraria d'Italia* (from 1778), *Bibliothèque des sciences et des beaux arts* (Le Haye. chez Pierre Gosse junior—from 1754 to 1764). The number of journals, however, was growing and in the first half of the eighteenth century, they were so numerous, that we cannot mention all. We remember now the most important, in chronological order, the different *Mercuries* and, among them, *Mercur sçavan* or *Mercurius gallicus* (1684), *Nouvelles de la république des lettres* (initiated in 1684 by Bayle and continued in 1669 by Bernard), *Histoire des ouvrages des savans* (Holland, Henry Basnage, 1687-1709), *Nouveau journal des savans* (Rotterdam, 1694, and Berlin, 1696-1698), *Miscellanea italica erudita, Galleria di Minerva* (1696-1713), *Nova literaria Maris Baltici* (1698-1708), *Acta literaria Svecica, Nova literaria Germanica; Genio dei letterati; Histoire critique de la république des lettres* (1712-1718), *Europe sçavante, Nouvelle bibliothèque,* of The Hague, *Novelle della Republica delle lettere* of Verone. *Novelle letterarie publicate a Firenze* (1740-1774).

We must pay special attention, for the importance which it acquired and for the length of time it was published, to a periodical which appeared at Paris, in 1701; it was called: *Memoires pour l'histoire des sciences et des beaux arts,* printed in Trevoux, in the printing office of H. H. S. Mylord Prince Souvrain de Dombes.

It was published until the year 1775, and formed a series of about 400 small volumes (of twelve by eight centimetres). According to its index, it must have contained a review of letters, physics, medicine, and new machinery, and illustrated the publications made in France, Spain, Italy, Germany, the kingdoms of the north, Holland, England, so that everybody interested in any kind of sciences, could find what he needed.

Medical publications, however, were very few. We must mention a method which was introduced in this journal, in order to make the summaries, and which was used recently by Professor Riva, of Parma, in publishing an Italian magazine, called *Autoriassunti e Riviste,* viz., the method of the *autorésumés.*

"Nobody, generally speaking"—it is written in the introduction—"is able to make the extracts of a book better than he who wrote it, and an author might be afraid that another man could make him think and speak, as he intends. They, who desire to make, themselves, the extracts of their own works, must send them to the editors of the *Mémoires.*" The editors of these *Mémoires* were more cunning than the good Professor Riva, because they gave notice that they compared such extracts with the originals, in order to see if they were faithful. "We think necessary this precaution," it is added, "because an author does not always develop in his work the idea which he has formed, and which he reveals in the introduction."

Beside the journals mentioned, a series of periodical publications merits particular consideration in the history of scientific journalism; this was a series due to the academies which were numerous at that time. Already one of the oldest, viz., the *Philosophical Transactions,* of London, was due to the *Royal Society;* to other periodicals the academicians could bring their valuable cooperation; but when I speak about academic publications, I mean particularly that category of publications, which were called *Acts, Memoirs,* etc. A sketch of these acts we can find in the *Appunti* or *Verbali* of the *Academia dei Lincei,* which remained unedited and in the *Gesta Lynceorum,* published by Eckio (one of the founders of this academy) in Rome, in 1605.

In 1667, was published in Florence an account of the works, made by the *Accademia del Cimento,* under the title: *Saggi di naturali esperienze fatte all'Accademia del Cimento,* but this publication was not of a periodical character. In 1686, an academy, founded in Brescia, decided to publish its acts, for a period of a little more than a year; the matter was physics, medicine, and mathematics. But the most celebrated acts, for its antiquity and continuance and for the importance of the publications, is the Acts of the *Académie des Sciences* of Paris.

The first volume was issued in 1692 and is preserved in the National library of Paris; it was entitled: *Mémoires de mathématique de physique tirées des régistres de l'Académie royale des Sciences;* in the year 1697 was issued by Duhamel, a volume which contained the dissertations and the observations of the first thirty years of its existence; in 1733 began the *Histoire et mémoires de l'Académie des sciences, son éstablissement en 1666, jusqu'a l'année 1790* (Paris, Gabriel Martin), which was published until 1797, forming a series of 114 volumes, in quarto, which contained numerous and important contributions on medicine. We do not mention later publications, because they belong to a more recent period, which we do not consider.

The academy founded in Berlin in the first years of the eighteenth century began to publish its acts; the Academy of Petersburg began also in 1726 its memoirs, called *Memoirs of the Imperial Academy of the Sciences of Petersburg,* whose tenth volume was published in 1750. They are very interesting for the physician, because they contain numerous medical papers.

In 1731 appeared the first volume of the *Bononiensis Scientiarum et Artium Academiæ Commentaria* of Boulogne; in 1732 was started in Florence, under the protection of Mr. Pazzi, another academy, which had, as emblem, a pigeon house and as motto: *Quanto veder si puo* (as we can see). May 15, 1735, a memoir was read and it was established that the memoirs of every year must be published in the *Annali,* and in the same year, 1747, the twelfth volume was issued. In the same year, in order to give a trial of the more important communications read in the academy, there were begun the interesting *Memorie di varia erudizione della Societa' Colombaria di Firenze* (Nella stamperia all' insegna di Apollo). Many scientific academies, however, published their acts; among them we remember the academies of Upsala (1773), of Dijon (*New Memoirs,* 1783), etc.

Having examined the origin of scientific journalism, it is now interesting to examine how the medical was first started, and what medical periodicals were first published. Although Junker, in his work published in 1692, on the first thirty years of literary and scientific journalism and entitled, *Christiani Junkeri Dresdensis Schediasma Historicum de Ephemeridibus, sive Diarius Eruditorum in nobilioribus Europæ partibus hactenus publicatis. Lipsiæ sumpt. John. Fred. Gleditsch,* 1692, in octavo, places the *Philosophical Transactions,* of London, among *Ephemerides medicæ et physicæ,* nevertheless we cannot consider this periodical the first medical journal, because it treated of other matters, such as physics, mathematics, and philosophy.

The first medical journal which has a great importance in the history of medicine, because it contains about all the medical movement of twenty years, is that published by *Academici naturæ curiosi.* It began to be published in Leipzig and Breslau, in 1670, by Philip James Sachs, and its first volume had the following title, rather long: *Miscellanea curiosa Medico-Physica Academiæ Naturæ Curiosorum, sive Ephemeridum Medico-Physicarum. Annus primus, continens celeberrimorum Medicorum in et extra Germaniam observationes Medicas et Physicas vel Anatomicas, vel Botanicas, vel Pathologicas, vel Chirurgicas, vel Therapeuticas, vel Chimicas, Præfixa Epistola invitatoria ad Celeberrimos Medicos Europæ. Lipsiæ et Uratislaviæ. Anno* 1670.

This journal, published in octavo, with elegance and richness of illustration, contained observations worthy of being remembered, original, extracted from monographs or other periodicals. After Sachs, who died two years later, Henry Volgnadius and John Geniesius, of Breslau, and afterward Georges Volchamerus, of Nuremberg, were the editors. Together with the *Academia Naturæ Curiosorum,* it became famous, so that it was an honor being a member of that academy. Two *decuriæ* were published; the first from 1670 to 1679; the second from 1682 to 1691. During the years 1685-86, Valentini published extracts under the form of another periodical called: *Historia literaria Medica, sive recensio librorum, quia Membris Societatis Naturæ Curiosorum editi sunt. Giessæ.*

The example of Germany was at once followed by Denmark; a year after, namely in 1671, the great Thomas Bartholinus began *Acta medica Hafniensia,* wherein were collected numerous rare observations and some experiments, performed in Denmark. The journal, dedicated to the Trinity, was published in Copenhagen; from 1671 to 1679 only five volumes were issued.

Afterward it was the turn of France; in the same year, in which was published the last volume of the Danish Acts, a Frenchman, Nicholaus de Blegny, surgeon in ordinary to the duke Aurelianus, and director of the society called *Academia Recens Exploratorum in Re Medica,* published the first French medical periodical, the name of which was: *Nouvelles découvertes sur toutes les parties de la médecine,* in duodicesimo. It was issued by the same author for three years (1679-1671), and was continued afterward by the Abbé de la Roque, who after some months changed the title of the journal to *Journaux de Médecine ou Observations des plus fameux Médecins Chirurgiens, et Anatomistes de l'Europe, tirés des journaux des pays étrangers et des mémoires particulières envoyez à Mr. l'Abbé la Roque à Paris* (1683), in duodicesimo. But it had a brief life, ending in the same year 1683; also, for a little time, it was published again in the year 1686 by Boelius.

The three volumes, however, of de Blegny's periodical were published again, translated into Latin, by the interpreter of Geneva, Theophilus Bonnet, who gave the periodical the following title: *Zodiacus Medicus Gallicus, sive Miscellaneorum Medico-Physicorum, titulo: recens in re Medica exploratorum, unoquoque mense Parisiis Latine prodeuntum.* Annus primus, scilicet 1679; auctore Nic. de Blegny. Genevæ 1680. The second volume appeared in 1682; the third in 1683. In 1680, it was the turn of Holland, and Stephen Blancard, a celebrated doctor of Amsterdam, published in the Dutch language a periodical which was translated into German by Tobias Peucerus, with the following title: *Collectanea Medico-Physica oder Holländisches Jahr-Register, die Beobachtungen sowohl in der Arzney Kunst als in der Wissenschaft der Natur in* *ganz Europa vorstellen, angefangen mit dem Jahr 1680*, in octavo.

These periodicals constituted the first medical journals (see Cornelius Beughem, *Syllabus recens exploratorum in re medica physica et chimica*, etc., Amstelodami, apud Janssonium Valsbergium, 1694); but, as we saw, excepting the celebrated Miscellanea, they had a short life. We must come to the year 1717 in order to see a new medical periodical, which had great importance and a long life.

In the meantime several journals appeared, which lived for a short time but did not leave a great memory behind them. I give the name of some, which I take from the fourth edition of *Polyhistor*, of Morhofius (Danielis Georgii Morhofii, *Polyhistor Literarius philosophicus et practicus cui præfationem notitiamque diarorum litterariorum Europæ præmissit. Jo. Albert Fabricius*) published in 1747, where such a *notitia diarorum litterariorum* is continued, until this year, by Joachim Schwabius. They are: *Observationes Chimico-Physico-Medicæ curiosæ*, Halle, Sax., auctore Ern. Shalio, 1697; *Deliciæ Medicæ*, in oct. 1704; *Natur und Medizin, Kunst und Literatur Geschichte*. Breslau, 1717-1729.

In the year 1719, however, appeared the celebrated periodical of Berlin, called *Acta medicorum Berolinensium incrementum artis et scientiarum collecta et digesta*, apud Godofredium Gedichum; Doct. John. Daniel Gohlius was the compiler. *Acta Berolinensia*, made in the style of the *Acta Eruditorum Lipsiensia*, were published for a long series of years, constituting the most important medical periodical of the first half part of the eighteenth century.

In 1731, however, appeared in Edinburgh, through that Society of Medicine, another good journal, written in the English language, with the title of *Essays and Observations of Medicine*, which was translated into French, into Italian, also, in the year 1751 (Venice, by Frank Storti). This journal, although it was edited by a society, had nevertheless a large programme, because, beside containing the letters of numerous correspondents in every part of the world, it contained also a review of the more important things published.

In the same year appeared in Nuremberg the *Commercium litterarium ad rei medicæ et scientiæ naturalis incrementa institutum*, which lasted three years; in 1736 we have the *Medicorum Silesiacorum Satiræ quæ varias observationes casus experimenta, tentamnia ex omni medicinæ ambita petita exhient*. Breslau. In 1737, began to be published in Francfort on the Oder, in four volumes, *Selecta medica Francofurtensia, anatomen, in primis praticam chirurgiam, materiam medicam, ipsamque universam medicinam tam clinicem quam forensem variis casibus et observationibus illustrantia*.

The number of medical journals having greatly increased, we have no idea of following them all, because it would take too long; but we will consider only two very important French publications, edited by two medical societies, one of surgery and another of medicine. The *Académie Royale de Chirurgie*, founded in Paris, in 1731, by the activity of Maréchal and Peyronie, called before the Royal Society and elevated afterward, in 1747, to the grade of academy, published from 1743, the first volume of the *Mémoires de la Société royale de chirurgie*, in octavo, with very fine pictures. It was divided in two parts, the first containing the history, the second the memoirs.

The first part contained short and isolated observations; titles, and sometimes extracts of the books published by the academicians; eulogies of some members of the society; instruments and machines, presented to the academy, worthy of note. The second part contained the interesting memoirs presented to the academy and selected by the chairman. The second volume of the memoirs was issued in 1769; the third in 1778.

Another academy was founded in Paris; it was an academy of medicine. Under the title of the *Société Royale de Médecine*, it was founded by the King, April 29, 1776, and in 1779 it began to publish, in large volumes, of the same type as its predecessors, the *Histoire de la Société royale de médécine*. The publications of this society, which in 1829 took the title of *Mémoires de l'Académie royale de Médecine*, continue until the present time, constituting a precious and very fine collection.

In the second half of the eighteenth century, numerous medical periodicals were published in the various towns of Europe; we will mention only some among the oldest. They are *Journal de médecine de Paris*, *Médecine illustrée des Sciences physiques*, *Bibliotheca physico-medica du nord*, the *Gazette de santé*, founded in 1773, which is continued until the present time, under the title of *Gazette médicale de Paris*, and the *Nouvelles instructives, bibliographiques, historiques et critiques de médecine et de chirurgie* (1785-1787), continued afterward (1789-1791), under the title of *Nouvelles ou Annales de l'art de guérir*.

Italy, however, which had a great part in the origin of scientific and literary journals, began late to publish medical periodicals. The first periodical publication, which we can consider as a true journal of medicine, was the *Giornale per servire alla storia ragionata della medicina di questo secolo*, published in Venice (by John Baptiste Pasquale) in 1783. Before this journal, here and there appeared a few medical publications, which were intended to be periodical, but they cannot be considered as journals, because they were published for about a year and did not contain any review of new books, and published also old writings; they are the *miscellanee, raccolte*, etc. We may cite, for instance, *La Raccolta di varii opuscoli e dissertazioni intorno alcune principali materie in medicina, anatomia, botanica e storia naturale*, edited in Naples, in 1759, by Valentino Azzolino. One volume only perhaps appeared of this *Raccolta*. It contained published and unpublished observations, some of which were written about thirty years before.

We remember also the *Raccolta di opuscoli medico-pratici*, v. i, with pictures, Florence, 1773, published by Targioni, who constituted a society of medicine and collected in a volume some important monographs.

We may consider the journal of Venice as a true journal, which was very complete and important, but it had not a long life, because it ceased to be issued after some interruption, in 1799, on account of the wars and the revolutions which afflicted Europe in that time. It appeared in monthly numbers, in octavo, of about forty pages; each number in the first volume was divided into the following chapters, which always came in the same order: Anatomy, theoretical medicine, practice of medicine, medical chemistry, surgery, miscellany; but this order, in the following years, was not followed.

The editors of the journal were anxious, in the first year, to show the importance of the union of theory with practice and, in order to do so, they purposed to consider all theoretical and practical arguments, discussed by the learned, by giving a brief résumé of the old knowledge, and by showing, at the same time, how much theory had influenced practice and vice versa.

This plan, followed in the first volume, was given up in the succeeding ones, in which the system of other journals was pursued, "to publish simple extracts of new books, or new observations made by the editors, or communicated by the correspondents." They did not forget to give, from time to time, reflections to convince the physicians that practice and theory must be united in order to make progress in medicine.

This periodical disappeared in the year 1799; in the first years of the nineteenth century we had no medical journal in Italy, and medical works, as in the preceding years, were published or abstracted in the literary and scientific journals.

In the year 1806, however, the *Giornale della Societa Medico-chirurgica di Parma* appeared; and in 1811, the *Giornale medico-chirurgico* was published in Rome, by Flaiani. In 1812 and 1814, in Padua and in Milan, were begun two journals, which were celebrated for many years, the *Giornale di medicina pratica* and the *Annali di medicina straniera,* which changed, after a few years, the title to *Annali universali di medicina e chirurgia.*

The journals which I have mentioned constituted the former scientific, literary, and medical journals; now medical journals, completely separated from the other forms of periodicals, are so numerous that we cannot know, must less mention them all. America, Germany, England, France, Italy, Russia, Spain, etc., publish, every year, innumerable and interesting medical magazines, which we can divide into special classes.

On the one hand we have the archives, which contain original works; on the other we have the *reviews* or *Zentralblätter* or *résumés* which reveal the scientific movement, and we have also the entirely practical journals, which are published, in order to satisfy doctors who have little time for reading, and want in a journal to find only what is necessary to know for the practice of medicine. Medical journalism now is so interesting that we can say it is the mirror of the medical sciences, making known, in a short time, in every part of the world, what is observed by studious men of different nations.

316 East 116th Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXIX.—How do you manage chronic ulcers of the leg? (Closed December 16th.)

CXXX.—How do you treat subacute and chronic laryngitis? (Closed January 15, 1913.)

CXXXI.—How do you treat psoriasis, and with what success? (Answers due not later than February 15, 1913.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXVIII has been awarded to Dr. Maurice Schneck, of New York, whose article appeared on page 29

PRIZE QUESTION CXXVIII.

THE TREATMENT OF INFANTILE CONVULSIONS.

(*Concluded from page 85.*)

Dr. Louis Weiss, of East Pittsburgh, writes:

Before beginning the treatment, it is customary to take into consideration the etiology as briefly as possible. The predisposing causes are included under four headings as follows: 1. Hereditary and family tendencies to convulsions in individuals presenting an unbalanced nervous system. 2. Autointoxication hypothesis. 3. Circulatory derangement, such as unequal distribution of the blood, with a superabundance to the brain. 4. A special form of epilepsy that is amenable to treatment, especially in early childhood.

The exciting causes are all forms of reflex excitation of this unstable nervous system, and comprise the following: 1. Gastrointestinal, as teething, sudden overloading of the stomach, one of the most frequent causes, constipation, parasites, etc.; 2, genitourinary, as highly acid urine with formation of gravel; 3, respiratory, including anything that interferes with proper oxygenation of the blood, as croup, either membranous or diphtheritic, edema of glottis, compression of trachea, etc.; 4, nervous system, as tumors, blood clots, depressed fractures, abscess, etc., of brain or cord; 5, thermal conditions, as seen in all fevers, as scarlet fever, measles, meningitis, etc.

The treatment of this condition should be subdivided into that during the attack and in the interval. During the attack the room should be perfectly quiet, the physician should make a careful examination of the patient and subsequently proceed with the medication as required; a tepid bath with cold effusions to the head is very beneficial, especially if there is any fever; if there is no fever a hot mustard bath should be given in its place; followed by an immediate injection per rectum of chloral hydrate, alone, or in combination with the bromides; occasionally small doses of alcohol are beneficial in such cases as teething, as is asafœtida by rectal injection; chloroform inhalations have also been recommended, as well as amyl nitrite; in cases of respiratory failure artificial respiration should be immediately instituted; stimulants are given as required and include brandy, strychnine, atropine, and digitalis.

Immediately following an attack we must look to a thorough cleaning out of the gastrointestinal tract, and this is accomplished by the internal administration of calomel in fractional doses, for example one sixteenth grain every fifteen minutes until ten are taken, followed by castor oil about eight hours afterward, in doses of two teaspoonfuls to a tablespoonful. Some, however, give castor oil alone.

During the interval the treatment comprises the following: Dietetics is the most important consideration and involves a careful study of the infant's constitution; a good plan is to put the patient on oatmeal gruel for about two or three days with a gradual return to breast feeding, especially in very young infants, with proper amounts and at regular intervals; barley water may also be given in place of the gruel; if this is not feasible it has been recommended to give a farinaceous diet for at least a week with return to milk diet thereafter. In older children we may give milk, soups, and finely divided vegetables.

Hygienic treatment comprises plenty of fresh air and sunshine, especially near the seashore or forests, well ventilated sleeping rooms; likewise bathing is highly beneficial, together with plenty of water internally.

Medicinal care comprises the internal administration of phosphates or codliver oil, or a combination of both; milk and codliver oil are highly recommended; in fevers give diuretics and diaphoretics, tonics, as iron and arsenic, may be required. The bowels should be properly attended to and constipation overcome by cascara, castor oil, calomel, etc. Intestinal antiseptics are needed in cases of autointoxication, salol or bismuth salicylate; if due to pressure on the brain, operative procedures should be instituted, except in cases of syphilitics, when antisyphilitic remedies should be given, while all exciting causes should be treated as they arise.

Dr. Ralph Boice, of Sistersville, W. Va., remarks:

The treatment of infants presenting convulsions as a symptom should begin with the suppression of the convulsions themselves, and end only with the removal of the cause, so as to effect a radical cure.

On being called to a case of convusions, I go at once and stay until the little patient is quiet. Chloroform by inhalation is the first thought. I do not push it to the extent of complete anesthesia because the spasm is usually quieted before that stage is reached. Then, as the majority of cases of infantile convulsions are due to some irritation of the gastrointestinal tract, I evacuate the bowels by a high colon injection, using a large catheter on the end of the syringe. To prevent a recurrence of the spasm I then throw into the colon a solution of chloral hydrate and sodium bromide in an ounce of warm milk or starch water. Under six months I use one to two grains of chloral and four grains of sodium bromide; at six months, four grains of chloral and eight grains of the bromide; at one year, eight grains of chloral and from ten to fifteen grains of sodium bromide. The dose can be repeated in an hour if necessary.

It has been my practice in the past to place the child in a hot bath of mustard water, rubbing the trunk and extremities briskly during the immersion. Now, I use the mustard pack as suggested by Holt. This is prepared as follows: Mix one tablespoonful of mustard in a quart of tepid water. Saturate a towel in this and wrap around the baby's body, then envelop the little one in a blanket. Keep in pack until the body is a well defined red, which will take from ten to fifteen minutes. An icecap is kept to the head during this procedure. I like this pack much better than the bath, as the latter tends to weaken the infant.

After all these measures have been tried and the convulsions still continue, I use morphine sulphate hypodermically. This drug can do little, if any damage in convulsions, but on the contrary, is well indicated if the heart is weak. Under one year I use one forty-eighth grain; at one year, one twenty-fourth grain; at two years, one sixteenth grain.

Lumbar puncture, and the withdrawal of twenty to thirty c. c. of cerebrospinal fluid is advocated as a means to suppress the convulsions, but I have never had occasion to try it.

After the convulsions have ceased I administer a dose of castor oil and put the baby to bed. A liquid diet is prescribed for twenty-four to forty-eight hours.

If there is not a history of an overloaded stomach to account for the convulsions, I now seek to discover and remove the cause. Intestinal parasites are responsible for many cases. I always examine the urine, as the possibility of nephritis must not be overlooked. Rickets is the predisposing cause of a large number of cases and should be thought of at once. In four cases I found the convulsions to be due to an adherent prepuce, with a large accumulation of smegma. Circumcision gave prompt relief. A hooded clitoris may act in a similar manner. Brain lesions should also be considered.

*Dr. George B. Lake, First Lieutenant Medical Corps, U. S. Army, of Fort Sheridan, Ill., observes.**

The treatment of infantile convulsions may be considered in three parts: 1. Prophylaxis; 2, treatment of the acute attack; and, 3, treatment between the attacks.

Prophylaxis.—The most important consideration in preventing these appalling seizures (i. e., providing the child with normal and sturdy progenitors) lies outside the powers and functions of the physician as regards the particular case in hand, but it is, distinctly, a part of his work to see that those with whom he comes in contact are so instructed in matters of heredity that the breeding of those nervous-ly unstable individuals, in whom convulsions so frequently appear on slight provocation, may be minimized, if not obviated; for it is well recognized that the children of epileptics, hysterics, neurasthenics, or those weakened by disease or excesses are far more liable to be attacked in this manner than are the progeny of sound parents.

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*By permission of the Surgeon General, United States Army.

When, however, children are born to parents who are below par physically, the physician should realize the danger of convulsive attacks and should guard the child, so far as may be, from probably exciting causes, while strengthening and fortifying him against the time when such causes will be no longer avoidable. His life should be as regular as the clock in all matters, every form of irregularity and excess being sedulously avoided. His diet should be very simple and nourishing; his excretory organs kept in normal action; his hours of sleep long and uninterrupted and spent in a well ventilated room or out of doors; his waking hours carefully supervised (to prevent excessive physical exertion and excitement) and spent wholly in the open air, except during blizzards, cyclones, or torrential downpours. The development of his body should be constantly encouraged, allowing his mental development to proceed, unurged and unhurried, but merely *directed* in its spontaneous unfolding.

The slightest sign of illness should be the signal for summoning a physician, who, when he arrives, should place the patient, at once, in a condition of *absolute rest*, physical and mental, and maintain him in this state during the administration of the indicated remedial measures and until convalescence is well established.

The normal child may be reared under a régime following this with moderate closeness, but not so rigidly carried out except in the matter of the outdoor life, which should be as unquestioned a part of the process of rearing children as feeding them

Treatment of the attack.—First, ascertain, if possible, the cause of the convulsion in progress and direct the treatment to that. In any of the acute febrile diseases of childhood a convulsion may take the place of the chill which commonly ushers in these disorders; or it may arise from the irritation and toxemia of an overloaded stomach or bowel. In some very susceptible infants the irritation caused by ill fitting clothing, intertrigo, phimosis, or any one of the minor discomforts or inconveniences of life may give rise to a convulsion.

In general, the treatment should consist of a thorough emptying of the stomach and bowels; the former, by an emetic (syrup of ipecac, mustard, and warm water, or other remedy of the sort which may be at hand) by mouth, apomorphine, in appropriate dose, hypodermically, or by means of the stomach tube; the latter by a warm, soapsuds enema, which may, in cases where chronic fecal retention is suspected, contain a little turpentine.

The relaxing effect of the emetic should be supplemented by immersion in warm or hot water for from a few minutes to half an hour. In severe cases a few whiffs of chloroform or ether may be necessary to control the paroxysm. If the pulse is full and bounding, as in acute febrile diseases, carefully adjusted doses of veratrine are exceedingly valuable, and if the nervous element appears to predominate, hyoscine hydrobromide, hypodermically, gives good results.

The patient should be put to bed, naked, between soft, warm sheets, and kept warmly covered in a well ventilated room. Hysterical or excited relatives and neighbors should be absolutely excluded, and the patient should be placed, so far as may be, in a condition of perfect quiet.

Treatment between attacks.—A thorough examination should detect the presence of any grave organic disease, treatment of which should be carried forward in accordance with the best ideas of the time. If the symptoms point to meningitis, an exploratory lumbar puncture should be made, having the Flexner serum at hand if possible, for use in case of a positive finding. The trouble may be due to hereditary syphilis or malaria, and so require the administration of mercury or salvarsan in the former case, or quinine in the latter. Any cause of physical irritation, as adherent prepuce, adenoids, intestinal parasites, etc., should be promptly removed.

The prevention of subsequent attacks depends upon the correction of any organic irregularities which may be present, while carrying out, more or less rigidly, the system of life described under the head of prophylaxis.

Dr. Albert M. Bell, of Brooklyn, New York, writes:

Because of the suddenness of onset and the numerous etiological factors, the treatment of infantile convulsions resolves itself into two rather distinct phases: 1. The treatment of the seizure itself; 2, ascertaining and treating the cause. With but a very brief history, begin treatment at once, leaving the details in history and thorough physical examination until after the tonic condition has been relieved.

My treatment is as follows: 1. Immerse the child in a warm mustard bath, temperature 100° F., subjecting the surface to continuous mild friction. Remove from bath in ten minutes or sooner if there are signs of returning consciousness. Contraindications to bath are: Convulsions due to loss of blood, anemia, diarrhea with inanition, and cardiac disease. 2. Give a warm soapsuds enema. 3. If any suspicion of condition being due to a poison or undigested food in the stomach, give an emetic, usually wine of ipecac, half to one drachm, repeated in fifteen minutes if necessary. Rarely it may be advisable to wash out the stomach with sodium bicarbonate solution, and leave in it some castor oil or magesium sulphate.

Usually by this time the child is conscious and relaxed, if not a sedative is necessary, and I try first an enema of sodium bromide and chloral hydrate in warm saline solution. If not effectual in twenty or thirty minutes, give a small dose of morphine sulphate, gr. 1/50 to 1/12, by hypodermic injection.

Rarely we see cases in which all these procedures are not effectual in quieting the child, then we resort to sufficient chloroform or ether to produce complete relaxation.

As soon as the convulsion has been relieved it is very essential that the child be thoroughly examined and the exact etiological factor discovered. If there is an elevation of temperature, look especially for signs of beginning pneumonia, any of the exanthemata, or gastrointestinal intoxication due to contaminated or improper food. Examine the chest and throat very carefully! In this type it is well to guard yourself by mentioning the possibility of a rash appearing later.

If there is no fever we must then look for some cerebral condition, producing pressure and with tonic contractures suggesting some focal condition, or some of the other conditions capable of producing these symptoms, as fright, rhachitis, nervous explosions in epilepsy, nephritis, hydrocephalus, chronic diarrhea, cardiac diseases, etc.

When the cause has been ascertained, the treatment for that condition should be instituted at once. If it is impossible to state definitely the cause, the child should be kept quiet, on a fluid diet, with bowels opened, and under observation for at least two or three days.

Dr. Alexander Sterling, of Philadelphia, remarks:

To treat properly infantile convulsion, one has to consider not only the convulsion *per se*, but the developmental phenomena as well as all the conditions possible to bring forth such a state of affairs in our little patient. The etiological factors are the conditions one has to combat, besides the mere relief of the convulsion.

When called to a case one should inquire into history, whether it is, 1, the onset of an acute infectious disease; initial symptoms in practically all of them may be a convulsion, particularly scarlet fever, diphtheria, meningitis, and pneumonia; 2, toxic from autointoxication, from gastrointestinal disturbance and uremia; 3, reflex from teething, worms, otitis media, tumor, causing pressure on the brain, enlargement of thymus or other mediastinal glands; 4, an epileptic convulsion, and unless all the possibilities mentioned are kept in mind, even after the convulsion has been relieved one may overlook the indication for further treatment.

To relieve the convulsion, while administering a few whiffs of chloroform, a hot mustard bath should be ready, one tablespoonful of mustard to two quarts of water, and child kept in it from fifteen to thirty minutes and a high colonic irrigation with two quarts of normal saline, after which the child is put to bed with or without ice to the head and a hot water bottle to the feet, being guided by the pulse and temperature; then a course of calomel followed by an oil. This routine should be observed in every case, excluding sometimes the hot mustard bath as the case may indicate. The necessity of a careful history and physical examination, though the convulsion had subsided, should not be underestimated, for the diagnosis and the indications for special treatment may be overlooked. Sometimes the proper history of a case may save time.

The indications for special treatment are too numerous to mention, and I would only have to enumerate all the infectious, functional, and organic diseases, that one may encounter in his practice and their proper treatment, but sometimes hypnotics or antispasmodics may be indicated in the form of suppositories, the safest of which I have used with good results, chloral hydrate and sodium bromide, of each grs. ii in cacao butter as often as every hour.

I am in the habit of telling the parents to watch the patient for one or two days, when the diagnosis is difficult, and to call me if there is any doubt in their minds as to the condition of the youngster, explaining the possibilities. This is always appreciated, and on many occasions our doubts are justified.

Dr. J. L. Bressler, of New York, observes:

It depends upon the stage in which we see the patient: 1. If during the paroxysm, measures should be employed to control it; 2, if after the paroxysm has subsided or under control, then measures to prevent recurrence must be instituted.

The seizure is frequently over before the physician arrives. But often it occurs during his presence or lasts until he arrives. In this event, where the convulsion persists or recurs, the patient's clothes should be loosened or removed and patient placed in a warm bath, preferably a mustard bath. At the same time a few drops of chloroform should be administered by inhalation to control convulsions. A high rectal enema of water at 110° F. should be administered. Very often, where a history of taking some irritating food is given, the removal by means of an emetic will cause a cessation of the attack. After the enema, a rectal injection of chloral hydrate, grs. v and sodium bromide, grs. x to xv, is often very efficient in controlling the convulsion. An icebag should be placed to the head.

After the convulsion has been controlled, the treatment resolves itself into ascertaining the cause and eliminating it if possible, and then prevention of recurrence of the attack.

To prevent the seizure from recurring, chloral hydrate and sodium bromide by rectum, repeated every hour or two, with or without a few drops of laudanum, will usually be sufficient. If not, it may be necessary in extreme cases to resort to hypodermics of morphine, in doses of gr. 1/40 to 1/24, at frequent intervals. A dose of calomel or castor oil should be given as soon as convulsion is under control. If fever is present, treatment should be the same as for acute infectious diseases. If rickets is present, measures for hygienic and dietetic improvement should be instituted.

The heart should not be overlooked. Measures for supporting it, both during and between convulsions, should always be taken. And above all, after control of convulsion, measures removing all influences, directly or indirectly the cause, should be instituted.

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Therapeutical Notes.

Treatment of Tuberculous Cystitis.—David Newman, in the *Practitioner* for July, 1912, states that in tuberculous cystitis secondary to unilateral renal infection, the bladder condition may heal spontaneously after nephrectomy. At all events, the primary affection must be dealt with first.

Where, some months after nephrectomy, the bladder is still troublesome, notwithstanding open air treatment, diet, tuberculin, tonics, and urinary antiseptics, good results may still be obtained by the introduction into the bladder of four ounces of sterilized olive oil, the patient being instructed to pass water, standing, until he notices the oil coming away, and then to stop. Some of the oil remains in the bladder, generally for twelve or eighteen hours, and assists the healing process. The injection may be repeated every third day.

Should cure be further delayed, instillations of a one to 20,000 or one to 10,000 solution of mercury bichloride in sterile water will often prove very beneficial. This treatment, however, causes considerable pain, sometimes necessitating the previous use of morphine or a general anesthetic. Half an ounce of the solution should be instilled every third day for three occasions, and the treatment then stopped for a fortnight, the patient being kept at rest.

Curetting the tuberculous ulcers or nodules, *per urethram* in the female and through suprapubic opening in the male, is often very helpful. The establishment of a suprapubic drain gives the bladder rest and free exit to the urine. The viscus can then also be regularly douched with a weak boric acid solution, or the ulcers swabbed with pure phenol through a speculum, the action being checked by washing afterward with sodium bicarbonate solution.

Special stress is laid by Newman on the advantages of early suprapubic cystostomy, hitherto chiefly resorted to late in the disease. Experience has shown him that the rest thus given favors repair; in addition, thorough cleansing of the organ is facilitated. When the patient is in bed, a simple apparatus for direct drainage is used whereby the urine may be siphoned out into a cistern. When the patient is able to be up, a baby's feeding bottle is carried in the hip pocket or a rubber urinal worn. Curetting is done a week or ten days after the cystostomy, the intervening period of rest being advantageous.

Treatment of Burns.—The following formulas are suggested in *Gaceta Médica Catalana,* November 15, 1912, for use in burns:

1.

℞ Salicylic acid, ...grs. viiss (0.5 gramme);
Zinc oxide, ...ʒiiss (10.0 grammes);
Powdered starch, ...ʒx (40.0 grammes).
Fiat pulvis.

2.

℞ Boric acid, ...gr. xlv-lxxv (3-5 grammes);
Basic aluminum acetate solution (N. F.), ...ʒiiss (10 grammes);
Lime water, ...ʒx (40 grammes);
Liquid petrolatum, ...ʒxiiss (50 grammes).
Misce.

3.

℞ Bismuth subnitrate, ...grs. cxxxv (9 grammes);
Boric acid, ...grs. lx-lxxv (4-5 grammes);
Hydrated wool fat, ...ʒxviii (70 grammes);
Petrolatum, ...ʒiiss (10 grammes).
Fiat unguentum.

4.

℞ Anhydrous wool fat, ...gr. xv (1 gramme);
Hydrogen dioxide solution, ...♏xxx (2 grammes);
Oil of rose, ...gtt. ii.
Fiat unguentum.

5.

℞ Liquefied phenol, ...♏xxv (1.6 grammes);
Powdered dextrin, ...℥iv (125 grammes);
Tincture of aloes, ...℥ii (65 grammes);
Brandy, ...℥i (30 grammes);
Lead acetate, ...grs. xlv (3 grammes);
Tannic acid, ...grs. xv (1 gramme);
Cherry laurel water, ...℥v (150 grammes).

(The dextrin is first dissolved in the brandy and tincture, the acetate and tannin then dissolved in the water and mixed with the former, and the phenol finally mixed in).

Balsamic Remedies in Chronic Bronchitis.—To Hirtz, in *Presse médicale* for December 7, 1912, is credited the statement that since all balsamic drugs are badly borne when taken internally, this route of introduction should be avoided wherever possible. Inhalations may be tried, as follows:

℞ Creosoti, ...ʒvi (25 grammes);
Tincturæ benzoini, ...ʒv (20 grammes);
Eucalyptolis, ...ʒiiss (10 grammes);
Thymolis, ...ʒv (20 grammes);
Alcoholis, ...℥vi (200 grammes).
M. Sig.: Place two tablespoonfuls in boiling water and inhale.

In children, some balsamic ointment such as the following may be very gently rubbed over the chest:

℞ Olei terebinthinæ, ...ʒi (4 grammes);
Adipis lanæ hydrosi,
Petrolati, ...āā ℥i (30 grammes).
M. ft. unguentum.

Where external medication proves insufficient, balsamics may be cautiously given by mouth:

℞ Balsami tolutani,
Picis liquidæ,
Sodii benzoatis, ...āā gr. i (0.05 gramme).
Ft. in pilulam No. i. Da tales No. xxx.
Sig.: One pill three or four times a day.

Or,

℞ Benzoini,
Picis liquidæ, ...āā gr. i (0.05 gramme);
Pulveris ipecacuanhæ et opii, ..gr. ss (0.03 gramme).
Ft. in pilulam No. i. Da tales No. xxx.
Sig.: One pill five times a day.

Or, again,

℞ Terpini hydratis,
Sodii benzoatis, ...āā gr. i (0.05 gramme);
Codeinæ, ...gr. 1/20 (0.003 gramme).
Ft. in pilulam No. i. Da tales No. xl.
Sig.: Six to eight pills a day.

Where the purulent expectoration in certain forms of bronchitis proves refractory to the above mentioned balsamics, creosote by inhalation or ingestion should be employed.

Treatment of Anal Fissures.—Fath, in *Semaine médicale* for October 2, 1912, is said to have resorted to the following procedure in the treatment of a case of anal fissures accompanied with much pain, which cocaine and ichthyol had failed satisfactorily to relieve: The patient, after defecation and a tepid sitz bath, was placed in the genupectoral position, and asked to contract the abdominal muscles, with glottis closed. To the fissures, thus rendered clearly visible, bismuth subnitrate was applied, with a surprising degree of benefit. A similar application was made every morning and evening for two weeks, at the end of which time the condition was wholly cured. There was no sign of recurrence subsequently.

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CHARLES E. de M. SAJOUS, M. D., LL. D.,
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THE COMMERCIAL VERSUS THE PROFESSIONAL ASPECT OF THE SALES COMMISSION.

While it is said to be a sound business principle to give commissions to those influencing or controlling sales, it is contemptible for a physician to accept them secretly, knowing that the patient must thereby be forced to pay more for the goods that he has prescribed. The confidence in the skill and honor of the physician that the patient expresses by seeking his advice, demands that the physician hold himself worthy of that confidence. The answer to all the questions suggested by the topic under discussion should be to let the patient know all the details of any purchase and decide for himself the disposal of any discounts or commissions.

The method of dealing with the commission evil that most strongly commends itself is the one adopted by the Jefferson Hospital, Philadelphia, which is to decline to purchase goods from a business firm that offers or gives commissions to physicians.

The consideration of this disagreeable subject at this time is due to the receipt of a printed form of a letter from a manufacturer of a kind of clothing that often may be advantageously employed upon the advice of a physician. The printed form of the letter indicated its extensive use. The intended tactfulness of its contents appeared seductive. The fact that the patient unconsciously paid twenty-five per cent. more than the goods were worth was convincing:

> Dear Doctor: Enclosed we send check in settlement for discount on goods sold to your patients who did not bear your card instructing us to allow them the discount. Hope the goods have been fitted to your entire satisfaction. Respectfully.

To this, the following answer was sent:

> Gentlemen: Yours of December 15th to hand, and I, herewith, return your check to my order which you state is a twenty-five per cent. commission to me for the sale of goods ordered by me for my patients.
>
> I note your statement "enclosed we send check in settlement for discount on goods sold to your patients who did not bear your card instructing us to allow them the discount." I desire to say that I had no knowledge of your methods or I should have notified my patients that they were to obtain a discount of twenty-five per cent. on all goods purchased from you. The patients for whom I have ordered these articles have paid me for professional services and I cannot find any reason to accept a commission from you. I have notified them that you will send them each three dollars which you have overcharged them. In order to be sure that you have the correct addresses, I, herewith, append them.
>
> Secret commissions to physicians who prescribe appliances or clothing for their patients are reprehensible and unjustifiable. The patients for whom these articles were ordered had confidence in me and paid twelve dollars for goods that you now state were worth only nine dollars. I can justify my action only by a frank confession to them of my error, deeply regret the occurrence, and avoid a recurrence in the future.
>
> The very secrecy that is resorted to condemns the procedure, for the manufacturer well knows that this form of business thrift on his part is a dishonest practice on the part of the physician. This form of bribery which induces physicians to send their patients to "our store" for personal gain is strongly condemned by the profession, whether it be commissions from the apothecary, the optician, the manufacturer of proprietary or patent medicines, of health giving natural spring waters, artificial limbs, trusses, or orthopedic apparatus. Very truly yours.

In 1894 we discussed this problem with reference to orthopedic instruments and here reproduce a few statements from instrument manufacturers which speak for themselves:

> A few days ago I reduced the prices of artificial limbs about one third and made an effort to keep the prices unvarying, without reduction or commission to any one. I soon found that in order to get any business from the profession it would be necessary to allow a discount, and I have since made a practice of discounting ten per cent. from the quoted prices on artificial legs. Taking a financial view of it, I am satisfied that it was a mistake to reduce the prices. I believe that I could more easily sell an artificial leg through the average practitioner at $100 with a twenty-five per cent. discount than I could by placing the advertised price at $60 or $70 with a ten per cent. discount, with every assurance that the construction of the limbs would be the same. It is unquestionably true, how-

ever, that many physicians give the patients the benefit of the discount.

We would be glad to see all commissions abolished, as it opens the door to many methods which are rank injustice to patient, merchant, and doctor.

We have never under any circumstances allowed a commission on apparatus or appliances to anybody, in a business career of over fifty years, although we have had numerous requests to do so, and have likely lost a number of cases in consequence.

AUTOMOBILE CREMATORIES IN WAR.

The Balkan war just ending has been one of the bloodiest and most ferocious in history; many thousands have been left dead on the various battlefields. One may say rather, the whole Balkan peninsula has been one vast field of carnage, into one little corner of which the field of Waterloo would fit; even after Metz in the Franco-Prussian war there remained 30,000 improperly buried bodies. The taint of many thousands of unburied and decomposing bodies is perhaps the most horrible of the many ghastly features of war and the resulting pestilence one of its most dreadful after effects. Automobile crematories were used to some extent in the Russo-Japanese war; and Blau, a German military surgeon, declared that such means of incinerating the bodies of the slain would be a necessary adjunct in all future wars. In this Balkan war, however, crematories seem to have had no part whatever in the problem of how to dispose of the dead, who seem indeed to have been left most pitiably to themselves. Only killing, and not its aftermath, seems to have been provided for.

THE INCREASE OF PELLAGRA IN THE UNITED STATES.

Pellagra was first recognized as existing in the United States in 1906 and early in 1907. Owing to the fact that the disease is chiefly confined to those States which have inadequate laws for the collection of vital statistics, it is impossible to determine with accuracy either its exact rate of increase or its degree of mortality. C. H. Lavinder, of the Public Health Service, has conducted an inquiry extending over the greater part of the past year which had for its object the determination of these factors. In his preliminary report (December 13, 1912) he states that from the evidence in hand we are justified in concluding that this disease, which was unknown to us five to six years ago, has already claimed 30,000 victims, with a case fatality rate of over thirty-nine per cent. The data at hand also indicate that the area of distribution is extending. Generally speaking, we may say that pellagra is prevalent in all the southern States, and sporadic in all others, except New Hampshire in the east, and a group of eight States in the west, which includes Idaho, Minnesota, Montana, North and South Dakota, Utah, Wyoming, and Nevada. Although none of these States has yet reported the disease, the rapid spread over the other parts of the country seems to indicate that it is only a question of time until there will be no section entirely free from its ravages. Although the total number of victims does not yet warrant us in comparing pellagra with such a disease as typhoid fever, the quick extension over such a wide area in such a comparatively short length of time, together with the exceedingly high mortality rate, seems to justify the conclusion of Lavinder that the matter has reached the dignity of a public health question of National importance.

RURAL OR EXTRAURBAN TYPHOID FEVER.

It comes with something of a shock to be told that typhoid fever is not really a rural disease, and yet that is what is clearly demonstrated in a recent able paper by Sedgwick, Taylor, and MacNutt. These authors have carefully examined the mortality statistics of Massachusetts, a State having trustworthy records for many years back, and found that typhoid fever is associated with small villages and towns rather than with districts which might be considered actually rural. Nor is this surprising when we reflect that it is usually in the small villages and towns that unsanitary conditions abound, whereas in both large cities and the rural districts conditions in this respect are generally much better.

We note, however, that the authors insist on strictly limiting the term "rural" to its exact meaning. Most writers in using the expression "rural typhoid" or "rural origin of typhoid" have in mind country districts distinguished from cities; in other words, extraurban and urban districts. This use of the term, while not strictly correct, is distinctly valuable in calling attention to an important epidemiological fact, that much city typhoid fever is of extraurban origin. Moreover, we cannot admit that "the question at issue is simply whether in proportion to the population, typhoid fever is more prevalent over rural or over urban areas." This is also a question to be decided, but it is not the burning question, which is the relative importance of typhoid fever in the city and in the country. What we want to know is the relative danger, to the city dweller, of contracting typhoid fever from a rural source, and the danger, to the rural dweller, of contracting typhoid fever of city origin. With practically all his water and food supplies coming from the country, and with typhoid fever preeminently a waterborne and foodborne infection, it must be admitted, we think, that the city dweller runs far the greater danger. Do we not all know of instances in which a single case of typhoid fever on a dairy farm has given rise to hundreds of typhoid infections in the city; of a single case of typhoid fever in the country contaminating the water supply of a large city and causing therein an extensive epidemic of typhoid fever? And how, aside from carriers, can typhoid infection ordinarily be carried from the city into the country, except by persons visiting the city and becoming infected there? It is impossible, merely by comparing the typhoid fever death rates of urban and rural communities, to gain an accurate conception of the relative danger of typhoid infection from the two communities. In one way or another a very large part of the typhoid infections in a large city are chargeable to infection from without, and there is no doubt that the proportion carried in the opposite direction is relatively small. On the whole, it will be best to hold to our present epidemiological conceptions concerning the significance of extraurban typhoid infections, but for the sake of accuracy, let us not use the term rural when we mean merely extraurban.

ADENOIDS IN NURSLINGS.

Durif states, in the *Annales des maladies de l'oreille, du larynx, du nez et du pharynx*, 1912, that adenoids in babies have been recognized, since Lubet-Barbon's description (1891), as not uncommon. About five per cent of persons with adenoids are children under two years of age. In the fetus the pharyngeal tonsil (adenoid) exists at first as a diffuse lymphoid infiltration: toward the ninth month the follicles begin to appear. Marfan, noting the frequent coexistence of adenoids with rhachitic manifestations, attributes them both to the same causes, viz., the chronic intoxications of infancy, not forgetting a bad heredity, as lues, tuberculosis, alcoholism, etc. He attributes the chest malformation to the rickets rather than to the presence of adenoids. In examining infants for adenoids, the author notes that the fifth finger is useful when the index cannot be inserted in the vault because of the smallness of the parts. Also an educated touch can at times palpate adenoids through the soft palate. Failing these, a forceps will reveal the growths and remove them. The following complications may follow adenoids in nurslings:

Suppurative adenitis with fever, which may give a retropharyngeal abscess. If the Eustachian tube becomes involved, the whole gamut of otitic affections may be seen, including mastoid complications. Deaf mutism may follow the otitis. The infection under la grippe may involve the frontal sinus region, whatever its anatomical condition may be. The rhinopharyngeal catarrh may spread to all parts of the air passages, and carry off the patient. A progressive emphysema may be established by the occlusion of the air passage. The diagnosis is made on troubles of respiration or of alimentation, or on the presence of reflex phenomena, as laryngeal spasm, asthmatic attacks, or nocturnal cough. Atresia of the cloanæ, specific coryza, retropharyngeal abscess, laryngeal diphtheria, and laryngeal malformation are to be differentiated; and the cough, at times suggesting pertussis, must be determined not to be due to mediastinal compression as from enlarged thymus gland (x ray). Medical treatment failing, the usual surgical treatment gives rapid and excellent results, reestablishment of nasal breathing, regular feeding; and the development of the child, until this time retarded, progresses normally.

SALVARSAN IN TREATMENT OF CHOREA.

Pierre Marie and Charles Chatelin, in *Bulletin de l'académie de médecine*, for December 10, 1912, state that they gave intravenous injections of salvarsan or neosalvarsan in twenty-five cases of severe or moderately severe chorea, with results so good that they now consider this to be one of the methods of choice in treating the disease. The average number of injections was four, at weekly intervals, and the dose 0.2 to 0.35 gramme, the latter only in adolescents. No untoward phenomena were observed except temporary malaise in a few cases in which salvarsan was used; neosalvarsan was well borne. After the second and especially the third injection, the choreic movements were markedly diminished. Complete recovery soon followed, the total duration of the affection being commonly reduced to three weeks or a month, compared with six weeks to three months in cases not so treated. None of the cases proved refractory to the treatment. Especially noticeable was the improved general condition, with return of appetite and gain in weight, even where the effect on the choreic movements seemed to be less rapid than usual. The oldest patient treated was nineteen years of age, the youngest eight.

PASSAGE OF CARBON MONOXIDE FROM MOTHER TO FETUS.

Maurice Nicloux, at one of the recent meetings of the Académie des Sciences, as reported in *Semaine médicale* for January 1, 1913, gave details concerning an experiment he had devised to demonstrate the way in which carbon monoxide passes from the maternal to the fetal circulation. In a large ellipsoid glass receptacle, he introduced from eight to ten litres of distilled water, or seven per cent. saline, and in this he placed a small fish and an ox's cecum, carefully examined to exclude any possible rent, containing one litre of beef blood impregnated with carbon monoxide (*oxycarboné*). The water surrounding the fish remains quite colorless, but two hours later, when the fish is examined, it is found to be intoxicated, its blood containing a notable percentage of carbon monoxide. This experiment, says Nicloux, demonstrates absolutely the method in which maternal blood is conveyed to the fetus, also the mechanism of placental and tissue respiration; the plasma alone is the conveying medium, both of carbon monoxide in cases of fetal poisoning and of oxygen in ordinary respiration.

Obituary.

WOLFRED NELSON, M. D.,

of New York.

Dr. Wolfred Nelson died on Wednesday, January 15th, in his sixty-seventh year, at the Hudson Street Hospital, where he had gone some days before for treatment of a chronic cardiac insufficiency. He was born in Montreal, Canada, in 1846. His father, Dr. Horace Nelson, had distinguished himself in the Dominion troubles of 1837. Dr. Wolfred Nelson was educated at McGill University in arts, science, and medicine, graduating in the latter in 1872. Subsequently he traveled extensively in Central America, Mexico, and the West Indies, making research into tropical diseases and communicating some of his conclusions to the *New York Herald;* he underwent a severe attack of yellow fever in 1886, and wrote copiously on that disease during the next few years. He practised in New York from 1888 until his death, maintaining his office in the postoffice district despite the upward march of the city. He was for some time an editorial contributor to the NEW YORK MEDICAL JOURNAL. Doctor Nelson was a man of unusual earnestness and enthusiasm and had an immense circle of acquaintance among distinguished people in this country and Europe. He was once president of the New York Society of McGill Graduates. He leaves a widow and a married daughter.

Medical Law.

IX. CRIMINAL MALPRACTICE.

The essence of a criminal act is usually a criminal intent, although it frequently happens that the intent is presumed from the nature of the act. In the case of State vs. Dargatz, 148 Southwestern Reports, 889, it seems from the evidence before the court that the reverse of this situation existed. Here there was direct, although contradicted evidence of a wrongful intent. The evidence as to the act itself suggests strongly a chain of circumstances in which any doctor, regardless of the correctness of his intent, is liable at almost any time to become involved.

The substance of the evidence introduced by the State is as follows: On September 12, 1910, the defendant, a practising physician, was called upon by William A. Hawkins, who requested the defendant to perform an abortion on his wife, stating that his wife had been pregnant for more than a month and was not willing to bear a child. Defendant first declined to perform the operation, but, on being told that Hawkins's wife was determined not to give birth to a child and would probably commit suicide if she was not relieved of pregnancy, consented to perform the operation for the sum of $10. On September 13, 1910, Hawkins brought his wife to defendant's office; at about 5 o'clock in the afternoon of that day defendant attempted to produce an abortion by inserting instruments into her uterus, and also placed a considerable quantity of gauze in the uterus. This operation did not really produce a miscarriage, nor any immediate results. About twenty-four hours later, Mrs. Hawkins became violently ill, and some ten hours later died. A post mortem examination, held the day of her death, did not indicate the presence of any disease or wound, except that her womb and ovaries were black and swollen with clots of decomposed blood inside the womb, which, in the opinion of the coroner, were produced by some outside interference which had destroyed a living fetus three or four weeks old.

The coroner gave it as his opinion that Mrs. Hawkins died from a septic infection brought about by an operation to produce miscarriage, and that said operation might produce death within thirty or forty hours.

The evidence of the coroner was challenged on this point by the evidence of physicians summoned by defendant, who testified that such an operation as Mrs. Hawkins had undergone at the hands of defendant would not produce death so soon as thirty hours; that death, when produced by an attempted miscarriage, would usually not occur sooner than six days, and often not that soon.

Defendant in his own behalf testified that he agreed to treat the wife of Hawkins for $10, but did not agree to bring about a miscarriage; that upon being informed that Mrs. Hawkins had determined to get rid of her pregnancy, he surmised that something was wrong with her; that, upon examination, he found her womb in an unhealthy and "doughy" condition, the neck being dilated, and a foul smelling froth running out, which he thought indicated the existence of a dead fetus inside. Defendant further testified that, to relieve Mrs. Hawkins, he inserted in her womb some medicated gauze, first thoroughly cleaning his instruments to prevent infection; that his treatment was necessary to relieve the womb of Mrs. Hawkins of the dead matter therein and to preserve her life.

The defendant was convicted of the "felony of abortion," and was sentenced to imprisonment in jail for one year and the payment of a fine of $250.

Upon appeal this conviction was set aside, on the ground that the indictment charged manslaughter, resulting from defendant's criminal operation, and that under that charge it was improper to find defendant guilty of producing a criminal abortion. The judgment was accordingly reversed and the case sent back for a new trial.

The apparent weakness of the doctor's case is that upon discovering the condition of his patient he did not disclose it to her and her husband. Had he done this, and certainly had he availed himself of the protection of a consultation, he would have found himself in a much better position upon the trial, and, it is probable, would have avoided the serious results of a criminal accusation.

X. THE PHYSICIAN AS WITNESS.

In the case of Norton vs. Clark, 97 Northeastern Reports, 1079, which was a will contest case, the contestant was attempting to show undue influence exercised by the residuary legatee, and among other things endeavored to show that improper relations had existed between the testatrix and the residuary legatee. It appeared from the evidence introduced in the case that for about fifteen years before her death testatrix had suffered from a fibroid tumor of the uterus, and that of late it had grown to a great size so as to weigh from fifteen to twenty-five pounds. Upon the trial of the case the proponent of the will introduced the evidence of the physician who had attended deceased for a period of fifteen years before her death and made frequent examinations of her at various times and who, in answer to the questions put to him, stated that it was his opinion that during all of the time it would have been very painful to the deceased and almost impossible for her to have committed any act such as she was charged with. Upon motion of the contestant the court struck out this answer of the physician, but upon the review of the case the Supreme Court held that the physician was qualified to give an opinion and it was based upon physical examinations made while attending deceased as her physician; that as he had stated quite fully the conditions existing, it was error to exclude his professional opinion.

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News Items.

Harvey Society Lecture.—The sixth lecture in the course will be given this evening at the New York Academy of Medicine by Major J. J. Russell, of the United States Army, his subject being the Prevention of Typhoid Fever.

Hospital Saturday and Sunday Association Fund.—At the annual meeting of this association, held in New York on January 13th, the treasurer reported that he had received $45,228.10, an increase over the amount received a year ago at this time.

Cortland County Medical Society.—Dr. M. L. Halbert, of Cincinnatus, was elected president of the Medical Society of the County of Cortland, N. Y., at the annual meeting of the society, held on the evening of December 26th. Other officers were elected as follows: Dr. R. P. Higgins, vice-president; secretary, Dr. Robert E. Riley; treasurer, Dr. F. S. Jennings; delegate to the meeting of the State society, Dr. M. M. Lucid.

Physiological Laboratory of the Polhemus Memorial Clinic.—The college faculty of the Long Island College Hospital has issued invitations for the opening of the new physiological laboratory of the Polhemus Memorial Clinic on Wednesday, January 29th, at three o'clock, p. m. An address will be delivered by Dr. John C. Cardwell, associate professor of physiology, and the laboratory will be open for inspection until five o'clock.

Society of American Bacteriologists.—The meeting held in New York, December 31, 1912, and January 1 and 2, 1913, was one of the most successful the society has ever had, both in general interest, as evidenced by the large attendance at each session, and in the importance of the papers presented. The following officers were elected: President, Professor C.-E. A. Winslow, American Museum of Natural History, New York; vice-president, Professor Charles E. Marshall, Massachusetts Agricultural College, Amherst; secretary-treasurer, Dr. A. Parker Hitchens, of Glenolden, Pa.; council, Dr. W. J. MacNeal, Dr. L. F. Rettger, Dr. H. Bergey, Dr. H. A. Harding; delegate to Council of American Association for the Advancement of Science, Professor S. E. Prescott.

Changes in the Council of the New York Academy of Medicine.—Dr. Charles F. Adams has been appointed recording secretary of the New York Academy of Medicine, succeeding Dr. J. H. Huddleston. Dr. H. Seymour Houghton has been made chairman of the committee on admission, and Dr. C. N. B. Camac, chairman of the committee on library. New trustees appointed are Dr. John H. Huddleston and Dr. Wisner R. Townsend, succeeding Dr. Abraham Jacobi and Dr. Arthur M. Jacobus.

Italian Medical Society.—At the annual meeting of this society, held in New York recently, the following officers were elected: President, Dr. P. Virdone; vice-presidents, Dr. A. Carini and Dr. W. Perilli; treasurer, Dr. G. De Maffutis; secretary, Dr. D. Petillo. The aim of this society is to promote good fellowship among the Italian physicians in the United States and to encourage scientific work among its members. The society meets every fourth Friday and its meetings are open to the medical profession.

Department Merger at Carney Hospital, Boston.—An important change at Carney Hospital will go into effect on February 1st, when the ear, nose, and throat departments, which have heretofore been independent, will be combined into one department, with Dr. Edward M. Plummer as surgeon in chief. Doctor Plummer will have as his staff three surgeons, Dr. John T. Sullivan, Dr. Timothy J. Shanahan, and Dr. Dana W. Drury, and six assistant surgeons, as follows: Dr. John L. Lougee, Dr. D. Campbell Smythe, Dr. William J. Sheehan, Dr. Frederick A. Bogan, and one other whose name has not yet been announced

Exclusion of Insane and Mentally Defective Immigrants.—At a conference of alienists held recently in New York for the purpose of considering the most practical methods of securing protection against the admission of insane and mentally defective immigrants into the United States, resolutions were drawn up regarding the exclusion of such undesirable citizens, and after full discussion and careful consideration were unanimously adopted. These resolutions, which have been sent to the chairman of the Senate Committee on Immigration and to the chairman of the House Committee on Immigration, were signed by members of seven important scientific bodies, and may be said to embody the opinions of those best qualified to judge as to measures likely to prove most successful in the exclusion of mentally defective immigrants, and it is hoped that congress will give the recommendations weight in legislation upon this subject.

To Create New Positions in the Health Department.—In his annual report to the Legislature, Dr. J. J. O'Connell, health officer of the port of New York, recommended the creation of thirty-seven new positions in his department, carrying salaries that total $35,000 a year. The report says that the expenditures for this department were $50,000 less in 1912 than in 1911. Among the positions which the legislature has been asked to establish are a chief medical officer to have supervision over the station and hospitals at $5,000 a year, an engineer to supervise improvements, at $4,000 a year, a bacteriologist's assistant at $2,500, and another at $1,500. Doctor O'Connell also recommends the establishment of a branch post office for his department, and the erection of a memorial tablet to commemorate the services and death "in the cause of civilization" of Dr. Edward Fiske Ashley, assistant bacteriologist, who died in 1911 of spinal meningitis, contracted while in the performance of duty.

Medical Association of the Greater City of New York.—The annual meeting of this association will be held in Hosack Hall, New York Academy of Medicine, on Monday, January 20th, at 8:30 p. m. Officers will be elected to serve for the ensuing year, and the reports of the council, the corresponding secretary, and the treasurer will be submitted. After the business meeting a scientific programme will be presented. A paper on High Tension Electricity as a Remedy, accompanied by a demonstration of methods and cases, including sarcoma and hepatic cirrhosis, will be read by Dr. J. Herman Branth, which will be discussed by Dr. Frederick de Kraft, Dr. Francis A. Scratchley, Dr. Albert C. Geyser, and Dr. G. F. Samarelli. Dr. William Seaman Bainbridge will present a paper on Some Newer Methods of Treatment of Malignant Disease, with a demonstration of lantern slides and cases. This will be discussed by Dr. Robert T. Morris, Dr. Gordon K. Dickinson, of Jersey City, Dr. Herman J. Boldt, Dr. Edward M. Foote, Dr. Worthington S. Russell, Dr. D. S. D. Jessup, Dr. Frederick J. Fox, and others.

Recommendations Made by the Illinois State Board of Health.—At a meeting of the State Board of Health of Illinois, held in Springfield, January 11th, an amendment to the medical practice act was recommended, whereby midwives might be empowered to use medicines for the prevention of ophthalmia neonatorum. An appropriation for the purchase and distribution of the medicines necessary was also recommended. Typhoid fever vaccination received the endorsement of the State board of health, and an appropriation for the purchase and free distribution of antityphoid vaccine for the prevention and suppression of typhoid fever throughout the State was also asked for. A State colony for epileptics was endorsed by the members and an appropriation for the same recommended, with the proviso that this institution should not take precedence over a State sanatorium for consumptives, recommended in the annual report. These recommendations are aside from those included in the annual report to the governor, which covered an increase in the general appropriations for sanitary purposes; a special appropriation for dairy inspection; a continuance of the appropriation for the free distribution of diphtheria antitoxine; a new birth and death act, enabling the State board of health to obtain a better registration of a State sanatorium for consumptives.

A Museum of Exhibits at the Seventeenth International Congress of Medicine.—Arrangements are being made for the organization of a museum of exhibits in connection with the Seventeenth International Congress of Medicine, to be held in London next August. A committee has been formed, with Professor A. Keith, of the Royal College of Surgeons, as chairman, to take charge of the matter, and regulations governing the museum have already been drawn up. This museum will consist of exhibits illustrating subjects to be discussed in the various sections of the congress, and such other material as the committee may deem of interest or importance. The specimens will embrace the scientific side of medicine, to the exclusion of the commercial element. Excellent accommodation has been secured for the purpose in the Imperial College of Science, South Kensington, and the museum will be arranged in this place as far as possible. It has also been decided that, inasmuch as the meeting is to be held in London, and visitors will no doubt desire to visit the Metropolitan hospitals and other great institutions, material cannot be collected from the museums of London. The committee is therefore seeking exhibits from provincial and foreign institutions and from private collections. Medical practitioners and scientists who are willing to place at the disposal of the committee material illustrative of recent advances in any branch of medical science are requested to communicate with the secretary of the Museum Committee (H. W. Armit, Ravenhurst, Talbot Road, Wembley). The committee is prepared to defray the expense of transit of the exhibits and to insure them against damage and loss, and will take every precaution to return them in good condition to their respective owners. Exhibitors will be invited to hold demonstrations in the museum on their own specimens.

Personal.—Dr. Frank B. Granger has resigned as chief of the x ray department of the Boston Dispensary, and Dr. Frank A. Davis has been named his successor. Doctor Granger was appointed consulting physician.

Dr. William C. Sandy, an assistant physician in the New Jersey State Hospital for the Insane, has resigned to accept a similar position in the Kings Park Hospital, New York. Doctor Sandy will assume his new duties on February 15th.

Dr. J. Edgar Paullin, of Atlanta, was installed as president of the Fulton County, Ga., Medical Society, at the annual meeting of the association held on the evening of January 3d. Dr. W. A. Selman is the new secretary of the society, succeeding Dr. R. R. Daly.

At the annual meeting of the medical board of the Cumberland Street Hospital, Brooklyn, Dr. William H. Pierson was elected president for the eleventh consecutive time. Dr. A. G. Warner was elected vice-president, Dr. O. S. Ritch, secretary, and Dr. W. S. Pallister, treasurer.

Dr. A. L. Muirhead, for three years vice-dean of Creighton Medical College, Omaha, Neb., has been appointed dean, succeeding Dr. De Witt C. Bryant, who has been dean of the college for nearly twenty years and is retiring to devote his time to private practice

Dr. J. M. Flanagan, of Shamokin, Pa., has been elected president of the Northumberland County Medical Society.

Trained Nurses Needed in the Far East.—Five trained nurses are wanted at once in missionary hospitals in Turkey, India, and Ceylon. The work is essentially religious and Christian, and requires women who are in full sympathy with its missionary purpose. Women who have administrative capacity and the ability for training other women in nursing will find opportunity for work that is greatly needed. The missionary hospital has introduced the profession of nursing to women in the East. In Turkey the government has prevented the sending in of women physicians and there is great need for the training of native nurses. The need in India is no less urgent and important, where social customs and caste isolate the women from uplifting influences and medical attention. All appointments are made by the American Board of Commissioners for foreign missions, which provides traveling expenses and living quarters, in addition to the regular missionary salary. Inquiries may be addressed to Mr. Wilbert B. Smith, 125 East Twenty-seventh Street, New York, N. Y.

A Bureau of Information at the Academy of Medicine.—For the purpose of furnishing information on medical subects to the local profession and to visitors to New York, a bureau of information has been established at the New York Academy of Medicine, under the direction of the Society for the Advancement of Clinical Study in New York. It is thought that this bureau will make more readily available the large clinical opportunities that are always here. The medical profession of New York and Brooklyn is requested to furnish the bureau with information regarding such of their clinical work which they are willing any physician should visit. Surgeons are requested to send regularly each day, as early as possible, a list of the operations they have arranged for the following day. The Academy of Medicine telephone, Bryant 974, is available for this purpose, or the mail may be used whenever there is sufficient time. An attendant in charge of the bureau will be at the academy daily after nine o'clock, for the express purpose of receiving all information, and promptly posting the same on the special bulletin board, which has been installed. The attendant is ready to give every assistance in furnishing information. Subscribers to The Society for the Advancement of Clinical Study in New York may arrange with the attendant to be notified when any special work in which they are interested is posted. Any information as to autopsies, laboratory demonstrations, lectures, medical clinics, and operations is desired. The bureau is supported by funds furnished by The Society for the Advancement of Clinical Study in New York and the medical profession is urgently requested to lend its aid by joining the society. For particulars apply to the attendant of the bureau.

New Year Honors in Great Britain.—We learn from the *British Medical Journal* that among the New Year honors conferred by King George is that of knighthood to be received by Dr. R. W. Philip, physician to the Royal Infirmary and senior physician to the Royal Victoria Hospital for Consumption, Edinburgh, in recognition of the pioneer work he has done in the organization of a coordinated system for dealing with tuberculosis. The same honor is conferred on Dr. George Turner, formerly medical officer of health for the Transvaal, and medical superintendent of the Pretoria Leper Asylum, whose services in these capacities were conspicuous; and on Dr. David Hardie, of Brisbane, member of the Medical Board and Central Board of Health, Queensland. Inspector General Duncan Hilston, R. N., C. B., honorary physician to the King, formerly in charge of the Royal Naval Hospital, Haslar, is promoted to be K. C. B. The Kaisar-i-Hind Gold Medal is conferred on Major H. W. Grattan, R. A. M. C., officer in charge of the enteric fever convalescent depot at Naini Tal; on Dr. J. Andrew Turner, health officer to the Bombay municipality; on Major E. Reinhold Rost, I. M. S., senior civil surgeon, Rangoon, whose name is known for his researches on the morphology of the lepra organism, and the treatment of leprosy; and on Major E. L. Ward, I. M. S., Punjab. Knighthood is accorded also to Mr. Francis Darwin, who, after studying medicine at St. George's Hospital and graduating M. B., became personal assistant to his illustrious father, and has won distinction as a botanist. The same honor is conferred on Mr. Stewart Stockman, chief veterinary officer to the board of agriculture. Professor Wyndham Dunstan, formerly lecturer on chemistry in the medical schools of Oxford and St. Thomas's Hospital and at the Pharmaceutical Society, becomes C. M. G.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

November 4, 11, and 18, 1912.

Tabes and Trauma.—Schultze says that although tabes is one of the most common affections of the nervous system, it can very rarely be traced to trauma. He reports three cases in which at first there seemed to be a causative relation between trauma and the tabetic process, but the result of careful investigation was negative.

Arsenated Wall Paper.—Kuttner relates three cases of arsenical poisoning caused by the poisoned dust from the wall paper. He urges in cases of intestinal catarrh and severe anemia where the etiology is not clear, the consideration of the above mentioned cause.

Disposition of Lung for Tuberculosis.—Serog's cases show that any factor interfering with the proper function of the lung increases the predisposition to tuberculosis in a marked degree.

Metastatic Cancer Tumors of the Skin.—Askanazy reports a case of metastatic cancer of the nerves of the skin. The patient was able to foretell the location of a new nodule in the skin twenty-four hours before its appearance. This was due to a peculiar oversensitiveness of the skin.

Penetrating Cancerous Ulcer.—Strauss demonstrates this case in which an exact diagnosis was made before operation and discusses fully the differential diagnosis between ulcus penetrans carcinomatosus and noncarcinomatous ulcer.

Phenolsulphophthalein in Functional Kidney Diagnosis.—Vogel believes that phenolsulphophthalein will in a short time attain an important place in the functional diagnosis of the kidneys, on account of its rapid and complete excretion through the kidneys, its reliability, and the possibility in most cases of determining by the calorimeter the total amount of excretion and thus to gauge the sufficiency or insufficiency of the kidneys.

Joha, Salvarsan Preparation. — Lindenheim found that joha possess all the advantages of salvarsan. It rapidly influences the skin and mucous membranes in malignant lues. With proper technic no disadvantageous side actions resulted. It is easily given to ambulatory patients. It is contraindicated in diseases of the heart, including dilatation.

Active Typhoid Vaccination.—Bessau says, in his address to the Congress of the Royal Institute of Public Health, that the only safe immunity in typhoid is the bacteriological one. The production of the bacteriolysin is conditioned by the endotoxines. The chief point in vaccination is to provide the organism with the endotoxine in the original form. Therefore a certain amount of poisoning is unavoidable in typhoid vaccination. The poisonous effects, however, are not dangerous.

Curative and Protective Vaccination in Tuberculosis.—Friedmann says that we have a right to believe that the antigens are contained in the bacilli. That the tuberculins have one fault, namely, that they are composed of virulent toxic material. It would be advisable to work with avirulent atoxic material. He treated 1,012 patients with his preparation. No matter in what form it was given it proved atoxic and avirulent. A filtrate must be formed and completely resorbed. In these cases the most brilliant results are obtainable. If the filtrate is not absorbed the healing process remains stationary. With simultaneous treatment, that is, alternating intravenous with subcutaneous injections, he has avoided disturbances. In bone and joint tuberculous processes fistula did not return; beside three fatal cases, twelve severe cases were cured. In pulmonary cases where disintegration is not too far advanced the improvement is rapid and progressive. The fever soon disappears and the subjective symptoms also. Loss of weight ceases, and a satisfactory gain in weight is soon noticed. The patients are able to continue their work and coughing and expectoration diminish. In lupus the injection is made centrifugally near a focus. Scrofula is soon healed by the injections. Paratuberculous manifestations (Poncet's articular rheumatism, sciatica, mental depression) are soon relieved. The author vaccinated 335 children, some of them intramuscularly, for protective vaccination. For the past year no signs of scrofula or tuberculosis have appeared in any of the children. Immediately after the injection the von Pirquet reaction is positive, later it is negative. The injected material disappears in a short time from the system of a guineapig. One injection increases the life of a guineapig four times compared with a control.

Bronchial Ruptures in Thorax Compressions.—Schönberg reports three cases of transverse rupture of the main bronchus as the result of compression of the thorax by the passage of a heavy truck across the chest. In two cases the chest was perfectly intact, in the third there was a fracture of the fifth rib without injury to the pleura. Other injuries were one femur fracture and twice the tearing of the lung. The mechanism of the injury is as follows: The sagittal compression of the thorax causes the wedged shaped middle portion of the chest to be forced in between the two lungs until tearing of the bronchus results.

Aleudrin.—Top found that aleudrin is of equal value to the best modern hypnotics in 0.5 gramme tablets. A dose of one to 1.5 gramme induces sleep, lasting from four to seven hours.

Cerebral Symptoms in Tuberculous Patients.—Querner's post mortem examinations did not show the slightest anatomical cause for the severe meningeal symptoms, lasting three weeks before death, in a patient suffering from pulmonary tuberculosis. In the second case cerebral symptoms and paralysis lasted two weeks without a clue to the cause of these symptoms in the brain.

ZENTRALBLATT FÜR CHIRURGIE.

December 14, 1912.

The Heidelberg Steel Wire Plaster Cutter.—Walter Neumann describes an apparatus for the rapid and painless removal of a plaster of Paris dressing. A long steel wire is placed along the limb, then the dressing is applied, and finally the two ends of the wire are brought together over the bandage, so as to enclose it in a loop of wire. When it is desired to remove the dressing, each end of the loop is attached to an instrument which acts to constrict the loop and so to make it cut through the plaster. This is done in a few seconds without causing the patient any trouble or pain.

December 21, 1912.

Injections of Pantopon Scopolamine for Operations under Local Anesthesia.—L. A. Diwawin proceeds in the following manner: The patient is given 0.5 medinal during the evening before operation, so as to secure him a good night's rest. In the morning, from one to two hours before operation, he receives an injection of a mixture of pantopon and scopolamine, the amount of each to be determined by his age and strength. The desired effect is usually obtained by from 0.02 to 0.03 of pantopon and from 0.0002 to 0.0003 of scopolamine in feeble men and women, or by 0.04 of pantopon and 0.0004 of scopolamine in strong men. It is only in exceptional cases that larger doses are needed, but careful individual doses are necessary. After about fifteen minutes the patient usually becomes somnolent, with a tired, bruised, weak feeling in all of his limbs. It is not a true sleep, as the patient rouses at once when anybody speaks to him or there is any excitement about him. An injection of a one per cent. solution of novocain suprarenin is made on the operating table, and a painless operation can then be performed. After the operation the patient usually sleeps for two or three hours, wakes, and then sleeps again till evening. The use of pantopon scopolamine is contraindicated in alcoholics, in old age, and in serious diseases of the heart and lungs.

FOLIA UROLOGICA.

July, 1912.

Perinephritis.—Illyes says that uric acid crystals eliminated by the capsule of the kidney can cause fibrous perinephritis which again causes kidney pain, and sometimes hematuria. In three cases after decapsulation the author has seen small uric acid crystals on the surface of the kidney and on the capsule.

August, 1912.

Ureteral Calculi.—Israel has operated in sixty-one cases of ureteral calculi. Independent of these cases there are, up to 1909, 172 cases in the literature. Ureteral calculi most frequently are formed in the kidney pelves. Israel saw but two cases of ureteral calculi formed in the ureter. Sixty-four of his cases were in the pelvic portion of the ureter. Of these thirty-nine per cent. were palpable by rectum or vaginally. Only very large calculi can be felt abdominally. A ureteral catheter may force a small calculus back into the kidney pelvis, or go past the calculus, and enter the kidney pelvis without hindrance. Ureteral calculi give practically the same symptoms as kidney calculi. The radiograph is negative in 11.7 per cent. of cases in which a calculus is present. A bismuth coated catheter used in connection with radiography often helps in diagnosis. The radiograph should always include the two ureters. The operative indications for ureteral calculi are: Anuria, more than forty-eight hours; bilateral calculi; retention, with or without infection of the kidney; and acute pyelonephritis. In uncomplicated cases operation depends upon the size of the calculus; upon the persistence of the pain in a circumscribed area; and is indicated when the calculus has no tendency to descend. For juxtavesical calculi in women one does a vaginal ureterotomy; in men they may be thrust back toward the kidney so as to make the incision and suture of the ureter easier. Often calculi can be worked back into the kidney pelvis and a pyelotomy performed. In fifty-three operations performed by Israel there were but two deaths, from myocarditis and cardiac paralysis. Twenty-five cases of uncomplicated urethrotomies resulted in no deaths.

KLINISCHE MONATSBLAETTER FÜR AUGENHEILKUNDE.

November, 1912.

Autointestinal Intoxication in the Pathogenesis of Eczematous Keratoconjunctivitis.—Gian Luigi Colombo lays great weight on indicanuria as an evidence of intestinal intoxication in patients suffering from this very common disease, and is inclined to think such intoxication is its cause. A paper by him on this subject in 1911 brought forth evidence that indicanuria was very common, even among those who gave no signs of intoxication. In this paper he shows indican to be present in considerable quantity in 82.6 per cent. of the cases he examined and reports four briefly in which recovery quickly followed treatment directed to the intestinal condition.[1]

Radium Treatment of Vernal Conjunctivitis.—Otto Schnaudigel reports a case of this obstinate disease which was cured by radium. Five sittings were given in the spring and summer of 1910 to the left eye, one to the right. One sitting was of fifteen minutes' duration, the next two of twenty-five, including the one to the right eye; the last two of thirty. In 1911 the right eye was perfectly well, the left showed some traces, so two sittings more were given of twenty minutes each. Thirteen months later both eyes were well.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

November, 1912.

Early Stages of Poliomyelitis.—E. Müller calls attention to the fact that a thorough knowledge of the early symptoms of poliomyelitis is due chiefly to the studies of Medin and Wickman. The period of incubation lasts from one to ten days. During this period there are no marked disturbances. The early stage is divided into two parts, the preparalytic stage with fever, and the paralytic stage. In the preparalytic stage there may be symptoms referable to the gastrointestinal tract or to the meninges. There may also be symptoms referable to the respiratory tract such as coryza, angina, bronchitis, or pneumonia. The cardinal symptoms during this period are: 1. Hyperesthesia; 2. intense sweating; 3, lumbar puncture findings. The spinal fluid is usually under increased pressure. It is clear and contains no organisms. There is a moderate lymphocytosis and an increased amount of albumin. Müller calls attention to the abortive cases of poliomyelitis and says they are more common than the paralytic forms. He describes in passing the various forms of paralysis encountered in poliomyelitis. The mortality varies from ten to fifteen per cent.

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[1] Although gastrointestinal troubles are often observed in this disease, and although regulation of the diet forms an important part of its treatment, yet it is commonly thought to be a local symptom of a general organic affection known as scrofulosis. Those who do not believe in the existence of scrofulosis have difficulty in explaining its nature. Incidentally, it is a disease of childhood and usually passes away about the age of puberty, yet the four patients mentioned by Colombo were aged twelve, thirteen, seventeen, and eighteen years respectively.—Ed.

Stenosis of Bile Ducts.—K. Sugi reports the case of a three weeks old child that came under observation for the first time at two weeks of age on account of umbilical hemorrhage. During observation the infant showed no jaundice. The infant died from a hemorrhagic diathesis and showed at autopsy, beside many external and internal hemorrhages, a very icteric liver secondary to a stenosis of the ductus hepaticus and both its main branches. The stenosis was of an inflammatory nature. Lues was suspected, but not proved.

Sugar Splitting Ferments in Infants.—F. Lust examined the feces of infants with nutritional disturbances for the ferments lactase, maltase, and invertin (saccharase). Lactase and maltase were found in every case, but invertin was absent in ten out of thirty-four cases.

Proteid, Starch, and Fat Splitting Ferments in Infants.—F. Lust and H. Hahn examined the feces of infants as above for trypsin, erepsin, rennet, lipase, and diastase. Trypsin was found in every case but one. This patient had a severe case of atrophy and died two days later. Erepsin was found in every case. Rennet was present in every normal case, but was absent in a few cases with enteritis. Diastase was present in every case. Lipase was present in all normal cases and in chronic nutritional disturbances, but was absent in acute alimentary intoxication. The authors leave their conclusions for a future communication.

LYON MEDICAL.

December 8, 1912.

An Additional Stage in Enucleation of the Eyeball for Ocular Phlegmon.—Genet and Bussy report a case in which, during enucleation, an adhesion as large in cross section as a dime, and situated next to the optic nerve, was found between the sclerotic and Tenon's capsule, thus necessitating the use of the scissors before the eyeball could be freed. Some cicatricial tissue was also found behind the capsule, with a group of short ciliary vessels forming its axis. There was no perforation of the sclerotic at the point of adhesion, however, the sheath of the vessels having most likely been the route of infection or perhaps merely of the transmission of irritating fluids—from the interior of the eyeball. Although textbook authors refer to posterior perforation of the eyeball in panophthalmitis, Genet and Bussy have been unable to find any report of lesions of the sclera in a cross section passing through the point of perforation.

December 15, 1912.

Renal Radioscopy.—T. Nogier asserts that radioscopy of the kidneys is a simple and rapid method of examination which is well suited for clinical use. The patient should be examined in the standing position, a cylindrical diaphragm used to render the picture as sharp as possible, and the soft tissues compressed by means of an apparatus which the author describes.

PRESSE MÉDICALE.

December 7, 1912.

Hemiplegia after Scarlet Fever in a Puerperal Woman.—Issailovitch-Duscian reports such a case and calls attention to the fact that scarlatina, like puerperal infections, may give rise to hemiplegia, with or without aphasia; the prognosis in scarlatinal hemiplegia, however, is less serious than in the form due to puerperal infection.

December 11, 1912.

Rôle of Adrenal Insufficiency in Pernicious Vomiting of Pregnancy.—Emile Sergent and Camille Lian report six cases of previously refractory vomiting in pregnant women in which prompt relief was afforded by the administration of epinephrine or adrenal substance. Since all these patients had shown marked lassitude, low blood pressure, and the "white line" phenomenon, the authors believe impaired adrenal functional activity to have been an important factor in the hyperemesis. In one case severe lumboabdominal pain and extreme lassitude preceded the onset of vomiting by many hours. The secretory activity of the adrenal cortex, which has been shown in bitches to undergo hypertrophic changes during pregnancy, is one of the means of defense called upon by the organism to overcome the syncytial autointoxication, i. e., toxemia arising from the chorionic villi, present in the early pregnant state. Where this toxemia is unusually marked, the adrenals, normal before pregnancy, may become rapidly exhausted through overwork, and a morbid condition the expression of both toxemia and adrenal insufficiency result. The authors do not hold, however, that adrenal insufficiency is a factor in all cases of pernicious vomiting. The success obtained in a few instances with corpus luteum or thyroid preparations seems to indicate that these organs may also be factors in protecting the system against the toxemia. In applying the adrenal treatment the authors give either the dry extract of the whole suprarenal glands in the average dose of 0.3 gramme in cachets two or three times daily, or the hydrochloride of epinephrine, from twenty to thirty drops daily of the one to 1,000 solution. The former is to be preferred when it is retained. The authors conclude that abortion should not be induced in the pernicious vomiting of pregnancy before a trial of adrenal therapy has been made, except in the most urgent cases.

ANNALES DES MALADIES DE L'OREILLE, DU LARYNX, DU NEZ ET DU PHARYNX.

No. 9, 1912.

Local Analgesics.—Le Mée studies in the present article cocaine, stovaine, alypin, the eucaines (A and B), and tropacocaine. He finds the belief that cocaine solutions can not be sterilized is unfounded, though it is less easily kept sterile than the solutions of the other drugs studied. In the nose he uses cocaine in crystals, in the liquefied form, or in solutions of from one to twenty per cent. strength. Stovaine from five to sixty per cent. (Dubar) gives good local analgesia, but is apt to give troublesome postoperative hemorrhage. Alypin is most used in twenty per cent. strength in the nose, with adrenalin added; this drug requires about one third longer to give analgesia than cocaine (say about fifteen minutes). Alypin has the same objection as stovaine, viz., hemorrhage during or after operation. Beta eucaine is considered equal in action to cocaine, both as regards intensity and duration, it is easily sterilized, but is a vasodilator. Tropococaine is said to be more durable but less intense than cocaine in its action within the nasal fossæ. Cocaine is the most toxic of all these drugs, the others being held to be far safer. All these solutions are more effective if they are warmed to 40° or 45° C. before applying. In the pharynx and larynx, cocaine is much less apt to give toxic symptoms than in the nose. It is here used in five to ten per cent. solutions Injections about the tonsils are to be of 0.5 to one per cent. strength. Stovaine gives an extremely disagreeable taste, but not the choking sensation of cocaine. Stovaine with equal parts of saline solution gives no shrinking of the parts or change in aspect, but the analgesia is less satisfactory than that of cocaine. Alypin may be used in the strengths of ten to twenty per cent. Generally speaking, it is considered inferior in action to cocaine. Beta eucaine has little effect in the larynx, even in twenty per cent. solution; but it is satisfactory in removal of adenoids, and no secondary hemorrhages are reported to follow its use. Tropacocaine is not used in the larynx because of the intense spasm it sets up. In the ear, cocaine alone is not effective if the drum membrane is intact. It is combined advantageously with anilin oil and alcohol (as in Gray's formula), or with crystals of phenol and menthol in equal parts (as in Bonain's solution) for analgesia preparatory to a paracentesis. Stovaine is useful in incising furuncles of the canal and in paracentesis, either alone or in combination with cocaine. Alypin lessens sensibility in the canal, on the drum, and in the tympanic cavity, as in cauterizing granulations, removing foreign bodies, and polypi. But Le Mée prefers the Bonain solution to alypin. In endoscopy the author cautions against using stronger solutions than five per cent. (cocaine) in the larynx (danger of toxic absorption), but finds ten or twenty per cent. safe in the esophagus as preparatory to instrumentation. Couzard, of Paris, uses a one to twenty-five powder of stovaine in order to lessen the sensation of later applying an alcoholic solution of twenty-five per cent. strength. Alypin is used in bronchial and tracheal examinations in twenty per cent. solution, combined with adrenalin, but there is danger of bleeding. In the esophagus more adrenalin is added, to constrict the mucosa and thus facilitate the introduction of the instrument. Here adrenalin offers no dangers, and may be used up to ten or fifteen drops (one to 1,000) at one séance. The eucaines and tropacocaine are not of advantage in endoscopy. The dangers of the drugs studied by Le Mée, are, for cocaine, the toxic symptoms it often gives; and, for the others, the vasodilatation given (except tropacocaine, which is considered as indifferent in its vasomotor action), making bleeding more troublesome during the operation, and postoperative bleeding more likely to occur, especially if adrenalin is combined with the preparation used.

ARCHIVES DES SCIENCES BIOLOGIQUES, ST. PETERSBURG.

No. 3, 1912.

Streptococcus in Blood of Scarlet Fever Patients.—V. N. Klimenko examined the blood of 523 children suffering from scarlatina for streptococci, and concludes that the organism is found only in 2.1 per cent. of all cases. The streptococcus never enters the blood in the early stages of the disease; a special clinical picture, characterized by septicopyemic phenomena, appears when the blood is invaded by it, though even then the prognosis is not rendered absolutely hopeless. There is no correspondence between the entrance of the organism into the blood and the appearance of synovitis, nephritis, or endocarditis. In cases of the fulminating type, no streptococci are to be found in the blood, either before or after death. There is undoubtedly a relationship, however, between ulcerative processes in scarlatina and the entrance of the streptococcus into the bloodstream. The organism concerned, wherever it is found in scarlatina, seems to be the streptococcus of erysipelas or long streptococcus.

Negri Bodies in Rabies.—R. Pirone points out that statistics hitherto advanced concerning the frequency with which Negri bodies are found in rabid animals have been faulty because the material upon which they were based included animals killed soon after the onset of rabies as well as those which had passed through the entire course of the disease and died therefrom. Various writers have thus been led to conclude that the Negri bodies are absent in 10.6, 11.9, and even 13.5 per cent. of rabid animals, whereas Pirone found in a series of 667 animals, all of which died from the disease, that these bodies were absent only in eight, or 1.2 per cent. The value of a negative finding in animals dead of rabies is consequently much greater than has hitherto been thought.

ROUSSKY VRATCH.

October 27, 1912.

On the Influence of Mushrooms on the Course of Nephritis.—A. Ph. Kakovsky observed that edible mushrooms have a decidedly deleterious effect in cases of nephritis, aggravating the condition of the kidneys.

November 3, 1912.

Tolerance of the Isolated Heart to Morphine and Nicotine.—V. I. Berezin demonstrated experimentally that repeated application of morphine or nicotine to the heart establishes a tolerance to the extent that the heart no longer responds to a repetition of the dose. This tolerance, however, disappears during a period of rest, so that a renewed application causes marked cardiac disturbances.

Diagnostic Significance of Painful Points on the Spine and Skin in Gastric Ulcer.—M. I. Barantshik demonstrated clinically that gastric ulcer gives rise to characteristic hyperalgesias of the bodies and processes of three to seven dorsal vertebræ. The diagnostic significance of the hyperesthesia of the skin areas, supplied by the seventh, eighth, and ninth spinal segments, the so called seventh, eighth, and ninth dorsal belts, is not very great.

The Comparative Action of Scarlet Red and Amidoazotoluol on Granulating Wounds.—N. A. Dobrovolskaja observed that in clean granulating wounds the application of ointments containing scarlet red or amidoazotoluol gives no better results than a dry aseptic dressing or a bland salve.

November 10, 1912.

The Engel-Turnau Reaction in Nursing Infants.—S. E. Ostrovsky found a positive Engel-

Turnau reaction in the urine of 96.2 per cent. of breast fed infants, while in 96.7 per cent. of bottle fed infants the reaction was negative. By means of this test he was also able to detect mixed feeding.

Action of Preparations of Iodine on the Blood.—M. J. Barantshik determined experimentally that iodides produce marked changes in the physical and chemical properties of the blood. Thus, the viscosity and specific gravity are increased; the leucocytes, particularly the polymorphonuclears, are also increased in number. The action of iodides in arteriosclerosis he explains by assuming changes on the osmotic pressure in the vessels and surrounding tissues.

Generalized Gonococcic Infection Treated with Vaccine and Antigonococcic Serum.—B. A. Volter reports a case of severe generalized gonococcic infection in which the administration of antigonococcic serum proved of marked benefit.

BRITISH MEDICAL JOURNAL.

December 21, 1912.

Some Manifestations of a Healthy Heart in the Young Frequently Taken as Indications for Treatment.—James Mackenzie dwells on the great defect in our knowledge of the significance and meaning of cardiac phenomena, particularly the harm which may accrue from misinterpretation. Of the four types of cardiac irregularity which are commonly encountered, two are usually of serious omen, while the other two are usually of no moment at all. Pulsus alternans occurs only when there is great exhaustion of the heart muscle; when this is due to some temporary cause, such as a short febrile condition, it may be of but relatively slight significance, but usually it indicates serious impairment. The irregularity of auricular fibrillation is the best known and is usually of grave import. Irregularity due to the presence of extrasystole is common in adult life, and those who show this condition very seldom have any impairment of general health and never suffer from heart failure. While an opinion of gravity should never be based upon this condition, it may be present in those who do suffer from some form of serious heart failure, but this must be determined by the presence of other signs. When it is the only abnormal sign it may be ignored. The youthful type of irregularity is characterized by a variation in the length of the diastolic period. This will be found often to be synchronous with one or the other of the respiratory phases; usually with expiration the slow beats are found. This form of irregularity has a tendency to come and go without any perceptible reason. It is so common in the young that Mackenzie thinks that every healthy person probably shows it at one time or another. It is of absolutely no serious significance and it must be so recognized, for much unnecessary harm has been done through the belief that any heart irregularity is an indication of serious heart disease. Of functional murmurs in the young, that is, murmurs in the absence of evidence of muscle affection. Mackenzie says that they are "signs neither of disease nor of impairment." Both irregularities and murmurs may be present in the young and be in no way incompatible with the presence of an absolutely normal and healthy heart. The sole trustworthy guide in the prognosis and the judgment of the significance of disease of the heart is the state of muscle impairment, or its absence. Increase in the size of the heart and the presence of murmurs may be signs of impairment of the muscle, but are not necessarily so and must not be taken alone. The one most valuable means of discovering muscle impairment is by a study of the functional efficiency of the heart.

Observations on the Acoustic Phenomena in Mitral Stenosis.—Thomas Lewis offers a preliminary communication based upon the results of simultaneous records taken by a microphone and a string galvanometer. The time relation of the first and second sounds in mitral stenosis is practically the same as in normal hearts. The sounds are usually much more intense, though similar in duration to those of the normal heart. In hearts beating regularly with normal sequence of contraction, the shortest diastolic murmurs of mitral stenosis precede the first sound, and consequently precede the initial rise of intraventricular pressure. In general the presystolic or diastolic murmur is not crescendo; the crescendo is an effect of the proximity of the loud first sound. The murmur usually occupies the whole or greater part of diastole. In the presence of auricular fibrillation an isolated presystolic murmur does not occur, the fixed time relation of the murmur is to the early phases of diastole. The murmur extends over a variable portion of the diastole according to the variation in the duration of the latter. In long diastoles and in slow acting hearts there is an appreciable silence between the murmur and the first sound, in the shortest diastole the murmur may occupy the entire period. In heart block the position of the diastolic murmur is largely controlled by the position of the auricular contraction. Lewis concludes that in mitral stenosis the diastolic murmurs are due to the rapid outflow of blood through the stenosed mitral orifice. Murmurs occupy those periods of diastole during which the velocity of outflow reaches a certain grade. When the auricle contracts at the normal time and the heart beats slowly, the velocity tends to be greatest in presystole, otherwise it is usually greatest in early diastole, and these are the periods at which the murmurs are most commonly audible.

Regional Anesthesia.—Felix Rood uses the following solution for paraneural anesthesia: Novocain, two grammes; sodium chloride, 0.5 gramme; and distilled water to 100 c. c. To this is added, immediately before use, adrenalin in the proportion of five drops of a one to 10,000 solution to each twenty c. c. of solution. The novocain solution is sterilized by boiling. The paper gives guides and landmarks for the injection of the several nerves of the extremities and shows the areas of anesthesia produced in each case, by means of diagrams. The application of the method, which has greatly extended its field of usefulness, is the injection of the intercostal nerves posterior to their lateral cutaneous branches. This is accomplished by injection just in front of the angle of the rib. The needle is introduced through the skin, while the patient lies on his face with the arm raised, at a point a little below the level of the desired rib. It is passed obliquely upward until it touches the lower border of the rib; then it is withdrawn a fraction of an inch and the point depressed a little, when it is again pushed forward. When the point just misses the lower border of the rib the needle is pushed on for about a quarter of an inch, well into the subcostal groove, and the injection made. This anesthetizes the entire thickness of the chest wall, from the mid line in front to within a few inches of the mid line behind. It offers a very valuable means of performing almost any operation on the thorax or the contained organs and obviates the dangers of general anesthesia in these cases, thus materially ameliorating the prognosis.

High Frequency Currents in Trigeminal Neuralgia.—W. F. Sommerville reports the successful result of the use of these currents in a case of very resistant trigeminal neuralgia which had not been improved by any other form of treatment.

December 28, 1912.

Preoperative Diagnosis of Appendicitis.—William Ewart describes a localized patch of dullness over the posterior superior spine of each ilium, which is to be elicited by careful percussion by means of Sansom's pleximeter. Alteration in the character, or extent, or both, of the right patch forms the basis for his new method for the more certain diagnosis of appendicitis. The most common indication is an increased area of dulness, though, at times, a portion of the normal patch may be replaced by tympany or hyperresonance. Diagrams illustrate many of the common findings. The examination is simple and is to be carried out preferably with the patient in a sitting position, though it is feasible to do with the patient in the left lateral prone decubitus. An accurate tracing should be made of the two areas of dulness found, as this serves as a later control of the success of operative treatment. The advantages asserted for the method are numerous. Previous to its use there was only a small group of cases in which an accurate preoperative diagnosis could be made with any degree of certainty, namely, the acute cases with definite symptoms. By this new method a large number of suspected cases, and many unsuspected cases diagnosticated as other vague conditions, can be definitely shown to be posterior or central appendicitis, or latent appendicular abscess. In just these cases the older abdominal method of examination fails and the symptoms are alone insufficient to localize the trouble. In a long series of cases of all grades of severity down to those without any definite signs the new method has proved far the most successful. It is far more accurate as a means of providing a localizing diagnosis, and detects retrocecal abscess where it has been overlooked. The method provides a normal standard, for the left patch is the control in each individual. It provides a means of determining the total absence of appendicular lesion in routine examinations for general health. It is the only means by which the thoroughness and successfulness of treatment can be determined.

Foreign Body in the Abdominal Cavity.—L. B. Green reports a remarkable instance of the introduction of a bone knitting needle into the abdominal cavity through the genital tract of a woman in an attempt to cause abortion. The body was removed eleven days later and no signs whatever of inflammatory reaction or infection were found in the abdomen.

LANCET.

December 21, 1912.

Pharmacotherapy of Pneumococcus Infections (*Concluded*).—A. E. Wright and his collaborators carried their experiments to man and found that ethylhydrocupreinhydrochloride was not poisonous for the pneumococcus and at the same time nonpoisonous for the tissues of the patient. In the human organism the drug is opticoneurotropic. Eight cases out of a total of thirty-six, in the care of different observers, showed some ocular disturbance after doses of 0.5 to two grammes of the drug. In some of these the condition went on to definite amblyopia. Together with this toxic action there is a lack of any very definite beneficial action to the host through destruction of the pneumococci; the drug may be classed as inefficacious or doubtfully efficacious at best. The drug does not increase the opsonic power of the human blood and it exerts no effect upon leucocytes until concentrations are reached which are at least twenty times stronger than would correspond to the medicinal doses used. One of the most obvious explanations for the beneficial action of the drug on pneumococcus infections in mice and the absence of a similar effect in man lies in the difference in the nature of the infection in the two animals. In mice the infection is a septichemia and the drug comes into direct contact with the organism in the blood stream. In man the main seat of the bacterial invasion is in the lungs where the tissue spaces are so filled with coagulated lymph that the drug can reach the bacteria only in very small amounts and very great dilution.

Treatment of Pott's Disease.—T. H. Openshaw and P. B. Roth advocate the prolonged use of a double Thomas hip splint with extensions for the head and feet. Two principles should guide the treatment of all of these cases, namely, put the diseased parts at absolute rest and do not interfere surgically until forced to do so. The advantages of the Thomas splint over all other methods in common use may be enumerated thus: 1. It will fit for years owing to the adjustable nature of the head and foot extensions; 2, the diseased portion of the spine and the groins and abdomen can always be inspected without removal of the splint; 3, dressings can be applied if there is a sinus present; 4, the child can be washed daily, and prevented from becoming verminous; 5, the splint does not cause sores; 6, it does not interfere with growth or development of the chest. Its continued use for many months should be followed by the application of a poroplastic jacket to allow the child to get about after the disease has become nearly healed. The results of this method of treatment are very gratifying and the treatment is very conveniently carried out in outpatient practice, a further great advantage.

Secretory Activity of the Stomach in Chronic Appendicitis with Gastric Symptoms.—C. Singer concludes that in cases in which chronic appendicitis is associated with gastric symptoms a gastric or duodenal ulcer may or may not be present, but that in all cases the gastric juice is found to be abnormal on analysis. The abnormalities may consist of increased or diminished secretion of both chloride and pepsin, or the presence of a proteolytic ferment, and of the elevation of the nitrogen factor. Such abnormalities can be explained best as being due to the action of toxic substances on both the stomach and appendix. Removal of the appendix does not always relieve or improve the symptoms.

Vaccine Treatment of Hay Fever.—A. G. H. Lovell treated five patients with a standardized vaccine made from pollen toxine. All patients were improved, but none was cured.

December 28, 1912.

Complete Removal of Pleural Effusions.—H. M. Davies shows the necessary insufficiencies and dangers of the usual methods of simple aspiration of pleural fluid. He employs the following means of securing complete evacuation of the fluid without the dangers or discomforts previously encountered in the partial removal: After inducing local anesthesia of the chest wall in two places he introduces a cannula into the eighth intercostal space in the mid axilla and a needle into the fifth space in the same region. The lower is connected with the aspiration bottle and the other with the apparatus usually employed for the induction of a nitrogen pneumothorax. A manometer is in the upper circuit, and oxygen is employed as the gas instead of nitrogen. Fluid is then aspirated from the chest until the patient coughs or experiences the least pain. The aspiration is then stopped and fifty to 100 c. c. of oxygen is run in slowly. This causes the pain and cough to disappear at once and the aspiration may be continued until there is another appearance of the symptoms, when the process is repeated. This is continued until no more fluid can be obtained. This procedure causes the patient a minimum of discomfort with the greatest amount of benefit and permit of the immediate use of the x ray for diagnostic purposes, an advantage not available when only a part of the fluid is withdrawn. The method has another great advantage in the fairly rapid absorption of the oxygen introduced, for this reduces the endothoracic pressure gradually and exerts a decided beneficial action upon a lung which otherwise would not expand well. In many cases this traction has caused the breaking up of very considerable adhesions without any discomfort to the patient.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 2, 1913.

Six Years' Treatment of Pulmonary Tuberculosis by the Class Method.—Nathaniel K. Wood asserts that the scope of the class work, though small, is larger than appears at first sight, because its influence extends beyond the individual patient and includes his entire family. It is not too special to be practical; one case in six of an ordinary clinic is suitable for this treatment; ninety per cent. of the cases treated were advanced. The expense is given as $5.95 for each patient a month. At the end of six years 72.5 per cent. of the patients are living. The advantages claimed are: It furnishes a means by which patients can be kept under observation for a long time; it cultivates in the patients a spirit of faithfulness toward the treatment after discharge from the class, as shown by their continuance of outdoor sleeping and their marked after improvement; a large proportion, fifty-seven per cent., have returned to useful occupations, and that some have been able to have their processes arrested without losing a day's work; the death rate has been 23.5 per cent. in six years, of which fifty per cent. or more occurred among those in the class less than three months; it affords relief to persons who would otherwise not be reached, such as the far advanced, those without civic settlement, children, and those who under no conditions will leave their homes. For these reasons Wood maintains that this method of treatment is entitled to definite recognition.

Rôle of Ptosis in Gynecology.—Robert M. Green says that the rôle of ptosis in gynecology is primarily in the production of pelvic displacements, secondarily in association with and as a result of intrinsic disease of the pelvic viscera. In the one case it is a cause, in the other a symptom. Primary ptosis may be congenital, in subjects of a depraved general physique, or acquired, either by static errors or as a result of the fatigue and trauma incident to life. In any event it should be considered as a possible cause for gynecological symptoms, especially backache, and the proper measures adopted for its cure or relief.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

January 4, 1913.

Pancreatic Lymphangitis and Chronic Pancreatitis.—John B. Deaver remarks that pancreatitis must be studied with an open mind in regard to its etiology, particularly in its relation to chronic inflammatory diseases of the alimentary tract that have their ending in retroperitoneal lymphangitis; that although in the early stages the results of treatment are promising, when the stage of interstitial deposit of fibrous tissue is reached, the case is hopeless. The most promising lead for treatment is in the means already devised for the treatment of chronic inflammation in the organs with which pancreatitis is commonly associated and on which it apparently depends. Finally, he is of the opinion that pancreatitis is not rare but common, and that its presence should be suspected in all cases of obscure upper abdominal indigestion and like other chronic inflammatory abdominal lesions, if it is not amenable to medical treatment within a reasonable time, surgical intervention should follow.

Unusual Exposure to Light, Followed by Seborrheic Keratosis.—Douglass W. Montgomery observes that while seborrheic keratosis is a common cutaneous disease occurring frequently in elderly people, especially those having a seborrheic skin, light, especially its actinic rays, must be considered the usual exciting cause. While there is no direct evidence of this view, several phenomena seem to confirm it: A small pigmented spot is often the beginning of a patch of seborrheic keratosis, and the action of light favors the formation of pigment. These seborrheic patches are most common and profuse on persons exposed to light, appearing almost exclusively on the exposed surfaces of the face, ears, neck, and back of the hands, the lesions being analogous to those of xeroderma pigmentosum, the exciting cause of which is known to be light. Finally, chronic dermatitis from prolonged exposure to x rays, which are peculiarly actinic, exhibits the same symptom complex as xeroderma and seborrheic keratosis, and eventuates, as they do, in epithelioma.

Etiology of Unilateral Renal Hematuria.—Alexander Randall calls attention to the rôle played by congestion of one kidney, and the relative importance of this congestion in the etiology of that symptom, unilateral hematuria. His conclusion is that nephritis with its concomitant congestion is the leading feature in a majority of the cases. In a second group the bleeding is from varicosities in the pelvis, secondary to congestion resulting from some extrinsic condition. In a third group the hemorrhage arises either from the rupture of a vessel or diapedesis of red bloodvessels, again secondary to congestion caused by some extrinsic condition. The actual etiological factor in any case causing the hematuria is a renal congestion, which may be certainly and successfully relieved by a nephrotomy.

Influence of the Operation of Resection of the Kidney on the Function of the Organ.—John H. Cunningham's experimental work on rabbits, which forms the basis of the paper, was suggested by an operation on a woman with but a single kidney, which contained calculi, removed later by operation. The rabbit urinates normally every three hours, but after a left sided nephrectomy, urine was not voided for from ten to eighteen hours, except in one instance, when a blue urine was voided between four and six hours. After resecting a portion of the remaining kidney, opening into the renal pelvis and closing the wound entirely, the secretion of the urine was much delayed (from seventeen to forty-four hours—usually after thirty hours. After resecting a portion of the kidney and draining with a rubber tube through the loin, urine was secreted in every animal before eight hours, and in most cases between six and seven hours. After resection of a portion of the kidney and draining with gauze through the loin, urine was secreted in six or seven hours, except in one which showed a blue fluid between four and five hours. The writer concludes that following the operation of kidney resection and entire closure of the wound, a temporary arrest of the kidney function occurs; that performing the same operation and draining the kidney pelvis, not entirely closing the wound, causes a less degree of suppression; when the kidney pelvis is drained by a rubber tube the drainage through the loin is freer than when gauze is used.

Diagnosis and Indications for Operation in Early Hydronephrosis.—Hugh Cabot shows that the symptoms are a fallacious guide to the diagnosis of this condition, and the general physical examination adds equally little of value. Routine uranalysis is practically valueless, for any suggestions thus obtained would likely point to other conditions than early hydronephrosis. The cystoscope and ureter catheter are necessary aids. Alone the cystoscope is of little value, and catheterization of the ureter, with distention of the renal pelvis, gives some help, but only when considerable dilatation has occurred will it allow of a positive diagnosis, and would fail entirely to reveal the cases with an irritable and therefore apparently contracted pelvis. The x ray, in and of itself, is of negative value only, excluding renal calculus and aiding in the exclusion of renal tuberculosis, but it cannot reveal the position or outline of the renal pelvis. The writer advises the injection of the renal pelvis with silver salts (which cast a shadow) through the ureter catheter when the exact size, position, and relation of the renal pelvis may be studied by the x ray. This he calls pyelography, and pronounces it the main stay of diagnosis.

Function of the Ureterovesical Valve.—John W. Draper and William F. Braasch have made an experimental study of the feasibility of ureteral meatotomy in human beings and conclude that there is little or no danger in human beings from the operation of meatotomy through the operative cystoscope, either from immediate hemorrhage or sepsis, or from late results from renal injury, provided the operator is experienced. The protection from reflux is effected quite as much by physiological ureteral function as by the check valve action at the meatus; together they constitute the "factor of safety." The ureter alone, almost always, prevented reflux, even if the ureterovesical valve had been destroyed, the ureteric function was not impaired after section of the valve. The writers conclude that the foregoing data confirm the opinion already offered that renal infections are seldom if ever ascending, but are usually hematogenous.

MEDICAL RECORD.

January 4, 1913.

Some Experiences with Antityphoid Inoculation.—John W. Brannan vaccinated some 200 hospital nurses, also about fifty members of the house staffs of the various hospitals with which he was connected, against typhoid fever. The inoculations were all given at the usual site of vaccination against smallpox, on the outer surface of the left upper arm at the insertion of the deltoid muscle, the skin being sterilized with the tincture of iodine and the injections being made under the skin, and not into the muscle. Very few severe reactions were noticed, those being more marked among the men. Only three nurses asked relief from duty for a day, whereas several of the internes were laid up two days at a time with temperatures ranging as high as 102° F., with rapid pulse, nausea, vomiting, severe headache, and pain in the back. One interne had a temperature of 103° F. after each of two doses (0.5 c. c., containing 500 million dead bacilli). He also had a "splitting" headache for thirty-six hours, great prostration and abdominal pain. Concerning the alleged occasional lighting up of latent diseases, such as arthritis, the writer inquired particularly, but failed to learn of any instance of this. He found, however, that the reaction was the same in the cases that had had typhoid fever as among those who gave no history of the disease. While undergoing inoculation many of the nurses were in close attendance on cases of typhoid, and Wright's negative phase gave rise to the fear that an increased susceptibility to the disease might be excited. As nothing happened, it seems to prove the contention of Richardson and Spooner, that the negative phase of immunity said to follow bacterial inoculation has no basis in fact. The duration of immunity after inoculation is believed to be two or three years. In the United States army the men are revaccinated against both smallpox and typhoid at the beginning of each three year period of enlistment.

Conservative Treatment of Tuberculous Glands of the Neck, Based upon Their Pathology.—John S. Brown's experiments for several years along these lines have led him to believe that scrofula is a tuberculosis of the patient, not only of the glands, which would indicate prophylactic and therapeutic hygiene as well as local treatment. As complete extirpation of the disease is impossible, and as Nature tends to cure, if given opportunity, judgment is a necessary factor in the matter of treatment. Since the glands exercise an important protective function they should not be carelessly sacrificed by the surgeon, who should be rather as conservative as possible when dealing with them, the removal of the caseous masses by a proper technic being all the local surgery needed in a great majority of the cases. The writer attaches considerable value to the action of the enzymes of yeast.

LANCET-CLINIC.

November 2, 1912.

Median Harelip.—Rausohoff reminds us that that the term "harelip," applied to the usual congenital fissure of the upper lip, is a misnomer, since the hare's lip is cleft in a Y shaped manner, the upright portion of the fissure being in the middle line with a bifurcation extending into each nostril. Viewed from the standpoint of development median harelip is totally distinct from the common variety. The latter is the result of a failure of fusion between the lateral maxillary and the frontonasal processes, while the median harelip results from a failure of union between the lateral tubercles of the frontonasal process, which is placed on each side of the middle line. His teaches that the central part of the upper lip is formed from the lower portion of the frontonasal process by the fusion in the midline of the two buds of globular shape. In point of time this is the last portion of the process to develop, and the fusion does not occur until the former has quite descended to the level of the lateral portions of the future lip. The writer reports a case of this rare condition.

November 16 and 23, 1912.

The Buried Animal Suture. — Marcy, in a scholarly manner, traces the history of sutures from the preaseptic period to the present time, giving incidentally a description of the rise and progress of antiseptic surgery. An important point, original with Lord Lister, which affects and at the same time explains the value of buried sutures, is the active cell proliferation in the deeper layer of the skin. In using the buried suture, the watchword is coaptation and not constriction. Subcutaneous suturing is not easy. The suture should be sufficiently fine and not chromicized, that its absorption may be assured before the normal skin growth brings it to the surface. The suture material itself is not exposed to invading bacteria. The very deep layers of skin only must be penetrated, and the stitches must be taken from side to side so that each stitch enters exactly opposite the emergence of the preceding one. Gentle traction brings the skin edges into even coaptation (the continuous suture is insisted upon by the writer), the last suture is fixed with a half knot, and the needle emerges at some distance from the end of the incision. The wound being carefully dried and sealed with iodoform collodion, the ends of the suture are drawn on, cut short, and allowed to retract beneath the skin. In healthy structures no drainage is permitted. The writer prefers kangaroo tendon on account of its great strength, ease of preparation, and uniformly good results. In deep operations like structures, as far as possible, should be coapted: fascia to fascia, muscle to muscle.

November 23 and 30, 1912.

Diagnosis and Treatment of Hysteria.—Hoppe calls our attention to the fact that the concept of the condition formerly known as hysteria has changed. For ages the all embracing diagnosis of hysteria was born of ignorance and fostered by our inadequate and inaccurate observations, and included many organic and functional diseases which we have learned to classify better under other more rational headings. The field of hysteria has become more defined, and there is, moreover, a relative and actual diminution in the prevalence of this disease. The enormous expansion of hysteria in bygone days was favored because organic diseases of the nervous system were mistaken for hysteria, deception of all kinds was unrecognized, simulation posed as hysteria, and finally certain functional nervous states, which we have learned to distinguish from one another and from hysteria, have been differentiated from the latter. Hysteria has actually and relatively decreased because of our greater and more accurate knowledge of disease based upon pathological findings (experimental and clinical) and upon accurate and scientific methods of diagnosis. As to the diagnosis of this disorder, the writer presents the views of the authorities from Charcot down to Babinski, Freud, Breuer, and Oppenheim, the physiological theories of Sollier and of Binswanger, and the vasomotor hypothesis of Savill, and concludes that the diagnosis must be made by exclusion after a careful mental and physical examination, and searching inquiry as to family history and antecedents. As to treatment, prophylaxis should be both general and special, the former resolving itself into eugenics, and the latter concerning those who are close to persons who are especially susceptible to suggestion. Psychotherapy and mental catharsis must precede reeducation. Success in treatment will demand daily interviews with the physician, who must himself be safe and sane, with a cheerful personality, a ready wit, a broad interest in all affairs, conversational ability, and above all an all absorbing interest in the case in hand.

BULLETIN OF JOHNS HOPKINS HOSPITAL.

November, 1912.

Aid to Diagnosis of Sinus Thrombosis of Otitic Origin.—S. J. Crowe ascertained by examination of fifty normal individuals that no appreciable stasis is visible in the retinal or supraorbital veins when one internal jugular is compressed with the finger; that simultaneous pressure on both internal jugulars causes marked dilatation of the fundal veins and of the anastomotic vessels connecting the endocranial and exocranial venous circulations—most clearly observable in the supraorbital and ophthalmic veins—and that when the pressure is suddenly released on one side only the engorged veins of the anastomotic system and fundi will immediately empty. If the results obtained upon practising the three steps of this test in any individual case differ markedly from those given, there is either an anomaly of the endocranial venous circulation or some pathological condition which is obstructing the outflow of blood from the brain. In thrombosis of the lateral sinus there is clear evidence of stasis upon compression of the internal jugular of the opposite side. When it is possible, as in the author's cases, to examine an otitic patient before the onset of complications and find that both jugulars are patent, and later, in association with fever, to find that the blood is not passing down one side of the neck as freely as down the other, the sign may be taken as positive evidence of a sinus thrombosis.

Chloroform Poisoning.—R. E. Mosiman and G. H. Whipple found that prolonged chloroform anesthesia produces no liver necrosis in the pigeon, frog, and terrapin. The liver cells of these animals, in contrast to those of mammals, have a peculiar power of resistance to the poisonous action of the drug which affects particularly the cell nucleus. Fetuses and young pups show a similar but less striking resistance on the part of the liver cells. In both instances it is conceivable that this is due to the presence of numbers of nucleated cells in intimate association with the liver cell columns.

Effect of Scarlet Red on Defects in Gastric Mucous Membrane.—J. S. Davis and C. D. Deming fed dogs and rabbits with a one per cent. solution of scarlet red in olive oil or with dry, powdered dyestuff, administered in capsules. Artificial gastric ulcers were made, and the rate of healing in the animal fed with scarlet red compared with that in controls. The results did not make it possible to state whether the agent has or has not a definite stimulating action on the gastric epithelium. The oily solution did, however, cause a more rapid and marked epithelial growth than in control experiments in which oil alone was given. The less favorable results with the dry powder may have been due to the fact that the material was not continuously in contact with the denuded area. The dyestuff was found to be nontoxic, and the authors believe it worthy of a thoroughly clinical trial.

INTERSTATE MEDICAL JOURNAL.

November, 1912.

The Malaria Problem, with Special Reference to Education and Diagnosis.—T. W. Jackson insists that education is the great prerequisite to success in antimalarial campaigns, and must begin within the ranks of our profession. Two known factors are necessary in propagating malaria; the anopheles mosquito and the plasmodium of malaria, one outside the human body, the other in the circulating blood. Thus two avenues of attack are present. We must destroy all the malarial parasites in the blood to make them noninfective to mosquitoes, by applying adequate treatment long enough to insure actual rather than symptomatic cures. The writer reports the case of a patient suffering with estivoautumnal (malignant tertian) malaria, his blood loaded with ring forms and crescents, who had been under treatment for typhoid fever for three weeks, and would probably have died, but for the corrected diagnosis made clear by the use of the microscope. More frequently the reverse mistake is made, though both are inexcusable with the means of diagnosis at our command. Though the microscopic diagnosis calls for special skill, intelligence, and practice, there should be no community without some medical man who can recognize the malarial parasites and make differential blood counts. The writer suggests that search should not be made immediately after or at the height of a paroxysm, and quinine must be withheld prior to examination. In the light of our knowledge of its parasitic causes and its insect and human carrier, we should be unwilling to get along without microscopic diagnosis or to cease treatment until the parasites have permanently disappeared.

The Treatment of Hemorrhagic Conditions with Normal Human Blood Serum.—L. A. Levison concludes that the term "hemorrhagic diseases of childhood" includes a number of conditions and diseases, in which hemorrhage is the dominating feature, which have not been accurately classified because we are not fully informed as to their etiology and pathology. He holds that there are probably a number of bacterial organisms, any of which may produce this hemorrhagic condition in childhood. The chemistry and mechanism of blood coagulation is not entirely known. Calcium, gelatin, adrenalin, and styptics have not proved satisfactory as hemostatics, nor has the use of animal serum other than human been successful. Human serum is nontoxic and should be invariably used in all hemorrhages of childhood, in liberal amounts, and continued for a short time after the cessation of the hemorrhages.

Hypotension; Its Clinical Significance.—F. A. Faught notes that nearly all our attention has been directed to those diseases accompanied by hypertension, although low blood pressure often forms an important part of the symptom complex of a number of pathological conditions, such as wasting diseases, acute infections, toxemias, etc. The writer places the low limit of normal blood pressure in man at 105 mm., and in woman at 95 mm. The lowest blood pressure in an adult compatible with life is from forty to forty-five mm., and this occurred with subnormal temperature and unconsciousness. Several varieties of hypotension are noted. *Terminal hypotension,* the abnormal lowering of tension which indicates the approach of death; *essential hypotension,* cases that seem to have a constitutionally low blood pressure; *primary* or *true hypotension,* allied to the preceding but produced by some assignable cause; *relative hypotension,* where actual pressure, while still above normal, has fallen from a former pathological high level to such a degree that consequent symptoms have developed. The direct effects of a falling blood pressure are the accumulation of an abnormal amount of blood in the veins, and a lowering of the current in the arteries, which interfere with nutritive and secretory processes depending on it, the most dangerous being upon the heart where the complete loss of vasomotor tone leads to death.

JOURNAL OF BIOLOGICAL CHEMISTRY.

November, 1912.

Formation of Glycocoll in Body.—A. A. Epstein and Bookman report experiments which indicate that much of the glycocoll liberated upon feeding benzoic acid is the result of a synthetic process in the body.

Influence of Aminoacids upon Metabolism.—G. Lusk and J. A. Riche conclude that the increase in metabolism which occurs after ingestion of meat is due, not to the intensity of the intermediary processes of protein metabolism itself, as maintained by Rubner, but to the mass action of aminoacids acting as stimuli upon the cellular protoplasm. The increase in heat production occurring upon administration of meat to dogs was greater in the second and third succeeding hours than could be accounted for by the extra protein metabolism, as reflected in the urinary nitrogen, at the time.

Influence of Mixtures of Foodstuffs upon Metabolism.—Lusk and Riche describe the following forms of metabolism as occuring in the quiet or sleeping dog excluded from thermal influences: 1. A basal metabolism, when the cells are nourished by a blood stream which does not receive food from the intestinal tract, but the composition of which is regulated by the organs of the body; 2, a metabolism due to plethora, induced by an increase of carbohydrate or fat metabolites in the blood on account of absorption from the intestine; and, 3, a metabolism due to the stimulus of aminoacids. The last two forms of metabolism cannot be added to each other, *i. e.,* the level of cellular oxidation induced by plethora is not further heightened by the stimulus of aminoacids unless the latter alone would accomplish such an increase in activity.

Synthesis of Lecithin.—McCollum, Halpin, and Drescher state that up to the time of their experiments, no great production of lecithins and other phosphorus containing lipoids had been shown to result from the synthetic activity of the animal cell. Upon feeding hens fatfree rations they found that the egg production remained not far from normal. Analysis of these eggs showed that a large amount of lecithin and cephalin must have been synthetized.

Feeding on Single Proteins.—T. B. Osborne and L. B. Mendel found in experiments on white rats that when these animals were fed with mixtures of isolated and purified proteins, carbohydrates, and fats, together with inorganic matter in the form of crystallized salts, every animal sooner or later declined, as a rule suddenly, with strong evidence that death would soon have ensued. The elements essential for prolonged maintenance were found to be present, however, in milk from which the fat and protein had been removed. In every case, administration of this milk resulted in immediate recovery of the depleted animal. On the other hand, it was found possible to maintain rats for periods equal to practically their entire adult lives on foods containing only a single purified protein, provided the "proteinfree" milk was also supplied. This indicates that the possibility of a transmutation or synthesis of the aminoacids constituting proteins in the organism has been hitherto greatly underestimated, and that monotony of diet is not necessarily a troublesome factor or one of such importance in nutrition problems as is usually supposed.

JOURNAL OF INFECTIOUS DISEASES.

November, 1912.

Experimental Studies on Milk.—E. H. Schorer takes up the study of milk in reference to the uniformity of different grades of milk, and the effects of storage upon certified, inspected, and pasteurized milks. These were based upon daily observations of samples covering a period of ten weeks. He mentions one point that is frequently disregarded by laboratory workers. That tests that give results readily and quickly are most important because a new supply of milk must be available daily. It is of little value to the consumer to learn that the milk he used yesterday or a week ago is unfit.

A Study of Streptococci from Milk.—E. C. Rosenow, during the recent epidemic of sore throat in Chicago, had the opportunity to study streptococci from numerous throats, from the pus of suppurating glands, and from exudates in a number of fatal cases. There were also epidemics in Boston and in Baltimore of the same general nature, being milkborne, and associated with similar streptococci. Rosenow found that streptococci, virulent for animals, but differing from typical *Streptococcus pyogenes* in more abundant growth, in being encapsulated and not forming chains, and in causing but little hemolysis, occur in predominating numbers in epidemic sore throat of milkborne origin. On artificial cultivation these strains sooner or later assume the characteristics of *Streptococcus pyogenes.* He also noted that by placing this streptococcus in unheated milk it becomes modified so as to correspond to the streptococci in epidemic sore throat.

The Production in vitro of Structures Simulating Negri Bodies.—Steinhardt, Poor, and Lambert report work undertaken to determine whether the Negri bodies are protozoa, as is held by some, or whether they are, as thought by the majority, to be degeneration products of nerve cells. In their experiments small pieces of the brain of rabbits and guineapigs were suspended in hanging drops of blood plasma obtained from the animal from which the brain was to be removed. These culture preparations were incubated at 37.5° C. for varying lengths of time. They found that the cells in these preparations showed in their protoplasm, when stained by Van Gieson's method, small pink staining bodies surrounded by a blue, granular ring, indistinguishable from the unstructured Negri bodies observed with great frequency in the rabid guineapig brain. In a few instances these forms contained a central blue staining ring or point, and closely resembled some of the smaller structured forms of the Negri body.

Intraleucocytic Bodies in Scarlet Fever.—D. J. Glomset, in a study of the leucocytes in scarlet fever and other febrile diseases, as well as in health, concludes that the larger number of these bodies are of nuclear origin and may be produced by shaking the blood. Consequently he does not consider it justifiable to regard them as having any etiological significance.

Phagocytic Activity of Leucocytes in Measles.—Ruth Tunnicliff, from observations made on the blood of six measles patients, finds that the phagocytic activity of the leucocytes is decreased for the streptococcus, staphylococcus, and tubercle bacillus during the period of leucopenia. The activity, however, becomes normal with the increase in number of the leucocytes. It may be that the leucopenia and the diminution of the phagocytic activity of the leucocytes in measles may account in some degree for the frequency of secondary infections in this disease.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, May 20, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Wheat Bran in Constipation.—This paper, by Dr. A. Ernest Gallant, appeared in the Journal for August 31, 1912.

Dr. Anthony Bassler, though his interest in bran had long been great, had just learned a great deal. There could be no doubt as to the value of bran in constipation, and, in addition to its mechanical effect, he believed that it had some chemical action. There were, however, a certain proportion of cases in which, although there was no anatomical condition causing obstruction, bran failed altogether. In instances of this kind, although we gave the patient daily an ounce and a half of bran and an ounce of agaragar, beside prunes, exercise, water, etc., the bowels, after acting well perhaps for a few days, then slowed up, and it became necessary to supplement this hygienic treatment with cascara or some similar agent. Still, in a large number of cases bran proved all that was required. It was certainly a most valuable agent, and it was to be regretted that it was employed to so small an extent by the profession. Apparently the reason why it was not more used was because it was so cheap. It was particularly useful for children, in whom its good effect was even more noticeable than in adults.

The president, Doctor Wilcox, some time ago was called as an expert on behalf of the government in the trial of a case involving the merits of a certain advertised food which was alleged to be curative of all sorts of diseases. The assertion of the activity of this preparation was based on the alleged fact that the grain composing it was still alive; so that a person using it had all the benefit to be derived from living matter. The jury, however, decided that its alleged virtues had no foundation in fact, and the proprietor was fined. Doctor Gallant's paper was one of great practical value, and he agreed with Doctor Bassler that bran was not much used from the very fact that it was so cheap and so accessible.

Doctor Gallant, in closing, said that to his mind bulk was the great thing about bran. The bulky stool squeezed the intestine in a way that might be compared to the pressure of a skilled dairyman in milking a cow. Patients with habitual constipation often got used to laxative drugs, so that these lost their effect, and he had found bran successful in cases where every other means had failed. He was convinced that the autointoxication which was so common was due to the accumulation of feces in the bowel, as this favored the constant resorption of toxic matters. What we needed to prevent this something to excite active peristalsis and keep the intestinal contents moving, and his experience had shown that bran was a most serviceable agent for the purpose.

The Tissue Density Factor in Physiology and Pathology.—This paper by Dr. Homer Wakefield, appeared in the Journal for July 27 and August 3, 1912.

Special Meeting in the Borough of Richmond, Held at St. George, Staten Island, June 10, 1912.

Dr. William Bryan in the Chair.

Observations from Three Hundred Cases Treated with Autogenous Bacterial Vaccines.—Dr. Henry A. Craig, of New Brighton, said that autogenous vaccines, which were made from the bacteria obtained from the patient under treatment, were, whenever available, superior to stock vaccines, which consisted of bacteria from other sources, which might not correspond exactly to the bacteria at fault, for the reason that many of the great groups of bacteria had a large number of subdivisions. Infections were apt to be mixed, so that in making an autogenous vaccine it was usually wise not to isolate any particular organism, but to grow all together synergistically and to standardize the product according to the prevailing organism. In the present series of cases less than two thirds were due to infection of a single organism, while in the other third two or more organisms were found. In long continued infections it was advisable to make new cultures from time to time, in order to discover any change in the bacterial flora and make a new autogenous vaccine when necessary. The keynote of the treatment of all bacterial infections was the production of immunity, which meant the power by means of which a cure was effected, as well as the power to resist infection. The injection of the various sera produced passive immunity, as the protective agents were introduced into the body all ready for action against the toxines or bacteria; but, unfortunately, this immunity was but temporary and such treatment had but a narrow application. In the active immunity produced by bacterial vaccines, on the other hand, the body tissues were stimulated to produce their own protective agencies, as in the case of natural recovery from an infection, and this mode of treatment had a very wide applicability. It was indicated in every case where the causative organism, so far as known, could be obtained, but it necessitated sufficient vitality on the part of the body to respond to the stimulus of the vaccines. Hence, it should not be left as a last resort, when the natural forces had neither the time nor the ability to react, and in such cases the sera would promise more, by possibly producing a passive immunity which would require neither time nor effort on the part of the body.

In the battle between the body and the bacteria the body's chief means of defense consisted of the phagocytes, the principal of which were the white blood cells; a great standing army, capable of being doubled or trebled at short notice Their weapons, without which they were helpless, were the opsonins in the blood serum, which did not stimulate the phagocytes to increased activity, but acted in such a manner upon the bacteria that the latter could be easily destroyed by the phagocytes. The effect of bacterial vaccines was to increase, not only the specific opsonins, but also the phagocytes; thus augmenting the number of soldiers as well as furnishing them with weapons. It was to to be remembered, however, that the vaccines did not directly provide opsonins; they simply stimulated the body tissues, especially the subcutaneous connective tissue, to manufacture more of these. In using the vaccines we were simply imitating Nature, and they were not given by intravenous injection or by the mouth, but always injected into the subcutaneous connective tissue, where the opsonins were principally elaborated. Thence they were absorbed by the blood and carried to the site of the infection, if it were a local one, to assist the phagocytes. After the administration of bacterial vaccines the opsonins increased for approximately ten days, when the maximum was reached. This was maintained for a time, and then they slowly decreased to normal, after a period of weeks or months. In many instances the immunity produced lasted much longer than the time during which antibodies could be found in the blood. In his cases Doctor Craig had made no attempt to measure the effects of the vaccine by taking the opsonic index, as the technic was so elaborate and the results varied too much to justify the time and work required. Clinical symptoms, plus the aid of general rules were sufficient guides as to dose, intervals between doses, etc. The cases here recorded were by no means picked cases, but were made up from everything that came along in hospital, dispensary, and private practice. In fact, in the hospitals, in many instances, only the worst cases were turned over for this treatment, so that in these the patients were apt to die before it could have any effect. Beside these cases, he had treated about a hundred with stock vaccines, often with good results; but these were not included in this report. The best results were obtained in cases of staphylococcus infections, and for these the treatment was practically a specific.

The series of cases included the following: Furuncles, thirteen cases. Generally, two or three doses were sufficient, and all were quickly cured except one which was a mixed staphylococcus and streptococcus infection of very long standing, about fifteen years; and this finally yielded to the treatment. Carbuncles, nine cases; three of them in diabetics. Some were of very severe character, but in all, the results were brilliant. In these cases it was necessary to make only a slight opening to let out the pus and detritus, instead of the enormous incisions and excisions formerly required. Cellulitis, fifty-four cases; of which twenty-three were staphylococcus, ten pure streptococcus, and the remainder mixed infections. Although some of them were very severe, with a temperature as high as 105° F., there were no failures. Most of them were incised, but not with such extensive cutting as would ordinarily be needed to control the spread of the infection. Abscess, twenty-three cases: five staphylococcus, two streptococcus, three colon, and the others mixed. The results were entirely satisfactory in every instance, and here, again, less extensive operations than usual were called for, while there was prompter healing and less danger of complications. Postoperative infections, forty-one cases; nearly all the result of the trouble for which the operation was done and not following clean operations. Gangrenous or perforated appendix, twenty cases; pyosalpinx, nine; gallstones or cholecystitis, three; hernia, five; ulcerating carcinoma of the breast, one; Cæsarean section (both cases infected before operation), two; nephrectomy, one. Many of the cases were of mixed infection. This was a class which was markedly benefited by autogenous vaccines, as was the case here, and none of these patients died. General peritonitis, ten cases: staphylococcus, two, of which one was fatal; colon, four, with one death; the others, mixed infection. All were desperate cases and were drained and received all the routine treatment. The low mortality of twenty per cent. was a remarkable result, and led one to believe that the vaccines helped out the operative measures.

Post partum infections, ten cases; staphylococcus, one, streptococcus, three, mixed staphylococcus, streptococcus and colon, six. All ended in recovery, though all were in a serious condition and some seemed hopeless, and this was a class of cases in which the vaccine treatment should be started as early as possible. Postabortion infection, ten cases: seven pure streptococcus, with two deaths, and the other three mixed infections. Apparently, these cases were worse than the post partum one, streptococcus infections being more common. Septichemia with positive blood cultures, four cases Of these, one, a staphylococcus infection following osteomyelitis, was fatal; the other three (one colon, one staphylococcus, and one staphylococcus and streptococcus) ended in recovery. Septic endocarditis, two cases; both were fatal, one two days after the treatment was begun. For such infections vaccine treatment was of no avail, as the body was in no condition to manufacture its own protective agencies. Erysipelas, ten cases. One, in an infant which the speaker did not see personally, and which had been treated most of the time with a stock vaccine, ended fatally in exhaustion. The others cleared up with remarkable rapidity; the treatment undoubtedly cutting short the attack. Pneumonia, forty-four cases with seven deaths, a mortality of sixteen per cent. This, he said, did not give a fair idea of the treatment, as in many of the cases it was given only as a last resort, and several patients died almost immediately from delirium tremens, toxemia, and other complications. In proper cases, where the treatment was instituted early, it was very gratifying to see the toxemia diminish, the delirium clear up and the course of the disease and convalescence shorten. In the Sailors' Snug Harbor on Staten Island, an institution for old men, where he had early access to all cases of pneumonia, for a whole year at one time there was not a single death from pneumonia, among nearly a thousand inmates. It had been found that the pneumococcus could be recovered from the blood in seventy per cent., or more, of all cases of pneumonia, and the preponderance of evidence was to the effect that the immunity against the disease was a phagocytic one. Therefore, it seemed that the vaccine treatment should be especially applicable here, though it was essential for the greatest success that it should be begun early. The treatment was given a trial in severe "colds," bronchitis, etc., once in his own person, when the results were very satisfactory, time and much discomfort being saved. These cases were due to a mixed infection, with *Micrococcus catarrhalis* predominating, though at times the streptococcus was very evident.

Empyema, five cases: pneumococcus, two, colon bacillus, one, mixed staphylococcus and streptococcus, two. One ended in exhaustion, three in recovery, and one, still under treatment, was nearly well. When of recent origin, empyema was undoubtedly benefited by the treatment, but in serious chronic cases it could be expected only to diminish the discharge and lesson the toxemia. Osteomyelitis, five cases, with two deaths. Here the treatment could not accomplish much, as there was generally dead bone present and septic absorption was too rapid. In infected compound fractures, however, it was of unquestioned benefit by preventing spread of the infection, as shown by four cases in this series. Otitis media, acute cases, seventeen, chronic, six; staphylococcus, five, streptococcus, two, the others, mixed infections. In the acute cases the treatment seemed of benefit in all except one, where severe operative interference was eventually required. Generally, it rapidly diminished the fever and discharge and also lessened the duration and the danger of complications. Theoretically these were ideal cases for vaccine therapy, and, combined with early paracentesis, it would undoubtedly save many a mastoid. In chronic cases dead bone was frequently present, and all that could be reasonably hoped for from the treatment was to diminish the discharge and possibly prevent the spread of the infection; though recently he had had extremely good results in the clearing up of a chronic discharge in two cases, one of four, and the other of eleven years' duration.

Mastoiditis, three cases: the treatment being given after the radical operation. One patient, an infant, died after six weeks from exhaustion, and the other two recovered; one, at least apparently, being greatly benefited. Pyelitis, nine cases, all colon infections. Here an autogenous vaccine might control the infection of the mucous membrane, diminish the pus in the urine, and, by relieving the toxemia, give the patient a subjective cure, but it was difficult to get rid of the bacteria in the urine, as they were beyond the reach of the phagocytes. Asthma, three cases. One, a bad case of spasmodic asthma, was not at all benefited, one was said to be cured, though it was as yet too early to decide positively, and one was still under treatment, but reported as greatly improved.

In concluding, Doctor Craig said that vaccine treatment, obviously had its limitations, but, even when employed in unsuitable cases or where the patient had not sufficient vitality to react, there seemed no reason to fear any harm from it if it were administered with proper precautions. It could not take the place of surgery, but it was often a very useful adjunct to surgical procedures, and, altogether, it was unquestionably a great addition to our armamentarium for the treatment of bacterial infections.

Doctor Craig remarked in answer to a question by Dr. J. H. Branth that in two cases of cancer, one of the breast and the other of the throat, he had employed a vaccine made from *Bacillus neoformans*, the organism found at times in cases of malignant disease, but with absolutely no result. He went on to say that cocci were distinguished from baccilli by their morphological appearance. The coccus was a minute organism resembling a seed (whence its name), while the bacillus was rod shaped. The vaccine consisted of a suspension in normal salt solution of the bacteria found in the patient, which were killed by heat or chemicals and standardized by enumeration and dilution, and he briefly outlined the technic of its preparation from bacterial cultures, which, he said, required considerable time and patience. To prevent contamination a preservative, such as phenol, was added. It was impossible to state the average duration of the treatment in cases of septichemia, as these varied so greatly in severity. As to pneumonia among the inmates of Sailors' Snug Harbor, the records for ten years previous to the use of bacterial vaccines showed that the mortality from the disease amounted to 60.3 per cent. The difference, therefore, was very striking.

Diagnosis of Colon Bacillus Infection of the Urinary Tract.—Dr. Carl Kingsley, of West New Brighton, said that, in spite of our ever increasing knowledge of this condition, as recently as 1907 such masters as Lenhartz and Friedrich Muller had confessed that some characters of it were unknown to them and asserted that even at the present time the diagnosis was frequently overlooked. Often it was only after many false starts, numerous symptomatic prescriptions, and considerable mental disquietude on the part of the physician, that the possibility of an insidious pyelitis presented itself. Beside urinary tract infections, many cases of *Bacillus coli* invasions had been reported, including septichemia, meningitis, pneumonia, and cholecystitis. Just why an organism so constantly present in large numbers in the body should be the cause of disease seemed difficult to explain. The present accepted view classed it with the pneumococcus and others as an outside organism, since none of its toxic products were absorbed through the unbroken intestinal mucosa, and consequently no immunity had been established against it. Inflammatory processes caused by other organisms might give it foothold by producing unusual temporary reduction of resistance of the host, and the etiology of colon bacillus infection of the urinary tract might therefore depend upon lowered vitality due to some general or special cause. The portal of entry of the bacillus was generally assumed to be extension upward through the urethra, often associated with diarrhea and consequent constant contamination of the vulvovaginal ring in female infants. Many authors, however, believed in the possibility of direct extension to the bladder from the colon or of hemotogenous infection. The present paper was based on nine cases, four in his own practice and five in that of others. All were in females, five in young children and four in adults.

In most of the cases we read of or saw the abrupt onset and severe reaction were characteristic. An infant suddenly became blue and cold, seemingly collapsed, and then there came on a rapidly mounting and inexplicable fever. Extreme misery and restlessness might be striking, soon replaced by a drowsy or semicomatose condition, with a hot, dry skin. Cerebral disease might be suspected. In some instances we might find the abdomen a trifle full. In an infant tenderness might be difficult to elicit on account of restlessness, but in older patients abdominal pain might resemble almost any acute condition, as appendicitis or cholecystitis. Fever, leucocytosis, and abdominal tenderness, especially in the costovertebral angle, were suggestive, and if pus was found in the urine we might avoid a useless and dangerous operation. Symptoms of a cystitis might put us on the right track. Acute pyelitis, as statistics had shown, was much less common in older children and adults than in infants.

So far, he had been treating of the more acute forms of colon bacillus infection of the urinary tract. It was often the subacute or chronic forms, long undiagnosticated and untreated, which proved even greater diagnostic stumbling blocks. Not infrequently such cases were mistaken for instances of chronic malaria. The acute cases, therefore, might be confounded with abdominal or thoracic conditions, as appendicitis or pneumonia, meningitis, gastroenteritis, dentition fever, or other acute affection, while typhoid, influenza, malaria, or tuberculosis might be applied to more chronic cases, which might even resemble pyemia or endocarditis. In both acute and chronic cases, however, we had an almost characteristic urine to help us, and even though the patient were a baby, we should not neglect this important examination in all instances of cryptic fever. The specimens examined by him had uniformly been of great acidity, and usually of high specific gravity. Several had shown a soapy opalescence, while others had been simply cloudy. In all instances large numbers of pus cells, mainly polymorphonuclear, were seen under the microscope. In some, an occasional red blood cell was found; besides many squamous, caudate, and spindle shaped epithelial cells. Sluggishly mobile, rodlike bacilli were invariably present, and, when appropriately cultivated, these proved to be colon bacilli. Other infectious bacilli invaded the urinary tract but rarely, and an acid urine full of bacilli and pus meant practically in all cases colon bacillus infection. The possibility of a renal calculus with a secondary pyelitis was to be remembered, as well as the fact that tubercle and colon bacilli might coexist as a mixed infection; but recovery under appropriate treatment would exclude these possibilities. We had been told that there was no such thing as cystitis, but we might have to exclude a urethritis which would cause pyuria, though scarcely a bacilluria. As to the treatment, as this bacillus would not grow in an alkaline medium, alkalinization of the urine was nearly a specific in primary colon bacillus pyelitis, and for this purpose potassium citrate was the drug of choice. Some cases of cure by autogenous vaccines had been reported, and if simple treatment should fail, a chronic case might yield to this.

Dr. R. E. Van Gieson said that the colon bacillus seemed sometimes to be very virulent, and sometimes not at all so, and he was inclined to believe that some of these cases were not actually due to this agent. As to the treatment, he had found that his cases of pyelitis cleared up very rapidly under the use of urotropin.

Dr. J. Milton Mabbott said he had used potassium citrate with great satisfaction in this class of cases for the past eight or ten years. He had seen many instances of pus in the urine, with calculus, in which the exact bacillus present was not determined.

The president, Dr. Reynold Webb Wilcox, said it seemed that the cure of pyelitis was not to be attributed altogether to alkalies, since it was found that hexamethylenamine, or urotropin, which required an acid medium, was even more efficient. In the various pathological conditions due to colon bacillus infection, and which had been exhaustively set forth in a paper by Doctor Kemp before the association in October last, the combination of sodium benzoate with urotropin, as recommended by Dr. William H. Thomson, was undoubtedly of great service.

Weak Foot, with Demonstration of Foot Strapping and the Taking of a Cast for Plates.—Dr. Irving D. Steinhardt, of Manhattan, said that the condition of weak foot, from which a large percentage of the entire population suffered, was constantly overlooked, and that to some extent the mistaken diagnosis was no doubt accounted for by the fact that many of the great variety of symptoms it presented were far removed from the vicinity of the feet. It was unfortunate that it was so generally called flat foot, as this was misleading and was one cause for the common overlooking of the condition. While every case of flat foot was one of weak foot, not every pair of weak feet were flat feet. With the weakening of the ligaments of the tarsal bones, followed by the giving way of the supporting muscles, we had a partial or complete obliteration of the arch, together with a varying degree of eversion of the foot. The causes of weak foot were numerous, and perhaps the principal one was improper shoes. Among the other causes were general debility, lack of development of the lower limbs, obesity, and occupations requiring much standing or stair or ladder climbing. Although weak foot had been classified under a number of subdivisions, the symptoms of all were practically the same; varying only in degree. Among the complications were varicosities of the veins, hypertrophy of the tubercle of the os calcis, thickening of the lower end of the tibia from chronic inflammation of the epiphysis, gout, rheumatism, etc. The symptoms were both subjective and objective. The patient would perhaps complain of tiring quickly when walking, of pain when walking after standing for a time, of stiffness and difficulty in attempting to walk after a rest. The complaint of pain might include some in the ankles, calves, knees, thighs, hips, and back. Muscular strain and stretching was responsible for much of the knee pain, and night cramps of the lower leg muscles were of frequent occurrence. Pathological changes in the tissues might cause increased pain, stiffness, and disability in damp or changeable weather, and this accounted for the wrong diagnosis, frequently made, of rheumatism or arthritis. Among the objective symptoms were eversion of varying degree and limited range of motion in the foot, while swelling around the ankle joint, more particularly on the outer aspect, was very common, especially in fleshy subjects. The pain experienced by the patient was not infrequently very much out of proportion to the findings of an examination of the parts. In making the diagnosis it would be found that in the imprint of the foot upon paper after smearing the sole with petrolatum, or upon the floor after being dipped in water, the width of the line on the outer side would show to just what extent the arch was lowered.

As to the treatment, in the simple cases proper arch plates, plus massage and foot gymnastics, would bring immediate relief and future cure. The wearing of shoes conforming to the shape of a normal foot was essential. He was accustomed to order at first an extra sole, about one sixteenth to one eighth of an inch thick at the inner border of the foot and gradually decreasing in thickness to the centre, where it was merged with the regular sole of the shoe. This remained in the shoe until the patient was fitted with the proper kind of arch plates. No feet were ready for these plates until they were freely movable to overcorrection, and foot gymnastics, strapping, and massage, either hand or vibratory, were ordered. Having described the exercises to be prescribed for the feet, he demonstrated on a subject his method of strapping (for which he employed zinc oxide plaster) while the foot was held firmly in a position of flexion and inversion. The strappings, he said, were usually changed twice a week.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Textbook of Medical Jurisprudence and Toxicology. By John J. Reese, M. D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, Late President of the Medical Jurisprudence Society of Philadelphia. Eighth Edition. Revised by D. J. McCarthy, A. B., M. D., Professor of Medical Jurisprudence (George B. Wood Foundation) in the University of Pennsylvania, Neurologist to the Philadelphia General and St. Agnes Hospitals, etc. Philadelphia: P. Blakiston's Son & Co., 1911. Pp. ix-660. (Price, $3.)

In the new edition of this favorably known manual such additions have been made as will place the subject matter abreast of recent practices and findings. The chapter on insanity has been extensively altered, to place it in conformity with the classification of mental diseases now generally accepted. A chapter, Commitment of the Insane, in which the regulations established by various States as to the restraint and general care of these patients are summarized, and the duties of the physician in relation to their commitment explicitly given, has been introduced after the section on insanity. Throughout the portion on medical jurisprudence, which occupies a little over three fifths of the volume, the text is characterized, as before, by conciseness and, withal, completeness as regards the range of subjects taken up. In the portion of the book devoted to toxicology the subjects of formaldehyde poisoning and chronic bismuth poisoning have been amplified. Some information on the subject of anaphylaxis has been added at the close of the volume. The toxicology section will be found up to date in nearly all respects. One minor deficiency noted is the emission of reference to gelseminine, the most active constituent of gelsemium, in the description of this drug. For the treatment of chloral hydrate poisoning picrotoxine is the only agent suggested; this subject had better be amplified or else left out. *Convallaria majalus* (p. 542) is a slip which should be corrected. Leaving out of consideration these slight imperfections, the work is an admirable one, which will no doubt enjoy the same popularity among practitioners and students that it has already secured in its previous editions.

Flatulence and Shock. By F. G. Crookshank, M. D. Lond., M. R. C. P., Honorary Physician to the Western General Dispensary, Marylebone, N. W., etc. London: H. K. Lewis, 1912. Pp. vi-47.

With a distinct taste for style in medical writing we confess to reading at one sitting the two essays making up this delightful little volume, whose modest and unaffected humor in no way impairs the value of its reasoning. A victim himself of flatulence the author believes that in many cases it is due to a real secretion of gas caused by vagal disturbance. To colleagues who may suffer as he suffers, Doctor Crookshank offers "in strictest confidence" the advice to secure as a remedy a bottle of the very best crême de menthe, and to sip it slowly and steadily until better. For ordinary, nonprofessional patients, more orthodox remedies are duly prescribed. Proper credit is given to Sajous for the original suggestion as to the possible implication of adrenal secretion as one of the active elements in the management of internal respiration or tissue gas exchange, and it is gratifying if somewhat surprising to read that the author hopes that British investigators of the subject may now stand on the same plane as the "most eager workers in Continental and transatlantic laboratories."

In the second essay on shock, credit is given to Henderson, of Yale, and Crile among others. The conclusion is that shock without demonstrable lesion is a very real condition, but varies with the personal equation of suggestibility or "shock value." We recommend this booklet as an admirable example of what an imaginative scholar can do with dry facts and as offering two well nigh perfect types of what medical communications ought to be.

A Manual of Surgical Treatment. By Sir W. Watson Cheyne, Bart., C. B., D. Sc., LL. D., F. R. C. S., F. R. S., Honorary Surgeon in Ordinary to His Majesty the King, etc., and F. F. Burchard, M. S., F. R. C. S., Surgeon to King's College Hospital, etc. New Edition. Entirely Revised and Largely Rewritten with the Assistance of T. P. Legg, M. S., F. R. C. S., Surgeon to the Royal Free Hospital, etc., and Arthur Edmunds, M. S., F. R. C. S., Surgeon to the Great Northern Central Hospital, etc. In Five Volumes. Volume III. The Treatment of the Surgical Affections of the Joints, the Spine, the Head, and the Face. Philadelphia, and New York: Lea & Febiger, 1912. Pp. xxviii-575.

The third volume of this important work is devoted to the treatment of the surgical affections of the joints, the spine, the head, and the face. The two preceeding volumes dealt chiefly with general considerations; the present volume is the first one to take up regional surgery and begins with the head and face. The chapters dealing with the diseases of joints are very full and treat the subject very systematically. The chapters on tuberculosis of joints are particularly clear and up to date in pathology and treatment. The newer operations for recurrent dislocation of the shoulder, drainage of the knee joint, and arthroplasty are described in full detail and illustrated by excellent drawings The second half of the volume, dealing with surgical affections of the head and face, devotes considerable space to the traumatic lesions of the skull and endocranial contents and will be found of great interest and value to the student first learning the principles governing this most important field of surgery. The latest operations on the brain such as Cushing's temporal decompression, removal of the Gasserian ganglion, and exposure of the cerebellum find a full description. This volume is fully up to the high standard set by the two which preceded it. It is essentially practical and will be found an excellent textbook for the student as well as a valuable book of reference and review for the surgeon and general practitioner.

The Hunterian Lectures on Color Vision and Color Blindness. Delivered before the Royal College of Surgeons of England on February 1 and 3, 1911. By Professor F. W. Edridge-Green, M. D., F. R. C. S., Beit Medical Research Fellow. New York: Paul B. Hoeber, 1912. Pp. 76. (Price, $1.50.)

This little book presents in very readable form what is at present known in regard to the theory and facts of color vision and color blindness, and the detection of the latter from a practical point of view. The writer objects to the term "color blindness," because it is not a good name for the condition to which it is applied. In most cases there is no blindness, in the ordinary acceptation of the term to colors. Those who confound red and green do so because both give rise to a similar sensation of color. The greatest number of distinct colors that can be seen is seven, while many persons see only six, five, four, three, or two, in proportion to the development of their color perceiving centres; hence colors that are not the same are put together as alike by those who see only two or three. The evidence that the visual purple is the essential factor in vision is given at considerable length. The entoptic evidence obtained by the author is very interesting, as is the theory of the evolution of the color sense. Defects of light perception and of color perception, dichromic and trichromic vision are dealt with clearly and briefly. Under the practical detection of color blindness the object of the test is first considered, then come the requirements, the persons to be excluded from certain callings, the construction of a test, the lantern test devised by the author, and various other tests. The work is a valuable one for any person who is liable ever to be called upon to make an examination for color blindness.

Sprue. Its Diagnosis and Treatment. By Charles Begg, M. B., C. M. Edin., Formerly Medical Officer Chinese Imperial Maritime Customs, and H. B. M. Medical Officer, Hankow, China. Illustrated. New York: William Wood & Co., 1912. Pp. vi-124. (Price, $2.)

Doctor Begg in this book gives the results of over thirty years' clinical work in connection with sprue. Brief chapters are devoted to the pathological changes, the author holding that the disease is caused by microorganisms, although no specific invader has been demonstrated. Diagnosis is dealt with quite freely, sprue being defined as a tropical disease characterized by the passage of bulky acid motions, with progressive emaciation and contracted liver. The treatment advocated is the use of santonin that has become golden yellow as a result of long exposure to light. The book would be of interest to those dwelling in countries where the disease prevails.

Aids to Histology. By Alexander Goodall, M. D., F. R. C. P. (Edin.) Lecturer on Physiology, School of Medicine of the Royal Colleges, Examiner in Physiology to the Royal College of Physicians, Edinburgh. New York: William Wood & Co., 1912. Pp. viii-135. (Price, $1.)

This is a convenient little book for students, also for physicians who have not acquired elementary histology when at college. A few pages might well have been added to its ten page section on histological methods to convey the latter more clearly. The main defect in the book, however, lies in the illustrations, rough sketches which any freshman in a modern medical school could surely improve upon. With several beautifully illustrated books on the market such illustrations are inexcusable.

Zur Morphologie der Nierensekretion unter physiologischen und pathologischen Bedingungen. Von Dr. Tatzuo Suzuki, Arzt in Japan. Mit einem Vorwort von L. Aschoff, Freiburg i. Br. Mit 6 Abbildungen im Text and 6 Tafeln. Jena: Gustav Fischer, 1912. Pp. viii-244.

This publication represents a tremendous amount of work in determining, by experiments upon the lower animals, the changes occurring in the kidney as a result of the administration of poisonous substances. The last sixty pages are devoted to an analysis of the finer structural changes occurring in the different portions of the tubule and the correlation of the functional disturbances with the morphological changes. The presentation is a very thorough one and contains much valuable information particularly in the summaries following the different chapters dealing with the experimental reactions.

Public Health Chemistry and Bacteriology. A Handbook for D. P. H. Students. By David McKail, M. D. (Glas.), D. P. H. (Camb.), F. R. F. P. S. G., Lecturer on Public Health and Forensic Medicine, St. Mungo's College, Glasgow, Lecturer on Hygiene to Nurses, Glasgow Royal Infirmary, etc. New York: William Wood & Co., 1912. Pp. vii-409. (Price, $2.50.)

The first portion of 147 pages of Doctor McKail's work is devoted to public health chemistry, including water analysis, examinations of air, soils, foods, beverages, and disinfectants. As illustrations are omitted the subjects are dealt with very thoroughly. Chemical procedures are given in detail. In the chapter on water analysis emphasis is laid on the necessity of using all evidence, bacteriological as well as chemical, before a definite opinion is formed. The remaining 250 pages are devoted to bacteriology. This section is very complete, the chapter on plague especially, containing a summary of the *Lancet* reports of the plague in China during 1910-11. Tuberculosis is treated fully and there is a summary of the final report of the British commission which concluded unanimously that the human tubercle bacillus could be transmitted to cattle, and that the bovine tubercle bacillus is dangerous to man. This book is a very useful one to both chemist and bacteriologist and can be recommended highly.

Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener u.a. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer, Redakteur der Klinisch-therapeutischen Wochenschrift. Neunte Ausgabe. Nachdruck auch einzelner Teile verboten. Würzburg: Curt Kabitzsch, 1913. Pp. xix-476.

By bringing upon the market every year a revised edition, editor and publisher have succeeded in supplying the medical profession with a reliable condensed prescription book, containing all the old as well as the new drugs, their indications and combinations. We have reviewed all the previous editions and are pleased to introduce the ninth to the medical public. The little manual can be well recommended.

Beitrag zur Klinik und Histopathologie der gutartigen Hautepitheliome. Von Privatdozent Dr. Walter Frieboes, Assistent an der Universitätsklinik für Hautkrankheiten. Mit 27 Abbildungen auf 10 Tafeln. Berlin: S. Karger, 1912. Pp. 95.

A careful study of the cases recorded under the titles of benign cystic epithelioma, epithelioma adenoides cysticum, lymphangioendothelioma, etc., leads the author to the conclusion that these new growths are true epitheliomata. Their relationship to various nevoid growths is indisputable; and the author proposes as a general designation for the entire group the name selected by E. Hoffmann, adenoid nævoepitheliomata. An illustration of a well marked case, with several colored drawings of the microscopic findings, serves to elucidate the text. The whole forms a useful general monograph for those interested in the subject.

Urologischer Jahresbericht. Edited by Prof. A. Kollmann and Dr. S. Jacoby. Published at Leipzig: Dr. Werner Klinkhardt, 1912. Pp. 499.

This review of the urological literature of 1911 is more complete if anything than its predecessors. If one is willing to wait for the appearance of this volume one need not take the trouble to read any genitourinary publications in order to be conversant with the literature. After a complete review of the physiology and anatomy of the genitourinary organs, diseases and treatment of both male and female are taken up. Urine chemistry and bacteriology are not neglected and the last chapter is devoted to diseases of the genitourinary apparatus of the dog. The index is very complete.

Lehrbuch (früher Kompendium) der Haut- und Geschlechtsleiden einschliesslich der Kosmetik. I. Band: Hautleiden und Kosmetik. Von Sanitätsrat Dr. S. Jessner. Vierte sehr erweiterte Auflage. Mit 33 Abbildungen auf 31 farbigen Tafeln und 7 Abbildungen im Text. Würzburg: Curt Kabitzsch, 1913. Pp. xvi-96.

This textbook has grown out of the *Dermatologische Vorträge* which Jessner has been publishing for many years, and possesses the merits as well as the inevitable drawbacks of a compendium designed for quick reference rather than for thorough consideration of the subjects treated. Thus the anatomy of the skin is disposed of in some ten pages, and is illustrated only with a section of the nail, one showing the vascular supply of the integument, and three plates. In equally brief manner the author treats of the various therapeutic agents usually employed, of physical therapeusis, including thermotherapy, hydrotherapy, electrotherapy, phototherapy, and radiotherapy. Functional disturbances are then considered; and this first portion of the work terminates with a brief consideration of some of the circulatory disturbances of the skin. The work is an excellent ready reference compendium especially for those who only occasionally require its aid incidentally to general practice; it contains the latest in abstracted form. It is necessarily incomplete, however; and it seems to us that it would have been better to retain the more modest title than to dignify it with the title of textbook.

Miscellany.

Scientific Street Cleaning.—Mrs. Flora N. Spiegelberg sends us a clipping from the *New York Times* for December 8, 1912, in which appears her article entitled The City Clean Should Be the Slogan of Women. Along with this clipping are two illustrations which did not appear in the *New York Times* article and which we reproduce below, and the following letter:

To the Editor:

I trust the enclosed article will appeal to you as much as my address last year before the Women's Health Protective Association on the same subject. This latest German scientific economic incinerating method, aside from yielding a large revenue to the city, will be sanitary, dustless, odorless, and will starve the fly instead of swatting it. It will do away with the dumps, prevent ash and garbage from standing uncovered on the sidewalks, or heaps of refuse in the streets. It will likewise prove the most effective means of cleaning up our filthy tenement quarters and thus reduce tuberculosis and other diseases. I have many more data on that subject at your disposal. You will remember that I suggested last year to the health department and personally pleaded with Doctor Lederle to have all old carpets removed from the car seats, likewise the filthy straps, possibly twenty years old. Imagine distributing millions of these transfers to poor, ignorant people in just such carpet covered car seats. This is really a joke were it not so serious—our German cousins only laugh at us. When will we learn municipal efficiency as in Germany? I appeal to you again this time for publicity because you gave my address such courteous consideration.

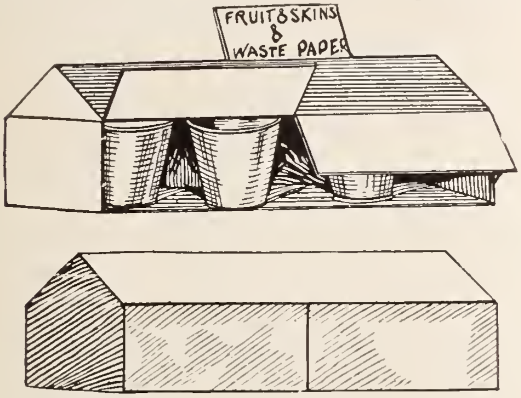

Fig. 1.—Box left on curb for street sweepers.

Fig. 2.—Can containing collection of refuse.

Figure 1 shows the covered box which, in German cities, is left on the curb for the street sweepers; the upper view is of the box opened in order to show the cans awaiting removal.

Figure 2 shows between the drivers the large can containing a mixed collection of refuse. This can is dustless, which prevents the men from being choked with dust or covered with grease or decomposed garbage; it is of reasonable size and not a heavy receptacle or barrel, the lifting of which is likely to cause physical injury such as often occurs in our cities. Our men are frequently compelled to work under conditions not fit for pigs. This is a crying abuse and should not be permitted by the Department of Health after the expiration of the present contracts in 1914.

Flora N. Spiegelberg.

Meetings of Local Medical Societies.

Monday, *January 20th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Elmira Clinical Society; Hartford, Conn., Medical Society.

Tuesday, *January 21st.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Triprofessional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Syracuse Academy of Medicine; Ogdensburg Medical Association; Oswego Academy of Medicine; Psychiatric Society of Ward's Island; Medical Society of the County of Westchester.

Wednesday, *January 22d.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo (annual).

Thursday, *January 23d.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Bronx Medical Association (annual); New York Physicians' Association; New York Celtic Medical Society; Hospital Graduates' Club, New York (annual).

Friday, *January 24th.*—New York Academy of Medicine (Section in Public Health); Academy of Pathological Science, New York; New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society.

Saturday, *January 25th.*—West End Medical Society, New York; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society, New York.

Official News.

Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 8, 1913:

Carter, Henry R., Senior Surgeon. Upon being relieved by Surgeon W. P. McIntosh, directed to proceed to Baltimore, Md., and assume command of the Marine Hospital at that port. **Cumming,** H. S., Surgeon. Directed to report to the director of the Hygienic Laboratory, Washington, D. C., for special instruction. **Fauntleroy,** C. M., Assistant Surgeon. Upon being relieved by Acting Assistant Surgeon W. J. Linley, directed to proceed to Honolulu, Hawaii, and report to the chief quarantine officer for duty. **Fox,** Carroll, Passed Assistant Surgeon. Relieved from duty at Manila, P. I., upon arrival of Passed Assistant W. A. Korn, and directed to proceed to San Francisco, Cal., and report his arrival to the bureau. **Glover,** M. W., Passed Assistant Surgeon. In compliance with the request of the State Board of Health of California, directed to make a survey to ascertain the prevalence of trachoma among the school children in certain sections of Tulare

County. **Krulish**, E., Passed Assistant Surgeon. Directed to report to the Bureau of Medicine, Washington, D. C., for conference relative to medical relief of the natives of Alaska. **Lyon**, R. H., Assistant Surgeon. Granted leave of absence for two months and fifteen days from December 14, 1912. **McIntosh**, W. P., Surgeon. Relieved from duty at the Marine Hospital, Baltimore, Md., and directed to proceed to Louisville, Ky., and assume command of the Marine Hospital at that port. **McLaughlin**, A. J., Passed Assistant Surgeon. Granted six months' leave of absence, without pay, from January 1, 1913.

Boards Convened.

Board of commissioned officers convened to meet at the bureau, Monday, January 13, 1913, at 10 o'clock a. m., for the examination of candidates for appointment as assistant surgeon in this service. Detail for the board: Senior Surgeon D. A. Carmichael, chairman; Surgeon John McMullen, member; Surgeon L. L. Lumsden, recorder.

Board of medical officers convened to meet at Port Huron, Mich., for the examination of a detained alien. Acting Assistant Surgeon W. J. Duff detailed as chairman of the board.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 11, 1913:

Blanchard, Robert M., Captain, Medical Corps. Relieved from duty at Fort Sheridan, Ill., and will proceed to Fort Strong, Mass., for duty. **Boyer**, Perry L., Captain, Medical Corps.. Left Madison Barracks, N. Y., to inspect Sanitary Troops, New York Militia at Albany, Troy, and Utica. **Cole**, Clarence Le R., Captain, Medical Corps. Relieved from duty at the Army Medical School, Washington, D. C., and will proceed to Fort Leavenworth, Kansas, for duty. **Collins**, C. C., Major, Medical Corps. Leave of absence extended ten days. **Dickenson**, Clarence F., First Lieutenant, Medical Reserve Corps. Relieved from duty at Whipple Barracks, Ariz., and will proceed to the Philippine Islands for duty on March 5, 1913. **Duval**, Douglas F., Major, Medical Corps. Left Fort Benjamin Harrison, Ind., on January 8th, on ten days' leave of absence. **Eastman**, William R., Major, Medical Corps. Reports arrival at Columbus, N. M., for duty. **Foley**, Thomas M., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month and fifteen days. **Freeman**, Paul. L., Captain, Medical Corps. Relieved from further duty in the Philippines Division and detailed in the Army Transport Service, with station at San Francisco, Cal. **Frick**, Euclid B., Lieutenant Colonel, Medical Corps. Granted thirty days' leave of absence from January 1, 1913. **Glennan**. James D., Lieutenant Colonel, Medical Corps. Leave of absence further extended twelve days. **Halls**, James F., Major, Medical Corps. Granted leave of absence for four months on surgeon's certificate of disability, with permission to apply for two months' extension. **Holland**, Josiah H., Lieutenant, Medical Corps. Granted leave of absence for two months and fifteen days. **Kellam**. F. C. A., Jr., Lieutenant, Medical Corps. Left Fort Clark, Texas, on January 6th, on thirty days' leave of absence, with permission to apply for thirty days' extension. **Mudd**, Lee C., Lieutenant, Medical Corps. Relieved from duty at Fort Leavenworth, Kansas, and will take transport for Honolulu on March 5th for duty at Fort Shafter; granted ten days' leave of absence from January 6th. **Munson**, Edward L., Major, Medical Corps. Will report to the examining board at the Army Medical Museum building for examination for promotion. **Phalen**, James M., Captain, Medical Corps. Relieved from duty as attending surgeon, New York city, and will proceed to Fort Sheridan, Ill., for duty. **Pratt**, John M., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Ethan Allen, Vt., for duty. **Richardson**, William H., Captain, Medical Corps. In addition to present duties, will perform the duty of attending surgeon, Headquarters, Department of California, San Francisco, Cal. **Schmitter**, Ferdinand, Captain, Medical Corps. Detailed a member of the board of medical officers appointed for the purpose of studying tropical diseases as they exist in the Philippine Islands; relieved from duty at Fort Greble, R. I. **Sharpe**, Herbert H., Lieutenant, Medical Corps. Ordered to temporary duty on the transport *Sheridan*. **Siner**, Joseph L., Lieutenant, Medical Corps. Relieved from duty at Fort Ethan Allen, Vt., and will take the transport for Honolulu on March 5th, for duty at Schofield Barracks. **Thornburgh**, R. M., Major, Medical Corps. Granted leave of absence for two months. **Webber**, Henry A., Major, Medical Corps. Leave of absence extended fifteen days.

Births, Marriages, and Deaths.

Married.

Baird—Blythe.—In Cedar Rapids, Iowa, on Tuesday, December 31st, Dr. Charles Glen Baird and Miss Margaret Mary Blythe. **Lesser—Taylor.**—In New York, on Saturday, January 4th, Dr. Mozart Monae Lesser, Jr., and Miss Isabel Taylor. **McCubbin—Cooper.**—In San Francisco, Cal., on Tuesday, December 31st, Dr. Hardy Lewis McCubin and Mrs. Cora A. Cooper.

Died.

Baldwin.—In White Hall, Md., on Friday, January 3d, Dr. Thomas C. Baldwin, aged forty-four years. **Barry.**—In Denver, Colo., on Saturday, December 28th, Dr. Joseph D. Barry, aged thirty-six years. **Bell.**—In Lowell, Mass., on Saturday, January 4th, Dr. Robert E. Bell, aged fifty-three years. **Bosley.**—In Baltimore, on Sunday, January 5th, Dr. James Bosley, aged sixty years. **Burlington.**—In Duryea, Pa., on Tuesday, December 31st, Dr. John A. Burlington, aged forty-nine years. **Cahill.**—In Cambridge, Mass., on Tuesday, December 24th, Dr. George Stephen Cahill, aged forty-eight years. **Carlin.**—In Boyds, Md., on Saturday, January 4th, Dr. James S. Carlin, aged seventy-six years. **Clifford.**—In Denver, Colo., on Sunday, December 29th, Dr. Benjamin K. Clifford, aged twenty-eight years. **Crothers.**—In Chester, Pa., on Wednesday, January 1st, Dr. L. Haines Crothers, aged thirty-five years. **Daniel.**—In Disputanta, Va., on Saturday, December 28th, Dr. Charles C. Daniel, aged twenty-eight years. **Donnelly.**—In Toledo, Ohio, on Saturday, January 4th, Dr. Peter Donnelly, aged forty-four years. **Green.**—In Little Rock, Ark., on Monday, January 6th, Dr. William Elza Green, aged sixty-eight years. **Hillyer.**—In Saginaw, Mich., on Thursday, December 26th, Dr. E. H. Hillyer, of Merrill, aged sixty-four years. **Howard.**—In Fort Worth, Texas, on Wednesday, December 25th, Dr. William R. Howard. **Humiston.**—In Boston, on Tuesday, December 31st, Dr. Franklin G. Humiston, of East Jaffrey, N. H., aged fifty-six years. **Johnson.**—In San Antonio, Texas, on Thursday, January 2d, Dr. Daniel B. Johnson, aged eighty-two years. **Jones.**—In Baton Rouge, La., on Tuesday, December 31st, Dr. Thomas S. Jones, aged eighty-five years. **Kendig.**—In Lancaster, Pa., on Monday, January 6th, Dr. Benjamin Sangree Kendig, aged eighty-six years. **Kennedy.**—In Troy, S. C., on Thursday, December 26th, Dr. C. L. Kennedy. **Massenburg.**—In Towson, Md., on Monday, December 30th, Dr. Richard C. Massenburg, aged sixty-seven years. **Mothershead.**—In Earlington, Ky., on Tuesday, December 31st, Dr. N. G. Mothershead, aged seventy-two years. **O'Brien.**—In Brooklyn, N. Y., on Monday, January 6th, Dr. Keran O'Brien, aged forty-two years. **Osgood.**—In Lowell, Mass., on Sunday, January 5th, Dr. George C. Osgood. **Owsley.**—In Sonora, Ky., on Friday, December 27th, Dr. J. H. Owsley, aged seventy-seven years. **Pierce.**—In New York, on Wednesday, January 8th, Dr. Williard Ide Pierce, aged fifty-six years. **Priestman.**—In Chicago, on Wednesday, January 1st, Dr. John Priestman, aged eighty-three years. **Stevenson.**—In Morenci, Mich., on Monday, December 30th, Dr. Samuel Stevenson. **Veeder,**—In Pittsburgh, Pa., on Saturday, January 4th, Dr. Andrew Truax Veeder, aged seventy-one years. **Vrooman.**—In North Adams, Mass., on Saturday, January 4th, Dr. Henry J. Vrooman, aged fifty-nine years. **Welton.**—In Brooklyn, on Wednesday, January 8th, Dr. Robert Bradlee Welton, aged seventy years.

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Original Communications.

TUBERCULOSIS AND OTHER DISEASES IN SCHOOLS AND COLLEGES.*

Open Air Schools and Open Air Instruction with Breathing Exercises as Preventive Measures.

BY S. ADOLPHUS KNOPF, M. D.,
New York,
Professor of Medicine, Department of Phthisiotherapy, Post-Graduate Medical School and Hospital.

MOTTO: *If we wish to prevent tuberculosis in children the open air school must become the rule, the indoor school the exception.*

Among the many telling sentences in that brilliant presidential address of Professor William H. Welch, of Baltimore, delivered at last year's meeting of the National Tuberculosis Association, in Denver, there is one that reads as follows: "In the light of our newer knowledge there is abundant reason for the ever increasing emphasis placed upon the importance of attacking the problem of tuberculosis in the early years of life."

There is no question in the mind of any worker in the tuberculosis field that this portion of our tuberculosis crusade is indeed, not only the most important, but also the most difficult one to deal with. The five to ten per cent. of tuberculosis in childhood, which can be traced to the bovine type of the bacillus, would seem almost the easiest part to prevent. This could be done by the wise enactment and judicious enforcement of bovine laws, but in order to be effective, these laws as well as their enforcement must emanate from the force of our central government. Individual State laws are of little use as long as they differ from each other, are reasonably severe in one community and ridiculously slack in the next. Bovine laws must be enacted and enforced uniformly and this is only possible with the aid of a Federal department of health. With such laws, enforced by the supreme power of the United States government, it is my firm conviction that the bovine type of tuberculosis can be annihilated within a decade. I believe that the ten per cent. of deaths we now have from this form of tuberculosis in childhood can be prevented; that the economic loss accruing to a community because it has educated five per cent. of its children at the age from eight to fourteen years and then had them die from a preventable disease, can be saved; and last but not least, that the vain sacrifices made by parents, the sorrow and agony they had to experience through the untimely loss of beloved children may be spared to them. Let those who still oppose the creation of a Federal department of health take this to heart and remember that by their opposition they must be held responsible for the untimely deaths of thousands of American children.

Although but a small percentage of tuberculosis due to the human type of bacillus can be traced to direct bacillary transmission via the placenta, we all know that postnatal infection from either parent, but particularly from the mother when tuberculous, is one of the most frequent causes of the disease in childhood.

It is not within the province of this essay to speak of the prophylactic measures and regulations which should prevent tuberculous procreation. I have very strongly expressed my views on this subject in other publications to which I must refer my readers.[1] I am here to-day to tell you what I believe might be done for the child who is tuberculous or is likely to become so by reason of a predisposition inherited or acquired, and last but not least, to tell you how we may strengthen the physique and mentality of the pupils.

It is very easy to say "take away the tuberculous child from its tuberculous parents, raise it in the best of hygienic environments, give it good food and plenty of air and you will overcome the tuberculous predisposition or cure the infected child."

That such a procedure can be inaugurated only in the smallest number of cases must be evident to all who have studied tuberculosis, not only from its medical, but also from its social aspect. In the majority of cases the separation of the child from the mother is out of the question. A beloved teacher of mine, the late Professor Grancher, of Paris, thought to solve the problem by placing the children of tuberculous parents residing in the city of Paris, in country homes as early as possible, having them there supervised by the local physician and returned to the parents when in his opinion the children had grown to be vigorous and strong enough to resist invasion of the bacilli. He called this work *Œuvre de preservation de l'enfance contre la tuberculose.* The work is still carried on by the widow of that great master and lover of children. That this work accomplishes a great deal of good there can be no doubt. The only question which there can be is whether it is not possible to accomplish a good deal

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*Read before Section 3, Hygiene of Infancy and Childhood: School Hygiene, of the International Congress on Hygiene and Demography, Washington, D. C., September 26, 1912.

[1] Primary Sources of Tuberculous Infection, Their Relation to Eugenics and the Cost of Tuberculosis, NEW YORK MEDICAL JOURNAL, June 29, 1912. Tuberculosis as a Disease of the Masses and How to Combat it, International Prize Essay, Seventh American Edition, New York, 1911. *Tuberculosis a Preventable and Curable Disease.* New York: Moffat, Yard & Co.

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more by removing mother and child, or the entire family, into the more sanitary quarters of the city and teaching them all hygiene and outdoor life, and sending the children in time to open air kindergartens, open air schools, and open air colleges.

To place not only the child but the mother as well, in fact, the entire family, in hygienic environments, where they may breathe good air, have clean, well lighted rooms perhaps so arranged that outdoor sleeping is feasible, and where there is medical supervision, would seem far superior to the separation of child from mother. By this method the whole family would receive the benefit of preventive and curative care.

While the out of town districts would be ideal for such homes of tuberculous families, it seems that even a great city, when it has citizens public spirited enough to devote their fortunes to so laudable a purpose, may have such a home sanatorium. A beautiful example of a sanitary home or home sanatorium for tuberculous or predisposed families exists now in the city of New York at Seventy-eighth Street and John Jay Park. It is known as the East River Homes and was built by the generosity of Mrs. William K. Vanderbilt, Sr. Here, a number of families with members who are strongly predisposed to tuberculosis, or have recovered from the disease, receive the advantage of almost ideal homes with every room lighted and ventilated and with all modern sanitary improvements, for a most moderate sum. To give also to such families where the breadwinner is yet an invalid or not strong enough to support a family the advantage of such a home, the New York Association for Improving the Condition of the Poor has leased for three years an entire section of the East River Homes. This section consists of twenty-four apartments with a southeastern exposure. The trustees of the East River Homes have given the association entire control of the open stairway leading to these apartments and free access to, and partial control of the ideal roof garden. These families will be carefully supervised by physicians and nurses.

On top of the Vanderbilt houses are beautiful roof gardens which, I understand, will, as soon as possible, be used as open air schools. However, open air schools, open air kindergartens, and outdoor play facilities should be provided not only for the tuberculous and the tuberculously predisposed, but for all children, if we wish to combat tuberculosis as a disease of the masses. In the city of New York, for example, where, owing to the density of population and the topography of the island, playgrounds and small parks are necessarily limited, we have nevertheless thousands of acres of unoccupied, unused roofs which could easily be transformed into open air schools and playgrounds. We have made a beginning in New York, but our efforts have thus far been limited to the care of a very small number of tuberculous and anemic children.

We have at this time in New York city twelve open air classes connected with the public school system. According to the statistics kindly furnished me by Dr. Thomas S. Carrington, assistant secretary of our National Tuberculosis Association, the number of pupils attending these twelve public schools is 526. The twelve open air schools in New York city are as follows: Seven fresh air classes, situated at Mott and Spring Streets, 57 West Forty-fourth Street, 272 East Tenth Street, Eldridge and Hester Streets (for boys), Eldridge and Hester Streets (for girls), West Twenty-eighth Street (for boys), West Twenty-eighth Street (for girls); four open air classes, situated at Bellevue Ferryboat, No. 2—Bellevue Ferryboat, Vanderbilt Clinic, ferryboat *Middletown;* one open air school on ferryboat *Susquehanna,* Brooklyn. Besides these classes of the public schools, the Horace Mann school established last year an open air class with forty pupils taken from the primary grades, and the Society for Ethical Culture announces that it will establish an open air school for sixty pupils of the fourth, fifth, and sixth grades, on September 25, 1912. This would give to New York City fourteen open air schools with a capacity for 626 children coming from all classes of society.

For the rest of the United States there are, according to the following statistics, also kindly furnished by Doctor Carrington, at this time in operation forty-one schools accommodating 1,229 pupils. To this must be added four summer schools, and for the coming year there are projected eight open air classes in the cities mentioned:

List of Open Air Schools in the United States.

City.	No. of schools and classes.	No. of pupils.
Monrovia, Cal.	1	..
Oakland, Cal.	1	25
Colorado Springs, Colo.	(Not yet in operation)	..
Denver, Colo.	(Not yet in operation)	..
Hartford, Conn.	1	25
South Manchester, Conn.	1	20
Washington, D. C.	1	35
Chicago, Ill.	Tuberculosis Institute School (three or four extra schools during summer months)	..
Chicago, Ill.	6	250[1]
New Orleans, La.	2	160
Boston, Mass.	5 class rooms	100
Cambridge, Mass.	1	30
Grand Rapids, Mich.	2	40[1]
St. Paul, Minn.	(Not yet in operation)	..
Montclair, N. J.	1	21
Newark, N. J.	1	30
Orange, N. J.	2	43
Albany, N. Y.	1	25
Buffalo, N. Y.	1	20
Schenectady, N. Y.	(Not yet in operation)	..
New York City.	12	526
Rochester, N. Y.	1	30
Syracuse, N. Y.	(Not yet in operation)	..
Cincinnati, Ohio.	2	40
Cincinnati, Ohio.	1 open air room	35
Columbus, Ohio.	(2 schools projected)	..
Hazelton, Pa.	1	40
Mt. Airy, Pa.	1	30
Philadelphia, Pa.	3	75[1]
Pittsburgh, Pa.	2	75
Williamsport, Pa.	(Not yet in operation)	..
Pawtucket, R. I.	1	25
Providence, R. I.	1	25
Kenosha, Wis.	1	30

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[1] Approximate.

The results obtained in open air schools are well known to all who have been privileged to examine and watch the children. I could fill these pages with testimonials certain to make of anybody and everybody an enthusiast, but I shall quote only a few authoritative statements and not omit the more conservative ones. The latter are to my mind as significant as the former. Thus, in the *Medical Report on Outdoor Classes for Anemic Children for the Year 1911-12,* kindly furnished me by the courtesy of Mr. Mann, secretary of the Tuberculosis Committee of the Charity Organization Society, and Doctor Woodruff, the physician in attendance, the conclusions are as follows:

> First. In the special outdoor classes for anemic children as at present conducted, subnormal children improve in mental and physical tone, in the iron content of their blood, and to a certain extent in nutrition.
>
> Second. The improvement in nutrition and gain in weight may possibly be dependent to some extent on the food received in the school.
>
> Third. The gain in hemoglobin bears no relation to the amount or character of the food given in the school, but is due in all likelihood to the effect of continuous life in the fresh air day after day.
>
> Fourth. The effect of the outdoor class is not or may not be transitory.
>
> Fifth. From the study of the "control classes" and the children discharged from the anemic class at Public School 21, it is likely that the environment of the ordinary class room has some deleterious effect, during the winter at least, which tends to produce an anemia.

An interesting statement concerning results for the first outdoor school in the United States, and more optimistic, was published in the *Journal of the Outdoor Life* for March, 1909, by Mr. Walter H. Small, at that time superintendent of the Providence schools. After describing the interest the general public had taken in this first open air school, he said: "The school enrollment is varying and the work is necessarily individual. Each does what he can; he is not urged; but he sits in the sun, keeps healthfully busy, drinks in fresh air, and grows stronger physically and more alert mentally. To see the color come into the cheeks and the sparkle into the eyes and to see the emaciated form fill out convinces those close to the work that it pays abundantly."

The result of the first outdoor school in Chicago is indeed surprising. It was kept open only one month. There was a gain of from one to seven pounds and, considering the general condition, Principal William E. Watt, of the Graham School, expressed himself as follows: "The children are delighted to breathe pure air all day in school and out. They are not compelled to stay in the room, but there are many more clamoring to get in. It has been a most successful experiment. Pupils have been cured of catarrh, swollen glands have been reduced to normal size, and tuberculous symptoms have disappeared. Their resistance to disease has been raised, and they are much more healthy."[2]

Because in New York city the open air schools connected with the public school system have been primarily intended for tuberculous or predisposed children, the following report of Professor Maxwell, superintendent of the city public schools for the year 1911, is highly instructive:

> The city of New York has incorporated in its school system outdoor classes in the regular school buildings during the school year for anemic children, children predisposed to lung tuberculosis, and children with other organic troubles, such as heart disease. Secondly, tuberculous classes for children who are excluded from the regular schools because they are afflicted with open tuberculosis. The board of health excludes from the public schools all children afflicted with this type of tuberculosis.
>
> In order to try the effect of the open air treatment on these children, the authorities of Bellevue Hospital assembled a number of them on a ferryboat. Here they were kept in the open air during the day, were fed and were under medical supervision. They slept at home. Not having anything to do all day the children tired and asked that a teacher be allowed them. Thus began the relation of the school system with classes of children excluded from it. There are now classes for tuberculous children on four ferryboats, moored to docks on the East River front, and two classes on the roof of the Vanderbilt clinic. These classes are annexes to the following schools: Public School 12, Manhattan, Public School 14, Manhattan, Public School 37, Brooklyn, Public School 141, Manhattan, and Public School 151, Manhattan. Pupils to the number of 474 attended these annexes last year, and twenty-five per cent. of these were discharged as cured, or "disease arrested." Children to the number of 136 were returned to the regular schools and twelve went to work. In connection with the number 136, it must be noted that a child once excluded from the regular schools cannot be readmitted to such schools until the board of health gives it a clean record of health. In this 136 are also included some children who were excluded for observation and were returned as nontuberculous.
>
> Some interesting facts in connection with these classes are the following: About two thirds of all the children admitted were taken from classes in the first four years of school life.
>
> Four of the five schools report that 316 children gained in weight, thirty-four lost in weight, a few showed neither gain nor loss, and, in five cases the weight was not recorded. A girl of thirteen years made the greatest gain in weight, viz., thirty-eight pounds in nine months; among the boys twenty-two pounds was the record gain.
>
> Among the children who gained in weight, the average for the girls is a little higher than that for the boys; among those who lost, the average for the girls is somewhat greater than that for the boys.
>
> Ten degrees Fahrenheit was the lowest temperature recorded in any of the class rooms during the year. It was registered in the class room on the roof of the Vanderbilt clinic during the month of December. The lowest average temperature for the months of December, January, February, and March was 29° F.; it was registered on the ferryboat foot of East Ninetieth Street. The highest average temperature was recorded in Public School 37, Brooklyn, on the ferryboat *Susquehanna*.
>
> About fifty-nine per cent. of the pupils admitted to these annexes had pulmonary tuberculosis in the first stage, about fifteen per cent. in the second stage, and about four per cent. in the third stage; the others had latent pulmonary tuberculosis, tuberculosis of the glands, or were held for observation because they were doubtful cases.
>
> The teachers are told that the health of the child is the main consideration and that school work must be sacrificed to gain it. A child physically incapable of keeping up to grade unless it exerts itself more than its physical condition will permit is not allowed to make the effort. It is a pleasure, however, to report that the majority of the children hold their own while in these classes, and that some of them do better work than they did in the regular schools.

The equipment, cost of feeding, character of feeding, clothing, rest, recreation, medical supervision, etc., have been so often described[3] that I will not enter into the consideration of these subjects here; suffice it to say that it pays in the end in health, happiness, and economic gain to take care

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[2] *Open Air Schools*, by L. P. Ayres, Ph.D.

[3] L. P. Ayres: *Open Air Schools*. New York: Doubleday, Page & Co.

Adolf Baginsky: Ueber Waldschulen und Walderholungsstätten, *Zeitschrift für pädagogische Psychologie, Pathologie, und Hygiene*, viii, pp. 161-177, 1906.

Dr. P. H. Bryce: Open Air Schools and Preventoria, *Medical Review of Reviews*, August, 1909.

Dr. Thomas S. Carrington: How to Build and Equip an Open Air School, *The Survey*, April 23, 1910.

Ralph H. Crowley: The Open Air Recovery School, Chapter XIV of *The Hygiene of School Life*. London: Methuen & Co., 1910.

Dr. Cleaveland Floyd: Care of Phthisis in Children through the Outdoor School, *American Journal of Public Hygiene*, pp. 747-751, November, 1909.

Dr. H. Grau: Ergebnisse und Bedeutung der Waldschule, *Centralblatt für allgemeine Gesundheitspflege*, 11-12, pp. 373-480, 1906.

Isabel F. Hyams and Dr. James Minot: Boston's Outdoor School, *Journal of Outdoor Life*, July, 1909.

Jeanne Morin: An Open Air School in France, *Wide World Magazine*, December, 1909.

Dr. Jay Perkins: The Providence Fresh Air School, *Outdoor Schools*, August, 1909, Boston Association for the Relief and Control of Tuberculosis (4 Joy street).

Mrs. Anna Garlin Spencer: Open Air Schools, International Congress of Tuberculosis, ii, pp. 612-618, 1908.

Frank E. Wing: Report of Chicago's First Outdoor School and Its Results. The Chicago Tuberculosis Institute (158 Adams street), November, 1909.

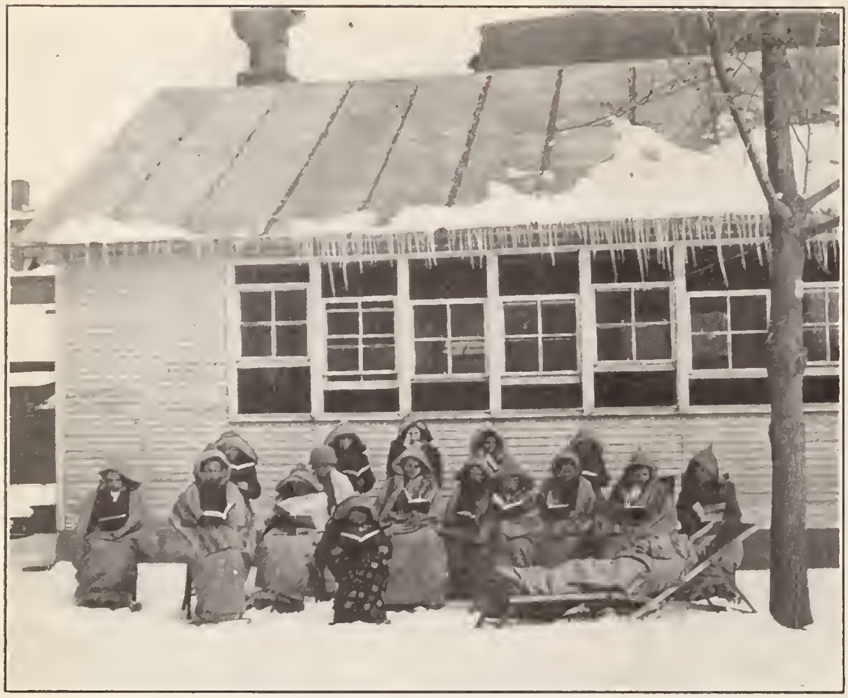

FIG. 1.—Portable open air school at Jamaica Plain, Boston; particularly suitable for villages and smaller communities.

of these tuberculous and tuberculously predisposed children at the right time and in the right place.

The various other photographs of open air schools which we reproduce here (Figs 1, 2, and 3) are self explanatory.

To the various types of classes for outdoor instruction (outdoor classes in regular school buildings for the predisposed, outdoor schools for those afflicted with open tuberculosis, roof classes for as many even seemingly healthy pupils as possible), there should be obviously added that type of schools which are known in Germany as *Waldschulen*. This is particularly feasible in summer, but will be of inestimable benefit to the nervous, anemic, scrofulous, poorly nourished children, all of them strongly predisposed to tuberculosis.

A very near approach to the German Waldschule exists near Chicago, in the summer outing camp at Algonquin (Fig. 4). The buildings are furnished by the United Charities of Chicago and the Elizabeth McCormick Memorial Fund bears the expenses of operation. The building which we reproduce here costs about $1,000, and includes, beside the portion which is shown in the photograph, two rooms which are enclosed, one used as a kitchen and one as a sitting room.

It should be the ambition of every city to possess a system of such Waldschulen or vacation schools. All these types of schools should be multiplied many fold. I go so far as to say that if we really mean to wipe out tuberculosis from among the coming generation, open air schools and open air instruction should be the rule, indoor schools and indoor instruction the exception. If it is true, as it has been stated, that the child handicapped by so serious a disease as tuberculosis, anemia, or scrofulosis, when instructed in the open air, not only holds its own, but often does better work than the healthy child raised and instructed indoors, what may we not hope from outdoor instruction given to the healthy child throughout its school career? And in school career I include a kindergarten course; this latter institution because, unless it is attached to a public school where the school physician is on guard, it rarely has medicinal inspection, is to my mind a fruitguard, it rarely has medical infectious diseases. Most frequent of these are the mysterious "colds" which the little ones bring home, and which upon investigation it is shown that all the children have. I am convinced that the open air kindergarten would not only do away with these so called colds (which are infectious), but also diminish the number of other infectious diseases to which children are so prone.

And now a word as to instruction in the open air in higher grades, that is to say, in high schools and colleges. I know, certainly, that there are a number of branches in the curriculum of the high schools and colleges which cannot be taught out-

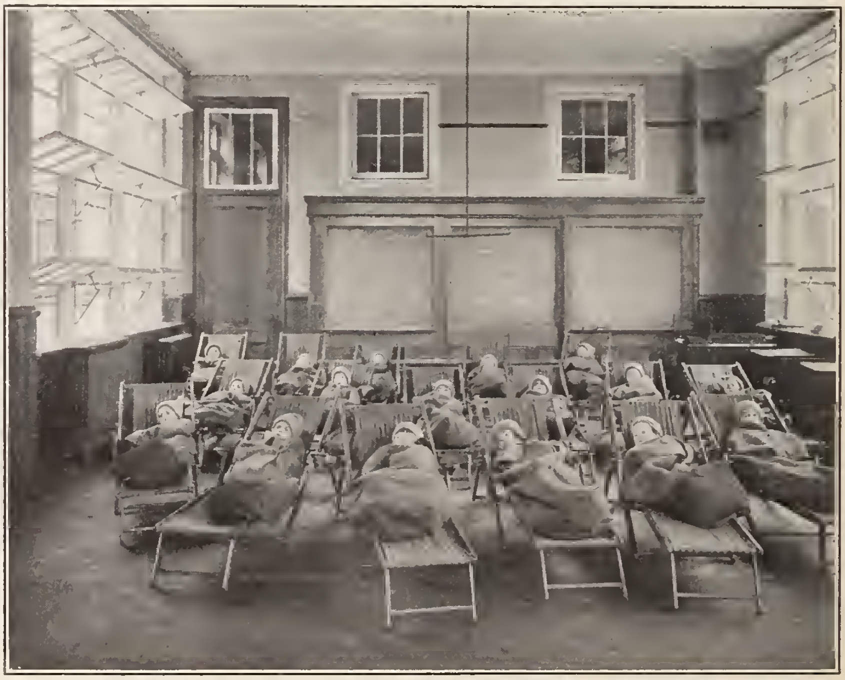

FIG. 2.—Rest hour in an ordinary schoolroom transformed into an open air class.

doors or in an open air class, but many branches can, and I know from personal experience and from the reports of army surgeons in Germany that recitation and singing in the open air is very conducive to health, to the development of sound lungs, and a well formed chest. Thus, Barth, of Koeslin, Germany, made a careful study of the effects of singing on the action of the lungs and heart, on diseases of the heart, on the pulmonary circulation, on the blood, the vocal apparatus, the upper air passages, the ear, the general health, the development of the chest, on metabolism, and on the activity of the digestive organs, and has come to the conclusion that of all exercises singing is the most conducive to health. Considering the fact that it can be practised everywhere (where the air is pure), or at any time, without apparatus, it should be much more cultivated than it actually is. The German military authorities who have the reputation of instituting all exercises which tend to invigorate the soldiers, have always encouraged singing during marches of all troops.

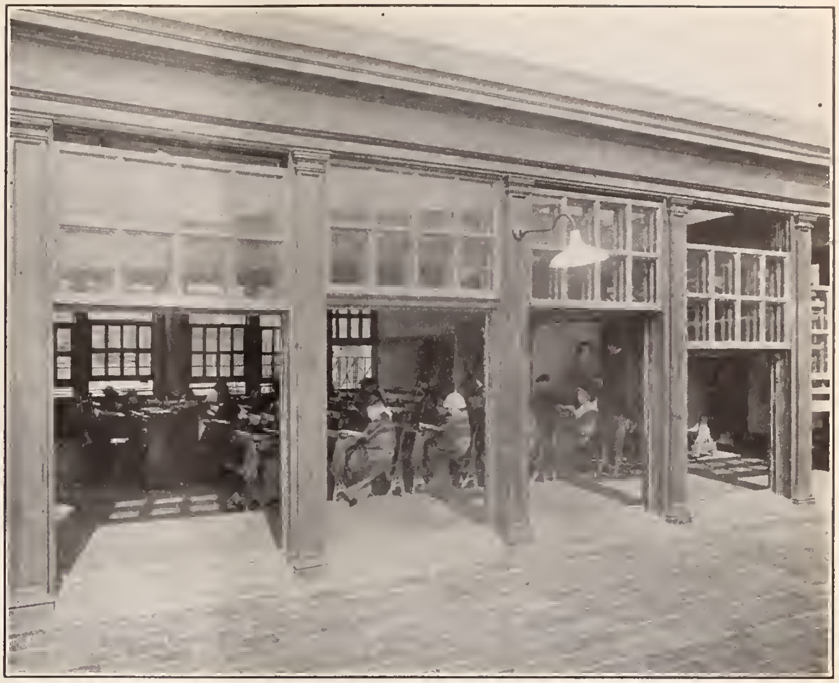

Fig. 3.—Open air classroom on roof of school building.

Botanical and geological excursions are, I believe, not nearly frequent enough in our public

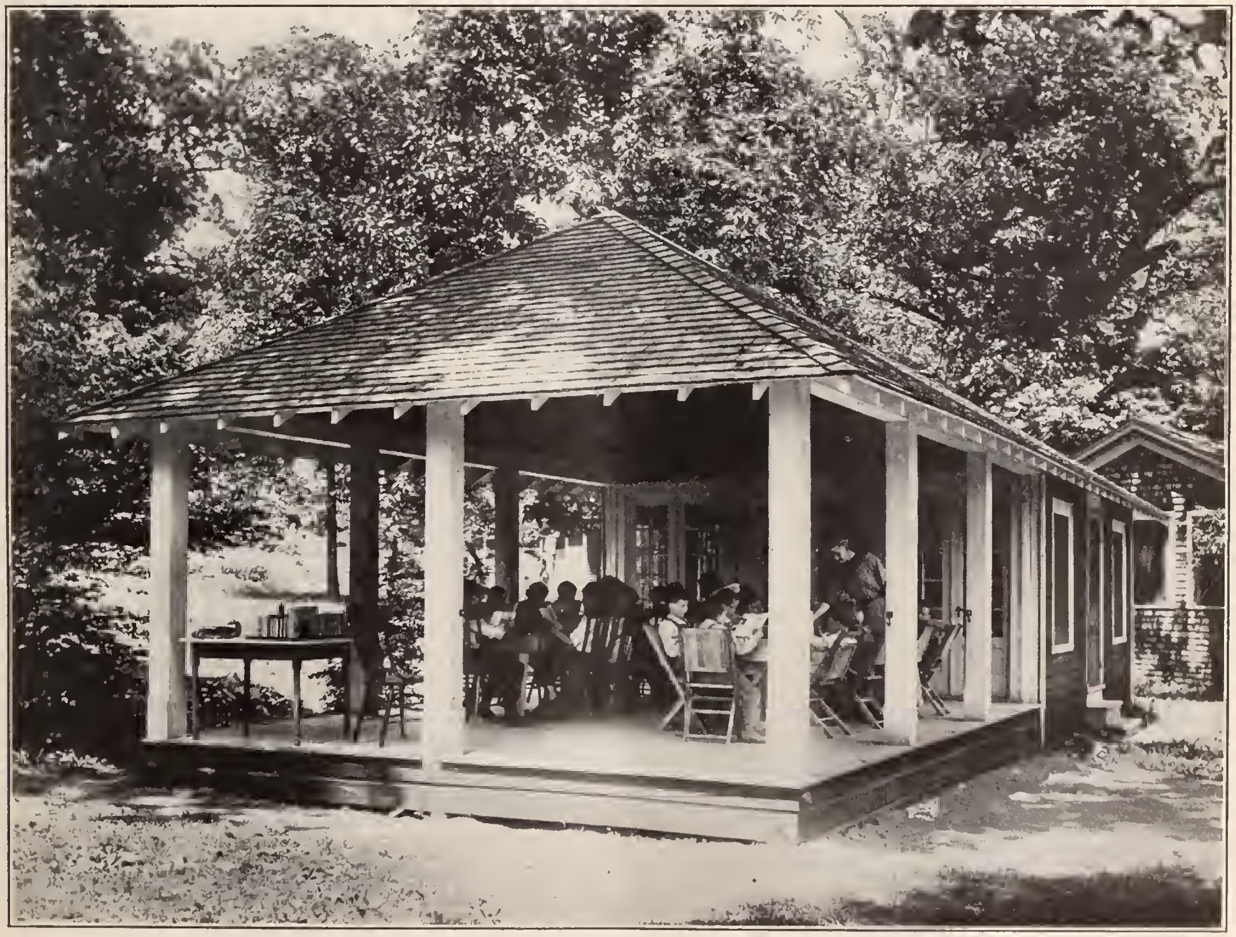

Fig. 4.—Forest school pavilion at Camp Algonquin.

schools. From personal experience I know the inestimable value of such as far as physical development is concerned. Certain studies can, I believe, also be better pursued outdoors than indoors. The authorities of the Ethical Culture School, evidently realizing the benefit derived therefrom, make the following statement in their recent announcement of open air schools for children: "During the fall and spring, there will be frequent excursions to the outlying country for the purpose of securing country air and environment. These offer possibilities in the way of recreation, nature study, and concrete material for geography, arithmetic, and all school work."

Let instruction in the open air be carried out more universally in high schools for young men and women whenever feasible, as well as in primary schools, and I guarantee a stronger and better race physically within a decade with no intellectual impairment whatsoever. I go even so far as to venture the statement that, if giving the course of studying mostly in the open air renders it possible for the tuberculous child to accomplish as much and more in shorter hours and shorter sessions, the hours and sessions for the normal pupil of primary school, high school, and college may also be shortened by this hygienic mode of studying and teaching.

There is one feature in the management of the tuberculous school child in the open air schools which I firmly believe, if inaugurated more universally, would be of immeasurable benefit to the physical and mental vigor of the average pupil. I refer to the rest hour during which opportunity should be given to any child, if he feels mentally or physically fatigued, to stretch out in the open air or special open air room designed for that purpose and take a half hour or little more rest, according to his or her needs. Children, unless they live very near to the school, should be enabled to purchase at cost price a substantial luncheon at school so as not to lose all of the time going to and coming from luncheon and besides being obliged to eat too hastily.

Although I am personally opposed to home lessons for children attending primary grades, older children will, of necessity, have to study at home sometimes. After having spent all day in the open air, they will dislike to be shut up for home study. For these children I recommend that an open air study room be arranged at home by the utilization of some portion of the roof or porch. If the parents do not own the house or the landlord is not gracious enough to give permission for the utilization of either roof or porch for that purpose, I suggest the following device: In front of the ordinary American window, raised from below as far as possible, place the work table for the child. In winter he sits in front of it, warmly wrapped up, on a comfortable chair, to do his lessons. Around him, enclosing table and window, is placed a large folding screen, or canvas[4] covered frame, with another piece to form a top, as high as the window will open. This will form a tiny room in front of the window for an outdoor study. The centre of the screen should contain a celluloid window so as not to take too much light from the room and also for the purpose of watching the child. By this arrangement the rest of the room will neither be rendered too cold nor too dark for the other members of the family. With outside shutters, which can be closed in stormy weather or at night, studying in the open air can be carried on day or evening and in all kinds of weather.

Professor Van Pelt has kindly made a very artistic drawing for me, which shows in Fig. 5 how such a device may be conveniently installed in almost any apartment and with relatively little expense. The dimensions of this device are about four feet six inches deep, three feet six inches to four feet wide, and six feet two inches high. An excessive height in the tent would not be good, as it would cut out the light and air that should come in above the tent for the rest of the room. As it is shown in this drawing the device will not only serve as an open air study during the day, but it can very advantageously be used as a typical window tent for the purpose of sleeping in the open at night. I have used such tents most advantageously for years for tu-

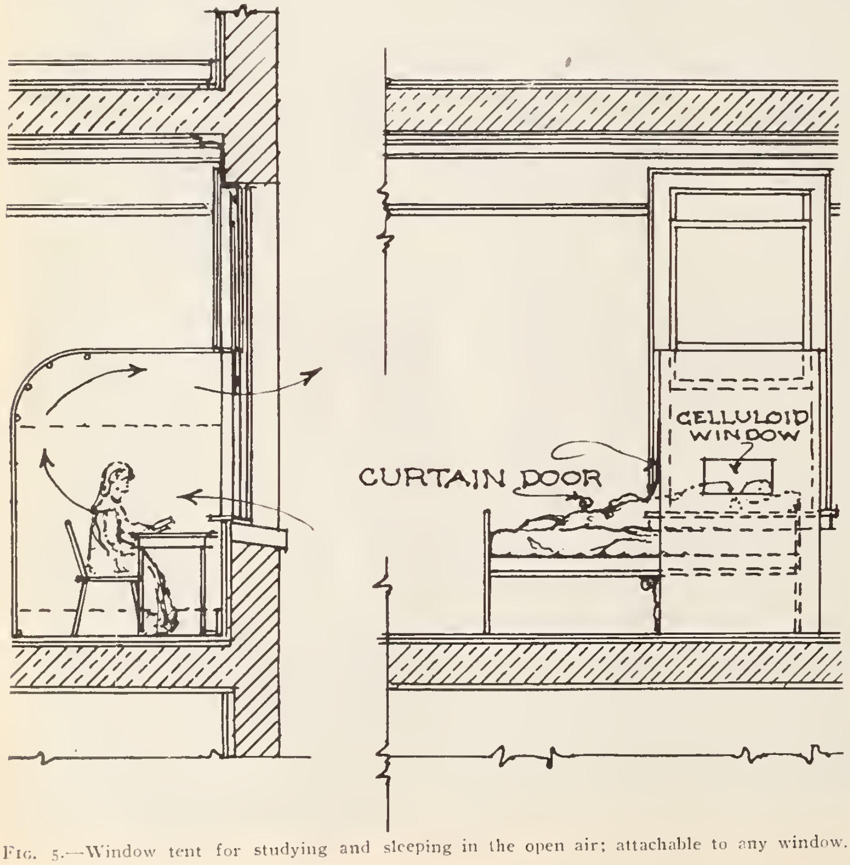

FIG. 5.—Window tent for studying and sleeping in the open air; attachable to any window.

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[4] The canvas or heavy muslin should be waterproofed by one of the numerous well known commercial processes.

berculous and predisposed individuals. The flap which gives entrance to the tent might slide up between two pieces of canvas so that it could drop on the bed without unnecessary weight and at the same time be held in such a way as to prevent the air from blowing through.

This arrangement is primarily intended for use in winter; it would hardly be necessary in warm weather.

And now, as to the value of the breathing exercises which I should like to see incorporated in the curriculum of every school, from kindergarten to university, to be performed at recess and graded according to the age, intelligence, and strength of the pupil:

I have often taken the measurement of children of tuberculous parents and of others who were brought to me because of their undeveloped physique. After a few months of exercises they almost invariably improved more in general health and grew correspondingly stronger than they had before taking the exercises. It has also been my privilege to teach respiratory exercises to physicians and students with gratifying results. The first time I published a system of respiratory exercises which I had worked out was in my doctor's thesis *Les Sanatoria, traitement et prophylaxie de la Phtisie pulmonaire,* which I defended before the Faculty of Medicine in Paris in 1895. I published them later in my textbook, *Pulmonary Tuberculosis, Its Modern Prophylaxis and the Treatment in Special Institutions and at Home,* and reproduced them in my International Prize Essay *Tuberculosis as a Disease of the Masses and How to Combat it.* I have had the good fortune to have seen the latter printed in twenty-seven different countries and twenty-four different languages.

Such or similar exercises are now, I believe, practised and taught by a goodly number of physicians engaged in the work of the prevention of tuberculosis. In Paris, such exercises have been adopted in some of the public schools. Doctor Marage, of that city, recently published some interesting statistics showing the results of having breathing exercises practised by a number of pupils several times every day for a period of six months. The experiments were made at the communal boys' school in the rue Gambon under the control of Professor Meunier, Madame Meunier, and a number of teachers. It was observed that the children learned the exercises easily and performed them with pleasure. There were fewer absences from school during the six months of experiments than during the other part of the year. The results were universally good, especially in sickly children.

The following is a table showing the gain of height, chest capacity, and vital capacity

Results of Series of Experiments on Children by Doctor Marage.

Age	Height in centimetres		Chest girth in centimetres			Vital capacity in litres and centilitres			Number of pupils
	Beginning	Sixth month	Beginning	First month	Sixth month	Beginning	First month	Sixth month	
6......	115	118	51	53	57	0.54	0.78	0.85	19
7......	125	125	52	55	59	0.66	0.80	0.93	14
8......	124	126	53	56	60	0.79	0.86	1.13	27
9......	130	132	55	59	63	0.89	1.00	1.17	29
10......	141	143	59	62	64	1.20	1.36	1.51	28
11......	138	142	58	62	66	1.05	1.31	1.70	18
12......	145	149	59	63	67	1.47	1.67	1.95	22
13......	148	151	70	74	77	1.93	2.26	2.26	16
14......	147	153	62	66	74	1.83	1.92	2.15	7

Encouraged by the results obtained by myself and others from these respiratory exercises, I have taken up their study anew and added a few more as particularly suitable for children. The teacher should strive to have his pupils learn to love these exercises as the average boy or girl loves general gymnastics. The following is as concise a description as can be given to enable one to teach them:

To begin with, the pupil has to learn to stand straight, assuming the position of the military attention, heels together, body erect, and hands on the sides. With the mouth closed, he takes a deep inhalation (that is, breathes in all the air possible), and while doing so raises the arms to a horizontal position (Fig. 6), remains thus, holding the air inhaled for four or five seconds, and while exhaling (breathing out) brings the arms down to the original position. The act of exhalation, or the expiration, should be a little more rapid than the act of inspiration.

The act of inhalation occupies about four, the act of exhalation about three seconds, and as has already been said, the act of retention of the air about five seconds. The child should be taught to count mentally during these three acts so as to be systematic about holding the air. One can move the hands up and down twice, counting four, and on the fifth second begin to lower the arms and exhale.

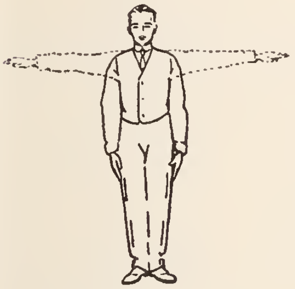

FIG. 6.—Respiratory exercise A.

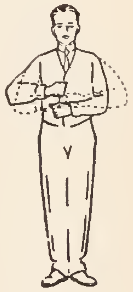

FIG. 7.—Respiratory exercise B.

When the first exercise (A) is thoroughly mastered, one may commence with the second exercise (B). The pupil places the hands one above the other, in front of the chest, with the fingers bent (Fig. 7). The arms and shoulders make a backward movement, the hands moving apart with a motion as though wanting to tear open the chest (the fingers remaining bent), while he takes a deep inhalation, holds the breath, counting four by tapping the chest four times with both hands, and at the fifth second he starts to exhale, bringing the hands and forearms into the position from which they started. This exercise has the advantage that it can be taken in the sitting position, or even when lying on the back.

The third exercise (C) consists in raising the arms from the sides to the horizontal and then above the head (Fig. 8), taking a deep inhalation during this act; then bending back as far as one can and remaining in that position four seconds while retaining the air, counting the seconds by moving the hands alternately, forward and backward, and on the fifth second one exhales gradually while resuming the original position. During this exercise it should be borne in mind that when the arms are raised until the hands join, one should not bring the arms close to the head, but rather form a circle above the head by bending the arms outward enough so that the meeting of the index fingers and thumbs form a triangle.

The fourth exercise (D) is for the purpose of bringing the abdominal muscles also into play, or, in other words, combining abdominal and chest breathing. To this end one assumes an erect position, like the beginning of all the exercises, the hands meeting in front, with the little fingers and the edge of the palms touching the abdominal muscles (Fig. 9). While taking a deep inspiration, raise the diaphragm, concentrating all attention on this act, and while doing so move the joined hands upward, sliding them along the thorax up to the chin, then turn them and continue to raise them until they are above the head, as in exercise C, Fig. 8. Remain bent backward during the four seconds while retaining the air, and then exhale, lowering the arms gradually to the horizontal and to the original position of "attention."

The fifth breathing or respiratory exercise (E), which may also be called a dry swim, requires more strength and endurance. It should not be undertaken until the others have been practised regularly several times a day for a few weeks, and until an evident improvement in breathing and general well being has been observed. One takes the usual military position of "attention" and then stretches the arms out as if in the act of swimming (Fig. 10), the backs of the hands touching each other. During the inspiration one moves the arms outward until they finally meet behind the back, remains in this position for the usual four seconds, counting by moving the hands while retaining the air, and on the fifth second exhales, bringing the arms forward again ready to start for another swim; or if this is the end of the dry swim, the arms return to the original position of "attention." This somewhat difficult exercise can be facilitated and be made more effective by rising on the toes during the act of inspiration, and descending during the act of expiration.

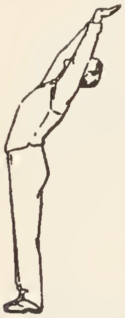

FIG. 8.—Respiratory exercise C.

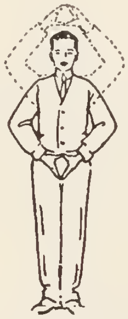

FIG. 9.—Respiratory exercise D.

It will be seen that with the aid of these five respiratory exercises every muscle of the body, from the nostrils down to the toes, is put into play. The face alone is at rest and can serve as an indicator that the exercises are properly done; for it must be borne in mind that they should be taken with the muscles not actually in use, relaxed, and all unnecessary contraction of muscles or tremorlike movements must be avoided.

Of course, when out of doors, one cannot always take these exercises with the movements of the arms without attracting attention. Under such conditions one assumes a position similar to "attention," raises the shoulders, making a rotary backward movement during the act of inhaling (Fig. 11); remains in this position, holding the breath for four seconds, and then exhales while moving the shoulders forward and downward, assuming again the normal position. This exercise (F) can be easily taken while walking, sitting, or riding in the open air.

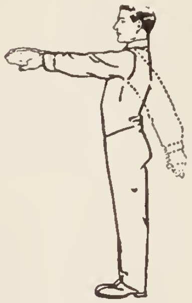

FIG. 10.—Respiratory exercise E.

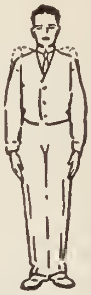

FIG. 11.—Respiratory exercise F.

Young girls and boys, especially those who are predisposed to consumption, often acquire a habit of stooping. To overcome this, the following exercise (G) is to be recommended: The child makes his best effort to stand straight, places his hands on his hips with the thumbs in front, and then bends slowly backward as far as he can during the act of inhaling (Fig. 12). He remains in this position from four to five seconds while holding the breath, and then rises again somewhat more rapidly during the act of exhalation, assuming the original position with hands on hips.

The following general rule concerning breathing exercises should always be remembered: Commence with the easier exercises (A), and do not go on to the more difficult ones until the former are completely mastered. Take from four to six respiratory exercises (one of A, one of B, one of C, one of D, or one of E), or when outdoors simply exercise F, four to six times every half hour or hour, or at least four to six times a day, and on rising in the morning and retiring at night. Continue this practice until deep breathing has become a natural habit.

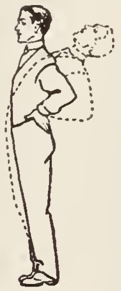

FIG. 12.—Respiratory exercise G.

These exercises are not intended for children who are already tuberculous, and they should be taught gradually and according to the strength, development, and understanding of the child. I believe them to be of incalculable benefit as a means of helping a child to overcome a tuberculous predisposition; but they are not indicated in all cases. They can do harm if the child is very delicate and not judiciously advised and guided in the gradual development of its physique as a whole. They will never be harmful to the healthy child unless grossly overdone. Children, as a rule, take kindly to these exercises, and their love for fresh, pure air, and distaste for foul air become very strongly developed. There should be no fear that in so called flat chested children these exercises can do harm. It is in these very cases that breathing exercises are indicated, for it must be remembered that in young children the bony structure yields to the pressure exercised from within. Thus, with the aid of such respiratory exercises a flat or hollow chested child can develop into a strong, broad chested man or woman.

I hope what I have said in the foregoing may have helped to convince the pedagogues, the physicians, parents, and the general public what open air schools, instruction in the open air, and breathing exercises could do for our children and what immeasurable benefit in sanitary, intellectual, moral, and even financial gain would accrue to the nation.

According to our constitution, every individual community has to take care of the education of its children, and the wealth, the number of children, and the density of population in general is unequally distributed. As a result, many communities, poor in resources, but rich in children, cannot offer to their future generations the facilities for getting that mental, physical, and moral development to which they are entitled by reason of being the children of a great, free, and rich country.

What a field for doing good presents itself here before our wealthy, well meaning fellow citizens! To help the poor communities to have ideal schools with ideal open air classes, to provide poor and undernourished children with nutritious food, to help the poor communities to attach to every one of these schools a physician and social worker, the latter to work with a view to aid the truly needy and to prevent pauperization, would bestow a blessing upon future generations the magnitude of which is beyond calculation.

According to the report of the commissioner of education, there are at this time about 20,000,000 children attending public schools in the United States. Placing the proportion of tuberculosis among them only as low as three per cent., would make 600,000 tuberculous children who are at this time in urgent need of open air instruction. According to the above mentioned statistics we have provided at this time instruction in open air classes for 1,755 tuberculous children. The anemic, the nervous, the children suffering from cardiac diseases, who are in equally great need of outdoor instruction, are not included in the three per cent.

Many of these children who are not properly treated because of nonrecognition of their disease, or lack of facilities to treat and cure them, must die during school life, but not before they have cost the community and their parents thousands and thousands of dollars for education and maintenance. In a paper recently read before the New York State Medical Society, entitled Primary Sources of Tuberculous Infection, Their Relation to Eugenics, and the Cost of Tuberculosis,[5] I estimated the average duration of the life of the 50,000 children who die annually from tuberculosis in the United States as about seven and one half years, and figuring the cost to parents and community for each life at only $200 per annum, the financial loss thus represented is $75,000,000; and these children have died before they have been able to give any return to their parents and the community. What a useless sacrifice of life and of money! What a useless cause of sorrow and heartaches to parents! And all because we do not take care of the child at the right time and do not educate it in the right place. How much is there to do and how little is as yet done!

16 West Ninety-fifth Street.

SEX ETHICS; A MEDICAL ORIENTATION.

By W. B. Konkle, M. D.,
Montoursville, Pa.

The distance between Tiberius and Marcus Aurelius, between Capreæ's ill famed villa and the military tent of the emperor-philosopher, is the distance which separates crass sensuality and sublimed ideality. To a corresponding extent the appearances of things will differ as seen respectively by the scarlet rays of the former or the argent beams of the latter. Viewpoint, as related mutually to these antithetic principles, largely determines opinions and estimates in the moral realm. Within the department of sexual morality is this rule most strikingly exemplified and verified. Narrowing the field yet again, it will be found that the same rule strictly applies to medical attitudes in questions of sex ethics. From the sensual standpoint sight is purblind and limited to low levels. A most regrettable fact is it that occasionally a physician does assume this position. And then we have presented to us free love, fornication, adultery, marriage bonds farcically lax and frail, all these things and more, as proper and efficacious remedial agents for the sufferings and inconveniences of sexual derangements. What a glorious armamentarium! And in the background lurks the foul, leprous body of female prostitution. And we hear of grotesque Utopias founded on decadency, perversion, and infirmity. And we face the lamentable spectacle of gross, all carnal hands by ill directed effort, dragging our dear old world still deeper into the mire, the while noble, devoted men and women lift and tug at it to clear it of its filth and to bring it to the feet of God.

The physician's attitude is bound to be that of devotion to the welfare and comfort of his patient. A champion is he, defending with shield and sword his client. And this is most praiseworthy. Such loyalty is the precept and rule of medicine. Example upon example of it might claim its Thorwaldsen and its Lion of Lucerne. But while our aim may be true, our missiles sometimes go wild beyond the mark. Mercy and benefaction toward the weak and unfit we are prone to push to the ultra limit of survival and perpetuation of the weak and unfit—to heal the individual to the wounding of the race. It is problematic just what measure of wrongdoing will be charged up to us for thus thrusting Nature aside, and only half filling her place—nullifying her laws without safeguarding her ends. Yet, howsoever we may differ as to some phases of the question, surely it cannot be maintained that we should serve our patients to the immediate, direct hurt of others. Fair and good is fidelity to interests we hold in trust. But certainly there can be neither obligation nor right to cure or relieve a sufferer by bringing harm to one or to many. We have no right to heal, satisfy, or gratify a man with a congested and prurient posterior urethra by degrading womanhood, demoralizing society, and stigmatizing our kind. Rather than do that, let the man be distressed and obsessed forever.

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[5] New York Medical Journal, June 29, 1912.

We must zealously protect our females—as knightly men we *must* do that. Women and children first, is Nature's highest, holiest law. To that law strong, brave men reverently bend on land and sea. The world cherishes as a proud heritage the memory of the heroes of the *Titanic*. And yet the Minotaur of male lust exacts yearly a staggering tribute of maidens. These powerful lines of Emma Lazarus written of Rome may be ascribed to this fell monster—

> The blood of myriad provinces is drained
> To feed that fierce, insatiable red heart.

Would that our guild might be the Theseus of the hour! But at all events, oh! may medicine in no way lend itself to the consignment of girls to the black sailed ships!

The medical specialist is all the time seeing the worst things in his line. For this reason he is liable to acquire an exaggerated impression of the numerical and influential ratio of deformity. The specialist in sexual disorders might be led to suggest a constitution of society that could find potential requirement and application as to but a small fraction of the mass of people. He, however, would have to admit the theoretic superiority and desirability of inviolate monogamic marriage, and acknowledge its not rare realization. The family physician, especially the country doctor, would generally assert a much greater, perhaps a prevailing, frequency of such marriages. Goethe likened society to his glass of beer; the froth on top, the dregs at the bottom, the substantial and wholesome product in the middle. Plain, common folks outnumber and outweigh all other classes. And this great middle class is sound and sane—in morals as in thought and affairs. Upon its good sense and conscience, as upon two bases of granite, society securely rests. A highly compensating fortune of the general practitioner is his intimate contact with the average family—it is a joy and an inspiration. Religious doubter that he was, Ricord had conspicuously hung in his bedroom a Madonna, that after the day passed in scrutiny of venereal disease he might before sleeping look upon a picture of purity. The family doctor cannot altogether share such a sentiment; pictures of domestic virtue, devotion, and confidence are daily before his eyes. His is the privilege of unrestrained access to a sanctuary—the simple home—home, that consecrated spot, more dear by far than any other, where fondest affections are enshrined, where, under the enchantment wrought upon the scene by the rapturously breathed names of loved ones, the world's storms are quelled and Eden blooms again beneath the sun glow and azure of skies serene. The homes of earth are its sweetening, saving salt. Still, with due deference for the truth it cannot be said that all of the exemplary family men found in model homes were, during the gusty days of their young buckhood, invariably found reading their Bibles at the parental fireside by ten o'clock o' nights. Light and leading earnestly, faithfully brought to bear upon this peril beset period of life will result in a better showing.

What broadly varies from the normal is abnormal. What essentially departs from the physiological is pathological. If a man's sexual makeup is glaringly unlike that of the typical man he is not specially developed, or overdeveloped, within normal lines; he is abnormally developed, and his condition is pathological. Even the so called powerful sexuality is the sign of weakness rather than of strength. The conception of such a case as involving superior potency is allied to the conceit of the man who proudly exhibited his chest as a paragon of development, when in fact the poor fellow was pigeon breasted to the degree of pitiable deformity. Markedly prominent sexual abnormality implies either sickness or degeneracy. Tangible pathological processes and alterations in the sexual structures will explain many cases. In others the cause is inscrutably hidden within the nervous system. Environment impressing itself upon character and habit will be the key in other instances. In still others the faults must be attributed to heredity. Heredity has no altar of atonement. With reference to the moral fibre of one of England's greatest poetic geniuses, a critic has said, "What would you expect in a man begotten by a satyr and born of a fury?" Very pertinent to the point is Dr. Frederick Peterson's beautiful poem, Heredity. It portrays "a ladye fayre." Here are some of the verses—

> But I, who meet her oft about
> The woods in morning song,
> I see behind her far stretch out
> A ghostly throng—
>
> A priest, a prince, a lord, a maid,
> Faces of grief and sin,
> A high born lady and a jade,
> A harlequin—
>
> Two lines of ghosts in masquerade,
> Who push her where they will,
> As if it were the wind that swayed
> A daffodil.

But whether departure from the type proceeds from disease, environment, or heredity, still is the sexually abnormal man infirm or imperfect. Now to seek relief and control of pathological cravings by abetting them and pandering to them is neither good science nor good practice. If a patient has a tormenting bulimia we urge moderation, self restraint, the while we try to bring about his cure. We do *not* advise him to provide for himself at dinner three plates and services. Especially do we not attempt to help matters by suggesting a raid upon his neighbor's larder, or by extensive and indiscriminate plunder. The pervert and maniac with imperious impulses we hold in check. Little warrant can there be for licensing a flatteringly free rein in the case of those, to only a less extent, sexually abnormal. Let us look upon these people charitably and sympathetically, but not indulgently. Let us look upon them with the physician's eye, not with the eye of the compliant time server, whose easy counsel would make the sick man the slave of his symptoms. While doing for them our best in the way of treatment and management, let us help them to mount to the moral level of the sentiment embodied in these lines of the greatest of the laureates—

Arise and fly
The reeling Faun, the sensual feast;
Move upward, working out the beast,
And let the ape and tiger die.

Now and then a physician, arguing from the standpoint of sensualism, will assert that irregular and merely animal sexual relationships can be made to conduce to human happiness. It may readily be conceded that human happiness is the proper mark and gauge of all human endeavor. But the terms of the phrase will require definition. Happiness must comprehend the higher self, the higher welfare, the higher life, and must not be confined to the low plane and the restricted bounds of mere animal pleasure and content. Human must not be taken to mean individual or any group of individuals. The word must include all mankind, existing and to come. Humanity is a flowing river. Personal enjoyment of whatsoever character that works harm and misery to others, now or in the future, is not human happiness. A keen, clear thinker has said that "for this country to be good enough for any of us to live in, it must be good enough for all of us to live in." The sentiment may be made strictly catholic. That the world may be an ideal place for anybody, it must be an ideal place for everybody, everywhere and always. Human happiness is coextensive with humanity.

Sensualism in medicine has averred that the best operation of genius is in some instances conditioned upon free and irregular gratification of sexual passion. That creative genius has occasionally been tained by sexual abnormality is well known.

'Tis true, 'tis pity
And pity 'tis 'tis true.

"*Es ist von manchem hohen Baum die Wurzel faul,*" is a maxim of the *Vaterland*. But it is altogether reasonable that in these exceptional cases the unusual mentality exists in spite of the defective makeup rather than on account of it. And it is hard to believe that the gratification of abnormal impulse could enhance the worth of the work of either talent or genius.

And now we come to idealism in its application to sexual morality. And at once we bare and bow our heads; for the ground on which we tread is holy. On this ground of the ideal have taken their stand earth's heroes and martyrs in imposing numbers. Here have stood in saintly array the lovers and benefactors of their kind. The possible weakness of idealism is not a blemish—it is a simple error. Idealism is prone to be hypermetropic—is liable in the far off vision to overlook the present pressing need. So in the domain of sex ethics what we *would* do must wait upon what we *can* do. Idealized theories of sexual morality as abstractions are admirable. To saddle them upon people, as people yet are, "aye, there's the rub." An attempt to do so summarily would probably occasion as much plunging and kicking as does bronco busting. Too much dare not be exacted all at once.

The vow that binds too strictly snaps itself.

For still quite a little while perhaps it were best to concentrate effort on keeping men at home. Just how they ought to deport themselves there is a matter that advantageously may be largely postponed for later consideration. At all events, it is an open question, and a delicate one, how far sentiment, emotion, impulse, passion itself, should be eliminated from, and how far permitted in the union of the sexes. We do not fully know to what extent we can, or should, or shall ultimately govern the reproduction of the race by stern reason, staid philosophy, hard science. Unless care is exercised the whole field will be made as bleak and cold and dead as the moon. Woe the day when is slain the boy god who makes the world go round!

The desirable is easier of discernment than of attainment. With less difficulty can one conceive the ideal than grasp the practical. The true, the trustworthy reformer is he who sees the final goal, the ideal, who lays his course by and toward it, but who does not try to reach it at a leap.

Evolution is the keynote which sounds through the whole of space. Its method has been, is, and likely will be a point of contention; but the principle is well established. Things grow; are not the product of fiat or spontaneity. Minerva springing from the brow of Jove, full statured and completely armed, is a beautiful myth; but the conception is visionary, and not in accord with Nature's plans and efforts—does not harmonize with the supreme law of the universe. It is unwise, unscientific to adopt revolution as a means of progress. There is no revolution strictly speaking. So called revolution is only evolution dammed back. And here is a truth for both the overconservative and overradical. The logical deduction is, keep moving, but move temperately and cautiously.

Regarding sexual morality specifically, it is an error not to largely take development into account. On the other hand it is also an error not to calculate upon sufficient time for such development to pass through its consecutive stages. These two contingencies are strongly improbable—first, that moral evolution, having been evident in history up to the present, will stop short now; second, that progress, having been almost imperceptibly gradual in the past, will henceforth proceed by bounds.

The world has steadily been growing better—is better to-day than ever before. This is simply a question of record. The abominations of Egypt, the debaucheries of Babylon, the horors of Phœnicia, the shames of Greece, the crimes of Rome, the vices of the Middle Ages, these have fled the light, and hid in the haunts of the bats and the moles. The promise of the future is not so much in itself as in the past. The backward look braces and reassures the forward look. If regret and repining and dejection come, as we apprehend how far off is yet the perfect day, so will come exultation and encouragement and enthusiasm as we survey the days of utter darkness from which we have emerged.

During the entire journey through the wilderness humanity must not disdain to use a tabernacle which may be moved. The stable temple is for Zion's heights. Evolution shatters conventions—the evolutionist is superior to precedent. An onward step is censure and repudiation of the old position. But progress is slow—it is to be measured, not by years, but by ages. Cato advised for what paltry sum they might bring the sale alike of old chariots, old oxen, and old slaves; and not till the lapse thereafter of two millenniums did France's lifeblood buy for mankind the right to speak the three words, liberty, equality, fraternity. Sarah called Abraham lord; and the antiquated order of lords of creation has not even yet yielded up its charters. The Greeks, though they had reared an altar to pity, on occasion did not scruple to slaughter their vanquished foes. Rome fed her captive beasts of prey with her captive men and women. Only three centuries ago Tilly boasted to his imperial master that Magdeburg's doom had not been matched since the destruction of Troy and Jerusalem.

Yes, the march of morals is slow; and sexual morality constitutes no exception. We do not know where down the course of time love will extinguish lust, and solicitude for, and devotion to the interests of posterity will supplant tyrannous impulse toward self gratification. We do know, however, that many fields of labor are involved in the working out of the problem, and that much must be done in each of them. The eugenist must look to the improvement of the human stock. The pediatrist must see that childhood and youth are not impaired or vitiated. The andrologist must be not simply a specialist in venereal diseases—he must do for man what the gynecologist is doing for woman. The sanitarian must make earth and its abodes harmless and healthful. The sociologist must get things so adjusted that there will be peace and content and concord in the human hive. The theologian has a most important part to play. He must keep God in the thought of men as the One who dictates duty and creates responsibility. The God idea lost and all is lost. Atheism is the blight of blights and the bane of banes. Its fruit is the apples of Sodom. Its only gospel is the mocking, maddening gospel of egoism, corruption, and despair.

And thus this problem of sexual morality reveals itself as a superlatively complex and knotty one. No one generation can solve it. But deliver your stroke, and trust the Oversoul. The solution will be accomplished albeit onflowing ages mark the stages of the process.

And so these twain, upon the skirts of Time,
Sit side by side, full-summ'd in all their powers,
Dispensing harvest, sowing the To-be,
Self reverent each and reverencing each.

VALUE OF PERTUSSIS VACCINE.

By George Dow Scott, A. B., B. S., M. D.,
New York,

Instructor and Assistant Attending Physician, New York Post-Graduate Medical School and Hospital, Infant and Children Service; Chief, Pediatric Clinic, St. Mark's Hospital; Consulting Pediatrist, Nassau Hospital, Minneola.

Pertussis is, in infants and in young children, a dangerous disease. Fifty per cent. of all cases occur within the first two years. It is highly contagious, the infecting areas being the nose and mouth, and is probably due to a microorganism, a coccobacillus discovered by Bordet and Gengon in 1905. Bordet injected twenty children with his pertussis vaccine in whom developed a severe negative phase of the disease. This bacillus stains with weak solutions of fuchsin, is Gram negative, and grows with difficulty in ordinary media, but more easily on humanized media. Through injection of this bacillus Klimenco and Fraenkel were able to produce seemingly typical conditions in monkeys. Inabo, quite recently, experimented with the vaccine in an ape and produced typical whooping cough. The bacillus used was found in seventy-eight of eighty-one cases and was cultivated in sixty-eight of seventy-seven cases. In eighteen cases of other respiratory diseases the organism was not found. This coccobacillus is found in the early part of the disease and in the expectoration which comes from the region where the bacilli are most active, namely, from the depths of the bronchi, where they are thrown out during a paroxysm. This exudate contains the true bacillus in considerable numbers and in favorable cases gives an almost pure culture. As the disease progresses, fewer and fewer bacilli are found.

Bordet and Gengou describe the bacillus of pertussis as a little ovoid bacillus, somewhat elongated at times, but frequently so short as to resemble micrococcus. The principal argument in favor of this organism appears to be furnished by a study of the specific properties of the serum. The serum of the individuals who have never had whooping cough, or who have had it a long time before, does not agglutinate the bacillus even in low dilutions. The sera of children who have recently recovered from the disease have a moderate agglutinating property which is constant. The most remarkable fact, moreover, is the intensity of sensitizing property in such sera. Bordet calls attention to the fact that a necrosing influence may be observed on the surface of the bronchi of affected children, and believes that the manifestations of the disease arise from lesions of the cellular lining of the bronchi resulting from the action of the irritant poison. Ladd, of Boston, prepares the pertussis vaccine in the following manner:

> The organisms are grown on blood agar in the incubator for twenty-four hours. The growth is then washed off with sterile physiological salt solution, and a bacterial count is made to determine the number of organisms per c. c. The blood cell method of Wright is best used. This consists of taking drops of equal size of the blood of a normal individual and of the emulsion under consideration. The mixture is then examined under a microscope in exactly the same manner as in making a blood count, and by estimating the number of bacteria present in proportion to the number of red blood cells and having determined the erythrocyte count of the patient, by a previous examination of the blood, one can accurately compute the number of bacteria present per c. c. After having made a count, the organisms are killed by heating in a water bath at a temperature of 60° C. for one hour, and the emulsion is diluted with physiological salt solution to the desired bacterial content per c. c. Bacterial tests are then conducted, plants being made upon the various culture media under both aerobic and anaerobic conditions. Safety tests are also made by injecting the vaccine subcutaneously into guineapigs.

Blood counts showing the relative increase in mononuclear cells plus the typical paroxysm make the diagnosis practically certain.

Ladd reports no ill effects from its use; beginning with twenty million he gave forty million bacteria at a dose. His cases number nine, ranging from seven weeks to six years. The duration of the cough ranged from one to eight weeks before beginning treatment, the number of injections from three to eight, and the amount of vaccine given from thirty-seven million to 170 million *in toto*. In the eight cases the blood count showed a white count, ranging from 7,000 to 41,200; a count of polynuclears from sixteen to fifty-five; of mononuclears from forty-five to eighty-three; of mast cells from one to two, and of eosinophiles from 0.5 to three. These results show that a moderate to pronounced leucocytosis is present.

Doctor Graham's cases received twenty million bacteria every four days. No contraindications were noticed and the dose was increased to forty million bacteria every four days. This latter dose was afterward given every three days with great benefit. The number of paroxysms became less, their severity diminished, cyanosis was less marked, and the vomiting became less and less. The number of injections varied from six to eight of forty million bacteria. Doctor Saunders, Dr. Johnson White, and Doctor Zahorsky, of St. Louis, began treatment by using doses of five million bacteria, but ended in giving doses of twenty-five million. Their doses were repeated twice at intervals of one week. As a prophylactic they used the vaccine in fourteen cases which had been exposed, but in which the disease had not developed, not even a cough. In a case of doubted diagnosis, the leucocyte and differential blood count may help.

Doctor Graham reports twenty-four cases, ranging from six months to eight years. Doctor Saunders, Doctor White, etc., reported forty cases, varying from three months to nine years. My own cases ranged from five months to eight years. Of Doctor Graham's reported cases, seven were probably not benefited by the treatment.

After eighteen months' work my patients now number seventeen. They are of poor, ill nurtured, and badly developed infants and children for the most part. Pertussic vaccine is not a panacea in all whooping cough cases. In the few cases, my own number three, where the disease was not cured the symptoms were distinctly mollified, the back of the disease was broken. The number of attacks became less, their severity was diminished, cyanosis was less marked, or vomiting during the paroxysms disappeared. The children slept better and the attacks at night became less.

In not one of my cases was there any reaction from the vaccine, no abscess, nor any swelling or redness at the site of the puncture, nor were joint, muscular, or constitutional symptoms noticed. I choose the buttocks as site for injection—our little patients cannot see the syringe if they are properly held, the circulation is more sluggish, and absorption takes longer, I know, but the nerve endings are fewer and seemingly less sensitive. Owing to slow absorption evil consequences may be lessened.

Possibly during severe epidemics the vaccine may not be useful, as Graham points out. We must wait. I wish to sound a note of warning, not to use the vaccine unless in cases of undoubted whooping cough. Physicians in all cases of cough should not rely upon the attendant of the child as to a whoop, but should examine the lungs, larynx, pharynx, and epipharynx for a possible cause. Acute bronchitis, for instance, may precede, be present with, or follow an attack of whooping cough. At each visit, therefore, the patient should be thoroughly examined before the treatment. Experience seems to confirm that stronger doses of vaccine should be given in the early stages of the disease; also that infants require less strong doses, less number of doses, and longer intervals between doses than do children. The younger the infant the quicker the cure is my experience. Owing to my inexperience, I began at first, giving doses of ten million to infants, and twenty million to children at intervals of twice a week, or in severe cases in older children three times a week for one week only. I now begin with forty million bacteria, even to an infant, and give another dose in proportion to the effects since the last dose. If much benefit arises I prolong the intervals, if less or no benefit I shorten them. Many of my cases improved after one dose. An infant of five months was cured, others were improved after the second, third, or fourth. A dose of forty million given in severe cases at short intervals, I believe to be better than larger single doses.

Before beginning the treatment I make sure of a paroxysm. No aborted or false cases were in the list treated. Many patients were in great agony on beginning the vaccine. In the future I want every physician to have six vaccine vials of twenty million each as a part equipment in his office, for in families in which whooping cough develops among the members, a prophylactic dose of forty million once or twice may ward off trouble. I am reporting in full only two of my seventeen cases, one a great success, the other a partial failure. In no instance was the vaccine wholly a failure, for in the three cases where the children were not greatly benefited, either the severity of the paroxysms was eased or their number lessened. In one family I injected three children whose ages ranged from two to six years, with excellent results. The two year old received eighty million in all, the next 120 million, and the third sixty million bacteria. A case of mine now being treated, that of a boy of six years, has already received eight doses of forty million to the dose. Four days ago he had a moderate bronchitis with few large coarse râles, heard over both sides of back. His father says he coughs or whoops about four times a day, not at night. I am experimenting with triple bromides for such pertussis tail enders. My own cases follow:

Case I. April 14, 1911. Sally N., twelve months old. Pertussis for five weeks. Paroxysms about every two hours. Vomited at each attack. Physical examination showed an emaciated chicken breasted infant, no teeth, anterior fontanelle large, and patulous heart sound. The spleen easily felt with the finger tip (without deep inspiration), as round and smooth extending two finger breadths below the costal border. The liver was enlarged downward half way to umbilicus. The wrists and ankles were cuffed, a marked rosary existed. No bow legs, vibration of the alæ nasi, dullness over both lower lobes of lung. Over right front of chest on deep inspiration, coarse moist râles, graduating to fine moist. Abdomen pendulous, temperature 102° F. Constipation. Injected pertussis vaccine ten million into right buttock.

April 16th, over left side of chest, front and back, coarse moist râles on deep inspiration. Over right side, front and back, dullness, restricted inspiration, and moderately prolonged expiration. Over this area, front and back, coarse moist and fine râles. The infant vomited everything before being brought to me. I put her on a diet of milk three quarters to one quarter of boiled water, every four hours. Her diet had been boiled milk, eggs, and mashed potatoes; stewed fruit juices were ordered at feeding, and between, raw orange and pineapple juices. Bowels acted twice daily. Stools normal in appearance.

April 19th. Paroxysms, mother said child was no better, infant racked itself badly, no further vomiting, appetite improved, bowels moved once a day, but movements were hard, liver less enlarged, now one finger's breadth below costal border, spleen less enlarged. Over left lung, front and back, coarse moist râles. Right lung restricted in inspiration and the breath sounds were indistinct over both front and back. Over this area flatness.

April 21st. Cough less severe. Same number of paroxysms, however, day and night. Appetite good; appearance was better. Over right front and back of chest, flatness and loss of voice sounds. Coarse and fine moist râles over the flat area, spleen and liver same size. Vaccine twenty million.

April 26th. Few paroxysms since last injections; cough, pharyngeal in character without paroxysms once a day, none at night, no fever, moderate constipation. Absolute flatness was in evidence over right lung; no needle puncture allowed; spleen and liver same as last time.

May 3d. Paroxysms once in twenty-four, or once in forty-eight hours, attacks not severe, no fever, appetite good, bowels moved once a day, lungs clearing behind, respiration on both sides less labored, only few coarse moist râles present in right lung. No flatness or dullness. Vaccine ten million.

May 6th. Lungs continued to clear. Appetite good, bowels regular, moderate distinct breathing in right lung, no fever.

May 10th. No further paroxysms, condition of patient good, spleen normal, liver nearly so.

Case II. July 28, 1911, I injected a baby two and one fourth years old with twenty million bacteria; on July 31st, forty million; on August 2d, forty million; on August 5th, twenty million with continuation of vomiting, paroxysms possibly less severe, but the same in number as before. The mother and father were disgusted and vaccine treatment was discontinued.

The failures of myself and others may be due to an impotent vaccine, insufficient doses, length of time between doses too great, faulty injection, too near mealtime, or depending on whether the infant is nursed or bottle fed.

111 West Seventy-seventh Street.

MALIGNANT GROWTHS.*

A Plea for More Conservative Treatment.

By Russell H. Boggs, M. D.,
Pittsburgh,
Röntgenologist, Allegheny General Hospital; Röntgenologist and Dermatologist, Pittsburgh, Columbia, and St. Francis Hospitals.

At the present time it is evident that there is a profound sentiment spreading among the leading minds of the profession, which questions the wisdom of the hitherto unquestioned practice of treating all malignant growths by the most radical means at our command. This sentiment springs mainly from a more comprehensive experience with a great number of cases traced out carefully to their end results. It is self evident that such an experience becomes possible only with the passing of many years, and much careful following up of cases.

We all know for what a long time it has been taught and accepted as a truth beyond dispute, that the only proper and scientific method in malignancy was immediate extirpation, wide and merciless, in all cases not hopelessly inoperable on the face of things. This includes, obviously, the removal of all lymphatics draining the diseased area so far as possible, and often a sacrifice of many important structures contiguous to the growth, especially muscle and large areas of skin. The surgeons have tried conscientiously to avoid the possibility of leaving any cancer cells behind. We have all admired the many brilliant operations devised along these lines, and we know how rigorously they were put into practice in innumerable cases. And now at last time enough has elapsed to form some true estimate, in the light of experience, of the value of these extreme radical measures.

WHAT OPINION MUST WE FORM?

In a recent clinical lecture, Dr. John B. Murphy spoke of the great shock he received on reading an article in one of the British medical journals, wherein was analyzed a series of cases of epithelioma of the lip, extending over a period of twenty or twenty-five years. It was demonstrated, from the cases that could be traced, that fifty-two per cent. of the patients who had carcinoma or epithelioma of the lip, *without any demonstrable metastasis* at the time of the operation, died a cancer death. Doctor Murphy further states that seventy-six per cent. of the patients who *have* a demonstrable enlargement of the gland at the time of the operation die a cancer death. Murphy goes on to speak of mammary carcinoma, and contends that the situation here is "equally unpleasant." "The improved technic," he says, "that has been adopted in recent years,—first, that of Halstead; second, the splendid technic of Rodman; and,—third, the additional advance brought out by Handley; would tend to make us believe that we could get better final results in the future than we have been having in the past. That appeared to be true for a long time until Halstead analyzed his statistics at the meeting of the American Surgical Association in Cleveland. That analysis certainly did not justify us in cherishing much hope."

Nothing could better support the position I am taking in regard to the end results in the purely surgical treatment of malignancy than Doctor Murphy's mature and ripened opinion as expressed in this lecture. "An analysis of that class of cases," he concludes, "disheartened me very much, and an analysis of the most extensive operations done in various portions of the body later has added to my discomfort, and has made the cancer field rather a hopeless proposition to me. I think we can honestly say that we have not improved our cancer results in the last quarter of a century."

It must be clearly borne in mind that Murphy is speaking here of those regions in which cancer is always peculiarly virulent, because of their rich lymphatic supply. By comparison, an epithelioma of the upper half of the face, for instance, is almost a benign growth, and is usually easily and permanently cured, if taken at all early and treated with any skill. Indeed as far as the prognosis is concerned we can classify cancers of any type by location better than in any other way.

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*Read before the American Röntgen Ray Society at Niagara Falls, N. Y., September 12, 1912.

The virulence in malignancy increases or decreases very strictly with the richness or the poverty of the lymphatic supply in the various parts of the body. Here is a rule which can never be lost sight of, either by the surgeon or the röntgenologist. Now it is an absolute fact that, when properly applied, the Röntgen rays decrease the lymphatic permeability, and produce a condition most unfavorable to the dissemination of the cancerous process, thus tending to render the aspect of an unfavorably situated lesion more favorable. I think all real röntgenologists at the present time appreciate this power of Röntgen therapy upon the lymphatic system, and the powerful part it has played in the prevention of recurrences and metastases as well as at times making otherwise inoperable cases operable. This in connection with its direct destructive action on the neoplastic cells and its strongly alterative action on the healthy cells, all of which it has when properly administered, gives it a very important place in the treatment of malignancy.

Every malignant growth presents a separate and distinct problem which calls for cordial and earnest team work among all concerned. The patient himself must be brought so far as possible to be one of the team. For many years before the employment of Röntgen rays, surgery held out the only chance of relief. The favorable cases cured by surgery gave the popular belief all over the world that this was the only hope. However, almost every case of malignancy, except where very superficially or favorably situated, recurred. Many relieved themselves of the responsibility by referring the patient for operation, even if the outlook was unfavorable. The careful study of cases in the last few years is putting us in a position to determine whether the treatment is for palliation or for cure.

The improvement in surgical technic and the recognition of the necessity of handling carefully both the diseased and healthy tissue, as well as the wide extirpation of all the structures involved, has lessened the number of recurrences by this method. It is to be remembered that recurrences after removal are regularly more malignant in type, more rapid in progress, more prone to metastases than was the original lesion. An incomplete operation (except in certain peculiar types) of itself is as powerless for palliation as for cure. It neither prolongs life nor diminishes suffering. Partial operations, therefore, are scarcely ever indicated. The fact that many long time patients, suffering from hopeless, inoperable malignant growths, have lived comfortably after Röntgen treatment, has impressed many with the power the rays play in the treatment of malignancy.

A few have formerly pointed out that possibly the rays had a tendency to produce metastases, but there is no foundation for such a statement, as practically all agree. I have seen cases where the disease was so extensive and the patient so emaciated that the rays had very little effect. But from this it must not be concluded, as has occasionally been done, that the rays increased metastases. X ray treatment of malignant diseases must be given powerful enough to produce the desired changes. The small dose that is frequently given is useless. If small inefficient doses are given for a long time, naturally the growth will increase in size and a general metastasis occur, as if no treatment at all had been given.

Some have pointed out the great harm that has been done in incipient carcinoma, particularly of the breast, by careless and repeated manipulations of the growth. It is asserted that this is the cause not only of increasing the growth, but also of secondary infection of the lymphatic glands. I have seen a few cases where this is what seemed to have taken place in patients who were treated by massage at the hands of osteopaths. It is certainly better to remove a doubtful growth surgically than to manipulate it repeatedly until it becomes plain that the surgical treatment is usually useless and the patient is therefore in a hopeless state.

Ochsner, in the last edition of his *Clinical Surgery*, appreciated, at least to some extent, the value of Röntgen rays. In speaking of lymphosarcoma of the neck he states: "From the anatomical conditions present in this region an extensive removal is, of course, not possible, and consequently these cases, with very few exceptions, have been hopeless; and still there are undoubtedly a few who have recovered permanently. The after treatment with the x ray seems to be of great importance. We have seen severe cases in which the recurrent nodules have disappeared permanently."

I have treated quite a number of cases of lymphosarcoma of the neck, some following operation to prevent further recurrence, some when recurrence had taken place, and others without operation. The experience gained from treatment without operation has convinced me that these tumors will readily disappear under heavy radiation and that the results are more permanent if the patient is given x ray treatment at first without operation. In nearly every case the mass can be made to disappear under heavy radiation, if the treatment is begun before the glandular involvement is too widely scattered, even if the mass has attained considerable size and the skin is not broken. After the growth has entirely disappeared a second series of radiation should be begun as soon as the reaction has disappeared. It may be necessary to give a third and even a fourth series, watching the patient for at least a year or more.

I have patients apparently well for over four years in whom a gland has been removed and a pathological diagnosis made. In this connection I will mention the following case:

CASE. Mr. H., aged forty-two years, had a gland removed from the left cervical region at the Mayo clinic and a diagnosis of lymphosarcoma made. On account of the size of the mass, operation was not advised, and they suggested x ray treatment. At the end of six months the mass had disappeared and no glands were palpable. Three years and nine months have elapsed and there has been no recurrence. About the same time another patient was operated upon for lymphosarcoma of the cervical glands, followed by a recurrence before the wound was entirely healed. The tumor increased under radiation, given three times a week for four weeks, until the recurrence was almost as large as the original growth. Then intense radiation was given daily for three weeks, after which irregular treatment was given for the next six months. Up to the present time there has been no recurrence.

My most successful results in sarcoma have been chiefly confined to the lymphatic glands. In a few cases in which the disease involved other structures the end results were unfavorable, except in the case of a patient with an inoperable sarcoma at the junction of the clavicle and the sternum. This patient has been apparently cured for five years. Much palliation was derived in many of these cases. Pfahler and others have shown many such cases are not only greatly benefited, but entirely cured by this method.

The carcinomatous cases in which the Röntgen rays have been of the greatest services are limited to those of the breast, cervical glands, and other external parts when internal metastasis has not taken place. Röntgen therapy is applied in deeply seated growths, not with the idea of effecting a cure, but in order to check the progress and make the patient more comfortable; used preparatory to operation, and again, postoperatively to destroy any remaining foci.

Postoperative Röntgen treatment has been adopted as a routine procedure by the most progressive physicians and surgeons. This treatment is just as important as the wide removal of a growth, as it makes the operation more radical. It is always a question how far the operator should go in the removal of adjacent glands, and in many cases it is impossible to go far enough. The size of a growth does not always determine likelihood of a recurrence. Therefore, to give the best chance of a permanent cure the rays must be employed, and likewise there is also a question as to the extent of the reaction necessary to destroy the remaining foci left after an operation, but the mistake has been, as a rule, that the radiation has been too limited both as to area and to quantity. If the best results are to be expected, we must give the radiation as soon as possible after the operation and, not as many have done in the past, wait until a recurrence had taken place. Frequently physicians and surgeons advise their patients to have Röntgen treatment after the operation, but advise them to rest or recuperate first, thus losing valuable time.

When treatment is given it certainly must be according to the judgment and discretion of the röntgenologist, and not of the physician or surgeon referring the patient, unless he is familiar with this method and has followed up a number of cases. It is most disheartening the way physicians and surgeons take it upon themselves to tell the patient when he or she has had sufficient radiation, and this explains many recurrences. Any one who has had sufficient experience in malignancy knows that a few treatments are useless unless followed up systematically and as thoroughly as a course of mercury in syphilis; and while the time may come that the experiments now being carried on in Europe will lead to a treatment for cancer analogous to the salvarsan treatment, still we must rely at present on the Röntgen rays, which remain the best treatment we have for palliation, prophylaxis, and cure in certain types.

In the paper which I read before this society two years ago, I spoke of my own faulty technic in a case which I had treated six years before. The patient received heavy radiations, after operation, over the anterior chest wall, but very little over the supraclavicular region. A supraclavicular recurrence was noticed six years after the operation. Under heavy Röntgen treatment the recurrence almost entirely disappeared for a year. She is now back with a second recurrence, but is comfortable and the picture of health. This recurrence, which sprang up quickly, was each time controlled by x ray and the growth became hard, freely movable, and approached the scirrhous type. We all know that the atrophic scirrhous type is much less malignant than the medullary carcinoma, that also the rays increase the stroma and decrease the cellular elements, thus tending to convert a medullary to a scirrhous type. It decreases not only the mass but also the degree of malignancy. The palliation and the prolongation of life that the patients receive from the Röntgen treatment in recurrent carcinoma should never be denied them.

The external recurrences can be caused to disappear unless too extensive, and great relief is often obtained when the bronchial and mediastinal glands are involved. Hopeless cases which have not been operated in derive more benefit in comparison with hopeless recurrent cases. These patients not only obtain palliation sooner, but live longer and more comfortably than those with recurrent cases, possibly because the bronchial and the mediastinal glands are not so much involved. Many hopeless cases present themselves when they are almost in a septic condition, and after a few heavy treatments there is not only marked improvement in the disease itself, but the aspect of the patient is completely changed until from one of the most miserable objects in the world she usually becomes fairly comfortable.

Ochsner's conclusion in regard to recurrent carcinoma of the breast is as follows: "During the past few years a number of these apparently hopeless cases have been cured after the use of Röntgen rays. Whether such recovery is to be permanent remains to be seen. In our own experience no patient has presented herself for treatment of this condition to whom we could promise any surgical relief."

The question of anteoperative treatment is still a live subject for discussion, and my experience in the past few years makes me feel firmer in regard to anteoperative treatment of many cases of malignant growths than I stated in the paper which I read before this society two years ago.

It is well known that carcinoma of the glands of the neck is nearly always secondary to epithelioma of the face, carcinoma of the larynx, parotid glands, tonsil, or tongue. The following is Ochsner's treatment of the glands of the neck: "Thorough surgical removal is the only treatment that promises anything, with the possible exception of treatment by the x ray. The condition is, therefore, almost hopeless. These cases should all receive vigorous after treatment with the x ray."

In epithelioma we are dealing with a malignant condition, but this varies with the pathological condition of the growth and, as before brought out, with the location. These lesions range from an almost invisible scaly spot, almost benign in character, to the far advanced cases with extensive glandular metastases. The initial lesions often progress slowly, changing very little for a few months or even a few years, but it must be also borne in mind that they will eventually become active, involving deeper structures and adjacent glands, thus proving fatal. The treatment of many of these early lesions is really prophylactic in nature, but this must be properly done, and the old method of applying stimulating ointments or irritating caustics is to be condemned. The experience of the older physicians has shown the great harm frequently done by these improper methods, and is the real cause of the popular belief that it is a dangerous procedure to remove a scaly spot, wart, or mole before it becomes malignant. Whenever an epithelioma is treated it should be thoroughly and completely removed no difference what method is used.

There are a number of processes which will cure a greater percentage of these early lesions, but it is also true that more cases can be permanently cured and that the cosmetic results are better when removed by radiation. Selection of the Röntgen method for the removal of the early lesions may seem extreme; but since experience has shown that the prognosis in any case has proved uncertain, and that the permanent results are so much better, it is a question if it is not always advisable to give the few necessary treatments in order to effect a cure. On the other hand, it is never advisable to give several hundred treatments of short duration, covering one or two years, producing a degeneration followed by a Röntgen ulcer. I have seen a few such cases in consultation, and the operator did not know that he was treating a Röntgen ulcer instead of an epithelioma. Every dermatologist and röntgenologist has undoubtedly seen the same condition, but in the early days of x rays many failed to realize the difference in pathology. When these Röntgen ulcers are removed with all the degenerated tissue, a permanent cure follows almost invariably. When the epithelioma is far advanced or of the more malignant type it has become quite generally recognized that the Röntgen ray is the method which should be employed.

Pusey's extensive experience in the treatment of epitheliomas of all types and the care with which he follows up the end results, make any statement of his along this line authoritative. Doctor Pusey lately gave the history of thirty-six or thirty-eight cases of epithelioma of the lower lip which were treated by means of the x ray more than three years ago and whose subsequent histories were known. In only two instances were there subsequent metastases under the jaw—approximately five per cent. of failures, which does nearly approach the percentage of metastases, occurring under the jaw after surgical interference.

CONCLUSION.

In conclusion, I believe that the cumulative experience of many points to these facts:

1. More conservative treatment of malignant growths must be practised in order to secure more positive results in curable cases, and effect greater palliation in hopeless cases.
2. Degree and location of malignancy should determine the treatment.
3. Good results follow from early operations when favorably situated.
4. Postoperative Röntgen treatment, even in these early operations, decreases recurrences.
5. Some unfavorable cases can be made more favorable for operation by anteoperative treatment.
6. Hopeless cases which have not been operated in derive more benefit in comparison with hopeless recurrent cases.
7. With many the Röntgen ray is superseding all other methods, even excision radically performed, in the treatment of epithelioma, unless it involves mucous membrane.

When many more receive a salutary shock in studying malignancy, they are certain to avail themselves of the value of the Röntgen rays in the treatment of the seemingly favorable cases, and as an adjuvant and a palliative measure in the more advanced.

315 EMPIRE BUILDING.

THE EDUCATION OF THE PUBLIC IN PERSONAL HYGIENE.*

The Value of Popular Lectures.

By ROSALIE SLAUGHTER MORTON, M. D.,
New York,
Professor of Physiology, University of Vermont Summer School; Clinical Assistant in Gynecology, New York Polyclinic Medical School and Hospital.

The need for education by lectures and much of the valuable work which has been done in educating the public in personal hygiene has been so ably set forth by the speakers who have preceded me in this symposium, that I shall confine myself according to the request of Dr. Herbert D. Pease, secretary of this section, to a brief and partial summary of the national work in public health education which has been going forward under the American Medical Association since June, 1909, as one of the constructive features of a congress, is its bringing together of people interested in similar work to compare methods and results and to keep informed regarding each other's plans and purposes.

The average illness to-day in the United States is equal to ten days' incapacity for each individual. It is, therefore, urgently necessary that we work together; for all we can all do will be needed to materially lower this total of largely preventable inefficiency.

The plan of organization of the American Medical Association Committee for Public Health Education among Women is the formation under the association in the county medical societies throughout the United States of committees on public health education, of which the one for New York county may be taken as a type.

Under this committee's auspices, in the New York Academy of Medicine for the last three winters, a series of twelve lectures has been given on alternate Thursday afternoons and Wednesday evenings to men, women, and children of all classes of society. The wide public interest in the presentation of plain facts regarding health is shown by the fact that the seating capacity of the hall is 375 persons, and on every occasion the adjoining rooms had to be thrown open and frequently there was not standing room, the average attendance being 500 persons. One evening the number reached 1,000 and it was necessary to have our overflow meeting in another part of the building. A general recognition of the value of knowledge tending to build up the individual and community standard of health was shown by the fact that working men in flannel shirts sat next to society women. Bank clerks, moving picture operators, clerks of all kinds, members of women's clubs, school teachers, Young Women's and Young Men's Christian Association workers, sisters of charity, members of the Salvation Army, social settlement workers, New York college professors, as well as people from surrounding towns, all came to these lectures. The secret of the success was that each member of the audience was made to feel that he or she was a vital part of the educational campaign. Many people have come to the whole series for three years. Many clubs and other organizations have arranged their programmes to cooperate with "the Academy lectures," as they are called; some schools required their scholars to take notes and gave them class credits accordingly. A high school and several private schools dismissed their classes so that both pupils and teachers could attend.

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*Read before the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., September 26, 1912.

The lecturers are all members of the Medical Society of the County of New York. The subjects, free from technicalities, presented there and in other county medical societies throughout the country are:

1. Conservation of our greatest natural resource, the health of the people.
2. The educational value of pain.
3. Food, its relation to intellectual and physical development.
4. Food values.
5. Care of food in the market and the home
6. Restaurant inspection.
7. The relation of clothing to physical and moral health.
8. The value of exercise and rest to health.
9. The causes and prevention of nervousness
10. The relation of pure water to public health.
11. The common drinking cup.
12. The air we breathe and the value of ventilation.
13. Sanitation of the home.
14. The sanitation of street cars and other public conveyances.
15. Open air schools and healthful school buildings.
16. The importance of medical inspection of public schools.
17. The relation of clean streets to public health.
18. Pure milk and infant hygiene.
19. Care of the growing child.
20. Habit postures, good and bad.
21. The relation of home and school to the health of the child.
22. The relation of children's amusements to health.
23. The ounce of prevention.
24. Bacteria helpful and harmful.
25. The prevention of Fourth of July injuries and tetanus.
26. The cause and prevention of colds, bronchitis, etc.
27. The care of nose, throat, and ears.
28. The relation of adenoids, tonsils, and teeth to health.
29. Care of the eyes and prevention of blindness.
30. The relation of flies, mosquitoes, etc., to public health.
31. Prevention of some of the commoner skin diseases.
32. How to meet emergencies, hemorrhage, burns, etc.
33. The care of contagious diseases.
34. The prevention of tuberculosis.
35. Cleanliness, moral, mental, and physical.
36. Causes and prevention of immorality among children of high school age.
37. How to instruct children in regard to the origin of life.
38. Necessity for parent instruction in sex hygiene.
39. The responsibility of girlhood to womanhood (for girls).
40. The responsibility of boyhood to fatherhood.
41. Eugenics.
42. The value of early diagnosis of cancer in women.

Several of these are combined, or the various phases elaborated, as may be seen by reference to the programmes issued by the Public Health Education Committee of the Medical Society of the County of New York from January, 1909, to March, 1912.

We have found that the best way of obtaining results is: 1. To pay especial attention to the ventilation of the hall, as an accumulation of carbon dioxide in the air makes it impossible for the audience to listen attentively. 2. To avoid having the audience face the light, and to have the lights on the platform half shaded so that while they illuminate the charts or other illustrations, they do not tire the eyes by shining into them. 3. To have each speaker limited to twenty minutes and requested to make a few clear points, as the change of voice and personality of the speaker holds the attention and accentuates different phases of a subject better than when one speaker covers the same points in an hour; for the auditory nerve unconsciously grows tired from the same inflections of voice. 4. To request the speakers to compare their addresses, so that there will be no repetition and no contention, the object being to give to the audience a constructive idea of the subject presented which shall be helpful on broad lines. 5. To use charts and objects as illustrations to demonstrate simple home measures for health and hygiene. 6. To have lantern illustrations limited to from ten to twenty minutes in one symposium to avoid fatiguing the eyes and consequently the rest of the body. 7. To encourage the audience to ask questions of general application and to answer them frankly, fully, and cordially, each speaker answering the questions falling under his or her paper. 8. To treat all questions seriously with a spirit of encouraging those who have health superstititions to voice them and be told the truth. 9. To make a custom of repeating the question so that the answer may be clearly understood in its relation to the interrogation, and in order that nervous and uneducated members of the audience may feel free to ask questions, knowing that in a tactful and kindly way the sense of their questions will be repeated without the clumsy wording. 10. At the end of each course to ask the audience by unsigned slip ballot to indicate subjects which will be most helpful to them, so that the twelve with the highest vote may be put on the next programme.

The sense of personal responsibility of the audience is aroused by their realization of the practicality of the work, that it is absolutely altruistic in nature, that the lecturers are people who are exceptionally busy with the immediate demands of the acutely ill, and that in order to have this work of prevention as wide reaching as it should be, all must use the knowledge gained not only for themselves, but for their children, and also in whatever group work they are interested in developing; for instance, The Mothers Club of New York has made its entire programme of meetings for this winter relate to education regarding the mental, moral, and physical health of children.

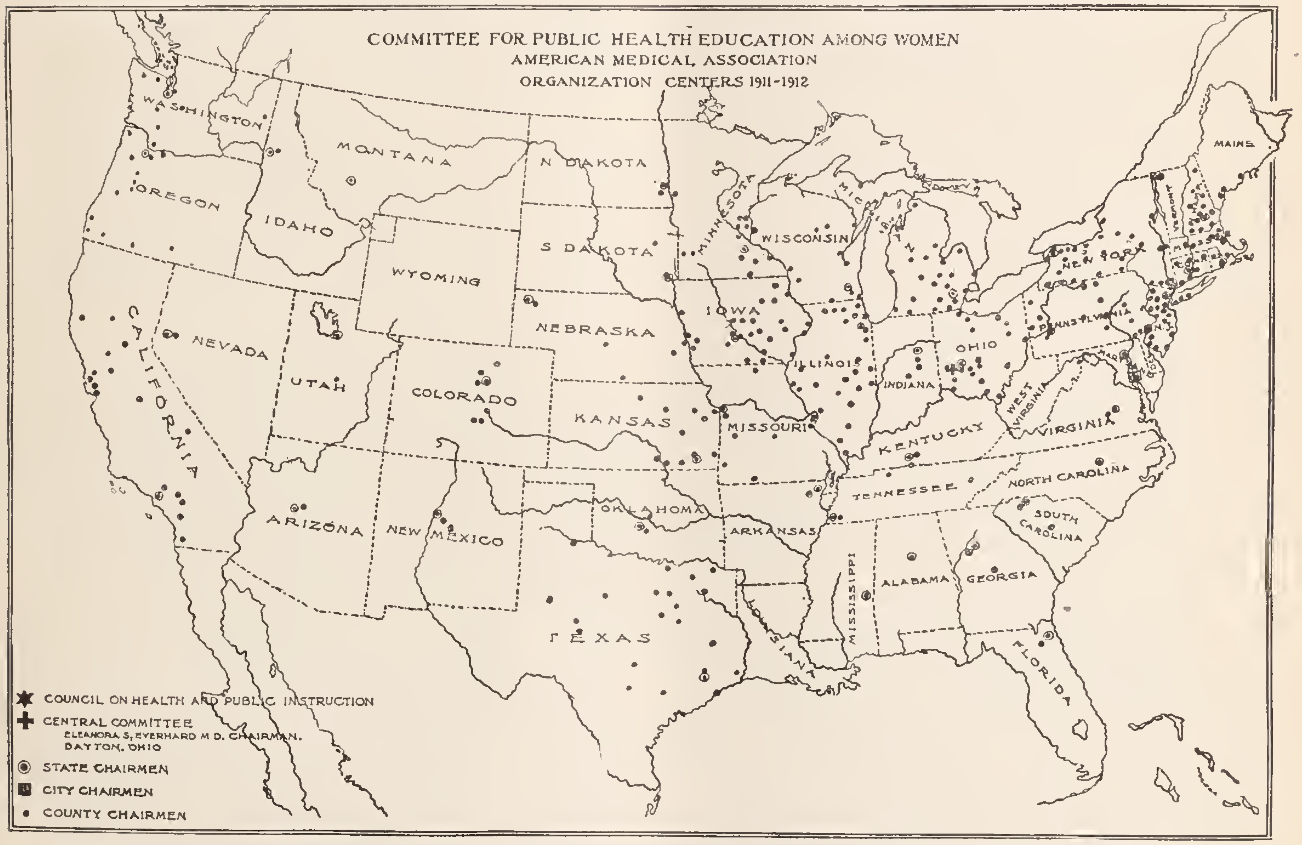
During the first year of the New York city lectures, which are part of the American Medical Association education campaign, they were the only series in the city; the following year there were six similar series going forward under other agencies, and there was no diminution of attendance at the lectures given in the Academy of Medicine.

The absolutely cordial relation between this and similar efforts looking to health betterment in New York city is one of the best features of the work. The 1911-12 yearly report of the National American Medical Association shows active cooperation with sixty-seven organizations and numerous plans for extending the work. A general feeling of comradeship exists in all of the forty-eight States, the District of Columbia, Alaska, Hawaii, and Panama, where the work is now going forward, and a total of about 10,000 lectures have been given in English, German, Russian, Polish, Yiddish, and Italian, the aggregate number of people present at these lectures being over 600,000, a considerable number of these being children; for, as Dr. Eleanor Seymour, our California State chairman, said in representing the American Medical Association Committee at the recent meeting of the National Education Association:

> Many of the older generation have been anesthetized by repeated monotonies and it is in the plastic, receptive minds of the coming generation that the seeds of hygiene will bear richest fruit. It is easy to start a child right. He accepts and assimilates new truths, and these, becoming a part of his composition, find practical expression in adult life. To the grown up the introduction of sanitary science seems an intrusion; it has survived primeval customs and conditions. Why disrupt them? The children are, therefore, the sanitarian's greatest asset, and the improvement of their condition is the work of the century. This necessitates the education of their superiors in the science of right living, for in this movement for health conservation, parent, teacher and child are vital and inseparable factors.

Dr. Eleanora S. Everhard, of Dayton, Ohio, the present National Chairman of the American Medical Association Committee for Public Health Education among Women, says:

> I am more and more impressed with the truth of the fact that it is the individual who must be taught. When the individual knows what is required for his or her physical safety and well being objection will be made to the careless and dangerous habits of neighbors, and personal hygiene immediately becomes civic hygiene. The object of this committee is to teach the individual by any method which is interesting, on any subject which will protect from disease. Methods differ in different States because people differ in different States.



The accompanying map shows the distribution of centres, and 5,000 of the 30,000 members of the American Medical Association are actively working with this committee, men and women being in about equal number.

Interest has been stimulated by prizes offered for the best essays written on public health subjects, as in North Carolina. Our committee officers have helped to secure medical inspection in schools in several localities; also the opening of more playgrounds, as in Dubuque. They have selected a traveling "citizens' shelf" of books on the prevention of disease, compiled and published a comprehensive list of books on personal hygiene, in all its phases; have secured better ventilation of the street cars in certain cities; have been granted the appointment of a Health Day by the Governor of the State to be observed annually as in Georgia. They have established courses of lectures in connection with clinics, as at the Woman's Clinic in Washington, D. C., and have made education so popular that one woman asked for a book to take home to read to her husband in the evening, and one little girl, five years old, arrayed her playmates in a row and lectured to them on health.

The method of public instruction used in Iowa was to convert a baby beauty contest into a baby health contest. The children entered in the contest are divided into classes according to age, and environment from which they come. The "score card," in accordance with which they are examined, contains statistics for the healthy child, and the reverse of the card contains items of instruction for the parents. At the Iowa State Fair, 1912, it was discovered that Iowa babies measure above normal. They expect, within two or three years, to give the average of a thousand babies with the conditions in which they have been reared. Hundreds of score cards with information were distributed. In addition, talks were given daily in this department of the State fair; 236 babies were measured. More were entered, but failed to appear. The winner in the two to three year old girl rural contest this year was entered in the one and a half year old class last year and failed. Her mother learned wherein she was deficient and brought her up to normal by care in regard to diet, etc.

In those States which have been visited with special epidemics during the year, instruction has been given to the public in the prevention and quarantine of that disease.

In many States the newspapers are cooperating by distributing practical and accurate information. In some places the County Committee for Public Health Education, working with the librarian in the public library, reviews all the popular books on hygiene in the library, relegating to the back shelves those which are sentimental or out of date, and publishing for the benefit of the public, lists which are authoritative. The effort in each community is to teach the people how to prevent those diseases which are preventable, bearing in mind always that it is the individual we wish to reach, as communities cannot be educated *en masse*.

I regret that time does not permit me to do greater justice to the extensive and entirely gratuitous work which has been done by many physicians who have worked with unfailing generosity, and whose efforts, together with that of the many philanthropists whose work is so well represented at the congress, will, I believe, be a substantial contribution to the life saving work of the world.

Sixty-third Street and Madison Avenue.

ABDOMINAL RIGIDITY.*

By L. Miller Kahn, M. D.,
New York,
Assistant Surgeon, Lebanon Hospital.

The object of this paper is to emphasize the importance of the defensive muscular rigidity of the abdominal wall in acute intraabdominal lesions. In the consideration of the diagnosis of acute conditions within the abdomen there are three cardinal local symptoms: Pain, tenderness, and abdominal rigidity. To estimate the degree of pain or the intensity of the tenderness, that is, local pain on point pressure, we must depend entirely on the statements of the patient and be guided by these and whatever other evidence, such as facial expression, slight bodily movements, and the like, that we may observe. In the final analysis both pain and tenderness are subjective and the value of evidence of their presence depends in great measure on the training, heredity, and resulting trustworthiness of the patient.

Rigidity of the abdominal muscles the clinician may judge for himself, its presence or absence, its degree, and the relation such rigidity bears to all other signs present.

In abdominal rigidity there is present involuntary, sustained, tonic contraction of the abdominal muscles. The involuntary character of the contraction must be clearly established in order that the diagnostic conclusions may have full value. Intermittent, voluntary contractions of the abdominal muscles represent response to pain or suggestion, and may have no definite relation to underlying pathological changes or may be present without such underlying pathological basis.

The character of the muscular tenseness may be determined by withdrawing the attention of the patient from the palpation of the abdomen, whereupon, if voluntary, relaxation occurs and the hand of the examiner notes the lessened resistance. The persistence of the reflex is the result of successive stimuli and argues for a definite pathological basis. As the motor and sensory nerve supply of the abdominal muscles comes from the six lower intercostals as well as from the iliohypogastric and ilioinguinal, these stimuli may originate within the thorax as well as within the abdomen.

Definite cerebrospinal nerve supply has been demonstrated throughout the parietal peritoneum save in a small area in front of the spinal column. According to Lennander (*Journal of the American Medical Association*, xlix, p. 836, 1907), sensation of pain within the abdomen is transmitted only by the phrenic, the six lower intercostals, the lumbar, and sacral nerves. It has been repeatedly shown that the stomach and intestines, as well as the liver and gallbladder, convey no sensation of pain on local experimental stimulation (Mitchell, *Ibidem*, lvii, p. 709, 1911). Howell (*Textbook of Physiology*, 1911) says, on the other hand, that "protopathic sensibility is found in the viscera, and it may be considered from the functional standpoint as a defensive agency against pathological changes in the tissues. This sensibility is low and consists of sensations of pain and of extreme changes in temperature, but the sensations are imperfectly localized." Lennander pointed out that the parietal peritoneum only can originate pain sensations, and while this opinion may subsequently have to be modified, it is probable that the abdominal reflex occurs in intraabdominal or endothoracic lesions only with injury to or inflammation of the parietal peritoneum or pleura or their adjacent lymph structures. It would seem that if within the abdomen the parietal peritoneum only may originate pain impulses that the mere distention or enlargement of an organ would not be sufficient to produce the reflex, and I have found this to be the case.

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*Read at a meeting of the Society of the Alumni of Lebanon Hospital, New York, November 14, 1911.

As is well known, localization of pain within the body is extremely indefinite, due mainly to the infrequent use of the pain sense beneath the surfaces. The so called head zones, or areas of hyperesthesia, which are only fairly indicative of lesions of the viscera, are not placed directly over the organ affected but in areas of the skin "supplied from the spinal segment from which the organ in question receives its sensory fibres; the misreference being due to a diffusion in the nerve centres." Those organs which receive no sensory fibres are in communication with the cerebrospinal system by means of the rami communicantes which connect the spinal with the sympathetic system.

Rigidity of the abdominal muscles is placed fairly definitely over the area involved within the abdomen, and thereby enables one to map out with exactness the location of the underlying pathological condition. If the condition is not yet localized, nor so well marked by the rigidity, the tenseness of the muscles may still be limited to the side involved or to the upper or lower half of the abdomen.

CAUSATIVE FACTORS IN RIGIDITY.

Foreign substances, usually bacteria or toxic serum within the peritoneal cavity or pleural space, which cause irritation or inflammation of the peritoneum or pleura, or their adjacent structures, may induce the abdominal reflex in direct ratio to their toxicity or power to bring about inflammatory reaction. Contents of hollow viscera, such as food, chyme, urine, bile, and the presence of blood within the peritoneal cavity, may and usually do produce rigidity of the muscles. Some organisms, as the tubercle bacilli, which are of low toxicity and do not induce acute reaction in the peritoneum, do not stimulate the reflex, so that in tuberculous peritonitis it is usually absent. Trauma to the peritoneum or pleura may also cause rigidity, but it is the opinion of the writer that injury to the muscles only does not result in producing the reflex. Whatever the causative factor may be, the presence of the rigidity of the muscles does not depend on the pain felt, and, in fact, rigidity is frequently present where there is no pain; neither does the degree of pain, when present, bear any fixed ratio to the degree of rigidity. Extensive abdominal rigidity is not necessarily an indication of a widely diffuse pyogenic process, but may only indicate the presence of large quantities of irritating serum, and this condition is commonly seen in early appendicitis.

As stated above, it seems highly probable that rigidity occurs in intraabdominal conditions only when the parietal peritoneum or its adjacent lymph structures are involved, and the absence of this sign in cases of strangulated hernia and intussusception until many hours after the onset of these affections, seems to be convincing as to that point. So, too, when an inflamed appendix is securely incased in friendly omentum and there is no inflammatory process elsewhere in the cavity of the peritoneum, no rigidity is observed, and the mass may be easily palpable. The sensitiveness of the peritoneum may be destroyed by the action of bacteria and the ability to originate such impulses as produce rigidity be lost. The destructive action of the bacteria on the peritoneum and its loss of sensation have been fitly compared to the absence of pain in erysipelas when the skin becomes gangrenous. When an abscess is formed within the peritoneum and placed directly against the parietal surface of this membrane, which is made to form one of the walls of the abscess cavity, the peritoneum is soon destroyed and no rigidity remains.

PATHOLOGICAL CONDITIONS WITH RIGIDITY.

First and foremost among the pathological changes which are accompanied by abdominal rigidity, stands appendicitis. Here the muscles of the right lower quadrant are ordinarily affected first, but the entire right side of the abdomen may be rigid from the onset. Often the spasm is limited to the right rectus. Where the diseased appendix is laterally displaced to the left, the reflex may be limited to the left rectus or spread over the muscles of the left lower quadrant. In infections of the appendix the adjacent lymph structures in the parietal peritoneum are early involved, and rigidity coming on in the first few hours of the disease gives a splendid warning. Simple distention of the appendix, for example, by a cyst of this organ, does not excite the reflex. It cannot be too strongly stated that, taken with a due regard for the accompanying signs, we have in abdominal rigidity a directing and determining symptom in appendicitis.

In infectious processes within the gallbladder the rigidity is often present in the right upper quadrant. Here, too, the degree of the muscular spasm excited seems to bear a direct ratio to the amount of the pericholecystic inflammatory reaction. The mere presence of calculi in the gallbladder or biliary passages without acute reinfection is insufficient to excite the reflex. This accords well with the theory that the parietal peritoneum must be involved before rigidity is induced.

In abscess around the gallbladder, or perforation, the reflex is usually most marked. In a case recently operated in at Lebanon Hospital in the service of Dr. Henry Roth, I found the gallbladder distended with pus eight months after an operation at another hospital, for cholelithiasis and drainage of the gallbladder. The patient had a perfectly healed scar over the gallbladder, a temperature of 103° F., and marked rigidity over the right hypochondrium; this without severe pain or tenderness over the region. There were present pericholecystic adhesions and recent deposits of fibrin. The marked rigidity was considered sufficient indication for the second operation.

In rupture or perforation of a hollow viscus into the peritoneal space we possess no other sign of equal importance, and while it is not intended that the other symptoms of visceral injury should be neglected, it has been my experience that the degree and extent of the rigidity of the abdominal muscles is our best guide as to operative interference. Rupture of the spleen or liver may be attended by the reflex, and as in rupture of the Fallopian tube due to ectopic gestation, the rigidity is due to the extravasation of blood.

In a case of subphrenic abscess I was greatly assisted in arriving at a correct diagnosis by the well defined rigidity in the right hypochondrium, along with other signs of the perihepatic infection.

Hall (*Journal of the American Medical Association*, p. 85, January 14, 1911) found rigidity in the abdominal muscles in sixty per cent. of gastric and duodenal ulcer. Pottenger (*Interstate Medical Journal*, May, 1911) has noted the presence of rigidity in tuberculosis of the intestines, especially in those parts most commonly involved, viz., the appendix, cecum, or ascending colon. He advises very light palpation over the abdomen, and if tuberculosis of these portions is present, the rigidity of the muscles on the right side is greater than normal. In both tuberculosis of the intestines and ulcer of the stomach the reflex is elicited in response to pain, and differs in that from the sustained rigidity in the acute conditions. In ulcer of the stomach or duodenum the skin and muscles of the abdomen may be exceedingly tender to touch and light pressure, and these are sufficient to produce contraction of the muscles.

Almost at the instant of perforation of a gastric or duodenal ulcer, the muscles over these regions stiffen, and as the contents of the stomach filter down the peritoneum, the entire musculature of the abdomen reacts to the irritating stimuli. In typhoid perforation the same rule holds good, and the observant clinician is well aware of the significance of abdominal rigidity accompanied by severe abdominal pain in typhoid fever.

In two cases of rupture of the urinary bladder the rigidity was most marked and extended over the entire abdomen, due to soiling of the peritoneum by urine and blood. In trauma of the kidney, with or without rupture, I have not found rigidity present unless the peritoneum was torn and there was contamination of the peritoneum. In rapid or violent distention of the posterior parietal peritoneum, as in sudden distention of the kidney pelvis, there may be rigidity. In the violent pain accompanying kidney colic, there is a marked reflex excited which is entirely dependent on the pain and with the relief of pain the spasm subsides.

In the female the pelvic infections through the Fallopian tubes are usually gonorrheal and do not, save in an occasional acute case, bring out the abdominal tenseness. This is probably due to a certain immunity of the peritoneum against the gonococcus and its toxines.

True, involuntary muscular rigidity does occur in irritation of the pleura, and perhaps of the lung, due either to infection or trauma, and one must be extremely cautious not to overlook a pleural or lung involvement, especially in children, even where all signs point to the abdomen as the seat of the trouble. As the abdominal rigidity often precedes all other evidences of the condition existing in the chest, it may not be possible to be absolutely certain of the diagnosis, and it so happens that pneumonia is often confounded with appendicitis or cholecystitis. This is especially true when the pain in pneumonia is entirely abdominal and is accompanied by true abdominal rigidity. The cause of this is readily understood, as the six lower intercostals lie immediately under the parietal pleura and upon irritation transmit impulses to the muscles supplied by them. In young children, and women with flaccid abdominal muscles, the rigidity in all conditions is not likely to be well marked.

GENERAL CONSIDERATIONS.

In acute muscular rheumatism of the abdomen, intense rigidity has been described, as well as in the crises of tabes dorsalis; in the former the reflex, it may be assumed, is excited by the inflammatory process attacking the nerve ends in the muscles, while in the latter the impulses are central owing to the lesion in the cord.

A simple method of palpating the abdomen is the following: If, for example, the right lower quadrant is suspected, palpation is begun in the left lower quadrant, thence to the left upper; across the abdomen, taking in the epigastric, the right hypochondriac, and then downward to the right iliac region. It is of the highest importance to take away the patient's attention from the palpation, and if the tenderest area is not palpated at first this is usually feasible. An orderly method for the palpation is of great help in determining the various degrees of rigidity present in the different parts of the muscular wall. It is to be remembered that there are all grades of the abdominal reflex and that the importance of its presence depends, in great measure, on the other symptoms available for consideration.

Morphine has long been interdicted in all abdominal cases where the diagnosis is in doubt, and a survey of the protective functions of abdominal rigidity, which acts as a sentinel for the peritoneum, confirms the dictum. It is not to be doubted that when the muscles are rigid they act as splints to the viscera, and until more radical measures are decided upon this protection should not be destroyed by morphine.

The necessity of considering all other available symptoms present, along with a careful analysis of a complete history of the patient, cannot be too strongly urged, and the full weight having been given to these, it will be seen that abdominal rigidity is one of our most trustworthy signs of abdominal lesion. In the greatest number of cases it will enable us to judge, with a fair degree of accuracy, both the area involved and the intensity of the process.

In all intraabdominal lesions, whether traumatic or inflammatory, that are amenable to surgical treatment, the time factor plays an important rôle in the mortality statistics. Well marked abdominal rigidity is an early sign of peritoneal involvement, and, if its presence is heeded, a life saving warning.

223 WEST 113TH STREET.

CONCOMITANT CONVERGENT SQUINT.*

Value of Correcting Glasses in Its Treatment.

By D. F. Harbridge, M. D.,
Philadelphia.

In concomitant squint, whatever the real determining factors may be, there is ever present, relatively at least, either an insufficiency or excessive action of opposing muscles. Of the varieties, permanent monocular, periodic, or alternating, convergent squint there is evidence of muscle imbalance in all. A certain number are explainable by the presence of anomalous anatomical conditions, congenital amblyopia, etc. The great majority, however, do not present these defects. Therefore various theories have been offered and defended by many advocates in explanation of this phenomenon, the two cammanding perhaps the most serious consideration being the theory of Worth in the development of the so called fusion faculty, and that of Donder of a definite coordinate association between the act of convergence and accommodation. So constant is the relationship of esotropia with hyperopia, and exotropia with myopia, that it can be considered the rule, and all nonconforming cases as the exceptions, to be accounted for by inharmonious anatomical conditions, congenital amblyopia, etc.

If this association of hyperopia, inducing additional accommodative effort, with esotropia is the rule—and it impresses me strongly that such is the case—I am rather firm in the belief that it will explain the great majority of cases of convergent squint, so constantly is it present, particularly in the moderate degrees. The high degrees of hyperopia are not so frequent, for the reason that the eye accepts the situation—a blurred image—and does not make an excessive effort at accommodation, thus relieving the extra innervation of the internal rectus.

Worth's theory can be supported to a degree, but it seems to me that if the eyes are held in proper position for parallelism of the visual axis, and the incoordinate relationship between convergence and accommodative effort be overcome by placing correcting lenses before the eyes, surely in the great majority of instances fusion will follow naturally. The eye in its faulty position does not have this opportunity to be stimulated properly, with the result that fusion suffers and the deviating eye becomes more or less amblyopic. In my judgment the loss of the fusion faculty is more likely to be a result and not a cause of squint. Orientation takes place about the sixth month. In one instance which I observed very carefully I determined it had practically become permanent at about five and a half months. The fusion faculty is recorded to be practically fully established about the sixth to the seventh year.

The varieties of convergent squint in which the application of full correcting lenses has operated most favorably are permanent monocular and periodic. As to alternating squint, while it is true that vision is usually good in both eyes, full correcting lenses influence the condition but little. There are other factors aside from the excessive accommodative effort involved. In periodic convergence of the young it is practically always favorable. In older patients, if the vision is good in the squinting eye, as is usually the case, and the deviation is not too great, the results are quite favorable. But if the eye is amblyopic the improvement in parallelism is less or nil. In this variety the condition is not, at least in its early manifestation, a true squint, but rather an excessive convergence power inducing spasm.

Regarding the constant monocular type, full correction is favorable, particularly, however, when the patients are seen early. The large majority of this variety occurs between the ages of one and three years. As soon as the squint becomes manifest in the child it should be under observation, and even as early as two years full correcting lenses must be ordered. They can be used very successfully by the little patient, such advice as "to wait and the child will outgrow the defect" being especially pernicious. The determination of the refraction is quite readily accomplished by the ophthalmoscope and retinoscope.

If the deviation is not too great, the foregoing treatment may suffice. However, it is true in most cases that if parallelism is not accomplished by the wearing of correcting lenses, it will be necessary to supplement their use by a simple orthoptic exercise obtained by blurring the sight of the fixing eye with instillations of atropine, thus compelling the child to use the deviating eye for useful vision. It is my custom to have a darkly smoked lens of a strength equal to the child's correction worn before the atropinized eye. When occasion requires it, it can easily be replaced by the clear lens.

The atropine is used for one month, then stopped for two weeks in order that the eye may be observed under active accommodation. If necessary, it is again instilled for another month, etc. If this method is carried out over a considerable length of time, it is advisable occasionally to suspend the atropine in the fixing eye and instill it into the deviating eye for a week or two, thus enabling the fixing eye fully to retain its function of parallelism and avoid becoming the squinter.

It may be advantageous in a certain number of cases to resort to the use of Worth's amblyscope, Krall's views prism exercise, etc. *But if the children are secured early enough I am sure the proportion requiring this additional exercise will be greatly in the minority.*

The amount of deviation can be estimated really more easily in the quite young child than in one of more mature years. The reflection of light in the eye of a child attracts its constant attention, and the position of the corneal reflex may be conveniently examined.

Children with squint who have been treated as above described should remain under observation well up to the seventh year, or until fusion is firmly established. A small amount of squint (ten to twenty per cent.) with good vision should not be interfered with surgically until after the twelfth or thirteenth year, owing to the fact that the skull broadens somewhat until that age.

256 South Fifteenth Street.

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*Read before the Philadelphia Polyclinic Ophthalmic Society, January, 1912.

CRIPPLED CHILDREN IN THE ENGLISH PUBLIC SCHOOLS.

By DOUGLAS C. McMURTRIE, M. D.,
New York.

Exceptional opportunities are now offered to crippled children in the English public schools by the system of special classes maintained for them. Such classes are sanctioned, and partially supported, by Parliament and have been established by many local education committees. Some cities, notably London and Liverpool, have made especially ample provision for cripples, or the physically defective as they are officially designated. The term "physical defect," has, however, been so interpreted as practically to limit its validity for cripples only. It has been construed as to apply only to those children who were out of school on account of organic disease or its effects, and had previously either gone without educational advantages or been taught by private philanthropic agencies.

The first public school class for cripples was opened in London in 1899 to continue, under State auspices, the work then being done by private means at the Passmore Edwards Settlement. In this first experiment the school board furnished instruction only, the settlement providing the premises for the class and the transportation facilities for the children. The following year, the school board passed a resolution in favor of the establishment of separate schools for crippled children of normal intelligence, and since then the number of such schools in England has been growing steadily.

It may be here explained that all of the English schools are under the general direction of the National Board of Education. This board prescribes certain rules, and schools complying with the regulations are certified as being entitled to receive the imperial grant. In the case of the classes for the elementary instruction of crippled children this grant amounts to fifty shillings a year to each unit of average attendance. For manual instruction a grant of thirty or forty shillings for each pupil per annum is paid, the amount varying with the age of the child. In all cases the remainder of the expense is borne by the local education authority.

One of the most important considerations in connection with the classes for crippled children is the transportation to and from the schools. For this purpose special ambulances and omnibuses are used. The ambulances are so constructed as to allow the insertion overhead of two stretchers for recumbent patients and provide inside seating accommodation below for fourteen children in addition to the nurse or attendant. The omnibuses are ordinary stages. Within the jurisdiction of the London county education committee alone, forty-three ambulances and thirty omnibuses are in commission for the transportation of crippled children. A commensurate number of nurses and attendants are employed to accompany the children in these vehicles. For some cases not requiring a special means of transportation, tram tickets or carfares are furnished.

On account of the circumstances it is impossible to send the children home at luncheon time and they are therefore given a hot meal at the school. In some cities the meals are provided by the school board and in others are furnished by private agencies. Liverpool is an example of the first method. The midday meal is provided under the direction of the medical officer of the education committee. With a view to covering the expense of the meal and partially defraying the cost of transportation and medical attention, the committee aims to secure from the parents, in cases where they can afford it, a contribution which may vary anywhere from six to fifty cents a week. The system in London is typical of the second method. There the school board provides the kitchens, the utensils, and the gas for cooking, while an outside organization, the Crippled Children's Training and Dinner Society, furnishes the provisions and the service. This society aims to help meet expenses by soliciting contributions from the parents. The arrangement works well and in comparatively few cases does the society fail to obtain the cost of the food.

The curriculum in the schools for the physically defective is very similar to that of the ordinary schools, but as considerable individual attention is needed, the classes are smaller. Some of the children are quite backward in their studies, but this is due rather to their having spent long periods in hospitals without educational advantages than to any mental incapacity. Care must be used in the selection of teachers for crippled children as they must be endowed with especial patience and adaptability.

The number of pupils to each teacher in the London schools for cripples is shown below for four different years.

	1906.	1907.	1908.	1909.
Number of teachers	66	90	93	107
Number of pupils..............	1,547	2,045	2,392	2,544
Average number of pupils to each teacher	23.4	22.7	25.7	23.8

It will be noted that in 1909 the number of pupils to each teacher decreased. This was not due to a decrease in the number of pupils, but to a very material increase in the teaching staff.

Visiting art teachers give instruction to the most advanced children on one day a week and develop any artistic faculties which they may possess. It is hoped that in many cases the children may be able to earn a livelihood at artistic work. Lending libraries are also provided for the use of scholars above a certain standard in all the schools for physically defective children. Owing to the importance of giving the children some trade training, such as shall help fit them to earn a living later on, some form of instruction in work of a constructive character is given. Of course the form of instruction is modified by the limitations imposed by physical disabilities in individual cases. The forms of manual instruction specified by the English Education Board as being suitable for physically defective children are as follows:

> For younger children: Bead threading, drawing, paper folding, paper tearing, paper cutting and mounting, paper mat making, clay modelling, plasticine modelling, macramé work, netting and other string work, kindergarten sewing, wood strip work, and pith cane work.
>
> For older boys: Drawing and design, woodwork and carpentry, tailoring, shoemaking and repairing, cardboard modelling, chair caning, gardening and farm work, house-

hold employments, mat and rug making, repoussé, bent iron work, printing, baking, and basket work.

For older girls: Cookery, laundry work, housewifery, needlework plain and fancy, knitting, mending, machine sewing, drawing and design, basket work, chair caning, and gardening.

In addition to the work done in the regular classes there are schools for trade instruction which specialize along certain lines. Two such trade schools have been recently opened by the London education committee and are directly under its jurisdiction. They represent a new and most interesting departure. The New King's Road (Fulham) Special Trade School was opened June 15, 1908, and on October 27th of the same year the Stanley Street (Deptford) Special Trade School was inaugurated. The former accommodates forty, and the latter thirty-two, crippled girls. In these schools the girls receive instruction in English, drawing, dress making, blouse making, embroidery, and needlework. The London County Council decided on February 12, 1907, that twelve London boys should be sent to the Heritage Crafts School, at Chailey, Sussex, where they receive a thorough training in woodwork. On July 28, 1908, the council decided to send twelve girls to these same schools. The council also offers twelve trade scholarships which are tenable at various approved private institutions. Such scholarships are good for a term of one year and are renewable up to four years. The age limit is from fifteen to seventeen years, the parents' income limit, $800 annually, the child must have attended a certified special school for at least two years and must not be disabled by infirmity from earning a livelihood after training.

The classes for crippled children are a part of the general system of special schools for defectives of several types, blind, deaf, crippled, epileptic, and mentally defective. As a general rule, a special school for one or more of the aforementioned types is located in a building of its own with the parts occupied by one type of pupil structurally separated from the part used by children of another type. Thus, for example, classes for cripples and epileptics may occupy different divisions of the same special school. The buildings are well suited to their purposes. The building rules applying to the classes for physically defective children and which are supplementary to the rules regarding regular school buildings are as follows:

Schools for various types of afflicted children should not be held in the same building, unless structurally separated for each type.

All rooms for physically defective children must be on the ground floor.

Where no field or other larger space has been secured, the superficial area of the site should provide not less than thirty square feet for each child of open space exclusive of buildings. The playgrounds for boys and girls should be separate except where the offices are inside the school. There should be a large covered shed open on one side, provided with ample top light, which, under supervision, may be used by boys and girls together.

In the class rooms not less than eighteen square feet of floor space per child in average attendance must be provided.

No class room shall contain less than 360 square feet of floor space.

The light should be ample and such as to suit the mode of teaching employed.

In day schools there should be a wide and well lighted corridor or hall, and a room for the use of the teachers. Accommodation should be arranged for medical inspection.

Each child must, as a rule, be provided with a desk of suitable size sloped at an angle of from ten to fifteen degrees.

Suitable rooms or accommodation must be provided for manual instruction. Such rooms if suitably arranged may be reckoned in the accommodation.

All playgrounds, offices, cloak rooms, lavatories, entrances, and passages must be so constructed as to admit of easy supervision by the teachers of the school and must, as a rule, be kept for the exclusive use of the children attending that school.

The permissive act of Parliament allowing local education authorities to make provision for cripples was passed first for England only in 1899. Since that time the number of special schools for the physically defective has grown largely. As far as I can ascertain there are at present fifty-four special schools for cripples in England. Forty-six of these might be roughly classed as regular public schools. Two are special trade schools under public auspices, and six are residential institutions in which instruction is given or partial support supplied by the education authorities.

London is easily the leader among English cities in the work for the education of cripples, and Liverpool has also been prominent. Features of the systems in both these cities have been already described. In Birmingham the system is very similar. Along trade lines tuition is given to certain boys in tailoring, light carpentry and fretwork, shorthand and typewriting, and basket work, and to certain girls in tailoring, millinery, embroidery, cookery, laundry work, shorthand and typewriting, and basket work. The secretary of education informs me, however, that it is difficult to give trade education to the majority of the children owing to their physical condition.

In Leeds there is one school for cripples. Some years ago the education committee purchased a residence in one of the better districts of the city and converted it into a special school. Children from seven to sixteen years of age are admitted. In addition to the ordinary educational subjects, the scholars are taught some manual occupation, such as rug making, chair caning, shorthand, typewriting, wood carving, dressmaking (for girls), and boot repairing (for boys). The special school hours are from 9.30 a. m. to 3.30 p. m., with the usual noon interval. The staff at this school (which has an accommodation of sixty-six) consists of a headmistress, three assistant teachers, a trained nurse, and a shoemaker in charge of the boot repairing workshop. The scholars are provided with a hot dinner daily by a voluntary organization known as the Leeds Invalid Children's Aid Society.

Sheffield is running an experimental school for crippled children which has an accommodation for twenty. The children attending the classes reside within a moderate distance of the school, which is situated near one of the main tram thoroughfares so as to facilitate the arrival of the children in the morning and their departure in the afternoon. No special means of transportation is provided. In addition to the ordinary elementary subjects the children are instructed in rug and basket making, cane weaving, chip carving, and paper cutting and mounting.

The elementary education subcommittee of the city of Hull received on March 21, 1910, a very thorough report on the physically defective children of school age within its jurisdiction. A list of all such children in the city was obtained through the cooperation of various agencies and an analysis of the cases was made after a thorough individual medical inspection. It was found that there were but eight children who were incapable, by reason of their physical defects, of receiving education in an ordinary public elementary school, but could probably derive benefit from attendance at a special school. There appeared to be nine children in whose cases the provision of a special chair, a boot, or a carriage, would be of advantage and enable them to receive proper benefit from the instruction in the ordinary public schools. In the large cities there are aftercare committees which look to the needs of the crippled children after they leave the special schools. It is not possible here to describe their work in detail.

The cost of giving crippled children a primary education in the special classes maintained for them varies in different instances. In London during 1909 the average gross cost per capita was $78.45. This included the cost of transportation. For the Liverpool classes the corresponding per capita expenditure for 1909 was $51.34. In Birmingham the cost for each child was $76.40. None of these figures include capital or administrative expenses.

The English cities have shown an excellent grasp of the conditions to be met in the care of crippled children and the situation is one of great promise. In 1906 an act was passed by Parliament, permitting local education authorities in Scotland to make provision for physically defective children within their several districts. Advantage has been taken of this and several schools for cripples have been started. The most extensive work in this line has been done by the school authorities of Glasgow, and classes for cripples are conducted at eleven centres: Bridgeton, Finnieston, Freeland, Grove Street, Hayfield, Shields Road, Govan Street, Port Street, Barrowfield, Woodlands Institute, and Strathclyde School. The latter has been very recently opened. Transportation is provided in special ambulances, nurses accompanying the children. Excellent work has been done and a considerable number of the children were certified, during the last session, as fit to take up the work of the ordinary classes. In Edinburgh there is one school for crippled children in present operation and a second will be open soon. The school board has in contemplation a third school, which, it is thought, if established would about meet the requirements of the city.

Within the last few years Parliament has passed an act providing for the education of afflicted children in Ireland. It is to be hoped that this will lead to the establishment of schools for crippled children there and have the same effect as did the similar acts in England and Scotland.

298 METROPOLITAN TOWER.

INCIPIENT PULMONARY TUBERCULOSIS.

Conclusions Based upon an Analysis of 3,310 Cases.

By SAMUEL G. EHRENREICH, M. D.,
New York,
House Physician, Montefiore Home.

Patients suffering from pulmonary tuberculosis, applying for admission to the Montefiore Home, are here divided by the examining physician into two groups, depending upon the stage of the disease present. The patients afflicted with the advanced stage of the disease are classed among those who are admitted to the home proper and do not concern us here. It is the incipient and moderately advanced patients which make up the subject under discussion in this paper, and of which I have recorded 3,310 in all, practically the number that have applied during the past four years; of these the writer has personally examined about thirty per cent., having made very careful observations upon them all, and has collected the few data and interesting conclusions herein mentioned. Before proceeding any further it should be made clear to all that the various figures cited cannot obviously be wholly and absolutely correct, as patients' statements are never entirely reliable; thus one patient may have been ill for years, and when asked for the duration of his illness may promptly reply, "Two or three months," or when attempting to ascertain the first symptom or symptoms of his present trouble, he will frequently overlook the gradual weakness and languor which have long preceded the sanguineous expectoration, the latter naturally being to him the first and only important symptom of "consumption." When, however, we consider the large number of cases collected, I am positive that certain general conclusions may be drawn, as I shall attempt to show.

I believe it will be of interest first briefly to describe the method of procedure in the examination of our cases in the clinic, so that a clearer insight into the results to follow may be obtained by the reader.

Clinics are held Monday and Thursday mornings from 9 a. m. to 1 p. m., for men and women respectively; the afternoons and evenings are far preferable, as then a rise in temperature, a most important sign in these early cases, is more frequently detected than in the mornings; but owing to the poor class of laborers, or so called wage earners, that apply, the afternoon hours would seriously interfere with their vocations, and many would far prefer to "stick to their jobs" than attend a clinic at the risk of losing them. In fact, a large number cannot stop work even for a short time without serious sacrifice. A careful history is taken by a physician, sputum examinations are made, and the pulse, weight, and rectal temperature taken by a nurse; the patient then receives a very careful, thorough physical examination, great stress being put upon general inspection, this having been of far greater aid in the diagnosis of early cases of pulmonary tuberculosis than is generally supposed among members of the profession; it frequently has occurred that these were the only signs obtained and were sufficient (in combination with the patient's history, pulse, and temperature) to warrant a positive diagnosis. All doubtful patients attend the clinic weekly until a definite idea of the case can be arrived at; often patients have had to return for reexamination no less than five to ten times before a positive sign of tuberculosis was detected by the physician. If a case is found suitable, it is put upon the waiting list for admission to the Bedford Sanatorium, where it is sent about one to four months later; this delay is unfortunately caused by the comparatively large waiting list of such cases.

Sex: Of the 3,310 cases here reported, 1,930, or fifty-eight per cent., are in the male sex, and 1,380, or forty-two per cent., in the female sex.

Stage: Of the males, 1,093, or fifty-six per cent., are in the incipient stage of the disease, whereas 837, or forty-four per cent., are moderately advanced. The females, applying somewhat earlier than the men, have 909, or sixty-six per cent., in the first stage and only 471, or thirty-four per cent., in the second. Taking all cases together, sixty per cent. belong to the first and forty per cent. to the second class. There are quite a number of suspect cases, these naturally being included among the first stage cases. The method employed in classifying cases is the one adopted by the National Association for the Study and Prevention of Pulmonary Tuberculosis.

CLASSIFICATION OF CASES OF TUBERCULOSIS.

Age.	Number of cases	Proportion of total	Number of males	Proportion of males	Number of females	Proportion of females
Under 10....	130	4%	51	3%	79	6%
10-20 years..	857	26%	388	20%	469	34%
20-30 years..	1.258	38%	832	43%	426	31%
30-40 years..	754	23%	431	22%	323	23%
40-50 years..	261	8%	191	10%	70	5%
Above 50 ...	50	1%	37	2%	13	1%

From the foregoing table it can easily be seen that the number of females from ten to twenty years of age suffering from pulmonary tuberculosis far exceeds the number of males of the same age, whereas at the next decade the percentage of males increases proportionately above that of members of the opposite sex; a plausible explanation for this, as suggested by Dr. S. Wachsmann, medical director of the home, is the fact that the young ladies of to-day, beginning as they do at about the age of sixteen years to wear corsets and other garments necessitating tight lacing, greatly hinder proper expansion of their chests, thus interfering with the respiratory function and activity, and are therefore more susceptible to pulmonary tuberculosis than are young men of the corresponding age. Another feature of the table, and one long known and recognized, is the preponderance of the disease in individuals from ten to forty years of age, extremes of age being relatively slightly affected.

Family history: In 358 males and 312 females, or in twenty per cent. of all cases, a family predisposition was obtained, seven per cent. of these being parental and thirteen per cent. with collateral heredity. The usual estimates of various observers range from ten to twenty per cent. or even to fifty per cent. in some instances. Of 427 cases at the Johns Hopkins Hospital, there were fifty-three in which the mother had had tuberculosis, fifty-two in which the father had been affected, and 105 in which a brother or sister had had the disease (Osler).

Time of onset: I have especially attempted to ascertain as accurately as possible, the duration of each patient's illness prior to the time that he applied to the home or other institution, and have tabulated the results as follows:

Duration of illness	Males	Females
One month or less..........	100 or 5%	70 or 5%
One to three months........	458 or 24%	308 or 23%
Three to six months........	590 or 30%	470 or 34%
Six months to one year.....	430 or 22%	286 or 22%
One to two years...........	244 or 13%	161 or 12%
Above two years............	108 or 6%	85 or 4%

It can thus easily be seen that about fifty per cent. of the patients have been ill at least six months before making application, most of these having progressed to the second stage of the disease, thus missing the chance for recovery.

Almost every practitioner is fairly well acquainted with the various reasons and causes offered by patients for this most unfortunate and serious neglect; but what was more than a surprise to me was the fact that more than fifteen per cent. of the patients had been informed by one or more physicians that their lungs were unaffected, were advised to continue working under unsanitary conditions and surroundings, and yet presented undoubted second stage cases of pulmonary tuberculosis when seen by the writer; in many instances the private physician did not deem it even necessary to examine the patient's sputum, but had he done so there would have been no doubt in his mind whatever as to the correct diagnosis. I can safely say, without any contradiction, that the physician's neglect in not properly examining and diagnosticating cases of pulmonary tuberculosis is responsible for more than twenty per cent. of all our advanced cases. It is true, many patients do not consult a physician early enough; they suffer comparatively little discomfort or believe that it is a mere "cold," and they may drift on, unconscious of danger, until it is too late; others find it an advantage to conceal their knowledge of their disease, for reasons best known to themselves; but a fair percentage of late cases arises from the fact that the first physician or two hurriedly and carelessly examined the patient, and declared him to be nontuberculous; in fact, I have heard from more than one patient that his private physician declared he simply had a "cold," prescribed for it, and did not even make a physical examination.

Mode of onset: In many cases the onset of pulmonary tuberculosis is extremely insidious and obscure, but, as a rule, the patient can usually remember how his present trouble commenced, especially if he is closely questioned; it is of great importance positively to discover whether he had been in an absolutely good state of health previous to the time mentioned as that of the onset. The following results were obtained in my cases:

ONSET WITH

1.	Cold (this including bronchitis, rhinitis, pharyngitis, influenza, hay fever, tonsillitis, a few cases of pneumonia, exposure during parturition or nursing, etc.)	2,122 cases (64%)
2.	Hemoptysis	283 cases (8%)+
3.	Sanguineous expectoration	160 cases (5%)
4.	Pain in chest (females especially complaining of this)	316 cases (9%)+
5.	Laryngeal symptoms	28 cases (1%)
6.	Symptoms of dyspepsia and anemia........	189 cases (5%)+
7.	Pneumonia	70 cases (2%)+
8.	Influenza	87 cases (3%)
9.	Other symptoms (including fever, dyspnea, epistaxis, infectious diseases, etc.)	55 cases (2%)

Sputum examination: In 1,198 instances, or thirty-six per cent. of all cases, the sputum was positive for the presence of tubercle bacilli, and in 2,112, or sixty-four per cent., it was negative. As the sputum was examined but once or twice in the vast majority of cases, the following results cannot be absolutely conclusive; in a small percentage "positive" sputum developed after repeated examinations at Bedford, which are here included among the negatives.

STAGE ONE				STAGE TWO			
Positive		Negative		Positive		Negative	
No.	%	No.	%	No.	%	No.	%
383	20%	1,591	80%	815	61%	521	39%

In other words, in 19.5 per cent. of stage one and sixty-one per cent. of stage two cases, bacteriological examination of the expectoration showed the presence of tubercle bacilli, whereas in 80.5 per cent. of stage one and thirty-nine per cent. of stage two cases, such examinations proved to be negative.

In 291 cases a chemical examination of the sputum for the presence of albumin was performed by Doctor Felderbaum, to whom I am greatly indebted. The test, as described by Sahli, is as follows:

> A measured quantity of sputum is placed in a glass flask with a three per cent. solution of acetic acid and violently agitated until the mucus is decomposed. The mixture is filtered and the filtrate is washed with three per cent. acetic acid. The filtrate, which contains the albumoses and the albumin of the sputum without the mucin, is now treated with sodium hydroxide until it is only slightly acid in reaction. If necessary concentrated saline may be added, after which the albumin may be coagulated by boiling. The albumin may also be precipitated from the strong acetic acid solution by potassium ferrocyanide. In either case the resulting precipitate gives a qualitative and a quantitative test for the amount of albumin in the sputum. Esbach's method, as applied to the urine, may also be employed for an approximate quantitative estimation of the amount of albumin.

This test is far from being absolutely specific for pulmonary tuberculosis, being also positive in a few other conditions, especially congestion and edema of the lungs. But, when we consider the results and figures to follow, we must lay a good deal of stress and importance upon this test, and immediately recognize its value, also its great assistance in the very incipient cases of tuberculosis, where the bacteriological examination of the sputum is usually negative.

Of the 291 cases where both chemical and bacteriological examinations of the sputum were made, seventy-three were positive for both tests, this being twenty-five per cent. of the 291, and eighty-six per cent. of the positive bacteriological cases; ten positive cases gave a faint chemical reaction, constituting eleven per cent of the positive cases; so that in ninety-seven per cent. of the cases, where tubercle bacilli were present in the sputum, a chemical examination for the presence of albumin also proved positive. In three per cent. no albumin was found; I really do not know how to account for this, but the percentage is comparatively so small that it can almost wholly be neglected. In ninety-five cases both tests were found to be negative, constituting thirty-three per cent. of all cases, and forty-six per cent. of those that were negative bacteriologically; of these cases, forty-eight, or fifty per cent., were distinctly tuberculous clinically. In seventy-four cases (twenty-five per cent. of all and thirty-six per cent. of the negative ones), the chemical examination was distinctly positive, whereas bacteriological examinations were negative; of these, sixty-eight cases, or ninety-two per cent., had positive signs of pulmonary tuberculosis, and the rest were tuberculous suspects. Thirty-six cases were negative for tubercle bacilli and gave a faint chemical reaction; twenty-six, or seventy-two per cent., of these were distinctly tuberculous.

Relation of height of patient to circumference of chest: Normally this ratio is practically two to one. The circumference of the chest is taken at the level of the angles of the scapulæ. I took such measurements on 400 of my patients and found that seventy of these, or 17.5 per cent., of all, showed a ratio of about 2.125 to one or more, owing to the diminished circumference of the chest in tuberculous subjects. Of these cases, eighty-eight per cent. belong to stage two, and twelve per cent. to the first stage.

Relation of asthma to tuberculosis. These two diseases have been held by many to be antagonistic, in fact Brügelmann goes so far as to state that it is impossible for any one patient to suffer from both at the same time. In 400 patients that the writer examined during the past year, no less than twenty-eight, or seven per cent., gave a distinct asthmatic history and positive physical findings of pulmonary tuberculosis and asthma; the tuberculous condition apparently followed the asthmatic in twenty-six, or ninety-three per cent., and in two cases the reverse held true.

This paper would hardly be complete without acknowledging my indebtedness to Dr. S. Wachsmann for his active interest and ever willing aid to the writer, and for his kind permission to publish the results.

3390 Broadway.

ALKALIES AND HYPERCHLORHYDRIA.

By P. Caswell Tupper, M. D.,
New York.

How many patients have said to you: "Doctor, when I get a sour stomach, I am always relieved by taking a little baking soda, because it brings up the gas so readily"? I presume most of you have heard substantially this statement many times. I would like to discuss with you a little demonstration along this line.

I realize that a test tube has not the individuality of a stomach and differs from it in many other ways; still, making due allowance for these differences, I think we may allow a test tube experimentally to represent a certain type of stomach. We will mix up a few c. c. of water with a few drops of dilute hydrochloric acid, and add a drop or two of alcoholic solution of dimethyl. The resultant red fluid, we will put in three test tubes, an equal quantity in each. These will represent three *gas free* stomachs, each containing free hydrochloric acid. Now we will take on a knife blade (we are making the experiment as simple as possible) a pinch of sodium bicarbonate, and add it to stomach No. 1. At once there is a violent effervescence, the fluid bubbles to the top of the tube (it is getting up the gas!), it turns yellow (the sourness is corrected); it then subsides, ebullition ceases, and the contents lie dormant in the lower portion of the tube. The whole reaction occupies but a few seconds. Now we add to stomach No. 2 a pinch of magnesium carbonate, about the same volume as of soda used; for a few seconds the fluid remains apparently unchanged, then follows a mild effervescence, the fluid slowly turns yellow, and subsides as in No. 1.

To the third tube we now add approximately the same volume of light magnesium oxide (calcined magnesia); almost instantly the fluid turns yellow, but its calm surface is undisturbed; this reagent does not "bring up the gas," because in the reaction no gas is formed.

The equations follow:

1. $NaHCO_3 + HCl = CO_2 + NaCI + H_2O$.
2. $MgCO_3 + 2HCl = CO_2 + MgCl_2 + H_2O$.
3. $MgO + 2HCl + H_2O = Mg(OH)_2 + 2HCl = MgCl_2 + 2H_2O$.

By substituting the atomic weights of the elements used, we find that taking sodium bicarbonate as the unit, the neutralizing power by weight of magnesium carbonate equals about 2 and of magnesium oxide about 4. As calcined magnesia is very light and fluffy compared to sodium bicarbonate, and as we often prescribe a loose powder to be taken by volume, i. e., by the teaspoonful or fraction thereof, it is of interest to determine the relative neutralizing power, volume for volume.

One molecule of MgO, weighing 40, neutralizes two molecules of HCl, while one molecule of $NaHCO_3$, weighing 84, neutralizes only one of HCl. This led the writer to believe that the MgO is more powerful, volume for volume. However, tests performed with the two salts, as dispensed in this city, failed to substantiate this belief. I will omit the experiment in detail, but will say that the commercial sodium bicarbonate bought from a wholesale chemist neutralized about twice the amount of acid as did an equal volume of calcined magnesia from the same firm.

We have said that a test tube differs from a stomach in many particulars: The tube is cylindrical, and has an unobstructed outlet at the top, an advantage which the stomach lacks. The stomach wall is distensible, more or less, which allows it, to a certain extent, to accommodate the gas formed, but *only* to a certain extent; and, furthermore, the stomach has a delicate mucous membrane lining its walls, a lining which, in the case of an irritable, hypersensitive organ, must certainly resent the violent action of sodium bicarbonate acting on free acid. Furthermore, when we neutralize HCl with soda in a test tube, the affair is finished, whereas a stomach makes its own HCl, makes it only too readily, when belonging to the hyperacid type. Our patriarchs in gastric experimentation seem to differ as to the further production of HCl in a pathological stomach by the action of sodium bicarbonate after that present is neutralized. In the face of this careful and extensive labors, I do not feel competent to venture an assertion in either direction, but it seems a possibility that an organ which upon the slightest irritation, chemical or mechanical, produces an excess of HCl, might play its favorite rôle of acid production as a result of the profound disturbance and the pressure due to obstructed outlet of gas produced when soda is administered.

I was led to make the foregoing crude experiments by the fact that both in private practice and in the gastric clinic of the New York Hospital Dispensary, about ten per cent. of my patients with excessively acidity receiving sodium bicarbonate in the treatment, gave a history of distress; belching, bloating, sense of weakness, or obscure nervous symptoms, immediately following the ingestion of this drug, in some cases severe flatulence where none had existed prior to the treatment.

When I completed the experiment detailed above, I jumped to the conclusion that MgO, or magnesium hydrate (MgO + water), was the ideal alkali to exhibit in simple gastric hyperacidity (I was much mistaken, as we shall see presently). I eliminated sodium bicarbonate from my private pharmacopeia (except for lavage and the soda contained in Carlsbad salt), and instituted a routine medication in these cases consisting of calcined magnesia, with a small quantity of bismuth subnitrate suspend in water. I soon noticed that the patients under this treatment, a large percentage of whom were constipated heretofore, no longer needed the Carlsbad salt previously prescribed for this symptom; they were no longer constipated, in fact quite the reverse; flatuence present under former medication containing soda had disappeared in favor of diarrhea, the soluble magnesium chloride formed in the third reaction performing the rôle of a first class saline cathartic. I am still searching for the ideal alkaline mixture, and should be pleased if some reader of this article would help me in the quest. At present, I compromise in the treatment of these cases as follows:

If the patient is constipated at the time of beginning treatment, I prescribe the suspension of magnesia and bismuth, a teaspoonful or less after meals, and one half an hour later, one dose, representing six grains of magnesium hydrate and twenty-two grains of bismuth subnitrate. This is continued for three to five days, and if the evacuations continue too frequent, at the expense of the patient's already reduced weight and strength, I discontinue the foregoing in favor of a powder containing equal volume of magnesia and magnesium carbonate, with a little powdered charcoal, and sometimes a little bismuth subnitrate. It must not be understood that I thus dismiss the symptom of constipation, or that I consider this ever as adequate treatment, but we are discussing here simply the exhibition of alkalies in hyperacidity. As to the formation of concretions, attributed by some authorities to the prolonged use of magnesium oxide, I would say that this result seems impossible to me, provided the clinician has accurately estimated the degree of hyperchlorhydria present from time to time, and has prescribed always less magnesium oxide than the amount able to completely neutralize all acid present, lessening the dose as the condition improves, and discontinuing it altogether when the free acid found at the height of digestion is within normal limits.

A word in regard to the addition of powdered charcoal to the mixtures: I do not assert any gas absorption by it; it may absorb some; if so, so much the better. One thing it does certainly do, it imparts a gray coloration to the powder or mixture, a factor often of psychic benefit, especially to that morbid patient who broods over his condition and speculates upon the effects of various medications used, a patient not infrequently met with in this line of work.

422 West Twenty-third Street.

Therapeutical Notes.

Treatment of Eclampsia.—G. Bellingham Smith, in the *Practitioner* for September, 1912, discussing this subject from the standpoint of private practice, states that there are two chief indications for treatment, viz., the convulsive phenomena and the toxemic state. In regard to the first, the drugs most employed are bromide, chloral hydrate, morphine, and chloroform. In mild cases the first two may suffice, but the author believes it best not to waste time seeing whether they will act. Of chloroform and morphine, he much prefers the second; he begins with one half grain, and repeats it in one quarter grain doses, the total amount in the first twenty-four hours not exceeding two grains. If any manipulations have to be carried out, or if the fits are not controlled by morphine, and recur frequently, chloroform should be given.

As regards the toxemia, it is often found that there is almost complete suppression of urine in these cases, generally accompanied by constipation. If the patient is conscious, one drachm of compound jalap powder may be given. With this should be combined free washing out of the bowel with warm water enemata; Tweedy advises that a pint of water be left in the bowel. In the unconscious patient, Smith disapproves of the commonly used croton oil, preferring the introduction into the stomach, by means of a tube, of some jalap powder or magnesium sulphate: this allows of preliminary stomach washing. In addition, normal saline solution should be given subcutaneously, one pint into each axilla; this may be repeated later. Diaphoresis should be secured by means of hot baths, wet packing, or hot air baths; of these, wet packing is most easily carried out in a private house. The fluid lost through perspiration should be replaced by means of rectal injections.

With the aid of these measures, not only may a patient pass through labor successfully, but the fits may disappear before the onset of labor. Regarding operative procedures, Smith points out that the benefit obtained by emptying the uterus has been somewhat exaggerated, as shown by the fact that even where the convulsions begin in the puerperium the mortality is from eight to twelve per cent. When the patient is in labor the advisability of terminating the latter as soon as possible, e. g., by application of forceps as soon as the cervix is sufficiently dilated, is undoubted. As for cases arising during pregnancy, rapid delivery does not give good results when employed as a last resort. By immediate operation, on the other hand, the mortality would appear, from published accounts, to be reduced, but the difference is slight and would be more than counterbalanced by the risks attendant on operating under adverse circumstances. Of the various operative methods, vaginal Cæsarean section seems to have given the best results. Induction of labor with bougies, etc., is of use only in cases where the convulsions have been controlled.

Arsenic and Other Drugs in Pulmonary Tuberculosis.—Abraham Jacobi, in *Albany Medical Annals* for July, 1912, states that he has convinced himself in a great many cases that in incipient, though well marked pulmonary tuberculosis the prolonged administration of arsenic leads to a diminution in the lung infiltrations, brings about disappearance of elastic fibres from the expectoration, improves the patient's strength, and increases weight. In advanced cases he makes it a rule not to prescribe arsenic when the fever is very high, but to return to it as soon as the temperature tends toward normal; under such conditions even these patients may be improved by the drug. Arsenic favors the proliferation of encapsulating connective tissue. But since the action must be a persistent one, the doses must not be large, from 1/15 or 1/10 to 1/6 grain of arsenic trioxide (arsenous acid) daily for an adult. The preparations used are either the trioxide or Fowler's or Pearson's solution, the dose of Fowler's being three drops and that of Pearson's solution from six to ten drops, three times a day in a few ounces of water after meals. Nausea, colic, diarrhea, or edema of the eyelids is a temporary contraindication to the continuance of the drug. Conjoint administration of a small amount of opium renders it less liable to induce disagreeable symptoms, and in such cases as show diarrhea at an early period, the combination is a particularly happy one. To prevent the effect of arsenic on the gastric glands, which have been known to become atrophic during its use, some hydrochloric acid should be given regularly, or black pepper may be combined with the arsenic in pills on account of its acid producing action.

Jacobi also states that he seldom gives the arsenic without a small dose of digitalis, and never without a guaiacol salt, generally the carbonate.

Treatment of Ulcers in Leprosy.—Wise and Minett, in the *Journal of Tropical Medicine and Hygiene* for September 2, 1912, state that the most effective method of dealing with the ulcerations met with in tubercular leprosy is to scrape them and then apply a wash of 5 per cent. benzoyl chloride in petrolatum.

Collyria in Incipient Cataract.—Chevallereau, at a meeting of the French Ophthalmological Society (*Bulletin médical*, June 15, 1912), stated that iodide collyria were capable in certain cases of arresting the progress of cataract and even, occasionally, of causing opacity to disappear. The concentration of the solution used should be carried up to as high as 0.7 to 0.8 gramme for every ten grammes of solution. Sodium iodide is better borne than the potassium salt, but being less stable it may at length cause, through decomposition, a pigmentation of the conjunctiva similar to that witnessed in argyria.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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COCAINOMANIA AND ITS TREATMENT.

A true cocainomania, which in the present instance might be taken as differentiated from the cocaine habit in that it embodies the elements of a more or less sudden craze, has developed in some parts of France, particularly in Paris and Lyons—a true epidemic according to André Lautheaume in *Revue de thérapeutique* for December 15, 1912. Until recently alcohol, morphine, ether, and a few other agents predominated as psychic intoxicants; at present cocaine leads them all, owing, it is believed, to the ease with which it may be taken—no syringe, no painful needle pricks, no marks on the arms, etc.,—while the pleasurable sensations sought are obtained without a relatively prolonged stage of habituation. Briefly, a mere snuff containing cocaine in suitable quantities suffices for all purposes. This class of cocaine habitués may be readily recognized by their frequent sniffling, their tremors, and the habit of "bug hunting" in the skin of their hands and arms in obedience to abnormal sensations or paresthesias caused by the drug. Hallucinations, phantoms, and a sort of delirium of persecution complicate marked cases and render the victims querulous and frequent visitors to the police stations. A curious symptom is a predilection for rapid progression; the automobile is a boon to these patients, unless, as frequently happens, they overlook the cost—another cause of trouble with the police, leading often to incarceration in an insane asylum. The nasal cavities sooner or later show a characteristic lesion; necrosis of the septum due to the denutrition caused by the constricting action cocaine has on the local arterioles.

Fortunately, appropriate treatment, when carried out judiciously, soon brings about a cure. An essential feature is removal of the patient from the environment in which the pernicious habit was acquired and sustained, to a place where cocaine cannot be obtained openly or surreptitiously. Attempts to carry out these measures at the patient's own home practically always fail; an asylum alone affords the necessary facilities. Sudden suppression is better borne by these patients than by morphine habitués. When the morbid phenomena are not intense, the patient showing for example but slight dyspnea, palpitations, insomnia, psychic depression, and anxiety, they promptly disappear under complete abstention, and are replaced by a voracious appetite, followed by an early resumption of normal health. When, however, the case is an advanced one showing cardiac, pulmonary, or renal lesions, abrupt abstinence may entail general collapse, syncope of cardiac origin, and depressive psychic phenomena, melancholia, etc., of a very severe type. Here the dose of cocaine allowed should be only gradually reduced, and the patient meanwhile protected against the foregoing complications. The cardiovascular system especially should be watched and the normal *vis a tergo* of the blood stream sustained with caffeine or sparteine. Quinine is also helpful and may be advantageously given with iron if, as is often the case, anemia is present. The stubborn insomnia which tends so severely to depress the nervous system should be met by the use of trional or other agents which do not depress the circulatory or respiratory system. A most efficient means against the tendency to collapse is a nutritious diet; this the patient soon learns thoroughly to appreciate provided the meals are tempting and to his taste. Small quantities of easily digested food at short intervals are to be preferred. At the end of two weeks, the symptoms due to abstention will have disappeared. Constructive metabolism should now be favored by means of warm baths, physical exercise, massage, and actinotherapy.

DIETETIC CONTROL IN TYPHOID FEVER.

Until we have a specific antityphoid treatment, the chief art of the physician must be employed in conserving the patient's vitality and in avoiding complications. That a routine, rule of thumb conduct of typhoid cases is not satisfactory is proved by the mortality of the disease in the past, and the deplorable frequency of complications and relapses. In fever there are two significant modifications of normal metabolism. By virtue of the hyperthermia itself, there is an increased destruction of body tissue proteid. In addition to this, the febrile toxines elaborated in the course of the disease process cause a further toxic destruction of body proteid. F. Voit found that the increased destruction of body proteid due to hyperthermia can be entirely prevented by feeding a suitable quantity of carbohydrate, or of carbohydrate and proteid, and explains the thermic loss of proteid as a result of the quick consumption of the glycogen supply of the body, and the demand of the tissues for a further carbohydrate supply. Since this demand is not met by carbohydrates from the diet, it is supplied by the breaking down of body tissue proteid.

From experimental evidence it seems probable that the febrile toxines stimulate the nerve cells of the midbrain, which react on the medullary centres and so produce hyperthermia. But these toxines, as has been stated, themselves cause a further body proteid destruction, and this destruction cannot be avoided by supplying other food elements from the diet, although it is possible that it may be more or less compensated by regenerative processes in the body. Thus in typhoid fever, where the toxic loss of body proteid is very high, it seems impossible to attain nitrogenous equilibrium, that is, to supply as much proteid in the diet as is used and destroyed in the body.

The dietetic indications from this brief analysis of febrile metabolism are very plain. The energy requirements of the body must be supplied just so far as the body is able to assimilate the nutrition offered it. At least enough proteid must be given to balance the normal daily nitrogenous excretion from the body. The remainder of the diet may include such an amount of fat as will not interfere with digestion or appetite, and a large quantity of carbohydrate.

Von Hösslin states: "Patients with a temperature not above 40° to 40.5° C. can digest and absorb the total quantity of proteid, fat, and carbohydrate which can be given with their diminished appetite, provided the food is administered in the proper form. Temperature and metabolism are only slightly increased thereby." Von Leyden and Klemperer added ten per cent. milk sugar to whole milk. Two litres of this modified milk per diem are nearly sufficient for an adult resting in bed, and usually cause neither diarrhea nor indigestion. An addition of 2.5 per cent. of cream enhances the nutritive value, which can be increased still further by adding a little brandy or sherry. Lusk aptly calls attention to the fact that whereas the modification of infant food has received great attention in this country, the production of a suitable fever diet has had little notice.

The considerations here outlined have borne good fruit recently in the work of Coleman and Shaffer in typhoid fever patients in Bellevue Hospital. Coleman believes that the 1,000 to 2,000 calories daily of the usual milk diet should be increased to from 3,000 to 5,000. He considers that harmful foods are meats (except small quantities of broths given to stimulate digestion), vegetables having much cellulose, and fruits having much cellulose or small seeds (berries). He has not found any serious digestive impairment in typhoid, and ascribes digestive disorders from food to the manner of feeding rather than to the quantity. The absorption of carbohydrates was practically complete, less than 0.5 per cent. being lost. The average loss of proteid was 7.1 per cent. In the active stage of the disease, with a daily intake of 147 to 200 grammes of fat, the loss of fat was 7.2 per cent. In convalescence, with an intake of 150 to 258 grammes of fat daily, this loss fell to 4.5 per cent. The normal loss of fat on a similar diet in health is three per cent., but may reach over seven per cent. The quantities of fat given caused neither acidosis nor alimentary disorders. Coleman does not assign to his high calorie diet any influence on the length of the febrile stage of the disease, but he asserts a decrease in complications, a distinctly shorter convalescence, and notes a mortality of 8.7 per cent. in the cases on high calorie diet, compared with sixteen per cent. in a group under other treatment. In addition he found it to have a favorable influence on the toxemia, and to cause a rapid disappearance of toxemic symptoms.

Typhoid patients can absorb carbohydrates and proteid as well as normal persons, and can also absorb very large quantities of fat, although the percentage of absorption is somewhat lower in this case, especially early in the disease, than in the normal. The stools of typhoid patients on the high calorie diet closely resemble the normal.

Roughly calculated the high calorie diet for 3,000 calories per diem consists of 1,000 c. c. of milk, 300 to 400 c. c. of twenty per cent. cream, 100 to 200 grammes of lactose, two or three eggs, two slices of toast, and butter. This can be increased in quantity, or boiled rice, oatmeal, mashed potato, cream of wheat, apple sauce, custard, and ice cream may be added. So much reliance does Coleman place on high feeding, that he believes enough food will remove the necessity for hydrotherapy in controlling the toxemia. A plain soapsuds or saline enema is given every morning.

The test of a therapeutic agency is found in its results. Several years' experience by an increasing number of clinicians seems to bear witness to the value of the principles Coleman has laid down. They are based on sound reasoning, and if carefully applied with intensive individual study of each case, should mark a distinct advance in the management of typhoid fever.

STATE HEALTH ADMINISTRATION.

Announcement has been made that a commission headed by Dr. Hermann M. Biggs has been appointed to examine into the present method of public health administration in the State of New York with a view to its reorganization and improvement. Those familiar with the conditions have long realized that such a reorganization was needed to bring rural public health administration in this State even measurably near the standard maintained by almost all the large cities. The personnel of the commission makes it certain that the work in hand will be wisely done.

As we see the problem, we believe that public health administration is regarded too much as a matter of local concern, consequently organization is on far too small a basis. The unit throughout the State is the local board of health, either village or town, and this local board, composed almost wholly of laymen, adopts rules and regulations for the protection of the public health, and also appoints a health officer, to act as the executive officer, who is almost invariably a local practising physician, and therefore largely dependent on the good will of the community for his livelihood. Is it to be expected that this makes for fearless enforcement of the law with an eye single to effective public health work, or that his interests will extend any considerable distance beyond the confines of his own little community?

In an able discussion of the subject before the last meeting of the American Public Health Association, Doctor Bolduan, of this city, advocated a reorganization of rural public health administration along the lines so successfully followed in both Germany and Great Britain. He pointed out that in both of these countries, the unit of administration is far larger than here. The sanitary districts (Great Britain) and the *Kreis* (Germany) correspond roughly in size and population to our counties, having from 20,000 to 100,000 inhabitants. Each district is in charge of a medical officer of health, or in Germany, of a *Kreisarzt,* who is specially trained in public health work, and usually devotes his entire time to public health matters. His compensation ranges accordingly, but is not less than £500 in Great Britain. With this larger administrative unit, and with no private practice to influence the official actions of the health officer, it is evident that much more effective public health administration is possible. And that it is actually secured is apparent to any one who has examined conditions in Great Britain and Germany.

Whatever plan is finally worked out by the commission we believe it should embrace: 1. Trained public health administrators, devoting full time to their work; 2, administration on larger, probably county, lines; and, 3, a uniform public health law throughout the State in place of local rules and regulations. Just how such a plan can be carried out will require careful study; that the difficulties will be surmounted is unquestionable.

MALARIA NEAR FARMHOUSES.

Senior Surgeon Henry R. Carter, in *Public Health Reports No. 105,* summarizes the information we have concerning the spread of malaria, a disease, as he says, essentially rural in its occurrence, for the benefit apparently of dwellers in the country. The characteristics of the guilty mosquito are fully described as well as its habits, how it travels and breeds, and how its surreptitious nocturnal invasion of houses has led to the bewilderment of men trying to account for an outbreak of malaria where no evidence of the presence of anopheles was discoverable.

The article goes on to describe the measures involving the control of the human host by keeping him under screens and mosquito bars, administering quinine freely, killing the mosquitoes of the sickroom, and rendering possible carriers innocuous by the prophylactic use of the specific alkaloid. To control the insect host, Surgeon Carter advises the destruction of their breeding places by drainage, enabling fish to get at the larvæ, pouring coal oil on larger ponds, cutting down brush and tall weeds about the house, yet planting a screen of trees between possible breeding places and the dwelling, use of screens and mosquito bars, etc. Full instructions are given how to construct the wire screens, including the doors. An interesting point is that collections of dirty water are not to be feared, as mosquitoes will not breed therein. It is to be hoped that some brave pioneer farmer, not susceptible to ridicule, will be found in every infested locality to carry out Surgeon Carter's excellent advice.

A SPURIOUS RELIC OF NAPOLEON.

American physicians who have visited the College of Surgeons in London in the absence of any attendant surgeon and have been obliged hastily to make the rounds with an orderly, will remember the little vial reverently averred to contain a portion of the intestine of Napoleon, with its contents showing the blue stain of some microscopist of long ago, and the assertion by the attendant that the specimen showed a cancerous growth which demonstrated the cause of Napoleon's death. Dr. Arthur Keith, in the *British Medical Journal* for January 11th, publishes a report of a careful microscopical examination of this fragment of intestine which showed that it contained merely an enlarged Peyer's patch, and, according to the decision of W. B. Leishman, demonstrated only that the original owner was once a sufferer from Malta, or, as it is now called, undulant fever. An editorial article in the same issue of the English official journal, however, maintains that the evidence that this portion of intestine came from the body of Napoleon is quite insufficient and offers abundant proof of the untrustworthiness of the two men, surgeons we regret to say, who presented the specimen to Sir Astley Cooper, who, as well as Sir James Paget, wrongfully diagnosticated the lesion as cancerous. In view of the double disillusionment concerning the once apparently important specimen all interest in it vanishes completely.

REST FOR THE WEARY CITIZEN.

Not least among the attractions of Paris are the benches thoughtfully placed on the less frequented streets, whereon the tired wayfarer may rest as long as he pleases. Such benches would supplement to great advantage the restricted park space in New York and other American cities. The lack of resting spots in the metropolis where no fee is exacted, is due evidently to calculation, probably on the part of the people who used to choke up the free drinking fountains. The free seats are not to be placed upon populous thoroughfares, but on side streets and the less busy avenues where they would be highly appreciated, particularly by the poorer women who have to carry infants and baskets. It is surprising that the enemies of the saloon and those who are worried about the tendencies of the moving picture theatres have not appreciated the value of placing such excellent alternatives at the disposal of the public, with their obvious physiological advantages and their healthful invitation to enjoy the fresh air.

THE NEW VOLUME OF THE INDEX CATALOGUE.

After a lapse of over a year the seventeenth volume of the second series of the *Index Catalogue of the Library of the Surgeon General's Office, United States Army*, has been published. It contains the subjects from Suaheli to Testut, and brings the eighth addition to the alphabetical list of abbreviations of titles of medical periodicals. The volume contains 9 and 788 pages and shows the accuracy and clearness of the preceding volumes of the great work.

Medical Law.

VIII. CIVIL MALPRACTICE.

The case of McDaniel vs. United Railways Company of St. Louis, 148 Southwestern Reports 464, represents a settlement that would not stay settled.

The plaintiff had been injured in a street railway accident, having sustained an intracapsular fracture of the surgical neck of the femur. The railway company and the injured passenger effected a settlement, whereby the company paid $175 and agreed to pay the passenger's expenses at a specified hospital and to have her treated at its expense by a certain surgeon possessing great skill and renown for the efficacy of his cures of difficult fractures.

Instead of carrying out this latter part of the agreement, one of the surgeon's assistants having about three years' experience took charge of the case, attempted to set the fracture, applied a splint, and apparently remained in charge of the case until the patient was discharged, reporting his treatment to the surgeon, who occasionally saw the patient and inquired how she was feeling, and once put his hand on her hip near the fractured bone. After remaining in the hospital several months the patient was discharged without any union of the bone.

The patient therefore commenced action against the railroad company for failing to carry out its agreement and the jury awarded her a recovery of $7,500, which judgment was affirmed by the appellate court.

The principal question having a medical aspect which was considered by the appellate court, was whether plaintiff's condition could be attributed to the failure of the surgeon to give to the case his personal attention. In an ordinary action against a physician for malpractice it is necessary for the plaintiff to show affirmatively that his sufferings are due to the want of the requisite degree of care and skill applied in his case, but here no evidence upon this phase of the case was adduced, nor, apparently did the appellate case consider it necessary. The view of the court as expressed by Mr. Justice Nortoni was as follows:

> In other words, it is sufficient if there be such certainty thereabout as satisfies the mind of a prudent and impartial person that the damages sued for may be traced as a reasonable probability to the breach of the contract. Then, too, the law, it has been well said, never insists upon a higher degree of certainty than the nature of the case admits. . . . In almost every case the damages to be measured are more or less uncertain, to a considerable degree; but the question of uncertainty presented here relates to the cause of the damage rather than to uncertainty as to the measure or extent thereof. Therefore, if it may be said that the facts and circumstances in evidence are insufficient to suggest to a reasonably prudent, impartial man that the damages proved flow as a reasonable probability from defendant's breach of the contract, the argument is sound; otherwise, the question was one for the jury. . . . The relevant facts touching this question are as follows: The evidence tends to prove plaintiff was about thirty years of age and possessed the full vigor of young womanhood. It appears she was a seamstress by occupation, energetic, and accustomed to work at that vocation for her living. One witness said she was a woman of good nerve, and several more attest the fact of her good health and vigor. With such a patient it would seem that a proper union of the fractured femur should be provided in due

course by the processes of Nature had the operation of setting and splinting the same been properly effected. Especially is this true in view of the evidence of Doctor Boogher, which goes to the effect that he had had two perfect recoveries in which bony union had taken place in like fracture of the femur in persons of over seventy years of age. The proof is that, after having remained in the hospital for several months, plaintiff was discharged without any union of the bone whatever having been made. One of the experts says in his judgment neither a bony or a fibrous union of the fracture had taken place for the reason that the ends of the fractured bone were not brought in apposition and maintained there as they should have been. Though some two or three years have intervened, plaintiff's limb is still unserviceable because of the nonunion of the fracture. It appears that Doctor Brokaw was a surgeon possessing not only great skill, but renowned, as well, for the efficacy of his cures with respect to difficult fractures; while, on the other hand, the physician who actually attempted to place the fractured ends in apposition, adjust the splint, and treat plaintiff throughout is shown to have been a young man of but three years' experience in his profession. We believe it was competent for the jury to infer from these facts that, had plaintiff been treated by Doctor Brokaw instead of Doctor Klinefelter, a proper union of the bone would have taken place, for, if the evidence on her part is to be believed, her health and condition were most favorable to such a result. Such would seem to be a reasonable inference and not mere conjecture, especially in view of the evidence that two like fractures had made perfect unions in persons over seventy years of age who were treated by Doctor Boogher. Though it be true that in suits for the breach of contract the damages should be traceable to the breach and appear to flow from it as a reasonable probability, it is not essential that they be shown as a certainty to follow from that cause. It will suffice if enough appears in the case to enable the jury to reckon such a result from the common experiences of life through the application of that degree of sense usually possessed by an impartial man of ordinary prudence. . . . Obviously, as said the Supreme Court of New Hampshire, the mere fact that the finding rests upon probability only or is made by drawing inferences from circumstantial evidence will not render it an improper one.

X. THE PHYSICIAN AS WITNESS.

The case of J. M. Pace Mule Co. vs. Seaboard Air Line R. Co., 75 Southeastern Reports, 994, passes upon the question of the admissibility of the opinion evidence, which evidence was subject to the well recognized objection that the opinion of the witness cannot be substituted for the functions of the jury.

While in this case the expert was a veterinary surgeon and the subject of the inquiry was the condition of a mule, yet the principle upon which the question was decided was identical with that which would have been applied had the witness been a physician and the subject of inquiry the condition of a human being. In this case, the veterinary practitioner, upon examining the mule in question after its death, removed the skin and found that the body was badly bruised. The internal organs were in a state of congestion and decomposition. After testifying to the condition which he found, he was asked substantially the following question: "State your opinion as to the cause of the mule's death, if you have one based upon your knowledge and experience and your post mortem examination of him?" to which he answered: "My opinion is that the mule was jammed up in the car." In passing upon the propriety of this question and answer, Justice Walker, of the Supreme Court of North Carolina, said:

> This evidence was improperly admitted. The question required him to testify, not only as to the condition of the mule when he examined him, which was proper, but to go further and give his opinion as to the existence of a fact, which was almost, if not quite, the equivalent of the one directly involved in the issue. It would have been competent to have asked him if the death of the mule could have been caused by being jammed in the car, or, if the jury should find from the evidence that the mule had been jammed in the car and had received no other injury, could the death, in his opinion, be attributable to the jamming as its cause; that is, was it sufficient of itself to cause the death.
>
> A question similar to the one admitted in this case by the court was asked in Summerlin vs. Railroad, 133 N. C. 551, 45 S. E. 898, and excluded by the court, and we sustained the ruling upon the ground that the witness was called upon to state a fact of which he had no personal or competent knowledge, and not merely the opinion of an expert. The opinion of the witness should be based upon facts admitted or found, or upon his personal knowledge, and not upon the assumption of the fact. The question should, therefore, be hypothetical, or rather suppositious, in form, following the precedents as settled by our decisions: State vs. Bowman, 78 N. C. 509; State vs. Cole, 94 N. C. 958; State vs. Wilcox, 132 N. C. 1120, 44 S. E. 625; Summerlin vs. Railroad, supra. The court in Hitchcock vs. Burgett, 38 Mich. 501, held that "a physician cannot be asked his opinion as to the cause of an injury, judging merely from the condition in which he found the patient, and without any knowledge as to how it took place." We conclude that there was error in admitting the question and answer, over the objection of the defendant, which was made in the proper way and in due time.

News Items.

Lutheran Hospital Pavilion Dedicated.—The formal opening of the new Ear, Nose, and Throat Pavilion of the Lutheran Hospital, situated on East New York Avenue, Brooklyn, took place Sunday, January 19th. The new building, which cost $20,000, is two stories in height, and is well equipped with all modern appliances for the proper treatment of patients.

Plan Fellowship in Women's Medical College of Pennsylvania.—To honor the memory of Dr. Hannah T. Croasdale it is proposed to establish a fellowship in the Women's Medical College of Pennsylvania, and the committee having the matter in charge invites subscriptions to the fund which will be known as the Hannah T. Croasdale Fellowship Fund. Contributions should be sent to the treasurer of the fund, 460 Bullitt Building, Philadelphia.

Smallpox in the United States.—During the month of November, 1912, there were reported to the Public Health Service, Washington, D. C., 22 cases of smallpox in the State of Alabama, with one death. During December, 35 cases were reported in Arizona, 3 in Connecticut, 46 in Maine, 9 in Maryland, and 87 in Michigan. One death was reported in Maine. On January 15th the secretary of the Maryland State Board of Health reported the occurrence of 5 additional cases in Alleghany County.

A Merger of Medical Colleges.—The two medical colleges of Richmond, Va., the Medical College of Virginia and the University College of Medicine, have been consolidated The new institution will be chartered under the name of the Medical College of Virginia, and will embrace the plants and equipments of the Memorial Hospital and the Virginia Hospital, in addition to the two colleges. The merger will go into effect legally in a few days, but the actual consolidation will not take place until the end of the school year.

Medical Club of Philadelphia.—President Taft was the guest of honor of the Medical Club of Philadelphia, at its annual meeting, held on the evening of January 17th. About six hundred members of the club were present to greet the President, who spoke on hygienic conditions in the Philippines and praised the medical profession for the work done by them in the Canal Zone, which made possible the construction of the Panama Canal. Officers were elected as follows: President, Dr. James C. Wilson; first vice-president, Dr. Wilmer Krusen; second vice-president, Dr. McCluney Radcliffe; secretary, Dr. William S. Wray; treasurer, Dr. Lewis H. Adler, Jr.; governor, Dr. S. Lewis Ziegler; directors, Dr. Clarence P. Franklin, Dr. G. Morton Illman, Dr. John W. West, Dr. Ellwood R. Kirby, Dr. William Duffield Robinson.

Osteopaths Fighting for the Privilege of Signing Death Certificates.—The osteopaths of New York were given a hearing before the Board of Health on January 21st for the purpose of urging the board to amend Section 163A of the Sanitary Code, which prevents an osteopathic physician from signing a death certificate. The measure giving them the necessary authority to sign death certificates is opposed by representatives of the medical societies of New York and Queens counties. The board reserved its decision for two weeks.

Medical Society of the Missouri Valley.—The spring meeting of this society will be held in Kansas City, Mo., on March 20th, 21st, and 22d, under the auspices of the Jackson County Medical Society. The third day of the meeting will be devoted entirely to clinics in the various hospitals, and a symposium on cancer, a dinner at the Coates House, and an address by Surgeon General Blue, of the Public Health Service, will be features of the first day. A complete programme will be issued shortly. The local committee of arrangements consists of Dr. H. E. Pearse, Dr. R. L. Sutton, and Dr. E. G. Blair.

Philadelphia County Medical Society.—At the annual meeting of this society held on the evening of January 15th, Dr. Charles Codman was elected president on the second ballot, none of three candidates for the office receiving a majority of votes on the first ballot. Other officers elected were: First vice-president, Dr. M. Howard Fussell; associate vice-presidents, North Branch, Dr. Jesse O. Arnold; South Branch, Dr. John D. McLean; Kensington Branch, Dr. Joseph A. Moore; West Philadelphia Branch, Dr. G. Mason Astley; Northeast Branch, Dr. Samuel Bolton; Northwest Branch, Dr. George A. Cameron; Southeast Branch, Dr. Simon Wendkos; secretary, Dr. William S. Wray; assistant secretary, Dr. Arthur H. Hopkins; treasurer, Dr. Edward A. Shumway; censor, Dr. William M. Welch; directors, Dr. Henry Leffmann, Dr. John F. Roderer, and Dr. John J. Robrecht.

Cerebrospinal Meningitis Epidemic.—Cerebrospinal meningitis has become epidemic in certain localities in Arkansas, Tennessee, and the southern part of Illinois. In Arkansas 25 cases, with 17 deaths, were reported at Lepanto, Poinsett county, during December and the first six days of January, and a few sporadic cases have been notified in other parts of the State. In Tennessee there were 108 cases, with 47 deaths, reported in Dyer county to January 13th. In Lake county there were 13 cases, with 9 deaths, to January 13th. In Carroll county there were 4 cases during the two weeks ended January 11th, with sporadic cases elsewhere in the State. There were thirteen counties in the State in which one or more cases were reported during the month ended January 14th. In southern Illinois there were 11 cases, with 7 deaths, reported at Dale, in Alexander county, to January 10th. Cases have also been reported at Cairo. Considerable agitation has arisen in connection with the appearance of the disease, and certain communities have established quarantine against other communities.

Medical Society of the County of New York.—A stated meeting of this society will be held in Hosack Hall, New York Academy of Medicine, Monday evening, January 27th, at 8:15 o'clock. The first item on the programme of the scientific session is the address of the retiring president, Dr. Charles Gilmore Kerley, followed by the address of the president elect, Dr. Brooks H. Wells. Dr. S. R. Klein, of Wakefield, N. Y., will read, by invitation, a paper on the Practical Value of the Negri Bodies from a Diagnostic Standpoint, which will be discussed by Dr. George G. Rambaud, Dr. Anna W. Williams, and others. A paper on the Water Trap Stomach, with diagnosis by means of the x ray, will be presented by Dr. George R. Satterlee and Dr. Leon T. LeWald, with a lantern slide demonstration by Doctor LeWald. A general discussion will follow, among those taking part being Dr. E. W. Caldwell, Dr. John Douglas, Dr. Burton J. Lee, and Dr. H. D. Senior. Dr. Adoniram J. Quimby will present a communication on Radiographic Evidence of Gastrointestinal Stasis, which will be elaborately illustrated with lantern slides. Attention is called to the fact that the programme of the scientific session of the February stated meeting of this society, to be held on the evening of February 24th, will be devoted to a consideration of the report of the Committee of Fifteen upon Hospital and Dispensary Abuse. Dr. William S. Thomas is chairman of this committee.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on February 15th is that of assistant superintendent of nurses, Craig Colony for Epileptics, Sonyea, N. Y. The position, which is open to women only, carries a salary of $900 and maintenance. There will also be an examination for the position of physician to the Cohoes Jail, Albany County, with a salary of $300. Applications must be filed on or before February 7, 1913. For particulars regarding the scope of the examinations and for the proper application blanks address the State Civil Service Commission, Albany, N. Y.

Gifts and Bequests to Hospitals.—By the death or Mrs. Anna R. Rice, the Memorial Hospital of Worcester, Mass., will receive $24,000, by the terms of the will of Mrs. Susan B. Thompson, who died ten years ago, making Mrs. Rice her sole beneficiary.

The Clinton Hospital Association, Clinton, Mass., is named sole legatee in the will of George H. Chace, of Harvard, and Dr. W. P. Bowers, president of the association is named executor. It is believed that the estate is valued at nearly $30,000.

Miss Dessie Greer, who died in New York on January 3d, left $100,000 in trust to Miss Trimper, and after her death $10,000 will go to Mount Sinai Hospital, and $90,000 to the American Museum of Natural History. Miss Greer also left $10,000 in trust to Miss Louise Simmons, and upon her death this sum will go to the New York and Roosevelt hospitals.

The Tuberculosis Preventorium for Children, at Farmingdale, N. J., recently received a gift of $10,000 from a woman who does not wish her name made public. The money will be used to make up the deficit of the past fiscal year.

Free Administration of Diphtheria Antitoxine Discontinued by the Department of Health.—Announcement is made by the commissioner of health of the city of New York that on and after February 1, 1913, the present system of free administration of diphtheria antitoxine and the performance of intubation at the homes of patients by inspectors of the Department of Health, at the request of attending physicians, will be discontinued. After that date, when it becomes necessary to administer antitoxine or perform intubation in any case of diphtheria, the patient will be removed to one of the hospitals of the department for further observation and treatment. The antitoxine may still be obtained, free of charge, by physicians from supply stations at drug stores for use where payment for the same by the patient would be a hardship. The free administration of antitoxine and the performance of intubation were begun by the department of health in 1895, the objects in view being not only the cure and the prevention of the spread of the disease, but also the education of the medical profession and the general public. These ends have been accomplished, as the records show a very low death rate from the disease and also that at the present time practically every case of diphtheria is treated with antitoxine.

Personal.—Dr. Willis E. Ford, for many years medical director of St. Luke's Hospital, Utica, N. Y., has resigned, and Mr. George W. Wilson, formerly assistant superintendent of Roosevelt Hospital, New York, has been appointed to succeed him. Doctor Ford will remain a member of the medical board.

Dr. Nathan R. Gorter has been appointed commissioner of health of Baltimore, to succeed Dr. James Bosley, who died recently.

Dr. T. B. Smith, city bacteriologist to the Lowell, Mass., board of health, has been named by Governor Foss to succeed the late Dr. Robert E. Bell as assistant medical examiner for the Lowell district.

Dr. G. B. Young has been reappointed commissioner of health of Geneva, N. Y., for a term of five years, and Dr. C. D. McCarthy, as health officer for a term of three years.

Dr. John R. Slattery, of South Boston, has been elected superintendent and associate physician in chief to the St. Elizabeth's Hospital, Boston, and will have much to do with the arrangements for the new hospital buildings at Brighton. Dr. M. J. Cronin, of Boston, has been reelected assistant physician in chief, and Dr. Edward A. Supple, assistant surgeon in chief.

Dr. Francis A. Lane has been appointed a member of the Boston Board of Health, to fill the vacancy caused by the retirement of Dr. J. J. Hooper.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

December 3, 1912.

Direct Röntgen Pictures without the Use of Plates.—Hufnagel found that because of advanced and perfected technic, direct Röntgen pictures have become practical on highly sensitive bromide of silver paper. The advantages over plate pictures are manifold, as they are cheaper and take less time, since no fixation baths are required and the drying of the plates is dispensed with.

Dietetic Treatment and Diet Kitchen.—Sternberg calls attention to the beneficial influence of pure olive oil in certain gastric and intestinal disturbances, but the oil being repulsive to most patients cannot be swallowed. A palatable mayonnaise can be made of it by adding to one tablespoonful of the oil the yolk of one egg, the juice of one lemon, salt, and ice, and mixing the same thoroughly.

Dysbasia angiosclerotica.—Pick reports thirteen cases of dysbasia angiosclerotica. All occurred in males; two under fifty years of age, the rest over fifty. Six were heavy smokers, seven were light smokers. There were typical symptoms in all cases; motor, vasomotor, and sensory disturbances in the upper and lower extremities when walking, cessation of these disturbances when the limbs were at rest. The condition is without doubt dependent upon a pathogenic change, thickening of the walls of the arteries by chronic poisons, such as nicotine, lead, etc., which thickening prevents the necessary amount of blood from flowing to the muscles of the extremities to nourish them. The author obtained best results under negative pressure respiration. When arteriosclerosis was present iodine vapor inhalations proved valuable, having two advantages over its internal administration, namely, producing no symptoms of iodine poisoning and no gastric disturbance.

Intestinal Symptoms in Basedow's Disease; Difficulty of Diagnosis.—Kolb describes the case of a man, forty-five years old, who was operated on for a large substernal goitre. For the past fifteen years he had had severe unappeasable attacks of diarrhea which ceased promptly after the strumectomy. This relief, setting in immediately after operation, proved that the diarrheas were occasioned by Basedow's disease. Therefore, in all cases of diarrhea that will not yield to treatment and show objectively no abdominal findings, the possibility of an incipient Basedow's affection must be kept in mind.

Spontaneous Cure of Appendicitis.—Deppe reports six cases of gynecological operations which on inspection of the appendicular region revealed a condition of spontaneous healing of inflammatory appendicular processes by adhesions, scar tissue with shrinkage, or self amputation.

Complete Gangrene of the Mamma in Puerperal Sepsis.—Bamberger tells of a secundipara, twenty-six years old, in whom, after a normal delivery, high fever developed and prevented the child from being placed to the breast. A painful swelling of the left mamma was incised radially in the outer lower quadrant. No pus was obtained, only a turbid serous fluid. Three days later a blue black discoloration of the whole mamma appeared, and the general symptoms of a severe sepsis. Amputation of the whole breast was performed. Death occurred six days later with symptoms of a general sepsis.

Diagnosis of Enlarged Bronchial Glands in Children.—Zabel says that for the diagnosis of this condition in general practice d'Espine's spinal auscultation of the whispered voice is of paramount importance; it gives results when other methods fail. Koramy's spinal percussion is less valuable, but gives positive results when the glands in children are much enlarged. The general symptoms and the whole clinical picture must also be taken into account.

December 10, 1912.

Crescendo Murmur in Mitral Stenosis.—Gebhardt tries to explain the typical murmur in mitral stenosis, its causes, reasons for interruption, and cessation at times. In most cases where the pulse is regular, it is due to a contraction of the auricles and its characteristic quality is given by the related action of the ventricle.

Action of Morphine, Opium, and Pantopon on the Movements of the Alimentary Canal in Man and Animals.—Stierlin and Schapiro studied the effects of these drugs on the alimentary tract of man for two years, and found that morphine acts very differently upon the stomachs of various individuals. An average dose in a young person delays for hours the emptying of the stomach contents, sometimes to twice the normal extent. In adults the action on the stomach is less pronounced. In two cases of excessive motility of the stomach the evacuation of the contents was even less rapid than with opium. In the small intestine the forward movement of the contents was delayed for hours (maximum seven). It seemed as if the contraction of the sphincter ileocæcalis formed an obstruction. The tonus of the small intestine showed no change. In many cases widely dilated coils were visible by the side of contracted ones. Even large doses had no effect upon the large intestine, nor was the tonus influenced. Similar to the action of morphine were the actions of opium and pantopon. In chronic diarrheal enteritis, with strong excessive motility of the small and large intestine, opium causes a delay in the onward passage of the contents of the small intestine, especially in the lowest coils, while the contents of the colon to the beginning of the sigmoid flexure were passed on with the usual rapidity. The sigmoid flexure remained filled a long time, corresponding to the large, delayed defecation. The constipating effects of the opiates cannot be attributed solely to the decreased motility of the stomach and small intestine. Inhibition of the defecation reflex centre with the consequent collection of the feces in the sigmoid flexure must be taken into account. In dogs, on the other hand, the varying doses of morphine and pantopon contracted the coils of the small intestine, while those of the whole colon were widened with the obliteration of the circular bands.

December 17, 1912

Spirochetes in Urine in Syphilitic Nephritis.—Vorpahl believes that every syphilitic inflammatory kidney which is the result of a fresh syphilitic process can be advantageously treated with mercury. It is immaterial whether the process is due to an early or the tertiary stage.

Hypophysis Extract in Practical Obstetrics.—Hengge reports twelve labor cases in which pituglandol and pituitrin were administered, with the following advantages: 1. The labor was perceptibly shortened, which in indicated cases was a great advantage to the mother. 2. No untoward effects were observed for mother and child. 3. In cases where the disproportion between the size of the head and pelvis was not too great the increased pains forced the head into the pelvis, and any operative procedure was then more easily performed with much less danger to mother and child.

December 24, 1912.

New Subcutaneous and Intramuscular Cathartic.—Credé, after four years of experimentation, has perfected for hypodermic use sennatin, a preparation from senna leaves, which gave excellent results in 300 cases of obstipation of various kinds, paresis, meteorism, etc. It is a dark, clear, durable, sterile fluid, nonpoisonous, even in large doses of five grammes. Sennatin stimulates peristalis strongly, so that in all cases gas escapes, and in cases where the mechanical obstruction is not too great, defecation occurs. Two grammes is the normal dose for an adult. Narcosis delays the action for five or six hours.

December 31, 1912.

Serum Therapy in Melæna neonatorum.—Franz shows that the good therapeutic results obtained in the treatment of hemorrhage in the newborn with serum, human, horse, rabbit, cow, sheep, diphtheria, or streptococcic, and the harmlessness of its application should stimulate to further study, so that the high mortality from this disease can be decreased.

ZEITSCHRIFT FÜR UROLOGIE

Volume VI, No. 7.

Vesical Malacoplasia.—Waldschmidt describes two cases, one in a child of nine years and the other in a woman of seventy-eight. These peculiar growths have been found only at autopsy. They are new growths, evenly distributed throughout the bladder, of mushroom form and bluish in color. Their dimensions vary from the size of a pea to that of a quarter of a dollar. They are not caused by cystitis, because cystitis always is secondary. They are not neoplasms, because one sees in them no cellular proliferation.

A New Lithotrite.—Young has made a combination instrument which allows of litholapaxy and by means of a tube in the lithotrite, either cystoscopy or evacuation of the stone fragments.

Volume VI, No. 10.

Malignant Tumors of the Testicle.—Vecchi reviews thirty-one cases of tumors. Of these twenty-four were large celled tumors which include both carcinoma and sarcoma of previous writers. The tumors are most commonly found between the ages of thirty and forty years, on the right side fourteen times; on the left ten; never bilateral. The epididymis is usually extensively involved, the cord spared. When the spermatic cord was involved pain was always present. Metastases occur through the lymph channels, in the lumboaortic lymph glands. Operative treatment is castration and high excision of the spermatic cord. The lumboaortic lymph glands should not be excised as a rule at the time of operation because of the severity of this operation and also because of the probabilities of other metastases.

LYON MÉDICAL.

December 22, 1912.

Emotion and Epilepsy.—Jean Lépine maintains that all forms of epilepsy, including that which appears to be of emotional origin alone, and the mixed varieties formerly classed as hysteroepilepsy, are the result of not one, but several coexisting factors, of varying relative importance and variously combined. Among these, however, three may be said to predominate: The cortical trouble, evidences of which may be detected even in emotional cases; the general toxic factor, usually of gastrointestinal origin; and circulatory instability, especially such as is manifested in sudden marked alterations of equilibrium in this system, which may be the result either of physical exertion or of emotion. In emotional epilepsy it is not the emotion itself which gives rise to the convulsive seizure, but the circulatory changes occurring in association with it.

PRESSE MÉDICALE.

December 14, 1912.

Pleximetric Auscultation.—C. Fernet emphasizes the value of auscultatory percussion in the early diagnosis of apical tuberculosis or pneumonia. He places the bell of the stethoscope over the supraspinous or infraspinous fossa and percusses the clavicle and first and second ribs anteriorly. Normally, the sound produced consists of two phases, a sudden, tapping sound of brief duration corresponding with the impact of the finger against the bone, and a more or less prolonged metallic, vibratory sound immediately following. Wherever the lung apex is solidified sufficiently to lose its normal spongy character, on the other hand, the second vibratory phase of the sound is no longer heard, probably owing to early arrest of the vibrations of the bone percussed by the inelastic lung tissue. Beside being of value to confirm the results arrived at by independent percussion and auscultation, the procedure described yields far more reliable information than in those cases where induration is localized in the centre of the upper lobe and where it is surrounded by a zone of emphysema. The same is true of central, "latent" pneumonias in the upper pulmonary lobes of old individuals, alcoholics, and cachectics in general. An additional advantage of the procedure is that it does not require cooperation or any effort on the part of the patient.

December 18, 1912.

Sedative Action of Small Doses of Sodium Iodide.—J. L. Champion asserts that subcutaneous injections of a dose not exceeding 0.02 gramme of pure, desiccated sodium iodide, while without any action under normal conditions, are very effective in relieving pain of various sorts, as well as vascular or bronchial spasmodic conditions. This applies to intercostal neuralgia and the neuralgia accompanying grippe, the initial pain in pleurisy and pneumonia, lumbago, sciatica, certain forms of headache, and the pain arising from sinusitis and iritis. The measure sometimes proved effective in cardiac palpitation, the dyspnea of asthma and emphysema, acute pulmonary edema, posttraumatic vertigo, and conditions resembling angina pectoris. The most marked evidence of the sedative effect of the iodide was seen in cases of acute tenontosynovitis, anal abscess, quinsy, and mammary abscess, in which the pain was so obtunded as to permit of sleep on the following night. In a few cases a febricula was observed to follow the injection of iodide.

SEMAINE MÉDICALE.

December 11, 1912.

Peritoneal "Gelatinous Disease" of Appendicular Origin.—Lejars reports three cases of "pseudomyxoma" of the peritoneal cavity, all of which ended in recovery. In the one case in which the appendix was examined at operation, this organ was found enlarged, cystic, and perforated. Such cases might easily suggest colloid cancer of the peritoneum, but where the perforated cystic appendix has been the origin of the accumulation of mucoid material in the peritoneum, malignancy is rarely associated. Hueter has reported one case in which "gelatinous disease" was found in combination with carcinoma of the appendix; but with the exception of similar rare instances, gelatinous disease arising from the appendix, in contrast with that due to ovarian cysts, is of benign nature. If appendicectomy is done and the mucoid material evacuated, recovery without difficulty of any kind ordinarily takes place. In one of the author's cases, the swelling caused by the material subsided completely after operation, although the appendix had not been removed and the pseudomyxoma only in part evacuated.

REVUE DE CHIRURGIE.

November, 1912.

Pathogenesis and Treatment of Traumatic Myosteomata.—A. Lapointe believes that the theory which accounts for the formation of myosteomata after traumatism through a process of myositis ossificans, i. e., through ossification of the connective tissue of the muscle subjected to trauma, holds good not only for free myosteomata, as is now generally accepted, but also for myosteomata adherent to bone. The theory of periosteal origin applies only to certain cases of subperiosteal ossification, which should be clearly distinguished from the others. In the treatment, conservative measures, recently advocated by many, appear to have been successful mainly owing to a spontaneous retrogression of the growth, which, indeed, does sometimes result ultimately in a return of sufficient function. Excision, from six to eight weeks after the traumatism is, however, the treatment of choice in cases of myosteoma uncomplicated by ossifying periarthritis of the neighboring joint. Where the latter condition is associated, as is frequently the case after dislocations and sprains of the elbow joint, excision of the growth alone is insufficient and useless; where the loss of function is severe and marked, resection of the joint may have to be considered. In removing myosteomata, the muscular tissue surrounding the growth should be spared as much as possible, and where the mass is adherent to bone, removal of the periosteum and injury to the compact bony tissue should be avoided. Lapointe reports a case of myosteoma of the thigh in which, although a small recurrent growth appeared after excision, the perfect functional result previously obtained persisted.

Synovitis Due to Sporotrichosis.—H. Gougerot and G Lévi-Frankel point out the fact that sporotrichotic synovitis may resemble acute synovitis of pyogenic origin, subacute gonococcic synovitis, and chronic tuberculous synovitis. The diagnosis is easily made by culture, agglutination, or complement fixation methods, and the readiness with which multiple foci disappeared under potassium iodide in a case reported by the authors leads them to emphasize the importance of differentiating this form of arthritis from the tuberculous variety.

Third Tibial Fragment in Malleolar Fractures.—Viallet concludes from a study of a number of x ray plates and some clinical observations that the breaking off of a third fragment at the posterior border of the lower extremity of the tibia does occasionally occur in fractures at the ankle. A profile radiogram is not sufficient, however, to prove its presence, as a fragment which appears posterior in such a picture may in reality be external. Certainty may often be reached by means of a view taken anteriorly, but sometimes, especially where the fragment is but slightly displaced, a third plate, taken from an intermediate angle, and the use of stereoscopic radiography, may be necessary.

RIFORMA MEDICA.

December 14, 1912.

The Use of Camphorated Oil by Hypodermic Injection.—L. Fornaca and R. Lanza, after an exhaustive work on animals and observations on patients, come to the following conclusions: Camphor has no action whatsoever on the virulence and cultures of the pneumococcus, *Bacillus coli, Bacillus typhi,* and streptococci. Camphor administered as camphorated oil in doses of from 0.2 to 0.4 gramme in 0.5 c. c. of olive oil has a positive and rapid action on the vascular pressure and on the viscosity of the blood; such action is not present or is not so marked when doses are increased up to 1.4 of camphor in five to twenty c. c. of olive oil. Therefore as a conclusion on the therapeutic value of camphor the authors say that the use of large doses is to be abandoned, and that small and repeated doses, when necessary, are very valuable and should be recommended.

BRITISH MEDICAL JOURNAL.

January 4, 1913.

Insect Porters of Bacterial Infections (*Lecture I*).—C. J. Martin reserves the term porters to express the rôle played by insects in the transmission of disease organisms without the insect itself being a host. While flies have been shown to play a very important part in the dissemination of typhoid fever in the case of the United States Army when in camp, it is almost conclusively proved that such is not the case in cities and towns where the facilities for the disposal of sewage are good. Here the dissemination by flies is of very minor importance. Careful statistical records and experimental studies as to the relation between flies and diarrheal diseases of children show: 1. The fly porter hypothesis is the only one which offers a satisfactory explanation of the extraordinary dependence of the epidemic upon the accumulated effect of temperature. 2. It explains the spread of infection to neighboring children who have had no direct personal contact with the infected child. 3. The peculiarities of the relation in time between fly prevalence and the epidemics in different localities are not inconsistent with the view that fly carriage is essential to epidemicity. No other interpretation at present forthcoming is nearly so satisfactory, and it is at least worthy, in the meantime, to guide our efforts at prevention.

Primary Sarcoma of Both Biceps Muscles.—E. Scott-Carmichael reports the case of a man, fifty-six years of age, in whom developed symmetrically placed swellings in the biceps of both arms. These tumors gave no symptoms, but it was discovered that one was a round celled sarcoma. Both were removed while still encapsulated, and the patient has made a good recovery and shown no signs of any recurrence. The muscles were preserved so far as possible and much hypertrophy of the portions left has taken place so that the patient has still very fair strength.

LANCET

January 4, 1913.

Recovery from Streptococcal Infective Endocarditis.—H. Hemsted's patient suffered from a streptococcal infection of the endocardium engrafted upon a congenital defect, the infection arising from a tooth. Her disease was marked by very frequent and numerous pulmonary emboli, with few in other viscera, hence the lesion was probably in the right heart. In spite of her condition she went through the greater portion of a pregnancy and was delivered of a 6.5 months child. Her condition became serious with extreme loss of weight and strength, and remained so until treatment was started with autogenous vaccines. The infecting organism was *Streptococcus conglomeratus* and it could be isolated in pure culture from the blood, and in impure culture from the sputum after an infarction had occurred. The use of the vaccine seemed to turn the tide of events in her favor, but alone was not successful. An immune serum was prepared from her organism by inoculation into a horse and this, in addition to the vaccines, brought about a complete recovery.

Glycosuria in Tuberculous Meningitis.—R. S. Frew and A. E. Garrod examined forty-one cases and found a considerable glycosuria in fifteen, or 36.6 per cent., at some time in the disease. Some trace of reducing agent was found at a corresponding period of the disease in eleven of the remaining cases. In all of the fifteen patients the glycosuria first appeared within ninety-six hours prior to death with a single exception, in which it was found as early as nine days before the fatal termination. In no case did the glycosuria disappear after it had developed. Clinically the glycosuric cases showed no differences from the nonglycosuric cases, and sex and age were also without influence. At autopsy no characteristic lesion could be found in the pancreas, thyreoid, or adrenals, and the distribution of the tuberculous lesions of the meninges bore no apparent relation to the occurrence of the glycosuria. In a series of cases fatal from tuberculosis without meningitis no sugar was ever found in the urine. No structural lesion could be found in the fourth ventricle to account for the occurrence of the sugar. Increase of the endocranial pressure does not seem to be the cause, for in other types of meningitis this pressure is not infrequently higher and yet there is no glycosuria. Nevertheless the authors believe that the glycosuria has its origin in a nervous lesion, though such cannot be located as yet.

Treatment of Pulmonary Tuberculosis with Small Doses of Tuberculin.—N. D. Bardswell used residual tuberculin in doses of one one thousandth up to one six hundredth mgm., and was unable to detect any difference whatever in the progress of the cases treated with tuberculin as compared with the progress of similar types of cases, who, living under precisely similar conditions, were not having tuberculin. In the tuberculin treated cases it is to be noted that opsonic readings showed good immunizing responses. Bardswell regards tuberculin as an absolutely negligible factor in the treatment of pulmonary tuberculosis.

Preliminary Inquiry into Value of the Complement Fixation Test in Tuberculosis.—L. S. Dudgeon, W. O. Meek, and H. B. Weir investigated 131 cases of pulmonary tuberculosis, and of 102 patients undergoing treatment without tuberculin the reaction was present in eighty-six. In every patient who was being treated with tuberculin or bacillary emulsion the reaction was positive. In nineteen arrested cases in which the disease had been quiet for periods from a few months to seven years the reaction was positive in fourteen. The intensity of the reaction did not appear to depend in any way upon the extent or chronicity of the disease, nor on the general condition of the patient at the time of the examination. In the majority of the more chronic cases, however, the reaction was weak. In the patients who had recently received tuberculin injections the reaction was strong in the majority, and appeared to vary in strength directly with the amount of tuberculin which had been administered. Nine healthy contacts, persons engaged for some time in the care of tuberculous patients, were tested and none gave any reaction.

Radical Operation for Malignant Disease of the Testis.—Seton Pringle makes a racquet incision, encircling the diseased area and extending up the inguinal canal. The tumor with all of its coverings is then freed, along with the cord, up as far as the inguinal ring. The incision is next prolonged parallel to Poupart's ligament and then upward to a couple of inches below the umbilicus, and carried through all of the layers of the abdominal wall down to the peritoneum. The peritoneum is not incised, but is stripped up from the iliac fossa and posterior abdominal wall and retracted well inward. The vas is followed deeply into the pelvis, ligated, and divided. The fascia covering the psoas is next divided well to the outer side of the spermatic vessels and up to the renal vessels. The sheet of fascia lying to the inner side of this incision, along with the spermatic vessels, fat, and lymphatic glands, are dissected up from the underlying muscle as far as the aorta. This is then cleared from below the renal vessels down to its bifurcation. In this way the testis, cord, inguinal glands, spermatic vessels, psoas fascia, lymphatic channels, and lumbar glands are all removed in one piece without traversing the peritoneum. The peritoneum is allowed to fall back into place and the wound is closed, leaving a drain beneath the peritoneum for a few days.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

December, 1912.

"Vitalism" in the Practice of Medicine.—O'Carroll objects to the mechanical view of life that holds "that all changes in living substance are brought about by ordinary chemical and physical forces." He believes that while the living organism is subject to all physical forces, it has a force of its own—a vital force which determines it to preserve its own individuality. This term is not, in his opinion, an expression of ignorance, but is the name of a force present in each individual structure of the body which determines it to preserve its own existence, while at the same time it is dependent for perfect function on the health of other structures that go to make up the organism. In disease it commonly happens that structures and tissues fail in proportion as they are more highly specialized, or have been later in development, but at each stage of degradation defensive works are set up by tissues lower or simpler in structure and of older birth, so that the most ancient of our tissues are the last to die. A good deal of the essence of a scientific treatment of disease consists of the full use of these lower defenses before an attempt to rehabilitate the higher positions that have been put out of action. He goes on to show that social and moral qualities also develop from this vital force, and concludes: "To say that such qualities—defensive, social, and moral—are explicable on chemical grounds accounts for such change no more than 'vitalism' does, and it leaves us with the uncomfortable feeling that while it deprives the term *chemical* of all definite value, it robs our conception of life of all that it connotes in the long story which begins at or before the ameba and ends with human civilization."

GLASGOW MEDICAL JOURNAL.

December, 1912.

The Pernicious Vomiting of Pregnancy.—J. W. Williams maintains that the underlying factor in all cases of vomiting of pregnancy is probably an imperfect reaction on the part of the mother to the growing ovum. In most cases this is only a predisposing cause, while a reflex or neurotic influence is the exciting factor, and cure usually follows its removal. He divides the cases into those of reflex, neurotic, and toxemic vomiting, and considers the neurotic the most common, the reflex the least so, and the toxemic the most serious. Pronounced toxemic vomiting is accompanied by characteristic lesions and profound changes in metabolism. The significance of a high ammonia coefficient is not specific. It may be a manifestation of toxemic vomiting, of starvation following neurotic vomiting, or of an acidosis due to various causes. It should be regarded merely as a danger signal, while the differentiation between the various types is possible only after careful clinical observation. If improvement does not promptly follow appropriate treatment, the existence of toxemic vomiting should be assumed and abortion promptly induced. In the absence of genital lesions a low ammonia coefficient indicates neurotic vomiting which can be cured by suggestion and dietetic treatment, no matter how ill the patient may appear to be. In primiparous women vaginal hysterectomy is the most conservative method of emptying the uterus. Nitrous oxide gas or ether should be used in preference to chloroform for anesthesia.

PRACTITIONER.

December, 1912.

Sleepiness.—F. Taylor describes abnormal sleepiness; the condition is not one of the so called sleeping sickness, but of an abnormal somnolence, such as was pictured by Dickens in his fat boy. Treatment, he says, resolves itself into dealing with the cause, whenever we are fortunate enough to know what the cause is. Local diseases about the base of the skull may be treated surgically. In obvious conditions of toxemia, or of autointoxication, whether from the stomach, bowels, or kidneys, or of altered metabolism of any kind, the special indications must be dealt with as far as possible. He doubts the wisdom of regarding high blood pressure, which he found in his cases, as anything more than an indication of a toxemia. When associated with obesity, dietetic measures may be used with judgment to reduce the superabundant fat. The evidence of the participation of the glands in this symptom he considers sufficient to suggest a trial of pituitary or thyroid extract in such cases as do not present an obviously toxic element, or in those which do not do well when the apparent cause has become inoperative. If the sleepiness is the result of a disturbed balance between fatigue products on the one hand, and the gland secretions on the other, we may try the effect of supplementing the defensive element by a recourse to one of these extracts.

Rest Cures in Theory and Practice.—H. C. Miller, before describing the orthodox rest cure, quotes the words of Weir Mitchell, who devised it: "I am more fearful that it will be misused, or used where it is not needed, than that it will not be used, and with this word of caution I leave it to the judgment of time and of my professional brethren." As is well known, the rest cure is a combination of psychic and physical influences suited to the needs of a fairly common type of neuropath. It comprises complete rest in bed, isolation, overalimentation, and massage. Miller analyzes the curative elements that enter into this prescription, and discusses the types of cases that require various forms. He divides the neuroses into neurasthenia, the disease of strain, the causes of which may be psychic (anxiety, disappointment, self repression, etc.), physical (either toxic, from autointoxication, arteriosclerosis, alcohol, drugs, or traumatic), or psychophysical (from eyestrain, deafness, etc.); psychasthenia, the neurasthenia of degenerates, and hysteria, the disease of inadequate inhibition. Hysteria and neurasthenia combine, forming a large class of hysteroneurasthenics. The neurasthenic will enjoy a rest cure if it is conducted upon rational lines; if a true neurasthenic finds it irksome, something is wrong with the cure. The intellectual aspects of the treatment are first considered along the lines of mental inactivity, mental occupation without effort, and mental occupation with effort. Then come the physical aspects. Overalimentation also, he thinks, needs to be modified according to the case, and the same is true of massage. If a hysterical patient is treated as a neurasthenic, the results will be transitory. If a neurasthenic is treated as hysterical, there will probably be no results at all. A case of neurasthenia due to eyestrain treated in this manner will improve rapidly at first, then slowly, and relapse at once when he goes to work, because of uncorrected astigmatism. The aim should be not only to put the patient on his feet again, but to teach him not to fall again, and this can be accomplished only by avoidance of routine and individual study of the cases.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

December, 1912.

Smallpox.—T. H. Whitelaw gives a brief account of fifty-eight cases of smallpox that have come under his observation during 1912. Of these patients fifty had never been successfully vaccinated, though the attempt had been made in a few. Of the eight vaccinated patients, all had been vaccinated in infancy and most of them had only one mark; none of them was under twenty years of age. He says: "It is not at all creditable to Anglo-Saxon civilization to state that among this series of cases there was not a single patient who was not born in Great Britain, Canada, or the United States; and yet we commonly hear the statement made by our so called intelligent Anglo-Saxon, who prides himself on his cleanly person and habits, that it is little wonder we have smallpox when so many unwashed foreign immigrants are coming into our community. They may need washing, but they are almost invariably vaccinated and revaccinated." He urges health officers to take up the matter of vaccination vigorously in the public press.

Treatment of Nevus with Solid Carbon Dioxide.—E. A. Smith avers that solid carbon dioxide is a valuable addition to our armamentarium for the treatment of nevus, moles, and some other superficial conditions. The application should be made for not more than fifteen seconds in children up to two years old, and for as long as forty-five seconds, or longer, in an adult. Several applications should be made at intervals in extensive cases. No anesthetic is necessary, as the application is comparatively painless, but sometimes the pain during the thawing, and perhaps for some hours afterward, is considerable. In the after treatment a drying, mildly antiseptic powder with a pad of aseptic wool is preferable to ointments, under which there is more tendency to ulceration and greater difficulty in maintaining asepsis.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 9, 1913.

One Hundred and Ten Cases of Renal and Ureteral Calculi and Ten Cases Simulating These Conditions.—F. S. Watson deals with the chemical and physical characteristics of these calculi, their recurrence, the frequency with which they are bilateral, the symptoms produced, errors in diagnosis, the value of radiography, the dangers caused by their presence, the medical and the surgical treatment. In nine of the ten cases in which renal calculus was simulated the actual troubles were: Displaced kidney constricted by bands of adhesions in two, pressure of adhesions in kidney not displaced in one; movable kidney in one; moderate distention of renal pelvis and calyces due to misplaced ureteral outlet from pelvis in one; enlargement of the kidney due to acute congestion in two; constriction of ureter by adhesions in two. The medical treatment is thus summarized: For renal colic the combined use of ether inhalations and moderate doses of morphine. Heat to the affected side. An abundant supply of water to be drunk. Liquid or milk diet. To aid in expulsion of calculus from the kidney: Spirit of turpentine in ten minim doses in gelatine capsules three times a day. Diet of milk, each tumbler diluted one quarter with Vals water, milk to be slightly warmed and drunk slowly. Fish and dry toast may be taken once daily. Patient is to rest recumbent during the regimen and to take occasional hot sitz baths. Treatment to last six days consecutively, then after a two days' interval it is repeated once or twice, if necessary. After one month, or six weeks of this treatment, if the stone has not passed, it should be removed surgically. Watson says that in every case in which the patients were freed from their calculi by medical treatment the cure was absolute, and in twenty of them the patient's subsequent history was followed from three to twenty years. Recurrence occurred in only six, and in these the calculi were removed again by the same treatment. The calculus failed to pass in seven cases; these were operated in successfully later. In eighty-seven per cent. of the writer's cases treated in this manner, in which the calculus was small enough to pass through the ureter, it was spontaneously expelled while the patients were under medical treatment.

Pellagra.—Elisha H. Cohoon and Frederic J. Farnell report a number of cases of pellagra and sum up their pathological findings thus: Fifteen out of the twenty-seven cases evinced absent knee jerks, eight distinct evidence of peripheral polyneuritis even to the extent of foot drop and muscular atrophy; five had diminished knee jerks. The differential blood count was one of a small mononucleosis. The cytological count in the spinal fluid although small, two to nine cells to the c. c., appears to be of sufficient weight to indicate a chronic inflammatory process. The microscopic findings in the central nervous system are such as are comparable essentially to that rare disease known as central neuritis, the nerve cells showing an infectious or febrile condition of essentially a parenchymatous reaction. Finally they ask, if, on the one hand pellagra is to be considered of a toxic or infectious etiology and showing central neuritic evidence; and on the other hand, is distinctly an afebrile condition of unknown bacteriology, is it not possible, or even probable, for it to produce neuritic symptoms of central as well as peripheral origin?

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

January 11, 1913.

Demonstration of Spirochæta pallida in the Cerebrospinal Fluid from a Patient with Nervous Relapse Following the Use of Salvarsan.—Henry J. Nichols and William H. Hough note the fact that spirochetes have been found in the spinal fluid during life in only four cases; twice in papular syphilis, once in hereditary syphilis, and once in syphilis of the nervous system with skin symptoms. The positive findings in secondary syphilis indicate an early involvement of the nervous system which may occur although there is an absence of definite nervous symptoms, which has a direct bearing on the subject of nervous relapse. The writers record their successful inoculation of the rabbit with *Spirochæta pallida* from the cerebrospinal fluid of a luetic patient. They believe it to be the second successful inoculation on record, and the first in which the rabbit has been used. The special interest is the fact that the fluid came from a patient suffering with nervous relapse following the use of salvarsan, and that the final proof of the syphilitic nature of this condition has been given. We have yet to explain why these relapses are more frequent under treatment with salvarsan than with mercury. The clinical lesson is that treatment in the early secondary stage must be vigorous and prolonged. A radical cure must not be attempted with less than three or four intravenous injections of salvarsan, combined with an intensive treatment with mercury over a period of at least two months. It is of great advantage if an examination of the spinal fluid can be made, because an increased cell count and protein content indicate the cases which are potentially those of nervous relapse.

The Human Prostate Gland at Birth, with a Brief Reference to Its Fetal Development.—See this JOURNAL for Oswald S. Lowsley's article, June 15, 1912, page 1294.

Bilateral Urinary Lithiasis.—Herman L. Kretschmer reports a case which is interesting from the fact of the long interval between the symptoms for which relief was sought, and the original onset of his trouble, viz., sixteen years, the fact that the only pain complained of was right sided, although he had bilateral calculi in the upper urinary tract, and on account of a simultaneous right sided ureterotomy for stone and a left sided nephrectomy. The writers emphasize the necessity of making a radiographical examination of both kidneys and both ureters, notwithstanding the symptoms may be only unilateral, and the value of the röntgenograph catheter in the diagnosis of ureteral calculi.

Röntgen Ray in Endothoracic Goitre and Thymus Hyperplasia.—André Crotti concludes that Röntgen ray examination must become a part of the routine in goitre work. In endothoracic goitre it is a necessity. The Röntgen ray examination should be made in every case of goitre, because thymus hyperplasia is likely to be present as a complication in any kind of goitre, especially in hyperthyroidism, and as this complication may prove fatal. While the diagnosis of a thymus hyperplasia is possible in the greater number of cases, a combination of the Röntgen ray and clinical examinations is necessary that a correct diagnosis may be made. Since the thymus gland is very sensitive to the Röntgen rays, especially in children, when the diagnosis of thymus hyperplasia as a complication of goitre is made, operation should be deferred until a marked diminution in the size of the thymus is effected through Röntgen ray treatment.

MEDICAL RECORD.

January 11, 1913.

Diseases of the Labyrinth; Methods of Examining the Labyrinth in the Continental Clinics.—James S. Greene describes the technic of applying the various tests in labyrinthine disease, and in estimating the comparative value of the different tests he observes that the turning test is the easiest to apply, but it has two disadvantages. Each labyrinth cannot be tested alone and in cases of severe sickness its application is contraindicated. The galvanic test has the same disadvantages and occasionally, especially in nervous patients, very disagreeable secondary effects follow. The caloric test, however, permits us to test each labyrinth separately, a fact which outweighs all its disadvantages. In measuring the excitability, with Brünnings system, we must allow for the local conditions which influence the conduction of the heat (stenosis of the external auditory meatus, polyps, middle ear inflammation, the condition of the drum membrane, the presence of secretion, of cholesteatoma, etc.). Furthermore, it is not always possible to apply the test with water, as in cases of dry perforations; the water must be replaced by paraffin or air (hot or cold) by means of the apparatus from Lautenschläger. The caloric test is, with these disadvantages, the major test at present. Touching diffused purulent labyrinthitis, which is dangerous, being frequently complicated with meningitis or cerebral abscess, the writer advises operation at once, as soon as the diagnosis is made, the indication being the removal of all diseased tissue and making free drainage, which objects are accomplished in various ways. The carious portion of the horizontal semicircular canal may be removed with a sharp curette. The canal and promontory may be opened, curetted, and drained, either laterally or medially. The canal, promontory, and spindle of cochlea (if carious) should be removed. Finally, the posterior portion of the pyramid up to the internal auditory meatus is removed; this destroys the posterior and horizontal semicircular canals; then the promontory is removed. The writer points to the constant danger of injury to the facial nerve with consequent paralysis.

New Method of Treating the Toxemia of Pregnancy.—George P. Shears suggests that we have been looking too far for the cause of the toxemia of pregnancy, which he prefers to call the preeclamptic condition, due in part, at least, to suboxidation. The clinical symptoms of pregnancy, from the subjective dyspnea to the headache, edema, and final convulsions of profound toxemia, strongly suggest a lack of oxygen. This theory aids in explaining why eclampsia occurs so often in robust and vigorous young women, as having normally a high oxidative equilibrium they are the first to suffer from a deficiency of oxygen. Basing his practice upon this theory the writer has treated his toxemic patients by the free use of oxygen, and although four suffered the severe type, improvement and eventual recovery were noted in all. The writer therefore suggests the free use of oxygen, in all these cases, either by inhalation or subcutaneously. It is important to note that this method of treatment does not conflict with the use of milk diet, catharsis, hydrotherapy, or with other approved curative agents.

Case of Sinus Thrombosis; Operation; Recovery.—I. Grushlaw reports a case of sinus thrombosis which had many interesting features. The appearance of the sinus was normal, although it was the seat of a septic thrombus. Although the sinus was extensively involved there was almost a complete absence of any signs. Although the jugular vein was not ligated, recovery followed. The mastoid was diseased, but gave no signs thereof. Finally this severe infection followed a slight operation on the ear (myringotomy for acute otitis media purulenta), which had been performed in some dispensary.

LANCET-CLINIC.

December 7, 1912.

Further Clinical Observations of Mental Symptoms Caused by Suppurative Ethmoiditis.—J. A. Stucky calls our attention to his finding, that in disease involving the silent area of the brain (the anterior frontal lobes), it is difficult for the clinician to differentiate between cases of true insanity and those whose symptoms simulate this condition These cases must be diagnosticated, not only from what we see and hear in the examination of the patient, but from symptoms and evidence given by the family and associates. From the clinical evidence obtained, the results of early surgical treatment, and the post mortem findings in the eight cases reported by the writer, an argument is made for a closer relation between the rhinologist and the alienist. The writer's observations also corroborate the opinion of Cordier, "that many cases, such as described by the writer, have been tried before juries, average juries, all over the country, and have been adjudged insane and have been accordingly committed to institutional care, when prompt surgical and medical treatment would have relieved them of their symptoms and put them back where they belong."

Definition of Nervous Dyspepsia.—Henry W. Bettmann reminds us of the twofold character of normal digestion: That it should be, first, *complete,* and, second, *unconscious,* and urges the opinion that the essence of nervous dyspepsia is a disturbance of the consciousness without a disturbance of the digestive process itself, an expression of a constitutional nervousness in which all the bodily functions tend to elicit abnormal cerebral responses, or it may be a more or less localized disturbance in which the abnormal irritability of the digestive organs themselves is the prime factor. The sequels of nervous dyspepsia are important, and assume either one of two types, eventuating in secretory disturbances (usually hyperchlorhydria), or in muscular atony, both of which in their early stages may be purely nervous in origin, and both disappear entirely when the general condition of the patient is improved. The treatment has two indications: To overcome the local symptoms which are prominent in the patient's consciousness, by diet and drugs, and to remove the underlying conditions which cause the nervous manifestations, by restoring normal living conditions.

Pituitrin, a New Therapeutic Agent in Obstetrics.—G. Mombach sums up his conclusions as to the use of pituitrin in obstetrics by stating it to be proved both by experiment and clinical observation that pituitrin is the most efficient agent to stimulate uterine contractions, in doses of from ten to fifteen minims, given subcutaneously, repeated safely a second or third time, and is moreover absolutely safe. The writer asserts that many forceps operations can be avoided by the use of this remedy. If used in cases where the uterus is imperfectly contracted, secondary inertia uteri and post partum hemorrhage may be avoided. Post partum retention of urine is successfully overcome by pituitrin.

December 14, 1912

Mercury versus Salvarsan in the Treatment of Syphilis.—Edward H. Shields concludes that salvarsan has been a disappointment, there being some doubt, even in the early cases, of the efficacy of salvarsan to abort or cure syphilis. The curative value of salvarsan is in direct ratio to the age of infection. There is a difference, from a serological viewpoint, between salvarsan and mercury, the odds being against salvarsan, and there is a mortality from salvarsan which does not follow the use of mercury, which should indicate the use of the former in those cases only when mercury fails. If the requisite number of injections cannot be assured salvarsan should not be given, but in many cases should be followed by a thorough mercurial treatment. Salvarsan is indicated, however, in threatened perforations, when time is lacking thoroughly to saturate the patient with mercury and the iodides; and it may be necessary, from a sociological consideration, to administer salvarsan, but it should invariably be followed by mercury.

December 21, 1912

Functional Psychoneuroses.—F. W. Langdon discusses hysteria, neurasthenia, and psychasthenia, and differentiates the three psychoneuroses as follows: The keynotes of hysteria (pithiatism of Babinski) are retraction of the field of consciousness wholly, or in part, with suggestibility, a necessary causal and curative factor (the patient cannot *will* right). In neurasthenia there are varied morbid subjective sensations and undue fatigability, with defective nutrition and metabolism as a basis (the patient cannot *feel* right). Psychasthenia is marked by morbid fears, anticipations, and impulsions (the patient cannot *think* right).

AMERICAN JOURNAL OF SURGERY.

November, 1912.

New Method of Treatment of Breast Cancer.—C. W. Strobell, to insure against recurrence, proposes removal of breast cancer by chemical surgery, which is painless, safe, and under complete control yet with the full consciousness of the patient. After extensive inquiries he finds that approximately only forty per cent. of breast carcinomata showed positive, microscopical metastasis to the axillary lymphatic nodes, and that eighty-five per cent. of recurrences in cancer of the breast are in the chest wall and only fifteen per cent. in the axilla. He is impressed by the fact that recurrence after operation for cancer of the breast is almost invariably in the line of incision, and believes the knife must sever the continuity of the fluids as well as the tissues holding them, hence infection is almost inevitable because of the manner of traumatism. He reports seven cases successfully operated in by the chemical method, which he describes as follows: 1. Cocaine, forty per cent. solution, is driven into the segregated area by phoresis and as high as 200 milliampères of current may be used, varying with the susceptibility of the patient. 2. The cuticle is then destroyed with caustic potash. 3. Tissues outside of the condemned area are properly protected from accidental chemical contact by means of strips of cotton flannel saturated with flour paste. 4. A mixture of zinc chloride, with powdered sanguinaria plus water, to the point of proper working consistence, is applied and protected with dressings. 5. In twenty-four or forty-eight hours a layer of devitalized tissue is aseptically removed and a fresh application is made, repeating the process each twenty-four hours until the entire breast has been removed. 6. Nature is allowed to complete the operation in her own way by granulation. Strict asepsis should be maintained throughout. 7. Skin grafting after Ochsner's method is done under cocaine cataphoresis safely and painlessly.

Gonococcus Vaccine as a Guide in Diagnosis and Treatment.—J. London injects gonococci, suspended in normal saline solution, into the endodermal layer of the skin with a hypodermic syringe and fine needle and obtains a local reaction, believing, in obscure cases, where the gonococcus is a possible infecting agent, as in a joint, tendon, endocardial and peritoneal or pleural infection, as well as in involvements of the genitourinary annexa, both male and female, a means of diagnosis not dependent upon the discovery of the gonococcus itself is of decided value. To obtain this reaction the skin on the inner surface of the arm or forearm is cleansed with alcohol or ether, which is allowed to evaporate; then a saline suspension of dead gonococci in a strength of 50,000,000 to 100,000,000 to the c. c. is injected into the skin until a slight weal is formed. A positive reaction occurs in about twenty-four hours, a central papule, red in color, surrounded by a lighter red areola, two to three inches in diameter. A previous injection, within ten to fourteen days in negative cases, may cause a positive reaction on secondary injection. The writer reports that of eighteen cases in which the gonococcus was found, sixteen gave a positive reaction. Of fourteen control cases, nongonorrheal, twelve gave no reaction, two gave a slight reaction. Of three cases of gonorrheal arthritis, two gave a positive reaction. In a case giving a negative reaction, staphylococci were found in the prostate, but no gonococci. In three cases in which the complement deviation test was performed, two were positive and one negative to the blood test, but all three were positive to the skin test. In two cases of stricture, one was positive and one negative. Of eighteen cases which were clinically gonorrheal, but where no gonococci were found, in thirteen the skin test was positive, in two negative, and in three doubtful. Cured cases give negative reactions.

ANNALS OF SURGERY.

November, 1912.

Tetany Following Extirpation of the Thyroid.—Francis J. Shepherd, reviewing the literature on the subject, says the weight of opinion tends to prove that postoperative tetany is dependent on the removal or destruction or injury of the parathyroids. As to the functions of the parathyroids there are at present two theories: 1. An antitoxine is developed by the parathyroids which neutralizes certain waste products of tissue metabolism; and, 2, the calcium metabolism of the cells of the body is controlled by the parathyroids, and their removal causes a rapid disappearance of the soluble salts of calcium from the blood. The glands are difficult to distinguish without microscopical examination, but as a rule their yellowish brown color distinguishes them from the deep red color of the thyroid. For treatment various measures have been adopted, transfusion, parathyroid feeding, injection of the nucleoproteid principle, calcium lactate, and transplantation from other subjects. The writer had always been a little sceptical regarding the danger of tetany or cachexia strumapriva following total thyroidectomy until last winter, when a severe tetany followed thyroidectomy in one of his cases. On the third day after operation the patient complained of a feeling of general formication and of a great weight which pressed on his brain. On the fifth day, in addition to formication and numbness of her legs and face, she began to have cramps in both hands, pains in the joints, and stiffness of the fingers and flexion of the toes. On the appearance of typical tetany the writer put her on one drachm doses of calcium lactate and one half grain of parathyroid extract, every four hours, which controlled all her symptoms. Six months later she had gained twenty pounds, and the only symptom at present is oppression in the head, which is corrected by lactate of calcium of which she now takes only twenty grains, twice daily.

Surgical Treatment of Aortic Aneurysm.—J. A. C. Macewen, with a view to obviating many of the dangers attendant upon the surgical treatment of aortic aneurysms, namely, anesthesia, ligation of diseased sclerotic vessels, and embolus, following the detachment of a red blood thrombus, proposes a method for inducing the production of a strong, enduring white thrombus, which was put forward many years ago by Sir William Macewen. A fine, highly polished steel needle is introduced into the interior of the aneurysmal sac or dilatation, and the inner surface of the opposite wall is scratched very lightly so as to produce a series of slight abrasions on that surface. In this manner there is produced a white thrombus by the action of fibrin and leucocytes. This exudate under favorable conditions tends to increase in quantity and is later replaced by fibrous tissue. The advantages of this method are: 1. There is no sudden blockage of the vessel and no strain on the heart; 2, the thrombus is at first small and so intimately adherent that embolus is impossible; 3, it is easy of application in most cases; no incision is required, hence no anesthetic is necessary; 4, this method is particularly adapted to the so called "inoperable" forms of aneurysm. He reports the successful treatment of a critical case by the production of a white thrombus, where the routine medical treatment of rest, dry diet, and iodides failed. In October, 1909, a small steel needle was introduced twice and the posterior wall of a large aneurysm treated, similarly three and twelve months later, and now, sixteen months later, the woman feels better than she has felt for many years.

Treatment of Fistula in Ano.—A. W. Elting draws the following conclusions: 1. Probably not more than ten per cent. of fistulæ in ano are tuberculous and a great majority of these are secondary to demonstrable tuberculosis elsewhere in the body, usually in the lungs; 2, the great majority of fistulæ originate from a diseased condition of the rectum, existing in the lower one and one half inch, and this diseased condition is usually a hemorrhoid; 3, the essential principles underlying the cure of fistulæ consist in (a) the severance of the communication between the bowel and the fistulous tract, and (b) the removal of the diseased portion of the bowel, including the fistulous opening; 4, a widespread and often destructive dissection and removal of the fistulous tracts in the circumrectal tissues is unnecessary; 5, it is possible to cure fistulæ without injury to the sphincters and with a preservation of all the sphincteric function possessed prior to operation by the application of the Whitehead principle of rectal excision. The writer bases his observations in 105 consecutive cases of fistula in ano. Of these 105 cases, sixty-four occurred in males and forty-one in females, and arranged according to age, two occurred in the first decade; one of them a child of ten months; eight occurred in the second decade; thirty-seven in the third decade; thirty in the fourth decade; fifteen in the fifth decade; ten in the sixth; and three in the seventh decade. While there was no mortality associated with the operation, yet in seven there was some degree of stenosis, but all of these were cases with very extensive circumrectal inflammation and necrosis. The use of hard rubber rectal dilators, inserted by the patient once or twice daily, relieved the strictures in all of the seven cases.

SURGERY, GYNECOLOGY, AND OBSTETRICS

November, 1912.

Nephrectomy without Drainage for Tuberculous Kidney.—William J. Mayo advocates nondrainage following nephrectomy for tuberculosis of the kidney, because in his experience a sinus which was slow to heal often formed, particularly in the debilitated patient in whom the second kidney was somewhat involved, and in many instances mixed infection with suppuration occurred and undoubtedly was a contributing factor in the ultimate failure to cure the patient. About two years ago a case of this type came under their observation. In operating, a large accumulation of wheylike fluid was found outside the kidney and, after removing the kidney, treating the ureter and cleansing the wound as well as possible, he filled the cavity, which held more than a quart, with normal saline solution and closed the wound without drainage. Primary union and a prompt and permanent recovery followed. The compensatory hypertrophy of the remaining kidney evidently furnished sufficient hyperemia to destroy such infection as may have existed within its substance. Since then, in operating in these cases, if the wound is soiled with tuberculous material the cavity is cleansed as well as possible, filled with normal salt solution, and closed without drainage. In cases in which the tuberculous material has not escaped into the wound and the patient is otherwise in good condition, there is no necessity for using the salt solution, but drainage should not be employed. An adequate incision is essential and should be secured by a vertical cut freeing the twelfth rib from its posterior attachment, and a long, transverse incision mobilizing the lower wall of the thorax. For a number of years it has been the Mayos' practice to inject from ten to twenty minims of carbolic acid (liquid ninety-five per cent.) into the ureter. This is distributed down through the lumen, and a ureter thus treated will rarely give trouble later.

Unsuccessful Surgery in Disorders of the Gallducts.—A. G. Gerster believes that as Naunyn's revolutionary views regarding the pathology of the liver find general acceptance, it is rational to conclude that the remedy suggested by him, surgical drainage of the biliary tract, must also be accepted. Naunyn states that there must be some other factor which is more constant than calculus and which is invariably present whenever febrile jaundice appears, with or without calculus, from any cause whatever. This factor is undoubtedly the infectious inflammatory edema of the mucous lining of the bile tract. This he terms cholangiolitis and though calculi aggravate the symptoms, yet the intrinsic and essential thing is the cholangiolitis, which often exists before stones are formed, and may continue after their removal. The writer found among the intrinsic causes of relapse, either stricture or undetected stones in the cystic, hepatic, or common ducts. He summarizes as follows: 1, Every dilated common duct should be opened and drained; 2, palpation should follow, not precede, incision of common duct; 3, an inflamed, thickened, adherent, or shrunken gallbladder should be removed; 4, all cicatricial deposits in the gallbladder or in cystic duct justify removal of the gallbladder; 5, the presence of many small stones, even though the cystic duct is patulous, indicates that the gallbladder should be removed; 6, the presence of a damaged gallbladder is not an aid, but an impediment to exposure of the common duct; 7, absence of the gallbladder does not constitute an important adverse factor in the subsequent exposure of the common duct; 8, suppuration in the gallbladder is the main cause of the formation of dense and extensive scars.

Proceedings of Societies.

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Ninth Annual Meeting, Held at Atlantic City, N. J., June 3, 1912.

The President, Dr. JOSEPH H. WHITE, in the Chair.

President's Address. The Eradication of Malaria.—Dr. JOSEPH H. WHITE, of New Orleans, observed that malaria possessed a wider interest than any other of the tropical diseases in the United States—particularly in his native south. There had, however, been countless deaths charged to malaria that did not belong to it. Many knew cases in which general physicians, through ignorance, would make a diagnosis of malaria and sign a death certificate giving that as the cause, yet in which the cause was absolutely foreign to this disease. Again, physicians would charge up knowingly even such things as syphilis to malaria; because they were afraid to wound the sensibilities of the patient or his family. The morbidity of malaria, rather than the mortality, was the question that made it of importance, particularly in the south. He did not think the morbidity was overestimated, although the mortality was largely so. They all knew the importance of doing away with conditions that sapped the vitality of the race. The filling up of the country with inhabitants had accomplished the desired result in many parts of the northern and middle States, practically obliterating malaria, without interference on the part of the physicians. There were many places where this was not so; and the remedy was first to be applied in a palliative way, by excluding the mosquitoes from houses, draining small pools of water near at hand, and oiling those which could not be drained, using for the purpose an oil that had been devised by Colonel Gorgas, composed of resin, caustic silver, and some other things that were cheaper and more effective than the oil. The main point was the elimination of the swamps, in the south particularly. To arrive at a proper remedy they must appeal to the State and the nation, as well as to the citizens; so as to get in more people and to expend more money and energy in draining these swamps, and so do away with this curse of malaria. He had seen the gradual recession of swamp land before population in his own State and Florida, and the gradual dying out of malaria before the advent of population. In the last fifteen years, there had been tremendous recession of malaria all around along the Mississippi river, where it used to be impossible for a white man to live. That was due to the fact that the people had been clearing a belt three hundred yards wide around their houses, living in the second story, and keeping the people in the house until the dew was off the grass in the morning. Now, if they applied, along with these measures, scientific measures, by wiping out the swamps, they should ultimately wipe out malaria in the entire country. Could they not interest the State and the nation in the obliteration of the big swamps? Was this not an integral part of the movement started for the improvement of waste lands? Should not national drainage go alongside of national irrigation, and was it not as important? Irrigation led only to public wealth; this led to both health and wealth. In the low lying coast lands of South America, neither the mixed breed of Indian and white, nor the pure white could live; but the negro could; and he had taken possession of the coast lands, pushing the white people back. The same thing threatened them; but they could remove a part of the threat, if they could remove the prime cause of negro supremacy. It was by right of inheritance that the negro could stand the malarial climate. If malaria was not removed from the south lands, the negro race would be the only one which could stand it. He did not mean any ill will to the negro; and he should not have mentioned the south at all, except for the fact that his own native land was the most afflicted with this scourge.

Dr. M. P. RAVENAL, of Madison, Wis., told how his boyhood home was at Charleston, South Carolina; and how he was brought up on the idea that "country fever" (as malaria was called in that region) was invariably fatal; and that for a white man to spend the night at St. Andrew's Parish—which was across the river from Charleston, would be an act equal to shooting himself. His father always had a strip of land, three hundred feet wide, that he did not allow to be cleared, bordering every piece of water on his grounds. This made a barrier of trees between the water and the house. All through the lower regions of the south it was the habit for people to leave their plantations on the fifteenth day of May, and not to go back to them until after the first frost in the fall. Many people said that the negro was immune to malaria, but he had seen negroes die like flies of it. The plantation negro was immune to this disease; but the negroes from the foot hills of the mountains, when taken down to the phosphate fields, were found to be very susceptible. The immunity of the negro race to malaria was acquired. The result of progress around Charleston had been such, that at present the white man slept in St. Andrew's Parish with impunity. This was due to the drainage of the swamps. There was no screening of the houses even. An uncle of the speaker's—for the first time last summer—lived on his plantation near Georgetown, S. C. He screened his house, and the whole family lived there throughout the summer without having a touch of malaria. The poor whites of the south were generally accused of laziness; but the fact was that they were as energetic as any people, when they were well. Malaria, togther with hookworm disease, had, however, been a primary factor in keeping back certain parts of the southern country. There was no doubt that with the drainage of these malarial districts and the cultivation of areas of land, there had been an enormous material development, so that the public health question was of great importance to this country from that standpoint, as well as the racial one.

Dr. B. F. ROYER, of Harrisburg, Pa., pointed out that malarial fever cut a very small figure to-day in Pennsylvania. It was a reportable disease in that State, and a placard was put on each premise where it existed. It was common for physicians to speak of indefinite fevers as a touch of malaria; but the reporting of the disease had done away with this loose method of diagnosis. Physicians were formerly in the habit of calling typhoid fever malaria, because the former was reportable and the latter not; but now they must make the differential diagnosis between these two diseases, and the State laboratory was available to make the tests. They had a little shipping outfit, which held three glass slides; and this outfit was sent to the physicians all over the State, so that they might send smears to the laboratory. Their outfit for the Widal test was a slight modification of Wright's tube, so that they sent the blood in a sealed tube. He did not know the details used in the laboratory itself.

Dr. E. H. HUME, of Changsha, China, said that in Central China, where they had a great deal of rice raised, there was none of the anopheles within hundreds of miles; yet in other sections of rice country, there were crowds of them. The studies now seemed to indicate that the presence of anopheles had something to do with the kinds of fish, etc., contained in certain waters. They hoped within the next few years to find the solution of this problem. The distribution of malaria was being worked out in China as a problem of much importance, because the disease was so scattered in that country.

Dr. WILLIAM H. JEFFRIES, of Shanghai, China, recalled that there had been a bill passed in the State legislature of Maryland providing that the State would pay two thirds of the cost of draining any swamps, if the land owners would pay the remaining third. So far, very few land owners had taken advantage of this law. Therefore, the draining of swamps on a big scale would have to be done by the State or Congress. He did not think that individual enterprise would do a great deal in that direction.

Biological Characteristics of Spirochæta pallida and Spirochæta pertenuis.—Dr. HENRY J. NICHOLS, of Washington, D. C., pointed out that the differences in morphology were slight; the same was true of the cultural characters so far observed. No specific antibodies had as yet been demonstrated. Group reactions occurred in the complement fixation tests with culture. Distinctive lesions occurred in experimental lesions in the rabbit and the action of salvarsan was distinctive. A review of their present knowledge of the biological characters of *Spirochæta pallida* and *Spirochæta pertenuis* threw but little light on their distinctive pathogenic properties, and showed the need for further investigation along some of the lines indicated.

Dr. Creighton Wellman, of New Orleans, thought that an attempt to work out exactly some of these relationships by means of a complement deviation or by other means was a thing that, while involving a great deal of work, was very much worth while. He discovered pertenuis and published a paper dealing with this discovery a few weeks after Castigliani's discovery. It, therefore, served merely as a confirmation of his; but he worked out the spirochete and sent his paper away long before he saw Castigliani's paper. He believed that there were morphological differences between this and the other form of spirochetes, pertenuis being blunt at one end and sharp at the other. The speaker, on the other hand, believed this difference to be due to faulty technic and he considered them to be entirely distinct, and did not agree with those who sought to unite the two diseases or the two parasites. If one saw a good case of yaws and one of syphilis, one got the two kinds of cases settled in the mind. They needed more scientific care in solving the question of the tropical diseases.

Doctor Nichols considered one drawback to this sort of work in tropical diseases to be that laboratories in the tropics were not so well fitted up as they were in the temperate zones. One might see many cases of the yaws in the backwoods of the tropics, and have no facilities to work with; while here they had the facilities, but not the cases; therefore, the work was slow.

Cultural Studies of Malarial Parasites.—Dr. Creighton Wellman, of New Orleans, said on behalf of Dr. C. C. Bass, of New Orleans, that the latter had gone on a scientific expedition, sent out by the Tulane University School of Tropical Medicine at New Orleans, and was now in Central America studying malaria. He had succeeded in cultivating the malarial parasite and following out the entire cycle of schizogeny, not only in culture, but in transplants. This work was begun some months ago; and some of the members might remember his preliminary announceemnt in the *Journal of the American Medical Association,* stating that the malarial parasites had been kept alive for seven weeks. His later work was done by the same method as described in that article. Doctor Wellman believed this discovery made by Doctor Bass worthy to stand beside the former discovery that the mosquito was the host of the malarial parasite.

Simple Method of Differentiating Disease Bearing Insects.—Dr. C. S. Ludlow, of Washington, D. C., first discussed briefly the general external resemblances and differences between ticks and bed bugs, lice and fleas. Wing venation offered a good means of differentiating groups of flies. The family was always indicated, and sometimes even the genus made evident, by this means. The differences were easily recognized and were available to every one on account of their simplicity. The classification of the mosquito was in almost inextricable confusion.

Dr. Creighton Wellman, of New Orleans, agreed that the classification of mosquitoes was in complete confusion, as Doctor Ludlow had said. In no other group of arthropods was there such a great number of people rushing in to describe new species, as in mosquitoes. He would also deprecate the attempt to name animals and insects by people who were general entomologists and not specialists. If they wished to work with a species of mosquito, first find out just what it was by sending specimens of it to some one especially working with mosquitoes. The same thing held true of other kinds of insects. Another thing that he deprecated was the guessing at the rôle played by every blood sucking insect. In order to play a pathological part, the insect must be a common one, be closely associated with man, and suck blood repeatedly. So far as the philogenetic significance of this wing venations was concerned, he was not so sure of the final state of that question; but there was no doubt of their taxonomic value. There were hiatus in the life history of almost all these insects, and the filling up of some of these gaps required the gathering of data, which students in tropical medicine might help them with. The best manner of clearing up the habitat of the tsetse fly, the glossina, was based on the fact that a peculiar degree of shade and humidity was necessary for its reproduction. The clearing away of the timber in the fly belts, allowing the sun to shine there, was efficacious; because these flies wandered only a few yards, at most, from the belts. The problem of mosquito destruction, as Dr. Joseph H. White had remarked, was a live one in the city from which they both hailed. They wanted to make a mosquito survery, similar to that which was made by Doctor White and his associates in the far famed yellow fever times. The conditions had changed since that work was done, and he believed that the task of collecting carefully and patiently exact data, getting a foundation of facts from which to draw a deduction, would be of more benefit at the present stage of the problem than making a great many ingenious suggestions and hypotheses which had little basis in fact.

Dr. Joseph Goldberger, of Washington, D. C., thought there was a great deal too marked a tendency, not only in entomology, but also in all of the branches of medical zoology, to a very broad, superficial study. The number of species and genera was appalling. The time had more than come when they needed intensive study, rather than a superficial layer of poorly recorded facts. They needed to know more about the life histories of the animal, and the way in which it bred, lived, and had its being; and instead of rushing madly after new species, they should try to learn something more about those they knew already.

Doctor Ludlow observed that so far as the study of flies was concerned, the study was surrounded with more difficulties than were usually recognized. The anopheles were especially shy, and many people insisted that they had no anopheles in their vicinity, when more care would show that they did have them. The question of whether one should name a new form depended upon several conditions. If they had a form that they could not find described anywhere, they must describe it; but they might find it again, and they might not. That was why it was hard to base a classification on the male sex.

Bacteriemic Nature of Leprosy.—Dr. Damaso Rivas, of Philadelphia, said the work was based upon the fact that *Bacillus lepræ* was easily found in the blood in cases of leprosy. The method consisted in collecting 0.1 to 1.0 c. c. of the patient's blood, from the tip of the finger or toe (free from lepra lesions), or from the vein, in about five to twenty c. c. of a two per cent. solution of acetic acid in which the erythrocytes were dissolved. The mixture was centrifugated for about fifteen minutes and the sediment was examined for alcohol acidfast bacilli. The method of staining was one usually followed in the examination for tubercle bacilli; the sediment was spread on a slide, dried, fixed, stained with carbol fuchsin, decolorized with thirty per cent. hydrochloric acid solution in ninety-five per cent. alcohol and counterstained with methylene blue. In the original paper plates were given illustrating *Bacillus lepræ* found free in typical aggroupment or scattered, as well as in the form of lepra cells; that was, endothelial cells or lymphocytes filled with the bacillus, also a few bacilli phagocytized by lymphocytes, were shown as evidences that *Bacillus lepræ* was found in the circulating blood. This method was advantageous in demonstrating the bacterial nature of leprosy and also as a means of diagnosis of the disease.

Early Diagnosis of Filariasis.—Dr. Damaso Rivas, of Philadelphia, went on to say that this diagnosis was based upon finding the microfilaria in the blood in the early stage of the disease; that was, before the symptoms due to obstruction in the flow of the lymph, such as lymphangitis, elephantiasis, etc., are manifested. The procedure consisted in collecting from 0.1 to 1.0 c. c. of the blood, from the finger, in about five to ten c. c. of a two per cent. acetic acid solution, in which the erythrocytes were dissolved. After shaking, the mixture was centrifugated for about five minutes, and the sediment examined. Either fresh cover glass, or dried and stained preparations, were made from the sediment. With the acetic acid method, it was immaterial at which hour of the day or night the examination was made. If the case was positive, the microfilaria would be found in the sediment. Four comparative tables were given in the original paper, and the advantage of the acetic acid method over the common fresh blood cover glass preparation, as usually recommended, might be summarized as follows: 1. Microfilaria of *Filaria nocturna* or *Filaria loa* were found in the peripheral blood at all hours of the day or night. In cases of *Filaria nocturna* the greater number was found at night; while in *Filaria loa,* the greater number was found in the day. 2. The periodicity of microfilaria in the peripheral blood was related to the relative number of embryos circulating from the blood, and not to an absolute absence of them from the capillaries. 3. The acetic acid method was of special advantage in the early diagnosis of filariasis. By it, the microfilaria could be demonstrated in the blood as soon as the adult filaria reached maturity and began to discharge its embryos, which, in all probability, took place years before the obstructive symptoms of filariasis were manifested.

Dr. Henry J. Nichols, of Washington, D. C., thought that there should be a more careful investigation of tropical diseases. There had been too much tendency in this branch of research to tell some wonderful story about a disease not clearly known, except to a few. For instance, it was true that *Filaria diurna* was in the circulating blood in the daytime; but it is not true that it was not at night. For two or three months, he observed several cases of patients who were nightwatchmen; and at the end of this time, their periodicity had not changed. They still had more filaria at night than in the daytime. There was more need of careful observation on these points, before a story was stated as a fact.

Summary of the Literature on the Etiology of Beriberi.—Dr. John M. Swan, of Rochester, N. Y., having reviewed the literature of the etiology of beriberi, suggested the following definition: So far as our knowledge went, beriberi was a disease of metabolism, characterized, pathologically, by a polyneuritis; and clinically, by an acute stage resembling an acute infection, by a stage associated with marked edema, and by a stage of polyneuritis and paralysis, and due to a diet of which uncured rice formed the principal element.

Investigation of Louisiana Rice with Reference to the Etiology of Beriberi.—Dr. Creighton Wellman announced that with the purpose of determining whether or not the experimental results obtained by various writers with the polished rice of the Orient could also be obtained with rice grown in Louisiana, he and Dr. C. C. Bass had undertaken a series of experiments with chickens which were still in progress and of which the following was an account: The best culled Louisiana white rice was obtained at the mill after chaff had been removed, and was designated as unpolished rice. Another sample of the same lot was obtained after culling and finishing ready for the market, except that the final coat of glucose and talcum had not been applied. Only rice used in Louisiana and milled there was studied. Marked nerve symptoms appeared after seventeen to twenty-three days in fowls fed exclusively upon polished Louisiana rice. The same rice unpolished did not produce the disease, and such rice with a general diet promptly cured the disease. A diet of pure cane sugar would produce this characteristic more rapidly and completely than the polished rice. Pure cornstarch would also produce the condition rather more slowly than polished rice.

Public Health Problems in Connection with Beriberi.—Dr. R. H. Creel, of Ellis Island, N. Y., asserted that in the United States beriberi had been confined to sporadic outbreaks in various parts of the country during the last twenty years. There was no evidence of any increase, and in this country the disease had not assumed public health proportions. The origin of beriberi was not known, but the great epidemicity of the disease during the last thirty years had been coincident with the increased output of steam milled or polished rice. Beriberi in Manila had steadily increased. In the fiscal year 1903-4 there were 318 deaths from this disease. A steady yearly increase in its mortality resulted in 1,480 deaths in 1910-11. In the period, 1903-1911, twice as many deaths resulted from beriberi as from cholera, in Manila. The disease had been practically suppressed in Government controlled institutions in the Philippines, but in the population at large beriberi was on the marked increase, both in Manila and in the provinces. The mortality incidence of the year 1910-1911 for the archipelago was fifty-five per 100,000; this in contrast to our admittedly disgraceful typhoid rate of twenty-two deaths per 100,000 in the United States. The prevention of beriberi lay in Government control of the milling process of rice, enforcing an undermilled product with a standard of 0.4 per cent. phosphorus pentoxide requirement. A rice law similar to the corn law of Italy would enforce this requirement on all rice imported or milled locally. Rice for sale in places of retail or wholesale would have to come up to this standard. A fine and confiscation of polished rice, whether imported or for sale locally, would undoubtedly result in the desired quality of undermilled rice in the markets. The culture of rice having a white pericarp instead of red, would materially reduce prejudice against unpolished rice. The results obtained in a practical way among the scouts and in the Government institutions in the Philippines, basing the measures on the assumption of polished rice as the cause of beriberi seemed to justify the enactment of a rice law.

Doctor Wilbur, of San Francisco, felt that they must make a distinction between polyneuritis due to inanition and that due to infectious microorganisms. It was particularly difficult for him to understand why on shipboard a number of sailors and officers should all come down, within the space of a few days, with acute symptoms of beriberi, and even die within a day or two. Certainly one would expect if it was entirely due to food, that they should get much more scattered cases, rather than epidemic.

Dr. John M. Swan, of Rochester, N. Y., told how in the province of Canton, and more particularly in Canton, practically outside of the zone where beriberi was very prevalent, they had, in 1907, a very severe outbreak of beriberi in the military camps, east of the city. There were about 6,000 troops, and during that spring season, there were about 600 cases of beriberi, with a mortality of something like twenty per cent. It has seemed to the physician in charge, whose report Doctor Swan used, that the use of polished rice was a preeminent factor in the etiology of beriberi. It occurred to Doctor Swan that he might give the consensus taken in this connection by the Far Eastern Association of Tropical Medicine, a meeting of which was held in Hong Kong in February last. The results of the work submitted to this meeting of the Far Eastern Association of Tropical Medicine had been such that they felt there was little question now as to the causation of beriberi. The question was whether it would be practicable or possible to overcome the difficulties which would arise in recommending laws or taxation, or the adoption of such measures by the different governments, as would control the product of this polished rice. Years ago they had been very careful in handling these cases of beriberi. They supposed then that they were contagious; but in recent years, owing to more careful investigations, they had not isolated these cases, and they had never seen any indication of contagion.

Dr. W. H. Jeffreys, of Shanghai, China, found it hard to accept the polished rice theory because of the fact that it did appear apparently epidemically. He was entirely convinced that the epidemicity was due to the fact of the use of certain brands of rice. Shanghai and Hong Kong were the places where beriberi was most pronounced in China. In St. Luke's Hospital they had paid a very high price for rice and had had a great deal of beriberi. Before the theory was established they used to add dried beans to the diet as a regular thing and that kept away beriberi more or less. He thought the reason was self evident. With the removal of the beans and a diet of white rice, beriberi used to break out almost like an epidemic in the ward.

(*To be concluded.*)

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Letters to the Editor.

A LEAD FOIL X RAY FILTER.

Fort Worth, Texas, *January 21, 1913.*

To the Editor:

Since hearing Doctor Pfahler's paper in 1905 I have used the leather filter consistently and with much satisfaction, but there were certain limitations beyond which we dare not go, although the treatment seemed only a little short of the desired result. And after trying out many and various substances I find that the one thing desired has been at hand all the time.

Lead foil, the ordinary kind with which we all are familiar, is the ideal filter for treating deep seated conditions. It is seemingly a perfect protection to the skin and does not materially interfere with the deeply penetrating rays. X rays may be given many times stronger and longer and many internal conditions relieved that would be impossible with leather or aluminum or any other substance before used.

The most profound action may be had on the deeper structures without any destructive action whatever upon the skin, not even affecting the hair follicles. I have used this method only about sixteen months, but its use has been so convincing that I wish to make this preliminary report in order that other and more prominent workers may verify my experience.

Cases where decided dermatatis has appeared will heal just as rapidly as if treatment had been discontinued, and at the same time action on the deeper structures may be much more vigorous and effective. So far I have not found the limit to which it may be carried, dermatitis not having occurred in any case, although treatments are more than double any formerly given and the results are impossible from any other method of filtration.

I do not wish to give a detailed report of cases at this time, but only the suggestion that others may aid me in working out the details. The lead foil may be used like any other filter. The penetration through the lead foil is easily demonstrated on the photographic plate which will also show that foil does not give protection to the internal viscera.

I have seen no former mention of lead foil as a filter, but if it has been previously suggested I want to emphasize it and urge its use.

GEORGE D. BOND, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Practical Gynecology. A Comprehensive Textbook for Students and Physicians. By E. E. MONTGOMERY, M. D., LL. D., Professor of Gynecology, Jefferson Medical College, Gynecologist to the Jefferson Medical College and the St. Joseph's Hospitals, etc. Fourth Edition. Revised and Rearranged. With Five Hundred and Eighty-nine Illustrations, the Greater Number of Which Have Been Drawn and Engraved Specially for this Work, for the Most Part from Original Sources. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xxii-857. (Price, $6.)

We have distinct pleasure in reviewing a work on gynecology which exhibits such exactitude and painstaking care as this work, and is such an epitome of what is best in this specialty, as to make it valuable not only to the student, but also to the specialist as well as the general practitioner of medicine.

The fourth edition of this standard work shows a marked improvement in typography, binding, and general make up. In this careful revision much that was obsolete and useless, of mere historical interest, has been omitted and important chapters have been rewritten.

The value of serum therapy and bacterial vaccines has been judicially considered. The melancholy subject of malignant disease of the genital organs has been discussed in a masterly manner, and the chapter on diagnosis of this condition is earnestly recommended to every general practitioner for study; as the only hope for permanent relief is dependent upon the early recognition, and this early diagnosis must be made, not by the specialist, but by the general practitioner who is first consulted and who should be ever alert to the vital importance of this subject.

Montgomery's book is a truly representative American work, embodying the principles of safe and sane gynecology, by a conservative author who is giving the profession the benefit of his wide and varied experience as a teacher and surgeon.

Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By VILRAY PAPIN BLAIR, A. M., M. D., Professor of Oral Surgery in the Washington University Dental School, and Associate in Surgery in the Washington University Medical School. With 384 Illustrations. St. Louis: C. V. Mosby Company, 1912. Pp. xxv-638. (Price, $4.)

Among the many excellent books dealing with diseases of the face, mouth, and jaws, which have recently been published, this volume of Blair's will take an eminent place. Of so comprehensive and uniformly admirable a work it is almost impossible, in a brief review, to mention particularly all the praiseworthy features by which the reader is impressed. There are, however, two important conditions which have been omitted or slurred over by other authors which Blair has satisfactorily presented, viz., the operative treatment of deformities and malrelations of the jaws and Sluder's description of the syndrome which he has so carefully and painstakingly investigated, sphenopalatine neuralgia.

An enumeration of the subject matter of the various chapters will give an idea of the scope of the work. Commencing with the physical examination and anatomical considerations, the author takes up in sequence the following subjects: Inflammations, infections, tumors, cysts; preparation of the hands, operative field, instruments and dressings; hemorrhage, shock, and allied complications; wounds and injuries of the soft parts; injuries of the teeth and alveolar process; fractures of the jaws; dislocations of the upper jaw; congenital facial, palate, and lip defects, with descriptions of the various operations for the commoner forms as well as those adapted to extraordinary cases; obturators, artificial vela and speech training; repair of acquired defects in the lips, cheeks and palate; ideal occlusion and malocclusion of the teeth; irregularities in the growth and relations of the jaws and their operative correction; diseases of the temporomandibular joint; limited movement of the jaw; extraction of the teeth; infections and inflammations of the mouth, teeth, circumdental tissues and jaw bones with their treatment; septic inflammations of the floor of the mouth and neck; diseases of the maxillary sinus; tumors of the mouth and jaw bones; diseases and tumors of the lips, including cancer; tumors and cysts of the floor of the mouth; affections of the salivary glands and their ducts; congenital affections, injuries, and diseases of the tongue, including tumors and cancer; tuberculous and malignant disease of the cervical lymphatics; malformations, injuries, and diseases of the pharynx, including its tumors and those of the velum and tonsils; ligation and temporary constriction of the arteries; motor derangements; tic douloureux and sphenopalatine neuralgia; local and general anesthesia. The illustrations are in the main excellent and the presswork is good; altogether this is a valuable and commendable work.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B. A., M. D., LL. D., Professor of Surgery in Cornell University Medical College, etc. Seventh Edition, Revised and Enlarged. With 459 Illustrations and 30 Plates in Monotint. New York and Philadelphia: Lea & Febiger, 1912. Pp. xx-930.

An attempt has been made by the author to bring the seventh edition of this well known work abreast of the times. It has long been felt that the later editions have retained much that was antiquated in literature, illustrations, and description. The author has succeeded in part in this ambition. More than one hundred new illustrations from photographs and skiagrams appear in this edition and some sections have been added to the subjects of treatment of old dislocations and the operative treatment of recent fractures. The subject of the open method of treatment of fractures, advocated by Lane and others, which has awakened wide interest throughout the surgical world, receives in this work very meagre notice beyond a general condemnation. The student or surgeon desirous of learning the details of the use of Lane's plates and other new methods of fixation of fractures will not find them in this work as in other modern treatises. The pathology of fractures and a description of the symptoms and ordinary methods of treatment are ably presented in this edition as in earlier ones. Some of the latest additions to our knowledge which have been made possible by the x ray have also been given recognition, notably fractures of the carpus and tarsus. On the whole this edition is satisfactory in its presentation of the subject from the point of view of pathology, symptoms, and general methods of procedure. It lacks full details of treatment with splints and other forms of retention apparatus, particularly with the newer methods of open fixation. The photographs and x ray plates are fair and sufficient to illustrate the text.

Health and Happiness. A Message to Girls. From ELIZA M. MOSHER, M. D., Lecturer on Special Anatomy, Physiology and Hygiene for Women, Chautauqua School of Physical Education, etc. Illustrated by HELEN MULHERON. New York and London: Funk & Wagnalls Company, 1912. Pp. xxii-203. (Price, $1.)

The Soul and Sex in Education, Morals, Religion, and Adolescence. Scientific Psychology for Parents and Teachers. With a Chapter on Love, Marriage, Celibacy, and Divorce. By JIRAH D. BUCK, M. D. Cincinnati: Stewart & Kidd Company, 1912. Pp. xxiii-175. (Price, $1.25.)

These two volumes illustrate anew the difficulties of the subject of sexual education. Doctor Mosher's volume, addressed to mothers of girls, is a wholesome book. It covers in a simple, straightforward manner the domain of anatomy, physiology, and sexual development of girls. The difficult problems relating to sex are treated with admirable frankness, but the book is laden with a superfluity of scientific detail that renders it often dull and difficult even to the educated reader. Moreover the author's personal views on such subjects as lateral curvature of the spine are developed with unnecessary detail. Why the chapters should be written in the form of letters, each from a different town, we cannot imagine; the association of York, Me., with crooked hips is no more obvious than that of Halifax with corsets.

Doctor Buck's volume defies criticism. His explosive style does not conduce to consecutive expression, and the progress of his thought is constantly interfered with by his horror of religion. One notes that his book is founded upon good scientific authority; but whether judged by his temper or by his powers of assimilation and secretion, the doctor's mental digestion seems none too good.

Les Parathyroides. Par LOUIS MOREL. Questions biologiques actuelles. Collection de monographies publiées sous la direction de M. A. Dastre, membre de l'institut, professeur à la Sorbonne. Paris: Libraire scientifique A. Hermann & Fils, 1912. Pp. 344.

This work is a comprehensive and painstaking compilation of all experimental facts concerning the parathyroid glandules. Beginning with their anatomy, the writer considers, in logical sequence, experiemental parathyroid insufficiency, the relation between the parathyroids and the other internal secretion glands, and parathyroid insufficiency in man. The work is too technical for the general practitioner, but is a mine of information for investigators.

Diseases of the Genitourinary Organs. Considered from a Medical and Surgical Standpoint, Including a Description of Gonorrhea in the Female and Conditions Peculiar to the Female Urinary Organs. By EDWARD L. KEYES, Jr., M. D., Ph. D., Professor of Genitourinary Surgery, New York University and Bellevue Hospital Medical School; Surgeon to St. Vincent's Hospital. With One Hundred and Ninety-five Illustrations in the Text and Seven Plates, Four of Which are Colored. New York and London: D. Appleton & Co., 1912. Pp. xvii-975.

This work was written primarily for the use of the general practictitioner and students. It bears the imprint of a conscientious effort to carry out this purpose. Books on special departments of medicine are often too abstruse to reach the nonspecialists; the class of information they contain is also such at times as to suggest that the subject is too complex for any one other than the specialist himself to whom the patient should be sent. The present work enables the reader to diagnosticate and treat practically all conditions in which the special training of the urologist and the use of instruments of precision are not needed—a limit which provides for the safety of the patient in difficult or obscure cases. This does not mean that these finer scientific resources are neglected; cystoscopy and ureteral catheterism, for example, are not only described by Dr. B. S. Barringer, but the technic of these procedures is admirably though succinctly given, each step being clearly outlined. The quantitative and qualitative tests of urinary function including cryoscopy, chromocystoscopy, methods for the estimation of urea are also considered. Gonorrhea of both sexes and the various forms of urethritis and vaginitis which may be mistaken for it occupy 132 pages; urethral stricture, diseases of the prostate, bladder, kidneys, ureters, scrotum, testicle, and penis, and syphilis are no less comprehensively treated. The terminal chapters are devoted to operative surgery of the genitourinary organs, the technic of each operative procedure being described. The illustrations are as a rule good, though some of the colored plates are not up to the standard of the high class works to which the present book certainly belongs.

E. Albert's Diagnostik der chirurgischen Krankheiten. Zehnte, vermehrte Auflage. Herausgegeben von Dr. KARL EWALD, a.o. Professor. Mit 55 Holzschnitten. Wien und Leipzig. Alfred Hölder, 1912. Pp. vi-373.

Albert's book is so well known in the surgical world that a new edition will be greeated with enthusiasm, not only among German surgeons, but also in this country. Twelve years have elapsed since the death of this distinguished Viennese surgeon, and this the tenth edition of his book bears testimony to the excellence of the original work. Doctor Ewald has made every effort to preserve the original text and form, at the same time putting in necessary additions. The reader is struck by the scarcity of illustrations and their antiquated appearance. Such great advances have been made in this art since Albert's death that it would seem desirable to have made use of plates more up to date and more illustrative of the text. The text, however, stands to-day as a model of clearness of description, acuteness of observation, and soundness of pathological principles. Each chapter is devoted to one particular organ or region and the differential diagnosis receives ample consideration. The student or practising surgeon will receive great benefit from a thorough perusal of any chapter pertaining to a particular case in hand. The first chapter, for example, is devoted to a consideration of the various abnormal positions of the head and the underlying pathological conditions. The student is thus taught the important method of considering all the possible causes of a certain finding and then by elimination determining the cause in the special case under observation. This method is a most valuable acquisition for a practising surgeon and cannot be obtained through the ordinary descriptive textbooks. Such a book as this has the value almost of a clinical demonstration especially as the author has put into it so much of his unusual power of accurate observation, clear reasoning, and expressive statement. The book will always remain a classic example of this kind of surgical treatise.

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Meetings of Local Medical Societies.

MONDAY, *January 27th.*—Medical Society of the County of New York.

TUESDAY, *January 28th.*—New York Dermatological Society; Metropolitan Medical Society of New York City; New York Medical Union; New York Otological Society; Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society; New York Psychoanalytic Society; Alumni Association of Seney Hospital, Brooklyn; Rome, N. Y., Medical Society.

FRIDAY, *January 31st.*—Hospital Graduates' Club, Brooklyn; Audubon Medical Society, New York.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 15, 1913:

Boggess, John S., Passed Assistant Surgeon. Granted one day's leave of absence, January 17, 1913. **Carter**, H. R., Senior Surgeon. Granted two days' leave of absence on account of sickness, January 8 and 9, 1913. **Cleborne**, A. B., Acting Assistant Surgeon. Leave of absence for seven days from January 2, 1913, revoked. **Creel,** R. H., Passed Assistant Surgeon. Directed to receipt to Surgeon S. B. Grubbs for the public property in his charge and to assume the duties of chief quarantine officer of Porto Rico in addition to his other duties. **Delgado,** J. M., Acting Assistant Surgeon. Granted four days' leave of absence, without pay, from December 28, 1912. **Geddings,** H. D., Surgeon. Granted one month's leave of absence on account of sickness from January 7, 1913. **Grubbs,** S. B., Surgeon. Relieved from duty as chief quarantine officer of Porto Rico, and directed to proceed to Providence, R. I., and assume charge of the Service at that port. **Hasseltine,** H. E., Assistant Surgeon. Leave of absence for two months and fifteen days from October 27, 1912, amended to read "two months' leave of absence from October 27, 1912." **Light,** S. D. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from January 4, 1913. **Markoe,** W. W., Acting Assistant Surgeon. Granted twenty-two days' extension of annual leave of absence on account of sickness from December 10, 1912. **Simpson,** French, Passed Assistant Surgeon. Granted fifteen days' additional leave of absence from January 9, 1913. **Vogel,** C. W., Passed Assistant Surgeon. Granted four days' leave of absence from January 11, 1913. **von Ezdorf,** R. H., Surgeon. Directed at the request of the Kentucky State Board of Health to proceed to certain ports in the States of Kentucky, Illinois, and Tennessee for conference with State boards of health for adoption of measures to prevent spread of cerebrospinal meningitis. **Warren,** B. S., Passed Assistant Surgeon. Directed to proceed to certain points in Maryland and West Virginia to investigate the smallpox situation and to recommend measures for the suppression of the disease. **Wertenbaker,** C. P., Surgeon. Granted thirteen days' leave of absence from January 10, 1913.

Board Convened.

Board of medical officers convened to meet at the call of the chairman for the purpose of preparing a revision of the regulations for the government of the United States Public Health Service. Detail for the board: Assistant Surgeon General A. H. Glennan, chairman; Assistant Surgeon General W. C. Rucker; Assistant Surgeon General J. W. Trask; Surgeon John F. Anderson; Passed Assistant Surgeon B. S. Warren, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 18, 1913:

Givins, George G., Lieutenant, Medical Corps. Relieved from duty at Fort D. A. Russell, Wyo., and ordered to camp near Sierra Blancha, Texas, for duty. **Harwood,** Thomas E., Jr., Lieutenant, Medical Corps. Left Fort Caswell, N. C., en route to Fort Moultrie, S. C., for temporary duty. **Huntington,** Bert R., Lieutenant, Medical Corps. Granted thirty days' leave of absence. **Lincoln,** Henry F., First Lieutenant, Medical Reserve Corps. Granted leave of absence to terminate at such time as will enable him to sail for the Philippine Islands on April 5, 1913. **Lyster,** William L., Major, Medical Corps. Granted leave of absence for two months on surgeon's certificate of disability. **Meehan,** John W., Lieutenant, Medical Corps. Relieved from duty at Fort Slocum, N. Y., and ordered to proceed to Fort Sam Houston, Texas, for duty. **Patterson,** Edwin W., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort D. A. Russell, Wyo., and ordered to proceed to Fort Hunt, Va., for duty. **Reno,** William W., Major, Medical Corps. Granted leave of absence for two months. **Winter,** F. A., Lieutenant Colonel, Medical Corps. Will proceed to New York city with reference to the semiannual purchase of medical supplies. **Wood,** Neal N., Lieutenant, Medical Corps. Relieved from duty at the Presidio of San Francisco, Cal., and will proceed to Fort Apache, Ariz., for duty.

Each of the following officers is relieved from duty at the station designated after his name, to take effect at such time as will enable him to comply with this order, and will proceed at the proper time to San Francisco, Cal., and take the transport to sail from that place on or about May 5, 1913, for the Philippine Islands, and upon arrival at Manila will report to the commanding general, Philippines division, for assignment to duty: First Lieutenant Edgar D. Craft, Medical Corps, Fort du Pont, Del.; First Lieutenant Francis X. Strong, Medical Corps, Jefferson Barracks, Mo.; First Lieutenant Henry C. Maddox, Medical Corps, Fort Moultrie, S. C.; First Lieutenant John J. Reddy, Medical Corps., Fort Jay, N. Y.; First Lieutenant Edward C. Register, Medical Corps, Fort McPherson, Ga.; First Lieutenant Frederick C. A. Kellam, Jr., Medical Corps, Fort Clark, Texas; First Lieutenant Henry C. Bierbower, Medical Reserve Corps, Fort Robinson, Nebr.

The following named officers are relieved from duty in the Philippines Division, to take effect on or about May 15, 1913, and will proceed at the proper time to the United States, and upon arrival will report by telegraph to the adjutant general of the army for further orders: Captain Ernest G. Bingham, Medical Corps; Captain Haywood S. Hansell, Medical Corps; Captain Orville G. Brown, Medical Corps; Captain Craig R. Snyder, Medical Corps; Captain Corydon G. Snow, Medical Corps; Captain William P. Banta, Medical Corps; First Lieutenant Charles H. Stearns, Medical Reserve Corps.

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Births, Marriages, and Deaths.

Married.

Orton—Boynton.—In Salem, N. Y., on Wednesday, January 8th, Dr. Zenas Van Dusen Orton, of Schenectady, and Miss Corinne Pearl Boynton.

Died.

Aldrich.—In Manchester, N. H., on Tuesday, January 14th, Dr. Ezra Barnes Aldrich, aged seventy-two years. **Beard.**—In Shelbyville, Ky., on Thursday, January 9th, Dr. William Force Beard, aged seventy-seven years. **Bothfield.**—In Newton, Mass., on Sunday, January 12th, Dr. James F. Bothfield, aged forty-seven years. **Boyd.**—In Chicago, on Thursday, January 9th, Dr. Robert D. Boyd, aged sixty-seven years. **Clarke.**—In Auburndale, Mass., on Monday, January 13th, Dr. Mortimer H. Clarke, aged fifty-two years. **Dierking.**—In Oolithic, Ind., on Saturday, January 11th, Dr. Albert W. Dierking. **Drake.**—In Kansas City, Mo., on Thursday, January 9th, Dr. Nelson Asath Drake, aged seventy years. **Greene.**—In Grand Rapids, Mich., on Thursday, January 9th, Dr. Wheeler Greene, aged seventy-six years. **Grove.**—In Galva, Ill., on Tuesday, January 7th, Dr. William A. Grove. **Hanson.**—In San Francisco, Cal., on Monday, January 6th, Dr. George Franklin Hanson. **Jenkins.**—In Boonshill, Tenn., on Monday, January 6th, Dr. Thomas Jenkins. **Jerolds.**—In Jeroldstown, Tenn., on Saturday, January 4th, Dr. M. F. Jerolds, aged ninety-one years. **Jones.**—In New York, on Tuesday, January 14th, Dr. Henry Woodward Jones, aged sixty-four years. **Kierulff.**—In Los Angeles, Cal., on Saturday, January 4th, Dr. Benjamin Franklin Kierulff, aged seventy-five years. **Kingsley.**—In Danville, Ill., on Saturday, January 11th, Dr. Virgil C. Kingsley, aged fifty-seven years. **McGrew.**—In Pittsburgh, Pa., on Monday, January 13th, Dr. William Edward McGrew, aged forty-seven years. **McKee.**—In Wilkes-Barre, Pa., on Monday, January 13th, Dr. Frank L. McKee, aged sixty years. **Nelson.**—In New York, on Wednesday, January 15th, Dr. Wolfred Nelson, aged sixty-six years. **Pillow.**—In Butler, Pa., on Saturday, January 11th, Dr. Raymond H. Pillow, aged fifty-nine years. **Richardson.**—In Janesville, Wis., on Sunday, January 5th, Dr. J. B. Richardson, aged eighty years. **Shirley.**—In White Hall, Ill., on Friday, January 10th, Dr. Edward K. Shirley. **Syrett.**—In West Springfield, Mass., on Sunday, January 5th, Dr. Edgar Charles Syrett, aged forty years. **Titus.**—In Oshkosh, Wis., on Wednesday, January 8th, Dr. William H. Titus, aged sixty-five years. **Underhill.**—In Berkeley, Cal., on Saturday, January 4th, Dr. William Webb Underhill, aged fort-three years. **Winsborough.**—In Kansas City, Mo., on Friday, January 10th, Dr. Joseph W. Winsborough, aged eighty years.

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Original Communications.

THE CURABILITY OF CERVICAL CANCER OF THE UTERUS.*

The Need of Educating Lay People and Doctors on the Necessity of Early Recognition.

BY LE ROY BROUN, M. D.,
New York,
Surgeon to the Woman's Hospital.

The glands in the region of an early cancer of the uterus are not usually involved in the cancerous invasion so long as the disease is confined to the cervix. Cullen (1) was the first to bring out this, in 1900, by showing that in operable cases only a small part were accompanied by metastases of the regional glands. Winter (2) found a similar absence of involvement of the glands in forty-two out of forty-four autopsies on patients in whom the cancer was confined to the uterus. Shauta (3), in sixty autopsies on patients dying with cancer of the uterus, forty of whom died from exhaustion, having had no operation, found that twenty-six showed no involvement of the pelvic glands.

Wertheim (4), in the splendid monograph in which he discusses the results of the extended abdominal operation in 500 cases of cancer of the uterus, while adhering to his principles of removing all enlarged pelvic glands, states, however, that there were forty-one such cases in the 500 operations; and of these cases of gland involvement only five passed to the fifth year limit of freedom from recurrence.

Surgeons are almost universally in accord that in the large majority of cases the extension of the process in the early or operable stages is by continuity into the surrounding tissue, and that our hopes of curing our patients are in the wide extent of removal of this tissue in the vicinity of the involvement.

In the early operations of slightly over fifteen years past, the removal of the uterus by the vagina, or a high excision in early cases, either by the knife or cautery, was all that could be done. The nearness of the ureters prevented active excision wide of the diseased area. Every operator knows that in recurrences following such operations the secondary invasion is first seen in the line of incision in the vault of the vagina, the carcinomatous process was not primarily removed during the operation. The limitation of the operability of the patient for the early simple hysterectomy was that, not only must the growth be confined to the cervix, but also that the uterus must be free, and that the bases of the broad ligaments must show no infiltration. Under such favorable conditions, from ten per cent. to twenty per cent. of those operated on were saved for useful lives.

The possibility of benefit from the simple hysterectomy must be confined to the very few in whom the involvement is discovered in its incipiency, and it is in such very early conditions that I feel that the operation should be favorably considered, even in the light of our present knowledge. It has a minimum death rate of two to five per cent; the recovery is even; the complications are nil; and the chances of a cure are fair. I believe that such a choice would be justified as against the more extended operation, which, though carrying with it a greater possibility of a cure, yet also bears a higher immediate mortality and a recovery with possibilities of complications and disagreeable sequelæ.

Schuchardt, recognizing the futility of operations on cases with involved broad ligaments by the accepted methods of the day, developed and laid before the profession, in 1893, the technic of the extended vaginal operation in which the ureters are isolated, pushed out of the way, and the uterus is removed with a wide attached cuff of the vagina (one third), together with a wide extent of the parametrium.

Shauta, two years later, modified this operation in making the perineovaginal incision as a later step in the operation, instead of at the beginning as laid down by Schuchardt. With this modification, Shauta has pushed the extended vaginal operation well forward, and reports in the year 1911 (5), 445 operations for the ten previous years, with a total mortality of 8.9 per cent. Of this number, 211 had been operated on five years earlier; seventy-three or 39.7 per cent. showed no recurrence after this interval.

By exposing and pushing aside the ureter in this technic, a far wider field of removal is possible, and the number of patients who can be given the benefit of an operation is greatly increased.

He divides, in one of his statistical tables, the operations on 162 patients into three classes: Those showing no involvement of the bases of the broad ligaments; those in which the bases of one or both broad ligaments were involved, and, lastly, those in which the cancerous process was so far extended

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*Read before the Alumni Society of the Lying-in Hospital.

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that it was doubtful if any operation could be of benefit.

In the first class of cases, there were forty-two, to which by the old measure of operability the simple vaginal hysterectomy would have been applicable. Under the last two classes, no operation under our former estimate would have been feasible. Of these, eighty-three belonged to the second class and thirty-seven to that in which any operation was questionable on account of the extent of invasion.

It will be seen that by the extended vaginal operation, 120 patients out of 162 were given the benefit of surgery with the reasonable chance of a permanent cure, which would have been denied them under the limitations necessary for ordinary vaginal hysterectomy.

While Shauta and his adherents were perfecting their technic by the vaginal route, the majority of operators were doing similar work through the abdomen. Clark and Ries, of America, independently of each other, in 1895, suggested the extended abdominal operation, which involved not only the extirpation of the uterus with a large portion of the parametric tissue, together with one third of the vagina, but also a removal of all vaginal glands possible in the pelvis.

This operation carried with it such high mortality (thirty per cent.) that few surgeons in America would adopt it, and even at present, though the mortality has been reduced from eight to fifteen per cent., the collection of statistics in 1912 (6) gave hardly more than 500 cases for America. Abroad, however, the temperament of the surgeon and his large clinical material under absolute control, enabled them to bring the technic of the extended abdominal operation to the state of the present perfection.

Wertheim, whose name is chiefly associated with the abdominal operation, introduced the use of the vaginal clamp, by which the vaginal tube was completely closed before it was cut across in the last step in the removal of the uterus, and by so doing minimized the possibility of sepsis, which was, prior to this suggestion, of frequent occurrence. He also introduced the use of the parametric clamp for use in removal of the parametric tissue, and thereby prevented what at times is embarrassing venous bleeding.

An incomplete list of the radical operations done by foreign surgeons was collected by Jacobson, in 1910. The number was 2,647. While incomplete at that time, it falls far short by fully an equal number of that of the present day.

To these surgeons we are indebted for our present knowledge of the life saving value of the wide extirpation of the uterus, whether by abdomen or by vagina. Weibel, the first assistant in Wertheim's clinic, on his recent visit to America, during the late surgical congress in New York, presented the latest results from the clinic of his chief as follows:

From 1898 to 1912: 1,430 cases seen in clinic; 71 refused operation; 689 inoperable; 675 extended radical operations; 50 per cent. operability. The mortality, while thirty per cent. in the first 100 cases, had been reduced in the last 174 consecutive cases to nine per cent. The freedom from recurrence after five years is, including primary deaths, forty-three per cent; excluding the primary deaths, fifty-three per cent.

It will be seen that through the extended operation by the abdomen or vagina, considerable tissue is removed beyond the uterus, and by so doing the field of application of the operation is not only largely increased, but the possibilities of a permanent cure are equally so.

The measure of value of any operation is to what extent it is curative in every instance of the disease for which its removal is intended. Measuring the value of operations for cancer of the uterus by this criterion, or establishing what is known as their absolute efficiency, we have:

For the extended vaginal operation the statistics of Shauta give, in 1911, the absolute curative efficiency of this method with cancer of the cervix as 16.1 per cent.

Wertheim, in his 1912 statement, gives the absolute curative efficiency of his operations by the abdomen as 19.5 per cent. The value of the simple hysterectomy, either by vagina or abdomen, is not so well established. It cannot be, however, over from eight to ten per cent.[1]

We have no established means at the present time of treating cancer, except by removal in a surgical manner. The small efficiency of this, our sole hope, is only 19.5 per cent. at the highest, for the reason that the largest number of cases presenting themselves are beyond the possibility of relief. If the ideal could be reached and all patients should seek trained operative assistance at the earliest advent of the symptoms, the absolute efficiency of surgery would reach at least the present freedom from recurrence for five years, which is in Wertheim's report forty-three per cent., and the operability fully ninety per cent., there being a few cases giving no symptoms until beyond operative measures.

The average operability of patients applying in nine of the large foreign clinics is sixty per cent. In America, with the exception of the Johns Hopkins Clinic announcing sixty per cent., there is scarcely any clinic that can give over twenty-five per cent., the difference between the foreign and our clinics being due partly to education and partly to centralization.

The hope of the unfortunate patient is early diagnosis and early treatment, and it is the duty of every surgeon to impress upon the entire physician body the absolute necessity of being keenly alive to the first symptoms of cancer; to insist on an examination, and to insist on a properly trained man seeing all suspicious cases. This can be done only by constantly and frequently calling the physician's attention to this subject.

Our duty does not rest here, but similar educative efforts should be directed to instructing nurses and midwives and druggists, all of whom frequently come more intimately in contact with patients who often talk to them of symptoms, which they may hesitate or regard as too trivial to bring to the notice of a physician.

To Winter we owe more than to any one else the educative crusade that originated in Prussia, and through his efforts has been attracting the attention of almost every country. I cannot do better than to quote a few extracts from his address before the

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[1] Von Ott recently reports fifteen per cent. of absolute cures in vaginal hysterectomy.

German Central Committee for Cancer Investigation in March, 1911 (7):

He states that despite great advances in medicine the prophylaxis is the most important feature, and to secure this we must have the cooperation of the public. This we have in tuberculosis, syphilis, and other infectious diseases, through enlightenment of the people in avoiding infection. In cancer the problem is different. We do not seek to protect the healthy from contagion, but from the consequences of their own neglect. The necessity of enlightenment is a product of modern surgery. The highly unsatisfactory results, even of the widest operations, make it necessary first of all to secure for the public early diagnosis and early operation. We do not know how many years will elapse before we cease to cure cancer by operation, but whatever the methods of the future—radiotherapy, chemical remedies, or immune sera—we must still have early diagnosis and treatment. The enlightenment is therefore something permanently necessary.

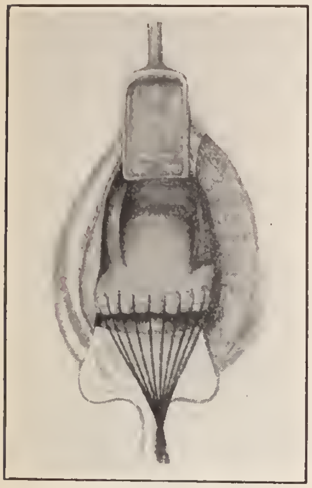

Fig. 1.

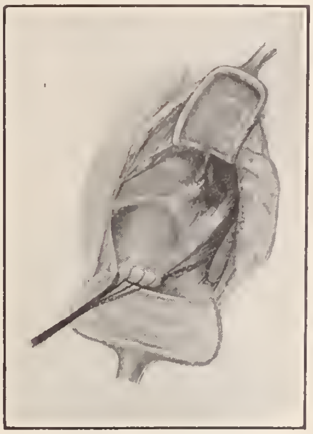

Fig. 2.

Fig. 1.—(Shauta.) The circular incision of the vagina has been made fully one inch below the cancerous invasion. The vaginal cuff has been separated to the cervicovaginal junction. The cuff has been stitched together with strong silk sutures left long for the purpose of traction. The bladder has been separated for a part of the way and the pillars of the bladder show prominently. The perineovaginal incision has been made on the left extending from the circular incision of the vagina laterally through the perineum to the point on the level with the anus.

Fig. 2.—(Shauta.) The pillars of the bladder have been separated from the uterine side. The rectum has been separated. The ureter is exposed as it passes through the ureter slit in the base of the broad ligament. The uterine vessels above the ureter are exposed and surrounded by a ligature. The uterus being pulled well to the side gives an extensive exposure of the parametric tissue of the opposite side.

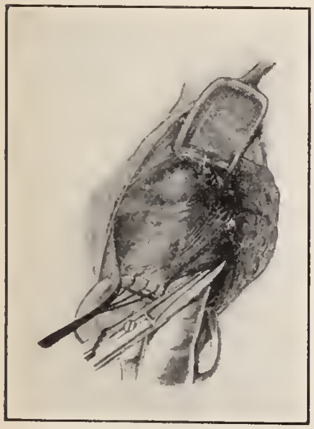

Fig. 3.

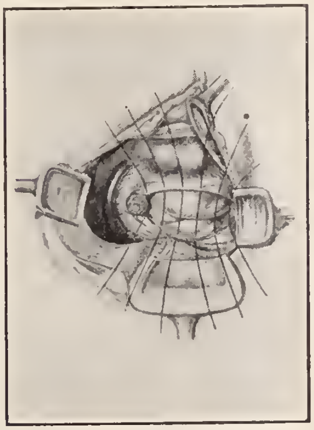

Fig. 4.

Fig. 3.—(Shauta.) The parametric tissue is being divided close to the side wall of the pelvis with the finger posterior and the retractor anterior as protections. The bleeding, which is venous, is subsequently checked by gauze, temporarily placed.

Fig. 4.—(Shauta.) The uterus with the wide portion of parametric tissue of both sides has been removed. The tubes and ovaries have not been removed, being tied off. These stumps have been brought down between the edges of the peritoneum and fixed in this position. Sutures have been passed preparatory to closing the peritoneum.

The basic ideas as to enlightenment in respect to cancer are:

1. To cause the patients to seek medical advice at the earliest possible moment and to confirm in them the belief that only through the earliest possible medical treatment may their imperilled existence be maintained.

2. To educate all classes of people to whom patients are inclined to turn for advice, so that they may be able to recognize the disease at the earliest moment and to eliminate all advisers who have not the expert knowledge.

Winter began his educative campaign in 1903 from Königsberg, Prussia, with the following plans:

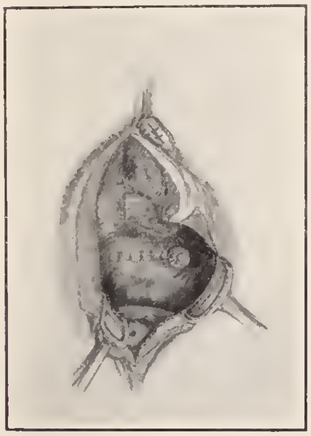

Fig. 5.

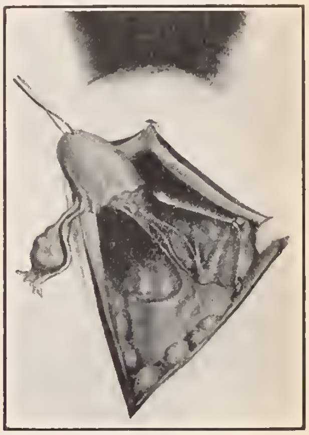

Fig. 6.

Fig. 5 (Shauta.) The peritoneum has been closed. The tubal stump of one side is seen fixed extraperitoneally. The vaginoperineal incision is well known. This as a final step is closed by layer sutures. The raw surface is loosely packed with gauze, which is removed at the end of the eighth day.

Fig. 6.—(Wertheim.) The infundibulopelvic and round ligament of one side have been tied and divided. The folds of the broad ligament have been separated and the ureter located.

1. To send to every physician a little pamphlet on early diagnosis.

2. By means of a leaflet, sent to each midwife, to induce the latter to refer all suspects to a physician.

3. To instruct the public, by means of statements in the newspapers, in regard to the early symptoms of cancer and to influence them to seek an expert adviser at the earliest opportunity.

The results of the campaign are graphically shown in the attached chart of Winter (Fig. 14). The first period, 1898 to 1902, shows the condition of affairs before the special action had been taken: the second, 1903, comprises the year that immediately followed the institution of the campaign; the third, 1905, gives the results of an investigation made two years later, to determine what lasting effects it had had; and the fourth, 1910, shows the present status of the situation. The data were obtained from the records of the clinic and from the reports of specialists.

Curve 1 shows the effect upon the physicians, the criterion here being whether or not an internal examination had been made by the physician to whom the patient had applied for advice (it will be seen that even now this is true in only ninety-one per cent. of the cases). Curve 2 shows the action of the midwives, the percentage here being based on the criterion whether or not a suspicious case applying to a midwife had been immediately referred to a physician. Curve 3 is an especially important one, as it shows the attitude of the patients themselves; it was obtained by reckoning the percentage of patients who had sought advice within three months of noticing the first symptoms. Curve 4 gives the percentage of operability, and therefore represents, to a certain extent, the resultant of all the others.

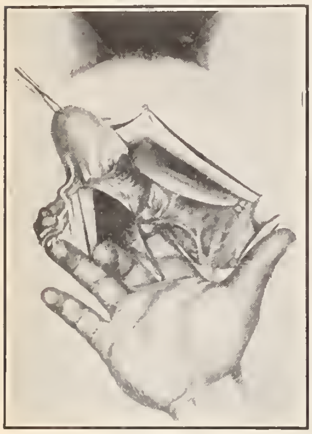

Fig. 7.

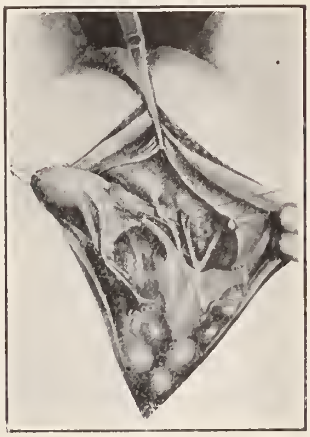

Fig. 8.

Fig. 7.—(Wertheim.) Along the ureter as a guide the finger is pushed under the uterine vessels. The vessels being isolated are tied off near their origin.

Fig. 8.—(Wertheim.) The uterine vessels being tied and divided, the ureter is laid bare to its vesical entrance. This at times is simple, at others the separation is difficult on account of the exudate.

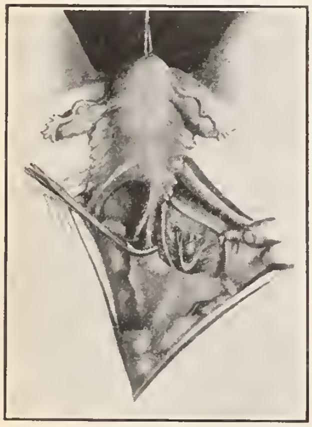

Fig. 9.

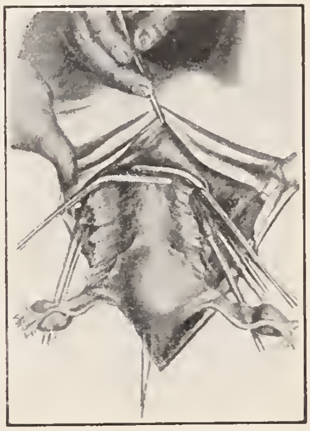

Fig. 10.

Fig. 9.—(Wertheim). The uterosacral ligaments are clamped off close to the rectum including all parametric tissue possible.

Fig. 10.—(Wertheim.) The uterosacral ligaments have been divided. The rectum has been separated posteriorly and the bladder anteriorly. Both are pushed away from the vagina for fully an inch below the invasion of the cancer. After this separation strong upward traction is made on the uterus, thus lifting up the surrounding parametric tissue. While in this position the parametric tissue is clamped off as close as possible to the side walls, the parametric clamps of Wertheim being of much value here. The vagina is now cleaned out prior to applying the occluding vaginal clamps fully one inch below the cervical involvment.

The striking fact shown in this chart is the splendid manner in which the midwives have responded to the teaching given them, and another in the general though moderate response of both patients and general physicians. The fall of the indicating lines in 1905 illustrates how quickly impressions are lost upon all of us unless the subject in hand is kept constantly before us, for at this time Winter might have been said to have "taken stock" after the active efforts of the period before. In America, up to the present time, no active steps have been taken by societies as a body, though efforts have been made and committees appointed within the last few years. One of these committees has been instructed to report ways and means of undertaking such an educational crusade to a national society for their consideration at its next meeting in Washington during the coming spring. Much can be done in this educational line throughout the country when such an effort receives the endorsement of a society of national recognition, and much also is to be done by every local medical society undertaking as a part of its duties the

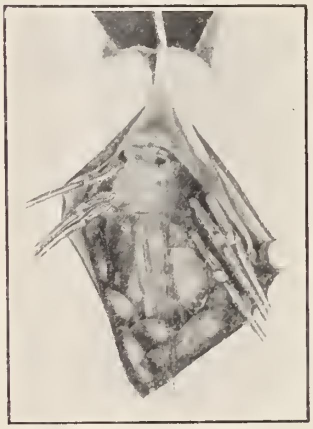

Fig. 11.

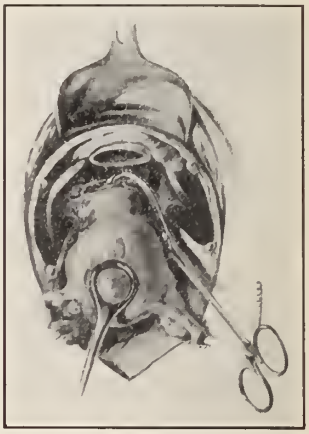

Fig. 12.

Fig. 11.—(Wertheim.) The parametric tissue is divided close to the applied clamps. The vagina is now again cleaned out and cut across below the occluding clamps. The tissue within the bight of the clamps is tied off. Gauze is loosely packed in the raw cavity protruding from the vagina, care being exercised not to use sufficient to touch or press on the exposed ureters. The peritoneum is finally closed over, leaving the field of operation extraperitoneal.

Fig. 12.—(Sigwart-Bumm.) The ureters have been exposed and isolated to their vaginal entrance, the uterosacral ligaments tied off, the rectum and bladder separated fully one inch below the cancerous invasion. The special occluding vaginal clamp of Sigwart has been applied to the vagina. The vagina is cleaned and then cut across. By upward traction on the uterus the attached parametric tissue is pulled well up and made very accessible. Note the exposed ureters and the parametric tissue being pulled up between them and the uterus. In this stretched condition it is clamped or tied off.

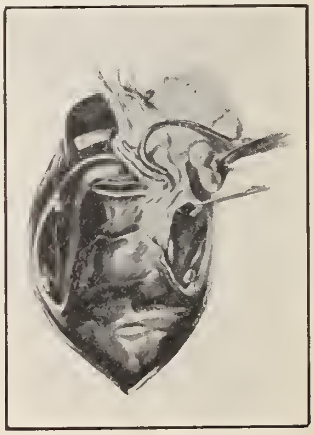

Fig. 13. — (Sigwart-Bumm.) The parametric tissue has been divided on one side and is shown well exposed on the other prior to being divided.

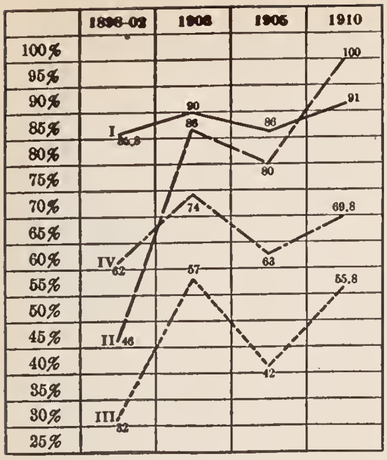

FIG. 14.—Winter's chart.

teaching of all in its own locality. By such efforts, earnest and without thought of self, many lives can be saved. For such an effort to be undertaken by individuals is impractical and far too great an undertaking. We in America shrink from appearing before the public as individuals in the light of such crusaders for fear of being misunderstood and our efforts being misconstrued. Societies, however, can do this, and we as individual members of these societies can do our part in our communities as the representatives.

For the purpose of showing plainly the steps of the modern operations for removing as much as possible the parametric tissue surrounding the uterus, I include the cuts taken from Wertheim, Sigwart, of Bumm's clinic, and from Shauta. To each is an explanatory legend of the steps intended to be illustrated.

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148 WEST SEVENTY-SEVENTH STREET.

THE NEWER TEACHINGS OF DISEASES OF THE GASTROINTESTINAL CANAL.

By MARK I. KNAPP, M. D., LL. M.,

New York.

V.

EXAMINATION FOR THE FUNCTIONS OF THE STOMACH.

The mechanical and chemical functions of the stomach are ascertained by means of the so called test meal. There are a variety of test meals proposed; but the one which I have been using is the so called Boas-Ewald test breakfast, which consists of thirty-five grammes of roll and 300 c. c. of water. It is urged against this test meal, that it does not sufficiently excite the action of the stomach, that it does not sufficiently stimulate the gastric mucosa. I cannot concur with this view; this meal is sufficient for all purposes. It is true that the quantities here given are entirely arbitrary and are taken from the fact, that in Berlin, where this meal originated, a roll, with which two glasses of water are taken, weighs about thirty-five grammes, the glasses containing about 300 c. c., together. We might, to be sure, accept another standard; but, once having accepted this, it is desirable that the test meals be made uniform, and certainly this test meal has the advantage of being simple and adequate. By this test meal we ascertain the condition of the muscular and mucous coats and also the state of the contractility of the sphincters of the stomach. For performing this examination, we need a stomach tube, an aspirator, and the test meal.

The stomach tube is a soft rubber tube, usually of about one quarter inch lumen and about twenty-five inches long. The tube should not be too soft, but should have sufficient firmness, without being too hard. There are two kinds of stomach tubes used. In one kind the distal end, that is that end which goes into the stomach, is open; in another kind, the distal end is closed. This latter kind is to be preferred, because of the greater ease with which it goes through the esophagus, not scratching anywhere. Usually there are two large oval openings near the distal end of the tube, one above and opposite the other. There may also be some smaller, circular openings. The object of the multiplicity of these openings is, that in case one is obstructed, the other may remain to function. The proximal end of the stomach tube is lengthened by the addition of two pieces of soft rubber tubing, each about six inches long and connected alternately by pieces of glass tubing with the stomach tube, all of which are of the same lumen as the latter. The object of the intervening glass tubing is to enable us to see the character of the contents we aspirate and, if necessary, to prevent certain contents from entering the aspirator. Assuming, as so often happens, that after a certain quantity of chyme has already been aspirated, blood should be seen coming through the first piece of glass and we did not want the blood to mix with the chyme, which is already in the aspirator, the second piece of the additional rubber tubing is instantly compressed and the aspirator is detached from the stomach tube. By means of the second piece of glass tubing, we can see that no blood has passed

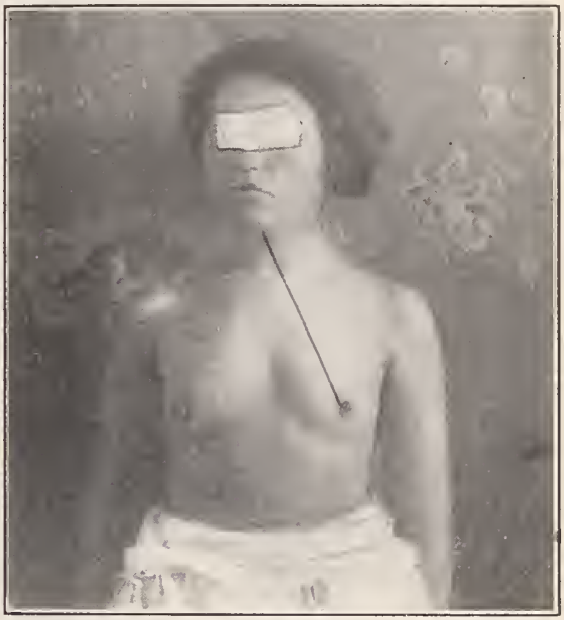

FIG. 1.—Showing the normal heart line; a line drawn from the thyroid cartilage through the left nipple gives the boundary of the absolute dullness of the heart.

into the aspirator. Were there only one piece of glass tubing we could only tell that blood had passed, but could not tell whether any blood had already entered the aspirator. For the same reason the additional pieces of rubber tubing should be of sufficient length to give us time to check undesirable contents entering the aspirator. Assuming that, instead of blood, the first glass tubing shows that duodenal contents are coming, which we should like to catch separately; if we had no intervening glass tubing we could not tell what was being aspirated nor could we get the various contents separately.

Stomach tubes are purchasable ready made. But occasionally we may have to make our own stomach tubes. This is easily done, if we have the necessary rubber tubing. The proper length is first cut off and two oval openings are made near the distal end with a pair of scissors. The end of the tubing and the two openings are then smoothed off with a red hot iron or glass rod, and the sticky rubber, resulting from that smoothing process, is then washed off with choloroform or ether. I have repeatedly made my own stomach tubes by this process.

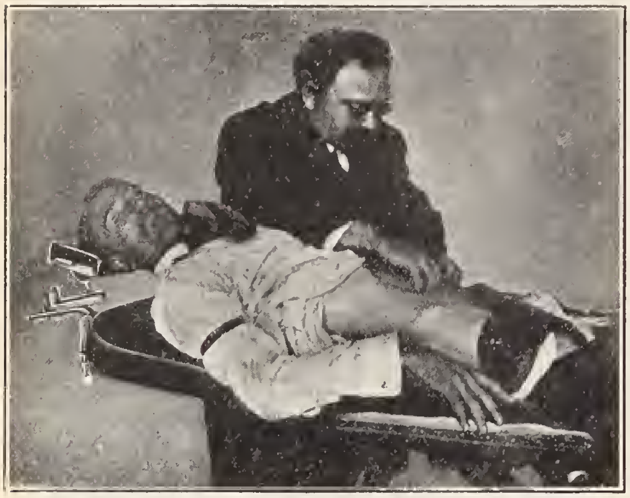

Fig. 2.—Passive palpation of the abdomen, showing the flexed position of the palpator's finger.

The aspirator is a pear shaped rubber bulb—a Pollitzer bag without a valve—of a capacity of 250 to 300 c. c., and must be of sufficient power to insure easy aspiration. A soft, thin bulb will not have the necessary aspirating force. The end of the rubber bulb has a hard rubber ring into which fits a hard rubber nozzle. This nozzle is about two inches long, tapers off slightly at each end, and has a bore of one quarter inch. The object of the tapering ends is that the nozzle may fit easily and tightly into the aspirating bulb and into the stomach tube.

Fig. 3.—Stomach tube, connected by glass tubing to two pieces of rubber tubing.

May we now introduce the stomach tube; are there any contraindications to the introduction of the tube? Objections and contraindications are cited in the textbooks, such as diseases of the heart, diseases of the lungs, diseases of the aorta, pregnancy, etc. Why? This is not explained. Why should a soft rubber tube not be allowed to pass the esophagus, while a bit of bread with ragged and pointed ends is given that privilege? I know of but one contraindication to the introduction of the tube, and that is, when one has not sufficient dexterity. I have introduced the stomach tube and washed the stomachs of patients in the last stages of tuberculosis, in ulcer, in pregnancy, etc., with decided benefit to the patient. As a general rule, I might say that so long as the patient can swallow hard substances, such as bread, there exists no contraindication to the introduction of the tube.

Fig. 4.—Aspirating bulb.

Before introducing the tube a few minor details have to be taken into consideration. The diameter of the tube may vary from the size of an ordinary catheter to about three eighths of an inch. I usually use two sizes in the same patient whom I see for the first time; a small one first, which gives less of the choking sensation when going into the fasting stomach, in order to accustom the patient to it, and a larger tube when aspirating the test meal. By this diplomatic move the patient is somewhat at ease when the test meal is to be aspirated; as a matter of fact the full stomach cannot bear the tube with the same degree of tolerance as the fasting stomach.

The patient is now seated in an ordinary chair and his clothing is protected from being soiled by the stomach contents. For this purpose I use one rubber sheet, spread over the abdomen and legs of the patient and a narrow rubber apron, which is tied in the back of his neck. The apron runs down into a white pail, and is arranged in the form of a channel; the object of this apron is to catch any stomach contents which may come up and lead them into the pail. If the patient has any false teeth, they must be removed, for fear that the patient may perhaps accidentally swallow them. However, I have many times introduced the tube with such false teeth left in position. Before attempting to introduce the tube, the patient is told what is wanted. We demonstrate to the patient the absolute impossibility of doing any harm, and try to convince him that a soft rubber tube cannot possibly hurt. We must also urge the patient to keep on breathing, for, as a rule, he momentarily suspends breathing and the consequence is that he becomes cyanotic, a thing which is liable to embarrass and frighten the inexperienced physician. The choking sensation which the patient may feel will be explained on the ground that it is something unusual, and the patient must be encouraged by telling him that he will soon introduce the tube himself and, indeed, talk and laugh while the tube is in his stomach. We must also warn the patient not to bite on

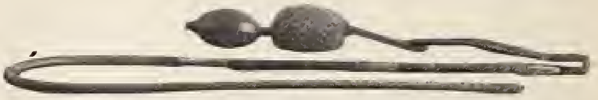

Fig. 5.—Stomach tube, connected with double bulb, ready for inflating the stomach.

the tube, as it would prolong the procedure, although closing the lips is of advantage in introducing it.

The patient is now ready. The physician stands at the right side of the patient, putting his left arm around the back of the neck. By this position we accomplish two very important things. First, our arm gives the patient an agreeable support to his back; and, second, with our arm around the back of the patient's neck, the most robust patient is entirely under our physical control; the patient cannot get away from us. We then attempt to introduce the tube, which has previously been immersed in water; no other lubricant is necessary. With our left arm around the back of the patient, our left hand is kept close to the patient's mouth, and with the left thumb and index finger we hold the proximal end of the tube so that the opening points away from us. The object of this is, that in case any contents shoot out of the stomach, they cannot soil us. The distal end of the tube—that part which goes into the stomach—is now taken between the thumb and index finger of the right hand in the manner in which we hold a pen, and is introduced into the patient's mouth, passing first between the index and middle fingers of the left hand which is kept close to the patient's mouth. Lateral motion of the tube is thereby prevented, whereby the tube takes a truer course. The tube is directed toward the hard palate and, as soon as we feel that the tube is at the pharyngoesophageal opening—a sensation which we get by training—the patient is told to swallow and keep on breathing deeply. The tube is now fed into the esophagus until the stomach is reached. The tube may be arrested, either at the first or the second normal constriction of the esophagus, may bend upon itself, and return into and out of the mouth. This happens quite frequently. Or, the patient may involuntarily move his tongue while the tube is still in the oral cavity and with his tongue direct the tube out of the mouth, or he may direct it upward and the tube then comes out from the nose. This has happened to me twice. It is not necessary to have the patient protrude his tongue or put our finger, as a guide, into the patient's mouth. The patient may perhaps become cyanotic, but this need not cause any alarm, as it is due only to a momentary cessation of the breathing, caused by his effort to expel the tube, in which effort the patient might succeed, did we not hold the tube with our right hand. The aspirating rubber bulb, which has been kept conveniently at hand is now connected with the proximal end of the tube, after the tube has entered the stomach. But before connecting it, it is first compressed with our free right hand, so as to produce suction. All this time the left hand remains busy, holding the proximal end of the tube. Getting hold of the aspirator, adjusting, and connecting it must all be done quite rapidly with the right hand only. In removing the tube from the stomach, we again have the tube pass between the index and middle fingers of the left hand, being very careful to catch the stomach end of the tube. If we pull the tube out, without having it pass through the fingers, the stomach end, as it comes out, may swing around and soil both ourselves and the patient. If the aspirating bulb fails to distend after its having been connected with the stomach tube, it shows that there is some obstruction in the stomach tube, which may be due to the fact that the stomach tube has bent upon itself within the esophagus, or that the tube is obstructed by some contents. Under such circumstances the aspirator is disconnected and then reconnected with tube without first compressing it. After the aspirator is connected, it is compressed, which act is sufficient to empty the tube of any obstruction. If compression fails, we are sure that the tube is not in the stomach, but in the esophagus. The tube is then removed and again introduced.

FIG. 6.—Showing author's stomach tube director with stomach tube inserted.

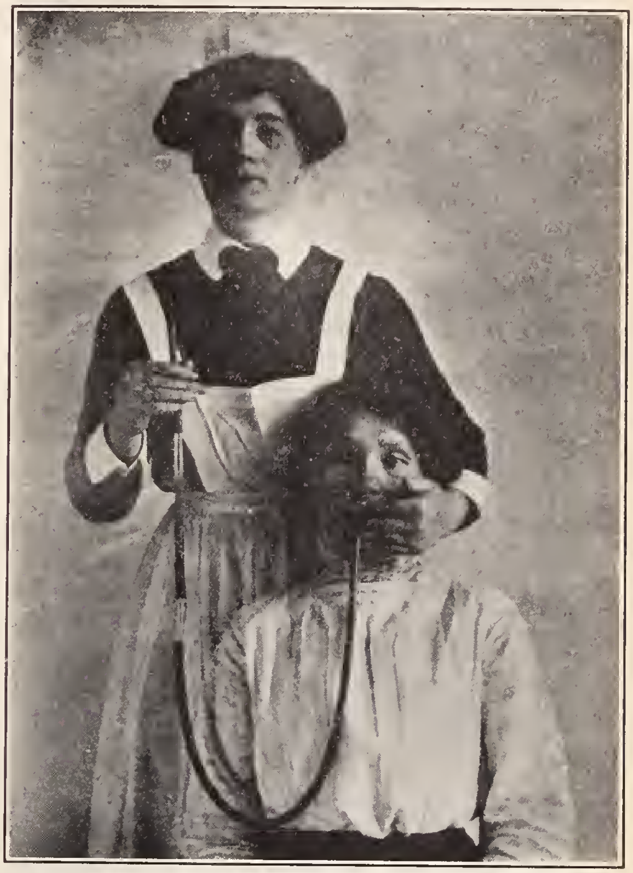

FIG. 7.—Showing position of patient and nurse or physician with stomach tube already in the mouth of the patient; the tube is then fed into the patient's stomach.

This is my usual way of introducing the stomach tube. Whenever this method fails, which is very seldom, I use my stomach tube director, invented by me and described in the *Medical Record*, August 29, 1896. This is an instrument that no physician should be without, as he can never tell when he may have to use it and by its use save life, as it happened to me a few times, when I was called to cases of attempted suicide. This instrument is practically a metal tube, curved at the distal end and cut lengthwise into two half tubes, both halves forming one tube, an upper and a lower half. The lower part of the distal, curved portion is absent. Thus the instrument consists of three parts: *A,* the palatal or the upper part to which it is hinged; *B,* the distal or the pharyngeal part by the hinge *E* and *D,* the lingual or the lower part. The bolts, *G,* at the distal end of the lingual part fit into corresponding notches of the pharyngeal part, *B.* The handle is firmly united to the upper, palatal part and has attached to it the trigger, *C,* which ends in the shape of a hook. This hook works on the catch *H,* which is attached at right angle to the proximal end of the glossal part. A silk cord unites the lingual part with the handle. The longitudinal edges of the upper and lower parts are grooved so as to form flanges; the upper, palatal part is grooved out on the inside, and the lower, lingual part is grooved out on the outside. When the upper and lower parts are apposed they form one smooth circumference. The object of these flanges is to prevent the upper and lower parts from moving laterally when the instrument is closed, ready for use. To close the instrument the pharyngeal part, *B,* is raised slightly, then the handle being held in the right hand, the right thumb is placed on the lower lever of the trigger; the glossal part is taken between the thumb and index finger of the left hand and its catch, *H,* is brought within the hook of the trigger, *C,* and the flanges of the lower, lingual part are brought within the flanges of the upper, palatal part. Now the right thumb presses upon the trigger, while the palatal and lingual parts are kept in apposition with the index finger and thumb of the left hand. The trigger, *C,* acting on the catch, *H,* moves the lingual part backward; the pharyngeal part now drops down. Now the right thumb releases the trigger and the spring of the trigger moves the lingual part forward which causes the bolts, *G,* of the lingual part to engage the notches of the pharyngeal part, which closes the instrument. Until the instrument is closed the palatal and lingual parts are kept in close apposition, as mentioned before. Simply pressing the trigger with the thumb of the right hand opens the instrument instantly.

Fig. 8.—Showing author's modified pipette.

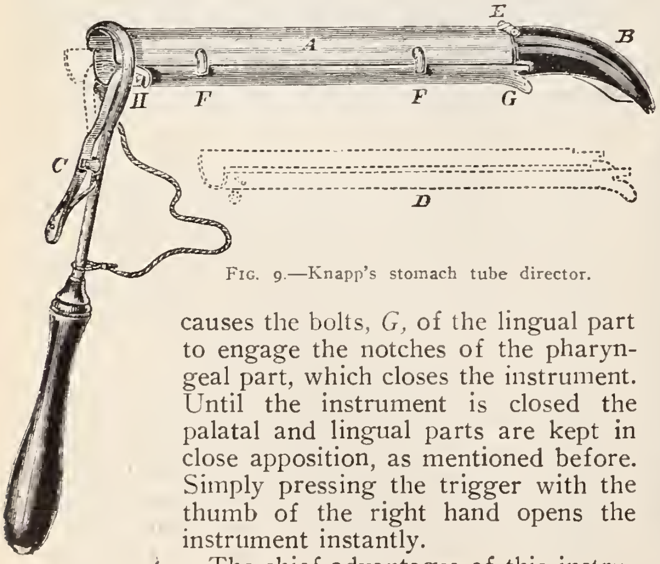

Fig. 9.—Knapp's stomach tube director.

The chief advantages of this instrument are that it may be used as a director for the stomach tube, enabling us to dispense entirely with the will of the patient. As a director it prevents absolutely the stomach tube from going anywhere but into the stomach. To use the instrument, it is first closed, then the stomach tube, dipped in water, is inserted until it protrudes a little beyond the end of the pharyngeal part. The director which now holds the stomach tube is inserted into the patient's mouth and brought gently in contact with the pharynx of the patient. The instrument is held in the left hand, and with the right hand the stomach tube is fed into the stomach. This instrument has its use in excitable persons and in cases of insanity and attempted suicide. Except in cases of attempted suicide the director can be removed after the stomach tube has reached the stomach. In cases of suicide the patient fights and bites on the instrument, and the more he bites the better the instrument holds in position. Occasionally there are scars in the esophagus at its first normal constriction opposite the bifurcation of the bronchus. In attempting to enter the stomach with the tube, touching the scar causes spastic contraction of the esophagus here, and the result is that the tube cannot get into the stomach. If we now use the director, the spasm will be overcome; the stomach tube not having any lateral motion within the director, the force applied to the stomach tube in pushing it forward has the full force exerted on the spastic contraction which will yield to such force, pushing the tube forward into the stomach.

616 Madison Avenue.

MEDICAL EDUCATION: AN UNSOLVED PROBLEM.*

By Isadore Dyer, Ph. B., M. D.,
New Orleans.

We are standing at the crossroads in medical education, turning to each new way with no decision, and uncertain as to the choice of direction for future effort. No analysis so far afforded is sufficient to determine an exact course, and as yet only individual opinion has obtained as the result of investigation. More than one educator has proclaimed his views, and various conferences have accumulated a variety of material which, digested, points to no conclusions. Each country engaged in the problems of medical education has moved along lines of least resistance, and the study of their methods leads to the observation that no system any where is complete and that all systems, every where, are made up of units different in their essentials.

The recent report of the Carnegie Foundation on the medical institutions in some European countries shows a careful consideration of existing customs and in these a variety of practice which, above all, shows a lack of coordination. No conclusion can be drawn as to the best of the systems described, as each has its merits, in some cases so predominant as to appeal to one point of view and in others to satisfy another point of view, but in none is there a systematic plan which can be accepted altogether. It is patent that in all countries medical education has been dependent upon certain essential economic questions and that, as any of these have predominated, the conditions have changed.

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*Address delivered at the inauguration of President Brooks at Oklahoma University, October 21, 1912.

The importance of the physician in his economic relation to the public has much to do with medical education and until recent years, this relation had been far from established. Even to-day in Great Britain, the social status of the physician has not been fixed, and the dignity of the practice of medicine has not yet emerged from its medieval standing. The apothecary and the surgeon are still far apart and there is not yet a middle ground, excepting where some luminary in his individual achievement may have risen to distinction above his fellows. We have, then. yet to define the relation of the physician in the cosmotic community, before we may approach the subject of his qualification to satisfy his obligations, and his right to engage them.

The contempt in which medicine as either an art or a science was held is exemplified in the life story of Rabelais, who, above all, a physician and student of medicine, was compelled to follow his scientific studies, masquerading as a priest—and even in that disguise, achieved his life's objective only under special papal authority (Paul III), and later, with the sanction of the King of France (Charles V).[1] His influence at French universities, notably Montpellier, Lyons, and Bordeaux, created a live interest in the study of the science of medicine, which beginning in the second quarter of the sixteenth century, has continued until now.

Prejudice has always stimulated true art, and in spite of the quackery and knavery in so called medical practices there have been geniuses enough, beside Rabelais, to carry the spirit of medical investigation apart from and in spite of the abuses of all times. So it is that with the achievements in medicine, we have inherited the shortcomings of its history and exactly as with all callings requiring a higher spirit for the consummation of their best endeavor, so with medicine, there has been attached to the army of earnest workers a vast concourse of hangers on, vandals often, sacrificing the cause itself for the satisfaction of selfish motives and mercenary ends.

We have, however, in this twentieth century, arrived at the crossroads, and to those who have inspiration enough there may be signals of the way which leads to the right road. We may be able to read some of them. Anciently medicine dealt solely with the cure of the sick, and symptoms were elusive and therefore only served as guides to doses and to drugs or remedies. To-day, disease is only one sign in the complex group of material evidences which point to the need of sane bodies, of the individual and of the community. Where cure was once the supreme ideal, to-day prevention is the chief aim of every student as well as of every practitioner of medicine.

The modern conception of hygiene, and of preventive medicine, which is only one field of hygiene, grows broader every day and the point of view must change with the knowledge of the conditions which are related. Not only must we take a survey of disease alone, but, of necessity, the entire fields of eugenics and of social economics are as well involved. More than this, these fields are so correlated with the problems of disease that it is not possible to divorce them nor to study any one subject apart.

The basis of sociological problems rests on heredity, environment, and the individual in his relative economic importance—and as the physical importance of the individual is most salient, the study of the individual from this point becomes paramount. No appreciation of eugenical questions can be approached without the analysis of society in its constructive units, and from a physical conception. So here, too, the field must rest on the study of the individual, in relation to his condition, type, or antecedents.

The philosophy of medical education, then, must lead us far afield, and the scope of its purviews must grow as we begin to study the question, no matter from what point we start. The traditions of medical training can only bear upon modern conceptions of medical education as in every developing art, and the older ways must be studied as mere foundations for a cultivated field of endeavor opening more and more to the minds capable of interpreting increasing knowledge and discovery. No matter what the history of medical education may teach, the fact remains that conditions have changed and that we must meet the new era on the way, lest we be overtaken. The concept of medical education must change and for the future the wisest of our preceptors must hold long sessions of a well constituted senate to debate our needs.

Medical education began in segregated groups of student teachers, in each group developing its own science or art, whether in the laboratory, clinics, or amphitheater. Here the field of medicine grew around the hospital; there out of the laboratory—but the evolutions of necessitous convention, gradually completed the medical college as a composite congress of sciences, made up of the essential branches of chemistry, anatomy, physiology, pharmacy, and their outgrowths, surgery and physic. The later interpretation of the interrelation of all of these has compelled a synthetic arrangement which now makes all subjects interdependent. Physiology is not complete without chemistry; surgery without anatomy; pathology without all three of the elemental subjects and, as the field of preventive medicine grows, the importance of biology in its chemical and physiological divisions is more and more evident.

Formerly the medical student accepted the digested and formulated theories in chemistry related to the practical fields of medicine and surgery, and the laboratory had no place in his required curriculum; in fact, the laboratory was associated with an ultrascientific spirit and it was taboo with the real doctor, who contemplated solely the mechanical relief of disease, a provision so often discounted after even a limited experience with the real battle with the practice of medicine. Now the graduated physician must take a full period of laborious detail to grasp even the fundamentals of scientific medicine, and to him who wishes to walk among the elect, there must be engaged the spirit of philosophy engendered in the laboratories of research.

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[1] François Rabelais, by Arthur Tilley, M.A., in *French Men of Letters*. Philadelphia: Lippincott, 1907.

American medical schools as a class have been much inveighed against and the present status of medical education in this country is deplored by those who sit in judgment. But we must halt a while and study our conditions.

This is yet a new country—in medical science and in medical art—if we compare our history of some four hundred years with the thousands of years of civilized Europe. Our medical schools were originated in order to supply doctors and not to develop scientific spirit; as a matter of fact, it has only been within the last thirty years that any scientific spirit has been encouraged at any of the medical colleges in this country, and this has resulted from the individual effort of the men who composed the faculties, rather than from any outside inspiration.

Within a decade, at almost every centre offering opportunity in this country, excellent original work has been done, and in preventive medicine the United States of America holds its own with any other country—and our work still moves on. The future of medical education in this country must rest upon the State, for no matter how beneficent, philanthropy has not yet responded in a way sufficiently broad or sufficiently organized to accomplish the desired result.

The health of the people is the first law. Medical bodies have organized to develop State medicine. Laws have been enacted to protect the public in matters of food supplies, water supplies, sewage, dwellings, and even in personal responsibility so far as contagious diseases are concerned. Legislation has even created boards of health with varying functions to enforce the laws and to think out the solution of health problems as they arise. International agreements have determined a comity which dictates quarantinable diseases and which recognizes the importance of a selected class of immigration. But most States have failed in the essential, above all the most important, and that is, to make provision for the training of those men and women who are to see to the enforcement of health laws and to look for the solution of health problems.

We repeat, then, the future of medical education in this country must rest upon the State! And no more opportune occasion could be afforded than the present to indicate the degree of responsibility involved. The physician is above all a citizen, clothed with the importance of a calling which at birth and at death demands his presence. At every step in life he sits in judgment on the progress of the human subject—invested with a decision which determines the degree in which his fellows may occupy the stage. It is he who fixes the responsibility in crime, adjudges the defective child or man, determines the degree of incapacity of the mentally unsound, holds the watch as death speeds with science in the race against disease. It is his province to condemn the victim of incurable disease, to assuage the contemplation of a certain end, and to tide over a surcharged mind not ready for the final plunge. The yoke of civic cleanliness, the burden of pest and disordered health are his to bear and, in return, he often yields his own life as a part of the cost of a neglected obligation of the State.

The State is responsible for its citizens, and no greater responsibility exists than the proper education of its physicians. The legislatures of many States, have declared that it is not within their province to provide education for professional schools, and they include medical schools in this category. Even where medical colleges form a part of State universities their support is often precarious, because no special provision is made for them and because they must depend on the attendance of students to make the instruction possible.

Medical education is the most expensive to the institution giving it, of all forms of education—an almost obvious statement when the constructive character of a medical course is considered. A survey of the leading first class colleges of medicine in this country shows an attendance varying from two hundred to four hundred students, with fees for students ranging from fifty to two hundred and fifty dollars a session and with annual budgets estimated between ninety and two hundred and fifty thousand dollars. But even at an expense for the education of each student which averages more than twice as much as he pays, the education received at most of these schools is not adequate when the future of the student is considered and his responsibilities are estimated.

Medical education should be absolutely free, but the qualifications of the student and of the graduate should be so rigidly determined that there need be no question of his preparation, nor of the estimate of his calling. To accomplish such an idealistic condition, even in degree, each State should endow its medical school, and each State should have its own school, and there should be but one such in each State, that the school should be above all need of calculating the possibilities of existence.

Then, and then only, can it be possible, at that same crossroad, to determine the future of medical education. Meantime, those of us who are denied the sustenance of an exacting mother, that is, our controlling State, may dream out the lines of such a medical education as we should wish our son's sons to have and the sons of our citizens to have hereafter.

The analysis of opinion thus far derived as expressed through the requirements of the Council on Medical Education of the American Medical Association and of the American Medical College Association, and as recommended by the Carnegie Foundation for the Advancement of Learning would resolve itself into a scheduled plan consisting of

Eight years of primary education, as in the public schools;

Four years of secondary education, as in the high schools;

One or two years in a standard college;

Four or five years in a medical college in which the elemental sciences are taught by full time professors and where practical and clinical branches are taught by professors devoting most of their time to these subjects. The fifth year contemplates hospital service with at least twelve months' experience.

The student, then, who aims at an ordinary medical education must spend seventeen or eighteen years in obtaining it, and to begin his life's work at twenty-five years of age he must begin his schooling at the age of seven or eight. If he is an average scholar and student he will finish on scheduled time—otherwise, he may not qualify before he is twenty-seven or twenty-eight years of age. Then his struggle starts, and he is easily thirty to thirty-two years of age before the beginning of success comes to him; often the intervening years are spent in satisfying the obligations of a financial character incurred as a student.

We may not change these things, but while we are debating the various phases of medical education, we should think of the future generations of physicians and find some way of making them ready before the life work begins. The large percentage of graduated physicians who do not finally follow the field of their choice argues that there is something wrong in the pedagogic presentation of medicine as a calling. Many students, we know, go into medicine because it offers, in this country, a position in the social scale perhaps above that of their forbears; other students look upon the prospect of medical practice with a degree of mysterious longing for the insight into a field of special knowledge. Then there are those who see the more successful worldly doctor in his house of ease, and believe that the practice of medicine offers a simple way to a good livelihood. There are few who go into medicine from the humanitarian spirit, or even because of the scientific outlook afforded—both of these may be grafted on afterward.

This discussion has been presented to begin the argument for a revised view of medical education, and to submit that the education of the young school boy in vocational opportunities and obligations should be systematically undertaken. The school boy should know what the study of medicine costs in time and in money and he should know that of all the fields of professional endeavor it offers least in wage. As he advances to his more mature studies, the opportunities for scientific knowledge should be pointed out and his course so planned that he should be ready to undertake the work with proper training.

The predominating influence of the materialistic and utilitarian practices among educators at great institutions has carried with potent results into the subsidiary schools, and even where the State controls, the humanities are more and more neglected for more practical subjects of instruction, more easily acquired. Again is the short cut in evidence, with the necessitated curtailment in adequate training.

It is almost impossible for the modern student of scientific medicine even to understand the terms employed in the subjects he engages without a proper foundation in Latin or Greek. As for contemporaneous endeavor, most of this finds its expression through the clearing house of the German medical press. Our State educators should hearken to the sound of distressed science in making the so called dead languages elective and these should find their place as of old in the required curriculum of a high school and a college course. The incentive to medical education, at least, is greater when the foundation is laid in the languages through which the birth of medical science has been recorded.

A medical college can never be an entire success without two essential attributes: First, its integrity merged with an established university, in which the arts and sciences are properly expounded, and from which emanates the spirit of philosophy and of research, both of which engender a reasonable leavening of its medical school with their tenets; second, a well organized hospital in which a sufficient number of sick and wounded are cared for to permit a proper instruction in the principles of medicine and surgery.

We have placed the university first, because the basis of both the study and the practice of medicine must be laid on the foundation of learning and the precept of practice attained at a hospital alone cannot be substituted. More than this, the other side of the future physician must be based upon his knowledge of the amenities of life—more naturally found in centres of general education than in sectarian segregation. It is not only possible, but it is desirable that all universities should provide the students in the State with the opportunities for the laboratory teaching of the elementary divisions of medicine embraced in the chairs of chemistry, physics and biology, including the branches of anatomy and physiology, comparative and human.

The teaching of the applied science of medicine, as embraced in the clinical fields, cannot and should not be undertaken without proper hospital provision. The outcry against many medical schools in this country has arisen from the very fact that medical colleges pretended to train doctors of medicine and have graduated classes of students with a diploma when their hospital training has been undertaken with institutions called hospitals with provision for not more than fifty to one hundred sick persons.

The day has passed when there is any necessity for this; and, in conscience, the medical school without adequate hospital facilities may satisfy the medical course by giving a bachelor's degree in medicine, as a recognition for the work actually accomplished by the student and as an honest credential from the institution. The additional degree of doctor of medicine will be gladly bestowed in due course in those cities with no greater spirit of education, but with larger clinical opportunities and facilities.

Any university contemplating a medical course in its entirety should so impress the authorities of the State that adequate hospital provision is made —if a complete course of medicine is to be given. We are not yet satisfied that the last word has been uttered in the arrangement of a medical course, and no school anywhere has established the course which is ideal. At present there are two classes of medical colleges—one training the scientific physician, the other training the doctor of medicine, and it has been difficult to marry the two. The time allowed for a medical degree is too short to make the trained doctor a thorough scientist as well, and our conception of medical education must change before the purpose of a medical training is fully realized.

Fully equipped laboratories with proper teachers cost a great deal of money, and as yet endowment has been inadequate in most schools to meet the need of such equipment. A medical training should begin in the high school, should continue for at least a year in a college, and a model curriculum should take at least five years to satisfy an ordinary scientific and practical education. The first two years should be spent in the laboratories of the natural sciences and the last three in the laboratories of the applied sciences as related to medicine, and at no time should the student fail to keep both the laboratory and clinic before him as of equal value. The fifth year should be mostly clinical, with concentration for set periods in the different branches of medicine. The physician of the future should be trained in all branches of medicine and surgery. Nowadays, there are too many specialists who are untrained doctors, and their superfluity is the chiefest argument for their relegation to the ranks.

The physician of the future should be above all an educated man, a credit to the State, and an honor to his own conscience, and this can come only by the appreciation on the part of the public of the need of a proper State support and control of medical education under the auspices of the institution of learning which is the centre of advanced thought in the State.

The University of Oklahoma has been a great object lesson to those of us who have looked at her advancement, and it is a thing to marvel at that in so short a space of years a great commonwealth should have arisen with that degree of wisdom in its newly established people to make model laws and establish model schools. The university stands as the centre of civic and State honesty and purpose, and around it must grow the finest traditions of the people, for here as a foster mother she spends her sustenance in building for the future of the citizenship of the State!

It is a privilege for the Tulane University of Louisiana, through an humble representative, to present on this occasion the felicitations of her faculty and its president, to a sister institution, beginning a new century under the brightest of auspices.

In offering the message of Tulane to the University of Oklahoma, it is with added pleasure that the occasion affords me the opportunity to tender the heartiest of good wishes and the most earnest hopes for a successful administration to the new president.

124 BARONNE STREET.

TYPHOID FEVER; ITS MILK FREE TREATMENT.

A Study of Sixty-five Cases at Germantown Hospital.

By WILLIAM N. JOHNSON, M. D.,
Germantown, Philadelphia,
Visiting Physician, Germantown Hospital,
AND C. C. WATT, JR., M. D.,
Germantown.

No advantage is to be gained by merely reporting a greater or less number of cases of any illness unless some lesson is to be learned or some new departure, however, slight, from previous treatment tried, which in order to commend itself to medical attention must have as many tried experiences as possible.

It is very useful to report all cases of a new disease occurring in a locality, especially of a contagious or infectious nature, in order that proper study of it may be made and precautions taken for limiting its spread.

In case of typhoid fever, much, but not all by any means, is already known: its method of transmission and spread; its character and complications; its prophylaxis; and, lastly, its treatment—both medicinal and dietetic. For many, many years the general trend, and we might justly add the only trend of dietetic treatment, was for liquid nourishment, which amounted in the majority of cases to milk alone. This was adhered to on the plea that it was the most concentrated nourishment that could be given; that the casein coagula, formed when the stomach was reached, were not sufficiently hard and bulky to irritate the ulcers of the ileum, and that it was better borne by the majority of patients than anything else. If the patients insisted that they could not take it, or that it always disagreed with them, that objection was overruled, on the ground of its being a neurotic idiosyncrasy, and that a very small amount of will power and determination on the part of the patients was all that was necessary to overcome their repugnance; or, in certain cases, their positive nausea and rejection of the food.

This series of cases was the result of direct contamination of the water supply of Germantown (Twenty-second ward of Philadelphia, and two or three other northwestern wards), caused by a break, on November 29, 1911, of the main pipe at Roxborough from the filter beds, which allowed the Schuylkill river to discharge its sewage directly into the supply pipes. The cases were of more than average severity, as will be seen from the following tables, the first one showing the high points of temperature and the average high point; and the second showing the duration of each case and the average.

TABLE I. TEMPERATURE.

Case No. 1, 105.4° F.
Case No. 2, 105.2°
Case No. 3, 105°
Case No. 4, 104°
Case No. 5, 104.2°
Case No. 6, 104.3°
Case No. 7, 103.2°
Case No. 8, 105.2°
Case No. 9, 101.3°
Case No. 10, 103.2°
Case No. 11, 104.3°
Case No. 12, 105.4°
Case No. 13, 104.4°
Case No. 14, 105.2°
Case No. 15, 105°
Case No. 16, 105.2°
Case No. 17, 104.4°
Case No. 18, 103.1°
Case No. 19, 103.1°
Case No. 20, 104°
Case No. 21, 103°
Case No. 22, 103.4°
Case No. 23, 103° F.
Case No. 24, 103°
Case No. 25, 104.4°
Case No. 26, 103.1°
Case No. 27, 105.3°
Case No. 28, 105°
Case No. 29, 104°
Case No. 30, 105.2°

Case No. 31, 103.1°	Case No. 43, 103.1°	Case No. 55, 105.1°
Case No. 32, 104.2°	Case No. 44, 104.1°	Case No. 56, 103.4°
Case No. 33, 104°	Case No. 45, 104.4° F.	Case No. 57, 104°
Case No. 34, 103°	Case No. 46, 104.3°	Case No. 58, 104.3°
Case No. 35, 104.2°	Case No. 47, 103°	Case No. 59, 101.2°
Case No. 36, 106°	Case No. 48, 103°	Case No. 60, 105.2°
Case No. 37, 103°	Case No. 49, 102°	Case No. 61, 104°
Case No. 38, 104.2°	Case No. 50, 105°	Case No. 62, 103°
Case No. 39, 105°	Case No. 51, 105.3°	Case No. 63, 106°
Case No. 40, 102.4°	Case No. 52, 104.2°	Case No. 64, 105°
Case No. 41, 104.3°	Case No. 53, 104.2°	Case No. 65, 104°
Case No. 42, 104.4°	Case No. 54, 104.2°	

The average being a little over 104° F. for high point.

TABLE II. DURATION.

Case No. 1, 23 days	Case No. 23, 26 days	Case No. 45, 25 days
Case No. 2, 27 days	Case No. 24, 42 days	Case No. 46, 29 days
Case No. 3, 29 days	Case No. 25, 15 days	Case No. 47, 32 days
Case No. 4, 20 days	Case No. 26, 14 days	Case No. 48, 25 days
Case No. 5, 44 days	Case No. 27, 109 days	Case No. 49, 16 days
Case No. 6, 64 days	Case No. 28, 29 days	Case No. 50, 21 days
Case No. 7, 17 days	Case No. 29, 20 days	Case No. 51, 28 days
Case No. 8, 58 days	Case No. 30, 15 days	Case No. 52, 20 days
Case No. 9, 20 days	Case No. 31, 11 days	Case No. 53, 30 days
Case No. 10, 48 days	Case No. 32, 32 days	Case No. 54, 30 days
Case No. 11, 33 days	Case No. 33, 28 days	Case No. 55, 42 days
Case No. 12, 40 days	Case No. 34, 16 days	Case No. 56, 22 days
Case No. 13, 50 days	Case No. 35, 24 days	Case No. 57, 24 days
Case No. 14, 44 days	Case No. 36, 17 days	Case No. 58, 19 days
Case No. 15, 43 days	Case No. 37, 26 days	Case No. 59, 26 days
Case No. 16, 51 days	Case No. 38, 20 days	Case No. 60, 21 days
Case No. 17, 15 days	Case No. 39, 28 days	Case No. 61, 22 days
Case No. 18, 23 days	Case No. 40, 15 days	Case No. 62, 28 days
Case No. 19, 22 days	Case No. 41, 36 days	Case No. 63, 29 days
Case No. 20, 15 days	Case No. 42, 31 days	Case No. 64, 37 days
Case No. 21, 27 days	Case No. 43, 21 days	Case No. 65, 27 days
Case No. 22, 20 days	Case No. 44, 20 days	

Average 28, 61/65 days.

TABLE III. DATES AND NUMBER OF ADMISSIONS.

The dates of admission and number of admissions on each day were as follows: On December 7, 1911, Case No. 1 was admitted on the twelfth day of the disease. This was the only case not traceable to the break in the water main.

On December 13, 1911, 1 case admitted, with history of date of onset December 13.

On December 15, 1911, 1 case admitted, with history of date of onset December 8.

On December 18, 1911, 2 cases admitted.
On December 20, 1911, 1 case admitted.
On December 21, 1911, 2 cases admitted.
On December 22, 1911, 1 case admitted.
On December 23, 1911, 4 cases admitted.
On December 24, 1911, 3 cases admitted.
On December 25, 1911, 2 cases admitted.
On December 26, 1911, 2 cases admitted.
On December 27, 1911, 5 cases admitted.
On December 28, 1911, 5 cases admitted.
On December 29, 1911, 6 cases admitted.
On December 30, 1911, 6 cases admitted.
On December 31, 1911, 3 cases admitted.
On January 1, 1912, 3 cases admitted.
On January 2, 1912, 6 cases admitted.
On January 3, 1912, 3 cases admitted.
On January 4, 1012, 1 case admitted.
On January 6, 1912, 1 case admitted.
On January 11, 1912, 1 case admitted.
On January 15, 1912, 2 cases admitted.
On January 18, 1912, 1 case admitted.
On January 25, 1912, 1 case admitted.
On January 31, 1912, 1 case admitted.

Duration of 65 cases, 1,881 days, an average of 28 61/65 days.

TABLE IV. COMPLICATIONS AND MARKED SYMPTOMS.

Relapses, 5, two in one case, thus making relapses in four patients only.

Diarrhea, 23 cases on admission; four persisting throughout, the remaining 19 subsiding on treatment.

Distention, 10 cases, marked only in three.
Hemorrhages, 4 cases, a low percentage.
Perforation, none.
Otitis, 8 cases.
Parotiditis, 2 cases.
Hematuria, 2 cases.
Nephritis, 19 cases.
Purpura, 1 case.
Abscesses, superficial, 6 cases.
Termination of fever: Lysis in 62 cases; crisis in 3 cases.

TABLE V. BLOOD EXAMINATION.

Average systolic blood pressure	99
Lowest systolic blood pressure	78
Highest systolic blood pressure	130
Average diastolic blood pressure	65
Lowest diastolic blood pressure	30
Highest diastolic blood pressure	82
Average leucocyte count	5,039
Lowest leucocyte count	2,200
Highest leucocyte count	48,200

TABLE VI. SYMPTOMS ON ADMISSION AND THROUGHOUT.

Headache	32	Delirium	9
Abdominal pain	19	Cough, bronchitis	19
Epistaxis	13	Chills	11
Anorexia	10	Rose spots	30
Constipation	15	Palpable spleen	15
Vertigo	6	Splenic resistance	13
Vomiting	13	Sudamina	2
Nausea	3		

TABLE VII. WIDAL REACTION.

Positive, board of health	57
Positive, hospital	60
Suggestion, board of health	0
Suggestion, hospital	2
Negative, board of health	8
Negative, hospital	3

The dietetic treatment, on which the greatest reliance was placed for the results obtained, and which in our opinion was responsible for the very low percentage of diarrhea, distention, hemorrhages, and no perforations, consisted of broths, soups, gruels, gelatin, eggs, sugar of milk, and butter. Milk was absolutely eliminated, except in the convalescent stage. Great reliance was placed on gelatin, which was given almost *ad libitum.* According to Kemp, the ingestion of 7.5 per cent. of the total heat requirement of the organism in the form of gelatin spares twenty-three per cent. of the body's proteid. There is a total of 2,800 calories required by a man of 154 pounds weight (Chittenden); 210 calories in gelatin are necessary (one gramme of gelatin contains 4.1 calories), so about fifty grammes of gelatin, or about 1.5 ounce, are necessary. This amount in one quart of water gives a five per cent. solution, and can be flavored with lemon, vanilla, orange, or sherry and sweetened with sugar of milk, and be given in divided doses during the day—between other feedings. Gelatin lessens the tendency to hemorrhage, in our opinion, and was largely accountable for the freedom in these cases from this serious complication.

If venous thrombosis occurs, gelatin should be stopped. The gruels (barley, rice, and oatmeal) may be made of different consistence. It is well to begin with a thin gruel (strained) and note the effect, and gradually thicken it if well borne.

For barley gruel, thin, use one tablespoonful of Robinson's barley flour to one pint of water; boil three quarters of an hour; for thick gruel use two tablespoonfuls of the flour. For rice and oatmeal gruel, use the same proportions as for the barley. Strain all. For adults, add to the gruels the yolks of four eggs, which contain considerable fat, and four drachms of sugar of milk. For children use two yolks of eggs and half the quantity of sugar of milk. A pat of butter may be added to the gruel.

TABLE VIII—ENTERIC DIET, GIVING THE AMOUNT AND TIMES OF FEEDING.

6 a. m.	Barley gruel, sugar of milk one drachm, and yolk of one egg, total of 10 ounces.
8 a. m.	Gelatin, 6 ounces.
9 a. m.	Lamb broth, 10 ounces.
11 a. m.	Gelatin, 6 ounces.
12 m.	Rice gruel, sugar of milk one drachm, and yolk of one egg, total of 10 ounces.
2 p. m.	Gelatin, 6 ounces.
3 p. m.	Barley gruel, sugar of milk one drachm, yolk of one egg, total of 10 ounces.
5 p. m.	Gelatin, 6 ounces.
6 p. m.	Rice gruel, sugar of milk one drachm, and yolk of one egg, total of 10 ounces.
8 p. m.	Gelatin, 6 ounces.
9 p. m.	Pea soup, 10 ounces.

During convalescence the same dietetic treatment was observed, except thickening of the gruels until the tenth day; then two soft boiled eggs were allowed, and if no rise in temperature occurred, milk toast was allowed the next day in addition to the eggs. Gradually soft diet was allowed, and at the end of the week, if no relapse occurred and convalescence was maintained, the patients were well on their way to full house diet, meat and vegetables.

In conclusion, about the diet, no feedings were allowed at night, with a very few exceptions among the very sick, when little could be taken at a time. In this way much needed rest was obtained by the patients. They were all roused during the day from 6 a. m. until 9 p. m., if dozing. The spirit was inculcated that they were all cooperating in their own cure. All the water (cold, but not iced) was given which they wanted. After each feeding five to ten drops of dilute hydrochloric acid were given in the water.

Medicinal treatment, outside of routine treatment which will be described later, was employed symptomatically. For hemorrhage, no food was allowed except gelatin; opium and lead internally and ice to the abdomen. For distention, same diet and oil of turpentine in doses of two to five drops in emulsion; passing of rectal tube and enteroclysis with salt solution, allowing two hours for one quart and one hour for one pint and given three or four times a day. For nephritis, abundance of water and potassium citrate. For diarrhea, gelatin alone or with gruels made very thin; bismuth, opium, and lead. Constipation required enemas, simple or high compound, consisting of magnesium sulphate, one ounce; glycerin, two ounces; turpentine, two drachms, and water, one pint, and irrigation of bowels.

The routine treatment consisted of cold spongings, lasting from fifteen to thirty minutes, and given every three hours if temperature was 102.5° F. or over, by axilla, which meant about one degree more by rectum. We usually began sponging new patients with the temperature of water at 85°, gradually reducing it as the patients became accustomed to it to 75° and 65° and lower, even to ice water if it was well borne and caused no chill. In children, the temperature of the water was on an average about ten degrees higher than for adults, and no ice water.

Hexamethylenamine was given in doses of five grains four times daily, and children two to three grains at same intervals, and we think, exerted a marked influence in reducing the toxemia; but as another chemical compound also seems to act similarly, the honors may be, perhaps, divided between them. Whether they act by eliminating bacilli in the excretions, principally the urine, or by rendering the fluids of the body an unsafe culture medium for the growth of the bacilli or by stimulating the opsonins or by doing all, seems a moot question. We will not enter into a scientific discussion of the question, as that would be beyond the limits of this article. The other drug used, as a febrifuge and antitoxic, was acetylsalicylphenetidin. It was given in doses of five grains, every two hours, to adults, and two to three grains at same intervals to children; and did not in a single case cause the slightest depression.

The four deaths, in this series of cases, we consider were inevitable from the start; that is, from the date of admission. All the doomed patients were highly toxemic, and had been cared for at home for a greater or less length of time in a very poor and haphazard manner. Two were postpuerperal patients, and in one the stage of invasion began a very few days after termination of labor, and, added to this, was the grief caused by the death of her baby. In the third fatal case a septic thrombosis occurred in the left median basilic vein and right popliteal, causing moist gangrene of both extremities. The fourth, and last case, occurred in a colored boy, aged five years, of tuberculous history, in whom basilar meningitis developed, whether of a typhoid, tuberculous, or mixed infection was not determined. A short history of the cases follows, the individual charts not being given on account of adding too much to the length of the article.

Case I. Boy, twelve years old. White. Admitted December 24, 1911, on eighth day of disease. Died January 8, 1912, on twenty-third day. Temperature December 24th, high point 105.8°, low point 101°. Delirium, moderate degree, talkative. Enlarged gallbladder. Heart, second sound accentuated. Abdomen tense, no spots. Spleen not palpable. January 3d temperature up to 105.8°, when chills occurred and marked swelling of left forearm, great tenderness. Erythema marked, also same on right tibia. January 4th, hemorrhage, amount not noted. January 6th, left arm and right leg marked by increase in size and dark color, deepening to a purplish black, and later, to moist gangrene due to septic thrombosis of left basilic vein and right popliteal vein. Blood pressure January 6th, systolic 93, diastolic 70, Widal, January 5th suggestive. Leucocyte count 9,400. No diarrhea, relapse, or distention.

Case II. Boy, aged four years. Colored. Tuberculous history. Admitted December 23d, on seventh day of disease. Temperature ranged from 102° to 105°. January 1st began to break and on January 7th, 100.6°, irregular in type; January 12th 105.4°. Died January 12th on twenty-seventh day. January 3d, shrill cry and rigidity of neck suggesting basilic meningitis. No opisthotonos, but marked curling of body. Extreme flexion. Legs spastic. Suggestive Kernig. January 4th, purpuric spots occurred on trunk and legs, breaking down into abscesses. Blood pressure, January 7th, systolic 78, diastolic 30. January 9th, double otitis, very foul discharge. Widal, December 31st, positive. Blood, white cells 8,880. No diarrhea, relapse, or distention.

Case III. White woman, aged twenty-five years. Had buried a child twenty-two days old on date of admission, which was January 2, 1912, and the fifth day of the disease. Temperature 105° to 103°. On fifteenth day of disease, January 12th, dropped to normal and back to 103°. Irregular until twenty-seventh day, January 24th, and stayed that way until death on January 26th, on the 29th day of the disease. Symptoms: Headache, drowsiness, malaise. Abdomen slightly distended. January 3d, sordes of mouth. January 4th, spleen palpable. January 6th, spots. Blood pressure, systolic 78, diastolic 70. January 12th, Widal, positive. White blood cells 6,500. January 18th board of health Widal, positive. Urine negative. The first week temperature ranged from 105° to 103°. Sponge baths had very little effect on temperature. Marked diarrhea from twelfth day of disease until twentieth day, ranging from four to seven stools a day, controlled after that. Treatment in addition to routine consisted of enteroclysis, one pint, B. D., taking an hour to deliver, later continuous enteroclysis. No delirium; some distention.

Case IV. White woman, aged twenty-six years. Postpuerperal. Admitted December 21st on seventh day of disease. Temperature 104°; pulse 128, respiration 32. Extremely toxic condition and appearance. Constant tremors. Lysis took place until December 29th. Temperature remained normal until December 31st, when after a chill, at 8 p. m., it reached 103.5°; pulse 150, respiration 28. Temperature again reached normal January 1st, but on January 2d was 104.4°. Death occurred January 3d, 12 p. m., on twentieth day. On admission, white blood cells 3,600. Widal positive. December 30th, marked hematuria, which entirely disappeared before death. Diarrhea not marked. Rose spots present. Spleen not palpable. Heart and lungs negative. Breasts enlarged. No diarrhea or distention. Delirium marked.

CASE V. White man, aged twenty-seven years. Admitted December 29th, discharged March 11th. Admitted on seventh day of disease with temperature of 104.4°; pulse 118; respiration 24; heart and lungs normal. From January 10th the temperature was irregular, normal, and up to 102° until February 3d, on the forty-fourth day, then normal until final convalescence, with one exceptional rise of February 12th to 100.4°. Case was marked by hemorrhages, intestinal distention, and diarrhea. On December 31st three hemorrhages, one of eight ounces; January 1st, two hemorrhages; January 4th, five hemorrhages, three dark brown; January 6th, one hemorrhage, clots; January 12th, one hemorrhage; January 20th, one hemorrhage, twenty-seven ounces with few clots. Spleen not palpable. Widal positive. Kidneys normal. Blood pressure, January 5th, systolic 100, diastolic 78, white blood cells 6,200. No delirium. Diarrhea until January 22d on thirty-first day. No relapse. Great distention, at times, but not constant.

CASE VI. Boy, aged thirteen years; white. Admitted December 28th on eleventh day of disease. Discharged, March 16th. Temperature on admission 103°; pulse 100; respiration 28. Highest point 104.6°. Lysis began January 7th, normal January 10th. Irregular until February 19th, on sixty-fourth day. Spots; tympany; spleen not palpable. Heart, January 12th, systolic 85, diastolic 60. January 17th, otitis. Widal positive. No diarrhea or delirium. Urine, casts present, hyaline, on December 31st, no albumin. No relapse or distention.

CASE VII. White boy, aged thirteen years. Admitted December 26th, on second day of disease. Discharged March 16th. Temperature 103.4°; pulse 96; respiration 24. Highest point 103.4°. Became normal December 28th for three days, then to 101° and irregular in type until January 10th, on seventeenth day, when final convalescence was established, with exceptions of February 6th, 11th, 12th, and 13th, when evening temperature of 100° was recorded. No spots or gurgling. Symptoms: Diarrhea (before admission, none after); nose bleed; tenderness over spleen; not palpable. Pressure, January 12th, systolic 100, diastolic 55. Widal positive. No delirium. Urine negative. No diarrhea, no relapse, no distention.

CASE VIII. White male, aged twenty years. Admitted December 28th, on seventh day of disease. Discharged March 16th. Temperature 106°; pulse 100; respiration 42, for seven days. Lowest point 102.4°; highest point 105.4°. Sponge baths every hour and two hours failed to lower more than one degree. January 4th, 100°, then until January 13th, when normal was reached, it was very irregular, 104.4° the highest point. After January 13th there was a long irregular course, temperature reaching at times 103.4°, January 24th and 104° on February 2d, and final convalescence not until February 17th, on fifty-eighth day. Heart and lungs normal. January 2d, gurgling, no spots. Spleen not palpable. January 3d, spots. January 7th, passed three small clots, no distention. January 8th, four hemorrhages. Pressure, January 13th, systolic 103, diastolic 20. January 14th, parotiditis, right side, enormous suppuration. Widal positive. January 26th, otitis. No diarrhea or distention. Delirium. Urine, albumin and casts until January 24th. No relapse.

CASE IX. White boy, aged five years. Admitted January 6, 1912, on fifteenth day of the disease. Discharged March 11th. Symptoms: Temperature 101.6°, pulse 120; respiration 24. Tympany. Spleen not palpable. Spots, abdomen and thorax. Herpes. Heart normal. Slight area in upper chest of bronchopneumonia. Blood pressure, systolic 88, diastolic 62. Widal positive. Abscess right leg. Leucocyte, January 12th, 11,200. Urine negative. No diarrhea. Lysis on twentieth day. No distention or relapse.

CASE X. White woman, aged twenty-one years. Admitted December 23, 1911, on ninth day of disease. Discharged March 6th. Symptoms: Temperature 102.4°; pulse 112; respiration 26. Highest temperature 103.4° December 26th. Lysis January 16th, thirty-third day. Normal from January 6th until February 4th, on fifty-second day. Relapse: Temperature 104°, February 9th, normal February 17th. sixty-fifth day, until final convalescence. Course of fever, counting relapse, forty-eight days. Spots on abdomen. Spleen not palpable. Epistaxis, January 1st, for three days. Systolic 100, diastolic 65. Widal positive. Heart and lungs normal. Leucocyte count, December 27th, 12,800. Urine, December 24th, albumin trace and hyaline casts—cleared up. Original course of fever December 14th (date of onset) until January 16th, thirty-four days. Add for relapse fourteen days, making a total of forty-eight days. No diarrhea. No distention or delirium.

CASE XI. White man, aged thirty-six years. Admitted December 31, 1911, on fourth day of disease. Discharged March 8th. Symptoms: Temperature 103°; pulse 108; respiration 28. Highest temperature 104.6° on January 3d, normal January 28th. Spleen very large. No spots or gurgling. Liver enlarged downward. No epistaxis or spots. Widal negative by board of health on January 9th. Heart, systolic 98, diastolic 78, January 13th. January 3d, lungs full of coarse râles. January 9th, gallbladder palpable. January 25th, Widal positive by board of health. Blood pressure, systolic 82, diastolic 60, January 26th. January 5th, leucocyte, 4,820. Urine, January 1st, slight trace of albumin and few granular casts—cleared up. Lysis, January 29th, thirty-third day. No diarrhea, relapse, distention, or delirium.

CASE XII. White girl, aged ten years. Admitted December 21, 1911, on eighth day of disease. Discharged March 6th. Temperature 104.4°; pulse 128; respiration 28. Highest point 105.8°. Normal December 29th. Rose again, after December 29th, to 101.4°, ran along in moderate fever from 98° to 101° until January 13th, then to 103°; moderate again to January 19th, then up to 103°; then normal until final convalescence, lysis occurring January 21st, fortieth day, with exceptions of 101.4° February 8th, and 103° March 1st. On admission heart and lungs were normal. No tympany. Spleen palpable. Gurgling. No spots seen. December 24th marked tympany for six days. Marked delirium until December 31st. Pressure, January 6th, systolic 114, diastolic 80. January 11th abscess opened in buttocks. Widal positive. January 18th, turpentine used, two drops internally every second hour, and externally. Rectal tube passed. Urine normal. No diarrhea or relapse.

CASE XIII. White girl, aged sixteen years. Admitted December 30, 1911, on eighth day of disease. Discharged March 8th. Temperature 104.8°; pulse 108; respiration 28. Highest point 104.8°. Lysis began January 8th. Normal on January 11th, then irregular until January 25th, when a recrudescence occurred, temperature reaching 103°, and finally normal on February 9th, on fiftieth day, and continuing until final convalescence. Spots on January 2d. Spleen not palpable. Slight tympany. Pressure, January 9th, systolic 92, diastolic 80, January 11th otitis media developed. January 18th, Widal positive. January 2d, leucocyte 6,700. Urine, albumin and granular casts, January 27th, cleared by February 7th No diarrhea or distention.

CASE XIV. White man, aged twenty-four years. Admitted December 29, 1911, on eighth day of disease. Discharged March 16th. Temperature 105.4°; pulse 124; respiration 24. Highest point 105.4°, and very high course for four weeks, reaching 105° four times, until January 26th, normal—then irregular, 102.6° and 102° twice until final convalescence, February 2d, forty-fourth day. Hemorrhages, January 5th, two; January 18th, one. Otitis January 24th. January 2d, lungs and heart clear, no spots. Spleen not palpable, no distention. January 3d, spots. Pressure, January 5th, systolic 140, diastolic 98. January 6th, systolic 98, diastolic 72. January 13th, systolic 85, diastolic 70. Widal positive. Urine, albumin and casts December 29th to January 11th. No diarrhea. Marked delirium, low and muttering. No relapse or distention.

CASE XV. Man, white, aged twenty-two years. Admitted December 29, 1911, on sixth day of disease. Discharged March 16, 1912. Temperature 104.8°; pulse 98; respiration 24. Very high course. Sponging every hour and two hours hardly affected the temperature. Between 103° and 105° until January 4th, when it began to break and spongings were discontinued on January 5th, to be resumed January 11th. January 12th a most erratic movement in temperature occurred, which continued for two days, then one day's intermission and to normal and on next day high. January 12th, 8 p. m., 105°; January 13th, 5 a. m., 100°; January 13th, 8 p. m., 105°; January 14th, 8 a. m., 99°; January 14th, 8 p. m., 99°; January

15th, 5 a. m., 100°; January 15th, 8 p. m, 105°; then a high evening course of 103° until January 27th, when lysis began and continued until final convalescence on February 4th, forty-third day. Heart and lungs normal. Rose spots. Marked delirium. January 12th, pustules over back and extensive sloughing of skin. Pressure, systolic 130, diastolic 70. Widal positive. January 18th, marked contracture of fingers of both hands, continued for three days. January 22d, otitis; profuse diarrhea. The urine showed albumin and casts from December 31st to January 24th. No relapse, no distention.

Case XVI. White man, aged twenty-two years. Admitted January 3, 1912, on fifth day of disease. Discharged March 16th. Temperature 105.4°; pulse 120; respiration 24. High course until January 9th, when lysis began, until January 17th, when normal was reached. On January 19th a recrudescence occurred for eight days. Lysis again on January 28th, reaching normal on February 3d, then irregular, reaching 100° in evenings, until final convalescence on February 18th, fifty-first day. Symptoms: Headache; no epistaxis; slight tympany; spleen palpable; no spots; gurgling; heart and lungs normal; no diarrhea or delirium. Pressure, January 13th, systolic 94, diastolic 60. January 19th, otitis. Widal positive. Urine casts and albumin from January 23d until February 1st, but mild. No diarrhea, relapse or distention.

Case XVII. White woman, aged twenty-three years. Admitted December 18, 1911, on fifth day of disease. Discharged January 20th. Temperature 104.8°; pulse 108; respiration 32. Lysis. Normal fifteenth day. Symptoms: Malaise, coughing, abdominal tenderness. December 18th, white blood cells 8,560 Widal positive. January 18th, board of health Widal positive. Pressure, systolic 118, diastolic 78 on January 6th. Urine, albumin and granular casts. Spleen not palpable. No diarrhea, relapse, or distention.

Case XVIII. White boy, aged twenty years. Admitted December 30, 1911, on nineteenth day of disease. Discharged February 22d. Temperature 101.2°; pulse 80; respiration 24. High point 103.2°. Lysis until January 3d, twenty-third day. Symptoms: Headache, vertigo, abdominal pain, constipation, vomiting, abdomen slightly tense. Spleen not palpable. January 5th white blood cells 6,200; Widal positive. January 9th, Widal negative by board of health. Pressure, January 13th, systolic 98, diastolic 59. January 25th, Widal positive by board of health. Urine negative. No diarrhea, relapse, or distention.

Case XIX. White man, aged thirty-five years. Admitted December 28, 1911, on tenth day of disease. Discharged February 22d. Temperature 100°; pulse 100; respiration 24. High point 103.2°. Lysis. Normal on January 9th. twenty-second day. Symptoms: Malaise, headache, cough, very slight tympany of abdomen, splenic resistance, spots. January 5th, Widal positive, white blood cells 7,400. January 9th, Widal positive by board of health. Pressure, January 13th, systolic 102, diastolic 82. Urine negative. No diarrhea, relapse, or marked distention.

Case XX. White boy, aged eighteen years. Admitted December 30, 1911, on sixth day of disease. Discharged February 21st. Temperature 101.4°; pulse 100; respiration 24. High point 104°. Lysis. Normal January 8th on fifteenth day. Symptoms: Chill, headache, cough, constipation. January 3d, spots, splenic resistance—not palpable. January 5th, white blood cells 5,300. Widal positive. January 9th, Widal positive by board of health. Blood pressure, January 13th, systolic 100, diastolic 68. Urine, albumin and granular casts. Disappeared. No relapse, diarrhea, or distention.

Case XXI. Colored man, aged twenty-three years. Admitted December 30, 1911, on fourteenth day of disease. Discharged February 25th. Temperature 99°; pulse 88; respiration 24. High point 103°. Lysis. Normal January 6th, then up to 102° for six days. Normal January 12th, on twenty-seventh day. Symptoms: Spleen palpable. January 5th, white blood cells 7,900. Widal positive. January 9th, Widal positive by board of health. Blood pressure, January 12th, systolic 115, diastolic 70. Urine negative. No relapse, diarrhea, or distention.

Case XXII. White girl, aged two years. Admitted December 13, 1911, for mastoiditis; operation December 15th, by Doctor Smith. Discharged January 11th. Temperature 102.6° with symptoms of mastoiditis left ear, fever, tenderness, hyperemia, and swelling over mastoid. December 15th, fever irregular, around 100°, but dropped to normal December 17th for six days. December 23d began to rise and December 24th up to 103°. High point 103.8°. Lysis. Bronchitis. January 5th, rose spots. December 14th, white blood cells 2,400. Widal positive. Discharged before board of health test could be done. Length of fever twenty days. No relapse, diarrhea, or distention.

Case XXIII. White woman, aged forty years. Admitted January 3, 1912, on eighth day of disease. Discharged February 29th. Temperature 100.8°; pulse 116; respiration 28. High point 103°. Lysis. Normal January 21st, on twenty-sixth day. Symptoms: Headache, pain in back, diarrhea, drowsiness and languor, anorexia. Pressure, January 9th, systolic 98, diastolic 60. January 18th, board of health Widal test positive. Urine had albumin, but it disappeared. Diarrhea until nineteenth day. No relapse or distention.

Case XXIV. White boy, aged eight years. Admitted January 18, 1912, on twenty-sixth day of disease. Discharged March 4th. Temperature 103°; pulse 120; respiration 36. Lysis. Normal on forty-second day. Symptoms: Headache, malaise, anorexia, abdominal tympany, rose spots, liver enlarged to fifth rib axilla line, gurgling, spleen not palpable. Pressure, January 18th, systolic 92, diastolic 51. White blood cells 10,400. Widal positive; board of health positive. No relapse, diarrhea, or distention after admission.

Case XXV. White girl, aged seven years. Admitted December 25, 1911, on sixth day of disease. Discharged February 21st. Temperature 103°; pulse 140; respiration 26. High point 104.8°. Lysis January 3d, on fifteenth day. February 7th, 103.4°, dropped again on February 10th and remained normal, fever lasting but four days—hardly a relapse. Symptoms: Headache, epistaxis, cough, diarrhea, slight pain. Pressure, January 6th, systolic 98, diastolic 70. January 13th, boil on back of head. January 18th, board of health Widal test positive. February 1st, white blood cells 4,100. No diarrhea or distention.

Case XXVI. White boy, aged eighteen years. Admitted December 29, 1911, on fifth day of disease. Discharged February 25th. Temperature 102.4°; pulse 88; respiration 24. High point 103.2°. Lysis. Convalescence began January 7th, on fourteenth day. Symptoms: Cough, diarrhea, rose spots. January 3d, spleen palpable. Pressure, January 13th, systolic 90, diastolic 70. January 5th, white blood cells 9,400; Widal positive. January 9th, Widal test positive by board of health. Urine, albumin and granular casts, cleared up. No relapse, distention, or diarrhea.

Case XXVII. White girl, aged ten years. Admitted January 25, 1912, on fifteenth day of disease. Discharged May 15th. Temperature 104°; pulse 132; respiration 36. High point 105.6°. First week temperature ranged along 104°. Sponging had very little effect. Second week around 103°, sponging still had little effect. Third week around 102°. Fourth week 103° to 105°, very irregular. Fifth week 104° to 103°. Sixth week very irregular, 103° to 99°. Lysis. Touched normal seventh week, but ran up to 104.6° the same week. Eighth week, March 10th, up to 103°. Ninth week still irregular, touching 103.8° and at times 99.4°. From the forty-ninth to the sixty-third day almost normal, at times reaching 100°. On the sixty-third day a relapse occurred, temperature reaching 103.8° and not normal again until the seventy-fourth day, then irregular until the eighty-first day; then normal until the 100th day; then irregular, reaching 101.8°, and normal on April 24th the 109th day and normal ever since. On the 100th day, April 19th, 50 million dead typhoid bacteria were given. April 22nd, 100 million typhoid bacteria. Symptoms: Vomiting, cough, diarrhea at times, epistaxis, headache, abdominal pain, spleen palpable. Pressure, January 26th, systolic 92, diastolic 70. January 28th, spots. February 1st, board of health Widal test positive. January 26th, white blood cells 3,720. March 11th, 6,000. March 16th, urine streaked with blood. Urine at times showed albumin, but no casts. March 20th, abdomen distended, two relapses.

Case XXVIII. White boy, aged fifteen years. Admitted January 1, 1912, on eighth day of disease. Discharged February 25th. Temperature 104.4°; pulse 88; respiration 28. High point 105°. Lysis. Convalescent January 22d, on twenty-ninth day. Symptoms: Abdominal pain, headache, epistaxis slight, anorexia, constipation, rose spots, splenic tenderness, iliac gurgling. January 9th, Widal positive; white blood cells 4,970; board of health Widal positive on January 13th. Blood pressure, systolic 92, diastolic 62. Urine negative. No relapse, diarrhea, or distention.

Case XXIX. White boy, aged nineteen years. Admitted January 1, 1912, on sixth day of disease. Discharged February 17th. Temperature 104°; pulse 94; respiration 24. High point 104°. Irregular temperature until January 15th, the twentieth day; then dropped, 102.4° to 97°. Symptoms: Headache, vertigo, nausea and vomiting, splenic resistance, rose spots, constipation. Pressure, January 12th, systolic 103, diastolic 58. January 18th, board of health Widal test positive. January 12th, white blood cells 11,600. Urine negative, no relapse or diarrhea, or distention.

Case XXX. White boy, aged seventeen years. Admitted January 2, 1912, on seventh day of disease. Discharged February 17th. Temperature 105°; pulse 100; respiration 36. High point 105.4°. Lysis, on fifteenth day. Symptoms: Headache, vertigo, constipation, blurred vision, vomiting, epistaxis, rose spots, gurgling. January 5th, spleen palpable. Pressure, January 12th, systolic 100, diastolic 60; Widal test positive; white blood cells 8,120. January 27th, board of health Widal test positive. Urine negative. No diarrhea, relapse, or distention.

Case XXXI. White boy, aged nine years. Admitted January 2, 1912, on tenth day of disease. Discharged February 5th. Temperature 103.2°; pulse 100; respiration 28. Dropped by crisis next day to 99°, on eleventh day. Symptoms: Headache, abdominal pain, anorexia, constipation, a few spots. January 4th, spleen palpable. Pressure, January 6th, systolic 92, diastolic 60. Hospital Widal test suggestive. White blood cells 5,900. January 18th and 25th, board of health Widal tests negative. Urine negative. No diarrhea, relapse, or distention.

Case XXXII. Colored girl, aged eighteen years. Admitted January 2, 1912, on tenth day of disease. Discharged February 21st. Temperature 103°; pulse 120; respiration 36. High point 104.4°. Lysis on thirty-second day. Symptoms: Anorexia, malaise, epistaxis, sore throat, cough, abdomen enlarged, firm and hard, fetal heart sounds, right occipital posterior, was pregnant, splenic tenderness. Pressure, January 9th, systolic 98, diastolic 80. January 12th, Widal positive. White blood cells 4,800. January 25th, board of health Widal positive. Urine negative. No diarrhea, relapse, or distention.

Case XXXIII. White woman, aged twenty-one years. Admitted January 2, 1912, on twelfth day of disease. Discharged February 10th. Temperature 102.6°; pulse 116; respiration 28. High point 104°. Lysis on twenty-eighth day. Symptoms: Malaise, headache, epistaxis, diarrhea. January 4th, rose spots, splenic resistance. Pressure, January 6th, systolic 116, diastolic 60. January 12th, Widal positive. White blood cells 6,700. January 18th, board of health Widal positive. Urine negative. No relapse, diarrhea, or distention.

Case XXXIV. White woman, aged twenty-eight years. Admitted January 3, 1912, on fourteenth day of disease. Discharged January 26th. Temperature 101°; pulse 116; respiration 28. High point 103°. Crisis on sixteenth day. Symptoms: Headache, abdominal pains, cough, vertigo, anorexia, malaise, mitral systolic. Pressure, January 9th, systolic 98, diastolic 80. January 12th, Widal suggestive. White blood cells 14,100. January 18th and 25th, board of health Widal test negative. Urine on admission showed albumin and granular casts, on discharge, no casts, but albumin present. No diarrhea, relapse, or distention.

Case XXXV. Colored boy, aged thirteen years. Admitted January 4, 1912, on seventh day of disease. Discharged February 25th. Temperature 104.4°; pulse 96; respiration 24. High point 104.4°. Lysis on twenty-fourth day. Symptoms: Headache, abdominal pains, anorexia, pain in neck, malaise, muttering, delirium, abdomen tense, tympanitic. January 9th, Widal positive. White blood cells 9,420. Pressure, January 13th, systolic 98, diastolic 33. January 5th, urine, albumin and granular casts, cleared up before discharge. January 18th, board of health Widal positive. No diarrhea or relapse. Distention.

Case XXXVI. Colored boy, aged seven years. Admitted December 26, 1911, on seventh day of disease. Discharged February 21st. Temperature 106°; pulse 140; respiration 32. Lysis on seventeenth day. Symptoms: Headache, malaise, constipation, spleen palpable. January 3d, delirious. January 4th, tympanitis. Pressure, January 6th, systolic 90, diastolic 70. January 8th, white blood cells 3,800. Widal positive. January 18th board of health Widal positive. No diarrhea, relapse, or distention, except for one day.

Case XXXVII. White woman, aged thirty-two years. Admitted December 31, 1911, on nineteenth day of disease. Discharged February 3d. Temperature 102.6°; pulse 120; respiration 28. High point 103°. Lysis on twenty-sixth day. Symptoms: Malaise, headache, epistaxis, cough, vomiting of pregnancy, constipation. January 2d, spleen palpable. January 3d, rose spots. White blood cells 7,850. Widal positive. Pressure, January 9th, systolic 119, diastolic 78. January 18th, board of health Widal positive. Urine, albumin and granular casts, which cleared up. No diarrhea, relapse, or distention.

Case XXXVIII. White girl, aged fifteen years. Admitted December 27, 1911, on fifth day of disease. Discharged February 5th. Temperature 102.4°; pulse 128; respiration 32. High point 104.4°. Lysis on twentieth day. Symptoms: Malaise, headache, diarrhea, abdominal pain. January 2d, spots and splenic resistance. December 27th, white blood cells 8,480. Widal positive. January 18th and 25th, board of health Widal negative. Urine negative. Pressure, January 6th, systolic 90, diastolic 60. No relapse, diarrhea, or distention.

Case XXXIX. White man, aged twenty-four years. Admitted January 2, 1912, on sixth day of disease. Discharged March 8th. Temperature 105°; pulse 100; respiration 28. Lysis and normal on January 17th, on twenty-first day, continuing so until February 3d, slowly rose to 101.6°. Lysis on February 9th to normal. Seven more days of fever, making the duration twenty-eight days. Symptoms: Headache, burning sensation upon urination, drowsiness, constipation, epistaxis, cough, stiff neck, abdomen slightly tympanitic, a few spots. January 3d, abdomen fairly rigid. January 9th, white blood cells 4,650. Widal positive. Blood pressure, January 13th, systolic 105, diastolic 58. January 18th, board of health Widal positive. Urine negative. One relapse, no diarrhea, slight distention.

Case XL. White girl, aged four years. Admitted January 11, 1912, on eighth day of disease. Discharged March 8th. Temperature 101.6°; pulse 124; respiration 36. High point 102.8°. Lysis on fifteenth day. Symptoms: Cough, vomiting, diarrhea, abdominal pain, malaise, spots. January 12th, white blood cells 9,270. Widal positive. Pressure, January 13th, systolic 78, diastolic 56. January 18th, board of health Widal positive. Urine negative. No relapse. No distention or diarrhea after admission.

Case XLI. White girl, aged eighteen years. Admitted January 15, 1912, on eleventh day of disease. Discharged March 9th. Temperature 102°; pulse 96; respiration 24. Lysis until January 27th, on twenty-third day, and normal until February 10th, slowly rose irregular to 103°. Lysis to normal on February 23d. Relapse for thirteen days, making length of fever thirty-six days. Symptoms: Headache, anorexia, dizziness, constipation, abdomen slightly tympanitic. Pressure, systolic 114, diastolic 60. January 8th, one spot; board of health Widal positive. White blood cells 6,270. Urine at times showed faint cloud of albumin, but never any casts. No diarrhea, one relapse. Distention slight.

Case XLII. Colored woman, aged thirty-seven years. Admitted January 31, 1912, on eleventh day of disease. Discharged March 19th. Temperature 102.8°; pulse 100; respiration 44. High point 104.8°. Lysis on February 21st, thirty-first day. Symptoms: Chills, pains in legs and arms, constipation, abdominal pain and tenderness, spleen palpable. White blood cells 4,800. Widal positive. February 1st, urine, albumin, and granular casts. February 8th, albumin but no casts, later albumin disappeared. No diarrhea, relapse, or distention.

Case XLIII. Colored girl, aged seven years (from House of the Good Shepherd). Admitted December 30, 1911, day of disease unknown. Discharged February 5th. Temperature 102°; pulse 120; respiration 28. High point 103.2°. Lysis on January 5th. Symptoms not noted. January 4th, splenic resistance, no enlargement. Pressure, January 6th, systolic 93, diastolic 72. Widal suggestive. January 18th, board of health Widal positive. No diarrhea, relapse, or distention.

Case XLIV. White girl, aged twenty years. Admitted

December 27, 1911, on sixth day of disease. Discharged February 5th. Temperature 103°; pulse 96; respiration 24. High point 104.2°. Lysis on January 10th, on twentieth day. Symptoms: Chills, fever, headache, nausea, profuse diarrhea, slight tympany of abdomen, spleen palpable. December 28th, spots. Pressure, January 6th, systolic 100, diastolic 70. January 2d, Widal positive. White blood cells 12,400. January 18th, board of health Widal positive. Urine negative. No relapse or diarrhea after admission. Distention slight.

CASE XLV. White man, aged thirty years. Admitted December 27, 1911, on seventh day of disease. Discharged February 12th. Temperature 102.4°; pulse 100; respiration 24. High point 104.8°, irregular but high. January 7th, seventeenth day, temperature dropped to normal, and on the eighteenth day, January 8th, rose to 105.4° and dropped on the nineteenth day, January 9th, to 102.4°, and on the same day arose to 105°, then by lysis to normal on January 14th, the twenty-fifth day of disease. Symptoms: Chills, then fever, headache, cough, vomiting. January 2d, spots; hospital Widal positive. White blood cells 7,200. January 9th, board of health Widal positive. Pressure, January 12th, systolic 125, diastolic 70. January 10th, urine, albumin, and granular casts, which cleared up later. No diarrhea, relapse, or distention.

CASE XLVI. White girl, aged nineteen years. Admitted December 28, 1911, on eighth day of disease. Discharged February 12th. Temperature 104.2°; pulse 128; respiration 24. High point 104.6°. Lysis on twenty-ninth day. Symptoms: Fever, headache, cough, nausea, constipation, abdominal pain and tenderness. January 2d, slight tympany. January 3d, tympany disappeared. Pressure, January 6th, systolic 103, diastolic 80. January 12th, Widal positive. White blood cells 8,500. January 18th, board of health Widal positive. Urine negative. No diarrhea, no relapse, slight distention.

CASE XLVII. White woman, aged thirty-three years. Admitted December 20, 1911, on tenth day of disease. Discharged February 11th. Temperature 99.4°; pulse 104; respiration 28. High point 103°. Lysis on thirty-second day. Symptoms: Chills and fever, vomiting, diarrhea, abdominal tenderness and pain, malaise. Pressure, January 6th, systolic 98, diastolic 70. December 21st, Widal suggestive. White blood cells 7,120. January 2d, Widal positive. White blood cells 2,200. January 18th, board of health Widal positive. Urine negative. No diarrhea after admission. No relapse or distention.

CASE XLVIII. Colored woman, aged twenty-three years. Admitted December 28, 1911, on tenth day of disease. Discharged February 5, 1912 Temperature 102.8°; pulse 109; respiration 32. High point 103°. Lysis on twenty-fifth day. Symptoms: Chills, fever, vomiting, diarrhea once, abdominal pain, splenic resistance. January 2d, Widal positive. White blood cells 5,700. Pressure, January 9th, systolic 98, diastolic 68. January 18th, board of health Widal suggestive, and on the twenty-fifth, positive. January 29th, urine, albumin, and granular and hyaline casts, that cleared up before discharge. No diarrhea, relapse, or distention

CASE XLIX. White boy, aged twenty years. Admitted December 27, 1911, on sixth day of disease. Discharged February 7th. Temperature 102°; pulse 88; respiration 24. Lysis, January 6th, on sixteenth day. Symptoms: Chill and fever, headache, cough, diarrhea, spleen palpable, spots. Pressure, January 12th, systolic 100, diastolic 75. January 5th, Widal positive. White blood cells 6,100. January 9th, board of health Widal positive. January 30th, abscess developed in right cheek, opened and drained. Urine negative. No diarrhea after admission, no relapse or distention.

CASE L. Colored girl, aged ten years. Admitted December 23, 1911, on third day of disease. Discharged February 5th. Temperature 103.2°; pulse 124; respiration 28. High point 105°. Lysis on twenty-first day. Symptoms: Fever, cough, profuse diarrhea. January 3d, delirious. January 6th, Widal positive. January 31st, urine, slight cloud of albumin, no cast. Albumin disappeared. Blood pressure, January 6th, systolic 98, diastolic 70. No diarrhea after admission, no relapse or distention.

CASE LI. Colored boy, aged thirteen years. Admitted December 23, 1911, on tenth day of disease. Discharged February 9th. Temperature 104°; pulse 116; respiration 28. High point 104.4°. Lysis on twenty-eighth day. Symptoms: Chills, sick headache, slight cough. December 27th, Widal suggestive. White blood cells 17,920. January 2d, Widal positive. White blood cells 6,200. January 9th, board of health Widal negative. Pressure, January 12th, systolic 105, diastolic 82. January 25th, board of health Widal positive. December 24th, urine had light cloud of albumin, no casts, albumin disappeared. No diarrhea, relapse, or distention.

CASE LII. White boy, aged fourteen years. Admitted December 18, 1911, on tenth day of disease. Discharged February 9th. Temperature 104°; pulse 112; respiration 28. High point 105.6°, until December 26th, when it dropped to 99°, then suddenly rose to 106°, dropped by crisis on December 28th, on the twentieth day. Symptoms: Malaise, epistaxis, diarrhea, vomiting. December 29th, hematuria for six days. December 18th, Widal negative. White blood cells 15,200. December 22d, Widal positive. White blood cells 8,480. January 9th, board of health Widal positive. Pressure, January 5th, systolic 86, diastolic 80; January 12th, systolic 105, diastolic 80. Urine showed a cloud of albumin, which disappeared. No relapse, diarrhea after admission, or distention.

CASE LIII. White girl, aged six years. Admitted December 30, 1911, on third day of disease. Discharged February 26th. Temperature 103°; pulse 112; respiration 28. High point 104.4°. Lysis on thirtieth day. Symptoms: Malaise, diarrhea, abdominal tenderness. January 2d, marked sudamina. January 3d, splenic resistance. Pressure, January 6th, systolic 90, diastolic 50. January 2d, white blood cells 4,700. Widal positive. January 18th, board of health Widal suggestive. January 25th, board of health Widal negative. February 5th, vaginal discharge. January 6th, hospital Widal suggestive. Diarrhea on admission, none afterward. No relapse or distention.

CASE LIV. Colored girl, aged fifteen years. Admitted December 29, 1911, on eleventh day of disease. Discharged February 23d. Temperature 103°; pulse 112; respiration 28. High point 104.4°. Lysis on thirtieth day. Symptoms: Malaise, diarrhea, abdominal tenderness. January 2d, marked sudamina. January 3d, splenic resistance. Pressure, January 6th, systolic 90, diastolic 50. January 2d, white blood cells 4,700. Widal positive. January 18th, board of health Widal positive. Urine cloudy, albumin and hyaline and granular casts, which disappeared. No diarrhea after admission, no relapse or distention.

CASE LV. Colored woman, aged twenty-two years. Admitted December 25, 1911, on sixth day of disease. Discharged February 20th. Temperature 103°; pulse 108; respiration 40. High point 105.2°. Lysis on forty-second day. Symptoms: Headache and pain in back, feverish. January 3d, dyspnea, delirious Pressure, January 6th, systolic 110, diastolic 70. One spot. January 15th, two boils on buttocks. December 27th, white blood cells 4,560. Widal positive. January 18th, board of health Widal positive. Urine negative. No diarrhea, relapse, or distention.

CASE LVI. White girl, aged twenty years. Admitted December 27, 1911, on ninth day of disease. Discharged January 30th. Temperature 101.4°; pulse 80; respiration 30. High point 103.8°. Lysis on twenty-second day. Symptoms: Malaise, chill, headache, cough, vomiting, profuse diarrhea, abdominal tenderness. January 2d, spots. January 6th, spleen palpable; blood pressure, systolic 100, diastolic 71. January 2d, Widal positive. White blood cells, 2,220. January 18th, Widal suggestive. January 25th, board of health Widal negative. Urine negative. No diarrhea after admission. No relapse or distention.

CASE LVII. White woman, aged twenty-two years. Admitted December 24, 1911, on seventh day of disease. Discharged January 31st. Temperature 104°; pulse 104; respiration 28. High point 104°. Lysis on twenty-fourth day. Symptoms: Exhaustion, chills, headache, slight cough, splenic resistance, spots. Pressure, January 6th, systolic 102, diastolic 80. January 12th, Widal positive. White blood cells 7,300. January 18th, board of health Widal positive. Urine negative. No diarrhea, relapse, or distention.

CASE LVIII. White girl, aged 2.5 years. Admitted December 24, 1911, on tenth day of disease. Discharged January 31st. Temperature 104.6°; pulse 160; respiration 28. High point 104.6°. Lysis on nineteenth day. Symptoms: Malaise. January 3d, spots. December 27th, white blood cells 17,520. Widal positive. January 18th, board of health Widal suggestive. January 27th, board of health Widal positive. Unable to take blood pressure. Spleen not palpable. No diarrhea, relapse, or distention.

Case LIX. White boy, aged 5.5 years. Admitted January 1, 1912, on twenty-second day of disease. Discharged March 2d. Temperature 101.4°; pulse 112; respiration 24. High point 101.4°. Lysis on twenty-sixth day. January 15th, sudden rise to 103°. Symptoms: Suggestive of mastoid abscess, did not develop; irregular until January 26th. January 19th, foot became painful, probably osteomyelitis. Symptoms: Malaise, constipation, spots. Pressure, January 6th, systolic 90, diastolic 62. January 15th, complained of pain in right ear, no discharge. January 16th, drums slightly bulging, painful on pressure over mastoid. January 6th, Widal positive. White blood cells 6,600. January 18th, board of health Widal positive. January 19th, pain in foot. January 21st, pain in left ear, no discharge. No diarrhea, relapse, or distention.

Case LX. White girl, aged eighteen years. Admitted December 31, 1911, on twelfth day of disease. Discharged February 1st. Temperature 105.4°; pulse 128; respiration 32. High point 105.4°. Lysis on twenty-first day. Symptoms: Chill, vomiting, diarrhea, anorexia, headache, cough, abdominal pain, splenic resistance. January 4th, one spot. Pressure, January 9th, systolic 100, diastolic 80. January 18th, board of health Widal positive. White blood cells 6,750. Urine showed slight trace of albumin and granular casts, which disappeared. No diarrhea after admission, no relapse or distention.

Case LXI. Colored woman, aged twenty-one years. Admitted December 15, 1911, on eighth day of disease. Discharged January 21st. Temperature 103.4°; pulse 100; respiration 24. High point 104°. Lysis on twenty-second day. Symptoms: Fever, malaise, general muscular soreness and tenderness. Spleen enlarged. Pressure, January 9th, systolic 118, diastolic 70. December 22d, white blood cells 12,000. Widal slightly suggestive. January 12th, white blood cells 6,450. Widal negative. January 18th, board of health Widal positive. Urine showed albumin and granular casts, which cleared up. No diarrhea, relapse, or distention.

Case LXII. White girl, aged sixteen years. Admitted December 7, 1911, on twelfth day of disease. Discharged January 13th. Temperature 102°; pulse 108; respiration 28. Hight point 103.4°. Lysis on twenty-eighth day. Symptoms: Malaise, slight constipation, spots. Pressure, January 6th, systolic 86, diastolic 60. December 9th, Widal positive. White blood cells 3,600. January 18th, board of health Widal positive. Urine negative. No diarrhea, relapse, or distention.

Case LXIII. White girl, aged seven years. Admitted December 29, 1911, on ninth day of disease. Discharged March 1st. Temperature 106°; pulse 140; respiration 28. High point 106°. Lysis on twenty-ninth day. Symptoms: Pain in chest, diarrhea, drowsiness, abdominal pain. January 5th, rose spots. Spleen enlarged. January 1st, Widal positive. White blood cells 3,400. Pressure, systolic 90, diastolic 70. January 18th, board of health Widal positive. No diarrhea, relapse, or distention.

Case LXIV. Colored boy, aged eleven years. Admitted December 22, 1911, on eighth day of disease. Discharged March 1st. Temperature 105°; pulse 124; respiration 28. Lysis until January 8th, rose to 103°, and the following day to 105°. Lysis, but of irregular type. January 19th, slight rise in temperature, due to parotiditis. Final lysis on thirty-seventh day. Symptoms: Malaise, chills, headache, epistaxis, abdomen slightly distended. December 24th, tympanitis, delirium. December 31st, Widal positive. White blood cells 9,520. January 18th, board of health Widal positive. Urine showed albumin and hyaline casts, which disappeared. Pressure, January 6th, systolic 100, diastolic 40. No diarrhea or relapse. Slight distention.

Case LXV. Colored boy, aged fourteen years. Admitted January 15, 1912, on eighteenth day of disease. Discharged February 25th. Temperature 104°; pulse 100; respiration 32. Lysis on twenty-seventh day. Symptoms: Headache, pain in neck, epistaxis, anorexia, diarrhea, vertigo, malaise, abdominal tympany. Pressure, January 16th, systolic 102, diastolic 68. January 18th, Widal positive. White blood cells 6,050; board of health Widal positive. No diarrhea after admission, no relapse. Slight distention.

6460 Germantown Avenue.

PULMONARY TUBERCULOSIS AND PERIPHERAL NERVOUS SYSTEM.

By J. L. Pomeroy, M. D.,
Monrovia, Cal.

Symptoms from disturbance of the peripheral nervous system occur not infrequently in pulmonary tuberculosis. The clinical picture presented often is confusing, and at times of misleading diagnostic nature. It does not seem to be generally understood that even at the earliest one may find as a part of the symptomatology of this disease disturbances in the nervous system simulating rheumatism, neuralgia, myalgia, shoulder joint pain, pain in the arms, on the chest, in the abdomen, in the back, and other parts of the body. The following case illustrates one form of these affections:

Case I. A young man of twenty-five years, a medical student, began to suffer from loss of appetite, gas in the large intestine, and slight loss in weight, and showed a daily temperature of 99.5° F. There was slight expectoration, but never any bacilli. The von Pirquet was positive. Physical signs were very uncertain, viz., slight dullness over the right apex, with muscle spasm and rough breathing but no râles. There was constant aching in the calves of both legs, such as is felt after severe fatigue or a bruise. The knee jerks were exaggerated, the skin slightly hyperesthetic, muscle power normal. Blood showed a constant marked eosinophilia, and some parasitic bowel infection was suspected; also trichinosis was thought of. Under dietetic and hygienic treatment, flushing the bowel, and tuberculin treatment the temperature came to normal, the body weight was restored, cough and sputum disappeared and patient became in every way well. Still continued the aches and soreness in the gastrocnemius in spite of electrotherapy, etc. The symptom has been slowly disappearing, and at present, one year after the onset, is about gone. It appeared at the earliest and has disappeared at the latest. The knee jerks are still lively and there is still some hyperesthesia and hyperalgesia over the calves of both legs.

It may be noted that Walshe, in 1860, described similar pains in the legs in cases of pulmonary tuberculosis. Beau, in 1902, also describes this syndrome, other earlier writers on this subject were Leudet, Schmidt, Steinert, and Jessen.

More recently, Poncet has given this subject considerable attention. Pitres and Vaillard and Hammer (1898) did much to clear up these symptoms. They described several different form of neuritis in tuberculosis: First, a latent neuritis, without clinical symptoms, but demonstrated at autopsy; second, neuritis causing atrophy and paralysis in the muscles; third, neuritis with sensory symptoms only. Many observers (see Jessen) have shown that the tubercle toxine was capable of causing distinct pathological changes in the nerve fibres. Furthermore, the neuritis does not seem to be dependent upon the cachexia or anemia or necessarily upon the alcoholic or syphilitic heredity, which idea has been advanced by some observers.

Beau's *mélalgie* in some cases approximates the clinical picture of the "melalgia paræsthetica," which is an affection of the external femoral nerve. Bernhardt and Roth described this syndrome in 1895, and Joseph Miller reported a case in 1911. The external cutaneous femoral nerve arises from the second and third lumbar, emerges at the outer border of the psoas, and crosses obliquely in front of the iliacus to reach the outer side of the thigh.

The peculiar disturbance of the nerve characterized by paresthesia, or more or less severe pain when the individual is standing, is an unusual condition. Bernhardt considered a toxic neuritis as the most important factor in its causation (particularly typhoid fever); others have considered mechanical causes, owing to its peculiar anatomical relations, rendering it liable to compression. Among the mechanical factors to be mentioned are pregnant uterus, pelvic tumors, varices, tight bands, direct trauma, and flat foot. Miller reports a case due to pressure of a corset at the edge of the anterior superior spine where the nerve passed downward and outward. The pain is burning in character, but most annoying is the paresthesia and sensitiveness of the skin to the clothing over the affected area. The area affected is triangular in outline, the upper border forming the base, about five cm. above the iliac bone, and extending from the crest of the ilium to five cm. midward from the anterior superior spine. The apex of the triangle is at the junction of the lower and middle third of the thigh. Two cases of this peculiar affection have been observed in association with pulmonary tuberculosis:

Case II. Young woman, aged twenty-five years, complained of pain and tingling on the outer side of left thigh, which at times would become so intense that after walking she would be compelled to sit down. The paroxysms usually came on while walking and would pass away in a few minutes. Often there was a numbness and creeping sensation. This had existed for a number of years, disappearing at times completely. Examination showed an area of hyperalgesia and hyperesthesia extending from the anterior superior spine to the junction of the upper and middle third of the thigh. There was no mechanical factor; and from the presence of manifest pulmonary tuberculosis, improvement in which condition gradually caused a complete disappearance of the paroxysms, we concluded the condition to be a toxic neuritis due to tuberculosis.

Case III. Man, aged thirty-seven years, with exactly similar symptoms but with a rather acute onset, having at the time of examination been suffering only six weeks. Curious to relate, was the presence of a small fatty tumor in the skin in the area affected on the outer side of the right thigh. This, however, had been there all his life and had no apparent relation to the paresthesia. In this case there was, beside distinct hyperesthesia, marked disturbance in the temperature sense in the affected area. The lung condition was severe and the symptoms persisted until the death of the patient.

Schmidt, in 1899, described a peculiar, painful area under the clavicle over the affected apex. This was to be demonstrated by pressing the finger tips down into the supraclavicular space. He called this *unilateraler Plexus Druck Schmerz,* and found it a quite constant sign or symptom in early tuberculosis. He attributed this symptom to adhesive inflammation at the apex of the lung, which involved the brachial plexus. He described also, associated with this sign, neuralgic pain in the arm, paresthesia, and localized sweating in the hands, due to irritation of the brachial plexus cords, particularly the inner cord. I have frequently observed these signs. not only in early cases, but in those where the lesion was quiescent or healing.

There is another factor in the production of such symptoms, and that is the irritation of the segment of the cord on the basis of Head's zones. The earlier writers attributed pain and tenderness about the chest entirely to localized pleurisy. By the work of Head, Wurtzen, Jessen, and others we know that changes in the lung give peripheral signs on the chest through the segmental areas in the spinal cord. On the basis of this theory one observes quite early in the development of pulmonary tuberculosis, aching between the shoulders, tenderness over the dorsal spines, rigidity in the muscles of the chest, tenderness or hyperalgesia in the skin over the affected area, as well as tender points at the maxima of Head's zones, and often in the axillæ about the nipple area, at the insertion of the levator anguli scapulæ, under the angle of the scapula, and down on to the abdomen. At times one may get a complicated picture from the presence of underlying pleurisy which gives localized deep tenderness, and again often referred pain, muscle rigidity, and skin tenderness referred to the back of the thorax, to the epigastric area, and to the area supplied by the third or fourth cervical segment (the origin of the phrenic nerve), from diaphragmatic pleurisy (see Capp's article). Also in these areas atrophy on the skin and muscles take place and, according to Gibson, who showed such changes to occur in angina pectoris, from disturbed segmental innervation. I have studied these symptoms in a large number of cases and have been able to demonstrate them in a large number. The following case is typical:

Case IV. A young woman of twenty-four years, unmarried, by occupation a school teacher, three years ago began to suffer dull pain under the left clavicle. It was not constant, but was worse when fatigued. First noticed the pain when she had a "cold." Described it as a "burning" feeling, as if it was inflamed, seemed to be in the skin. Lately had a "lame" feeling in the left arm, as if the arm was asleep. Began to cough recently, and a few months ago (February, 1911), spat blood. On examination there was considerable infiltration in the left apex, moist râles, rigidity of the left trapezius, sternocleidomastoid, and pectorals, local hyperalgesia over the apical region and part of upper lobe tenderness on pressure over the left apex, and over the second, third, and fourth dorsal vertebræ. There was also tenderness over the supraspinatus and the insertion of the levator anguli scapulæ. This symptom (the pain) was very difficult to relieve, although almost every method was tried. It gradually cleared up under general treatment for the tuberculosis. The important point is that this symptom was a very early sign.

The clinical picture afforded by these peripheral signs, sometimes neuritic, referred, or mechanical in character, is very varied. Occasionally a patient's first complaint is of rheumatism of the shoulder. Recently one patient was examined who had actually been under treatment for this supposed affection, when the cause was tuberculosis pulmonalis. This "rheumatic" pain in tuberculosis has been long recognized. Petruschky early described vertebral pain or tenderness over the second to seventh dorsal spines. Leudet also observed the neuralgic pains in the shoulders in pulmonary tuberculosis. Bozzolo, Laserre, and Weill describe cases of "so called tuberculous rheumatism," sometimes in the tendons or joints or bursæ. Remak described a rigidity of the arm and shoulder muscles in a case of phthisis which he ascribed to a reflex action on muscle tonus. There was no tetany. Often these painful affections, which are of peripheral or referred character, are the first symptom which sends the patient to the physician and their significance should be fully understood.

In connection with these nerve disturbances may be mentioned the exanthemata. Jessen described a neuritis of the peroneus nerve with a psoriatoid rash following the course of the nerve. Herpes zoster is a frequent symptom of pulmonary disease (herpes on lips in pneumonia). Head's observations on zoster were made many times in connection with pulmonary tuberculosis. In this connection the following cases are of interest:

Case V. Young woman, of thirty years, with a slight area of consolidation at the right apex, began to suffer stinging pain along the course and distribution of the ulnar nerve in the right arm. Then the little finger, ring finger and part of middle finger felt numb. In a short time a herpetic rash appeared on the ulnar side of the hands, particularly the right, the little finger and ring finger, part of the middle finger to the wrist. The lesions consisted of reddish white bullæ, pin head to small shot in size, in places coalescing to form larger masses. Sensation was benumbed in this area. There were no evidences of gastrointestinal, tonsillar, or other of the usual causative factors of these lesions. Examination of the chest showed a marked inflammation of the right apex, and slight at the left apex. Furthermore there was marked hyperalgesia over the upper chest, particularly noticeable over the breasts. There was some aching between the shoulders, with tenderness over the second to the fifth dorsal vertebræ.

The next patient had a somewhat remarkable condition which seemed to bear a close connection with her pulmonary status:

Case VI. Young married woman, aged twenty-nine years, with widespread infection in both lungs, daily high temperature, and markedly toxic, had been under treatment with I. K.[1] for several months. During the first month the daily temperature range was not over 100° F., and gradually fell to not over 99° F. Then about every two weeks there would be a period of several days of high temperature, looseness of the bowels, and toxemia. During these periods the patient would become tearful, depressed, very nervous, and had difficulty in sleeping. At the same time there would appear a peculiar rash, consisting of reddish, raised, sore masses from pin point to English walnut size. The peculiar thing about this eruption was its distribution. It first appeared on the palm of the right hand, the largest spot at the base of the index finger, where the skin was red, thickened, and sore, like a callous place; there was another at the base of the little finger, and several along the fold of the thumb in the palm. The lesions appeared in these same spots on the left hand. They remained on the right hand for two weeks at one time, and at times were painful, somewhat like a neuralgic aching. Sometimes they would rapidly disappear, only to reappear during another febrile reaction (? tuberculin reaction). They soon appeared in the same areas on the soles of the feet, causing much annoyance. Only once was there a lesion elsewhere on the body, a large red mass appearing on the posterior aspect of the skin over the ulna at about its middle. This was quite sore and disappeared quite slowly.

When the lesions disappeared they left no trace whatever. The peculiarities of these lesions were their occurrence only during febrile rises, their association with marked mental symptoms, and their peculiar distribution, being in similar areas on the palms of the hands and soles of the feet, only one lesion appearing elsewhere. On account of these facts I am inclined to attribute them to a nerve root irritation or an irritation of the peripheral nerve itself, in the nature of a zoster. While the lesions resemble in some respect an ordinary erythema nodosum, the peculiar discrete distribution, as well as the lack of joint symptoms and other factors usually associated, were absent. Therefore, I believe that they were produced by the toxic action of the tubercle enzymes, and associated with the periods of invasion of the lung. The only other possibility is the possible action of I. K. in producing a "serum disease," but I never have observed such a condition to be brought on by I. K.

Erythema nodosum is not uncommon in pulmonary tuberculosis. Two cases have come under observation during the past year.

Case VII. (Erythema nodosum.) E. S., three years ago, had a stiffness in both knees and elbows, walked with difficulty, and feet were swollen. The feet were so swelled, that she could scarcely walk. This was at the time when she had high fever and was in a very weakened condition, also had sore throat and tonsilitis. Was not constipated. Patient had been under treatment for pulmonary tuberculosis, for the past year and has presented a very stubborn chronic course, occasional fever, marked bronchial secretion with asthmatic symptoms. She is a slender girl, nineteen years of age.

April 1st. Noticed yesterday what seemed to her to be a bruise on her left leg at the lower extremity near the ankle. On examination there was a red swelling in the subcutaneous tissue about the size of an English walnut, quite tender, situated at the lower end of the tibia. Also there were similar bumps on the inner side of the left knee, and one about midway on the tibial surface between knee and ankle. There were also a few on the inner surface of the right knee. For the past week has been weaker than usual, rapid pulse, complete loss of appetite; bowels were normal. Temperature, pulse, and respiration were higher, slight rise to 100° F., beginning four days after a dose of I. K. and lasting five days.

She was put on salol, grains ten, every two hours, and was taking five drops of tincture of digitalis every four hours, tincture of nux vomica, ten minims three times daily after meals. Three days later, several other lumps appeared on the right leg in a similar position. There was no aching or other grippal symptoms. There was some pain in the left hip joint. The temperature showed a daily rise to 100° F., pulse 90 to 120, for six days during which there were several crops of nodosities on the extensor surfaces of the limbs and both elbows became sore. She complained of great pain in the left hip and both knees ached.

On the fourth day of the fever she received 2-IV of Spengler's I. K. Three days later the pulse fell to 100, and the day following the dose it had showed evidences of slowing Also on the third day following the dose the temperature had fallen to normal with a maximum of 99.4° F., pulse 90 to 96. On that day she received the next dose of I. K., 2-III, the next day the temperature was from normal up to 99° F. In six days the pulse showed considerable slowing, the temperature not rising above 99.4° F., and the pulse varying on an average between 80 and 100. During that time, however, she suffered from pain of an aching nature in both heels, both knees, the left hip, both elbows, and there were several recrudences of nodosities. I. K. was given on April 24th and 29th, 2-II and 2-I, respectively. On April 13th she was feeling fairly comfortable, the bumps had become a bluish green, showing absorption, and no new ones had appeared. The salicylates were discontinued early, before the temperature went up, having caused gastric pain after each dose; therefore the course of the condition was not influenced by the salol.

Case VIII (erythema nodosum). Young girl of fifteen years. Was an early case with slight infiltration at both apices, with slight daily rise in temperature. Patient was being treated with Spengler's I. K. and had gained eleven pounds in less than two weeks. Suddenly the temperature rose to 102° F. and there appeared a number of reddish inflammatory masses about two by two cm. in size, upon the extensor surfaces of the legs and arms, with a few on the trunk. Several on the shins seemed to arise almost from the bone and were exquisitely tender. The general symptoms were headache, malaise, aching through the limbs, but no joint swelling, nor any gastric or intestinal disturbances. White blood count showed 16,200 differential, neutrophiles fifty-eight per cent., eosinophiles 2.6 per cent., lymphocytes 26.8 per cent., myelocytes 0, transitionals 11.8 per cent.

For a period of nine days the temperature continued high (102.4° F.) and while during this time a few new lesions appeared, they gradually faded, becoming green, yellow, and disappearing. Through it all she gained two pounds during the week. The leucocytes fell to 11,100. The indican was increased and the urine also showed a diazo and much albumin. There was some increased cough and expectoration, and marked nervousness, insomnia, and restlessness.

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[1] *Immun Körper*, or Spengler's tuberculin.

While this case belongs to the pure erythema nodosum classification, the association of such lesions with general symptoms resembling a tuberculin reaction are sufficiently interesting to cause one to study them more closely. Tuberculosis is not usually supposed to cause such lesions, hence this report.

The idea that erythema nodosum might be of tuberculous character was first put forward by Landouzy, and from time to time cases have been described in association or followed by tuberculosis. M. M. Chaufford and Troisier (*Semaine médicale*, xxix, page 34) have succeeded in demonstrating lesions clinically identical with erythema nodosum after the injection of tuberculin in a girl of eighteen years, the subject of tuberculosis of the lungs.

Barbier and Lian (*ibidem*, page 226) showed a case of this disease in a girl of fourteen years before the Société médicale des hôpitaux de Paris, in whom a positive reaction might be produced by the injection of other serums, but the last observers were able to reproduce locally the lesions on this affection only by tuberculin, and not by any other serum. In their patient fresh lesions appeared upon the legs as a result of the injection, although the original eruption had faded.

Marfan relates three cases of erythema nodosum under his care, followed respectively by tuberculous pleurisy, arthritis of the knee, and tuberculous meningitis. He concludes, therefore, in the light of recent work with tuberculin, that this disease is often the result of bacillary infection (*Presse médicale*, li, page 457, 1909; *British Journal of Tuberculosis*, iv, 5).

Obstinate sciatica, painful back, occipital neuralgia, painful toes and heels, morbus digiti (dead finger) are among the many curious complications met with in the clinical course of pulmonary tuberculosis. Many of these cases show actual evidence of neuritis, absent or exaggerated knee jerks, changed skin sensation, tenderness along the course of the nerves, and muscular changes. The following case is of interest:

CASE IX. Young man of twenty-seven years, showing an old chronic infiltration through the right lung and a recent lesion at the left apex, gave the following history; About eighteen months prior to examination began to suffer from soreness in the back, low down in the sacral region, which made it impossible to lie on either side. No history of trauma. The trouble increased and he began to suffer from cramps in the anterior thigh muscles, worse at night, would come on at intervals of every two hours. Coughing would cause severe sharp pain in back and down thighs. Finally had to go to bed, and resorted to morphine to relieve the severe pain. During this time was unable to stand. While he had been an unusually heavy eater, and used some alcohol, there was no evidence of either acute rheumatic or alcoholic neuritis. About the same time he began to cough and expectorate and suspected lung trouble. On examination, there was a painful area on both heels, about the middle, and in these areas slight redness and much tenderness. The toes were free from disturbance. The knee jerks were lively, calves slightly tender, also tenderness over the sacrum, particularly the lower part; the sciatic nerves were also tender on pressure. Hands were tremulous, no Romberg, pupils normal, other reflexes normal.

Under general hygienic dietetic treatment and tuberculin these symptoms slowly subsided. The salicylates and similar preparations had absolutely no influence. I regard the condition as a tuberculous neuritis or neuralgia. Interesting symptoms are also those of the following case:

CASE X. Hebrew, twenty-eight years, travelling man. At the onset of his disease, before the diagnosis was made, he was stopping in Denver. He was extremely nervous, and became possessed of a peculiar obsession, in that it was absolutely impossible for him to cross a wide street alone. This came on suddenly and I rather believe it was indirectly brought about by the effect of the altitude. Still, when he came to California the idea persisted, in that he could not cross a wide street alone, nor even a wide room. During the course of his disease, he at one time became delirious, and exhibited a typical infectious and exhaustive psychosis for several weeks. From this he recovered. He had marked consolidation of both upper lobes, a daily temperature of 101° F., was very constipated, had much gas in bowel, was continually belching, had chronic backache, tenderness over the second to seventh dorsal spines, and hyperesthesia over the segments corresponding to these zones, even on to the abdomen. Recently he showed a very painful condition of neuralgic nature in the right leg and thigh. The calf muscles were sore to the touch, tender over the sciatic nerve and around the hip, with difficulty in walking, exaggerated knee jerks, and marked electrical excitability of the thigh and leg muscles. The high frequency current seemed to do more good than anything. There was no alcoholic or syphilitic history.

CASE XI (marked neuritis in pulmonary tuberculosis). Man, aged forty-seven years, ill three years with a chronic fibroid phthisis, began to suffer excruciating pain at the bottom of the feet, the big toes, and particularly the heels. In this case there was an old syphilitic history (fifteen years prior to tuberculosis), well treated, however; Wassermann was negative. The condition first began in the right heel as a dull neuralgic pain, shooting up the leg. Pain was increased on movement. There was no hyperesthesia of the skin over the tender spots. Complained of tingling sensation, and was very nervous and emotional; sphincters normal; and some dull headache, urine normal, no gastric crises. Sometimes felt cold dead sensation on anterior part of right leg, even as far back as five or six years ago. Knee jerks exaggerated, pupils normal. Marked tenderness over the sciatic nerve and several spots about the right hip. No joint disease present. The patient was unable to stand and was very miserable. Mercurial treatment was ineffective Salicylates, colchicum, etc., were of no avail. Finally the use of electrolytic catalysis of iodine over the tender areas seemed to do the most good. This patient had a marked case of tuberculous neuritis, and, as the disease became quiescent, the symptoms gradually disappeared.

CASE XII. Man, forty-five years old, had suffered from asthma and bronchitis for twenty years; only recently found out the tuberculous nature of the process. The case exhibited, beside marked neuritic symptoms, a mental aberration characterized by psychic impotence, inability to concentrate the mind, emotionalism, and neurasthenia. One brother had tuberculosis, and one cousin was odd and secretive. His early life was uneventful; was a successful business man and never ill until he married. He stated that he overindulged in sexual intercourse, became depressed, emotional, slept poorly, and about the same time a cough developed. Became so depressed and apathetic that he gave up active business in 1903. In 1907 began to suffer from pain and a feeling of weakness in the small of his back, attributing this to a fall. Had an idea that the left testicle was shrunken, which, however, was erroneous. No history of alcoholism or syphilis. Some dull headache for past twenty years. About one year ago, began to have cramplike pain in his legs, particularly in the right hip joint, often could not move right leg. Would come on while walking on the sidewalk and he would have to stop for quite a while before continuing. There was never any rheumatism, no joint swelling, or sore throat.

He complained of a numbness of the right little finger, running up to the elbow. There was no tremor of hands, no paralysis, no sphincter symptoms, no gastric crises; eyesight was normal. One attack of facial neuralgia fifteen years ago, but no symptoms or signs of paralysis.

There was pain and tenderness over the sacrum near the coccyx, on the left side, tenderness over the right sciatic nerve, no tenderness over the spines, no marked changes in sensation, muscular movements slow, spinal column seemed to lack elasticity, bent at knees to pick articles from floor, slight depression over eleventh and twelfth dorsal spines; muscles tender and painful on both sides of thighs, more on right side, particularly on movement. Knee jerks exaggerated, also ankle jerks, but equal; muscles of both forearms equal, grip good. (Stated that he had typhoid fever twenty-two years ago, but no definite spinal symptoms at that time.) Muscles, right thigh 45.5 cm., left 47, right calf 31.5 cm., left 34 cm. Muscles of left calf more developed than right. Stated that skin felt flabby and dead over left leg. No Babinski, no paralysis. Cremaster reflex normal, some tenderness over left crural region, and over left Poupart's ligament. On standing, the right gluteal fold was lower than the left. No joint stiffness. Some tenderness and dull pain at base of head. No Romberg; left pupil slightly sluggish in reaction, but otherwise normal. Speech slightly of scanning nature but not definitely so. Sexual power about gone. Showed slight incoordination with left hand. Left facial furrow deeper than right. Tongue protruded normally, no tremor. The lung condition showed diffuse thickening through both lungs, with bronchiectasis, and many bacilli (tubercle) in sputum. Slight daily rise of temperature, activity in left upper lobe of lung, pulse 100 to 110.

In this case one would suspect multiple sclerosis, but the long duration, the absence of very definite scanning and tremor, as well as his age, were against this diagnosis. For paresis also certain diagnostic signs were absent. The long duration of the tuberculous infection finally led us to the conclusion that the disturbances were due to the tubercle toxine, with probably a psychoneurosis as a background. Under general treatment the patient improved a great deal and gradually became stronger and mentally more alert.

Case XIII. Man, thirty-three years old, four years ill, having also a laryngeal infection, began to suffer from severe pain of cramplike nature in both calves, difficulty in moving the legs, and swelling of the feet. The knee-jerks were very lively, there was some redness and swelling in both popliteal spaces with marked tenderness extending into calf muscles. At first the skin over the back of the leg and outer side was hyperesthetic, later it became anesthetic.

Partial paralysis ensued, and the patient is still under observation. This illustration of neuritis in pulmonary tuberculosis is of interest because of the bilateral nature of the affection.

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212 American National Bank Building.

SCARLET FEVER.

By W. L. Somerset, M. D.,
New York.

If a patient present no suggestion of contagion, he may, happily, go on to a perfect recovery, though handicapped by a wrong diagnosis or by no diagnosis at all, and nobody be a bit the worse. But let there be a possibility of something "catching" and the situation is entirely changed. It is to everybody's advantage—including his own—that the doctor make a correct diagnosis and be quick about it, for it too frequently happens that there is really no place where a contagious suspect may lay his head.

Among the exanthemata, scarlet fever presents the greatest number of cases giving rise to difficulty in diagnosis. This is so both because scarlet fever presents many widely differing clinical pictures, and because many distinct clinical conditions more or less closely resemble scarlet fever. In the literature pertaining to this disease, written during the past sixty-five years, one can scarcely fail to be impressed by the multiplicity of variations, or even radical differences, given in connection with every symptom. Take, for example, the eruption; it may be intense or faintly marked; universal in its distribution or strictly localized; rough or smooth; mottled or uniform; erythematous or ecchymotic; it may persist for a week or more, or be as evanescent —almost—as a blush; and, lastly, it may be absent altogether! A corresponding array of possibilities is given in connection with every cardinal symptom. To offset all this, very little is said about the many things scarlet fever may not do. Yet, in order that our conception of the disease may not be a worthless and unworkable jumble of ideas, involving fever with sore throat and rash, we must bear in mind that variations in individual symptoms have their limitations; that no one symptom may be the sole basis for a diagnosis; and that the order of appearance and duration of symptoms is much less variable than the symptoms themselves. The cardinal symptoms are fever, endanthem, and exanthem. Their character, duration, and sequence must guide us.

The onset of scarlet fever is invariably accompanied by a temperature above the normal. If the prodromata, headache or nausea or vomiting or all of them are present, fever will surely accompany, persisting for four or more days without intermission. The temperature usually rises as the eruption appears, up to the fourth day of the disease—in favorable cases. It may never reach 100° F. Mildness of febrile movement is not against a diagnosis of scarlet fever. Afebrile cases, or cases with initial fever, lasting only twenty-four hours or less, do not occur.

The endanthem is synchronous with the fever. The prodromals just mentioned, with or without chills or convulsions, indicate a mucous membrane lesion somewhere—in stomach, intestines, or kidneys. If these symptoms are absent, sore throat with fever ushers in the disease. The throat affection may amount to little or nothing subjectively. There may be a mere tickling, or the patient may insist that he is conscious of nothing wrong with his throat. Hyperemia, however, though painless, will be present. The endanthem never misses the fauces. In the mildest cases, pillars, tonsils, soft palate, and uvula are congested. This congestion, or the more serious affection, if present, persists like the fever through the period of eruption. The intensity of the throat lesion bears a most intimate relation to the height of the fever. Chronic or immediately preceding acute diseases of the throat, or operations, may conceal the throat lesion of scarlet fever.

The exanthem must be insisted on as *sine qua non*. History of exposure, followed within a week by vomiting, sore throat, and fever, may offer the strongest temptation, but we must refuse to make a positive diagnosis of scarlet fever *sine eruptione*. Such cases certainly require isolation and the closest watching; but, if we cut loose from the exanthem, we are bound to drift into a sea of troubles where uncertainties, dangers, and ultimate disaster surely await us.

The exanthem easily takes first place among our cardinal symptoms, in the number of variations from what we all know to be usual and characteristic. These variations, however, have their limitations. The true exanthem, i. e., the dermatitis with subsequent desquamation, does not appear on the face. In many cases of scarlet fever the face gives no indication at any time that the patient is ill. In many cases the face is flushed. This flush affects the cheeks, temples, and eyelids, which may be swollen; but there is no dermatitis; the skin is smooth. The flush does not extend to lips and chin. Circumoral pallor is a real sign of scarlet fever. There is a good deal of insistence in describing the dermatitis, with its miliary vesicles, on the forehead and along the line of the hair. I can account for this only by thinking that the patients had prickly heat with their scarlet fever—or without it. The rash is sometimes mottled — resembling measles—never throughout its entire extent, but in patches only as on the forearms or trunk. These mottlings, furthermore, never show a crescentic arrangement and never appear on the face. The rash may be strictly localized. I have seen an undoubted case of scarlet fever with a patch of exanthem on the extensor surface of each elbow and under the chin, and none elsewhere at any time. Corroboration from throat and temperature is doubly necessary in such a case; and, fortunately, is usually present in added measure. Even when most patchy, scant, or otherwise irregular the eruption of scarlet fever never presents a distinct margin; there is no easily traceable outline between rash and normal skin, such as is often discoverable in digestive, drug, and antitoxine rashes. The rash of scarlet fever, again, does not begin to desquamate on the day of its appearance as do many of the idiopathic skin diseases. Best guide of all, however, is the duration. The exanthem may come out quickly. A skin normal to the eye at 9 o'clock in the morning may show an intense scarlet fever rash by high noon. It never fades in this way. Whatever the character or extent of a scarlet fever eruption may be, if it shows first to-day, it will be present to-morrow and the day after. Its sudden appearance, just referred to, is infrequent, progress from chest to feet usually extending over twenty-four hours or longer; once "out," however, on any given area, its presence there is assured up to the third day and without any marked change in character during the decline. If the dermatitis is to be excessive, it is so from the first. If hemorrhages are to be present, they appear early; so with mottlings and other irregularities. Intensity of rash is not intimately related to height of temperature or to severity of poisoning.

The pulse of scarlet fever is a rapid pulse. So many things may quicken a pulse, especially in children, that the rate here, as elsewhere, is of little diagnostic value.

The tongue, like the face, may give no indication at any time that the patient is not in his ordinary health. It may be white coated at the onset of the disease, and later, when the coating disappears, present its usual appearance; or it may present the white coating with enlarged papillæ showing through; edges and tip not coated and fiery red. This becomes, after three or four days when the dead epithelial coating has desquamated, the strawberry tongue. This tongue is clean and red, with prominent papillæ. It is unique. Toward the end of the first week it may give very gratifying confirmatory evidence.

The great majority of cases of scarlet fever desquamate in a way familiar to us all—beginning any time from the first to the fourth week and completed in five or six weeks from onset of disease. Skin comes off in flakes or patches of appreciable size. The abnormality is especially noticeable on palms and soles. But as the rash is variable, so is the desquamation. It may be so fine on the general surface of the body as to amount to little more than a slight increase of natural scurf, and escape notice if the patient has a daily bath. The palms and soles of scarlet fever patients do not invariably desquamate. We are prone to believe, if there is no desquamation by the end of the fourth week—for it may be delayed so long and then be fairly abundant—that the diagnosis was wrong. Undoubtedly, however, there are patients presenting fever, sore throat, and exanthem mild in form, yet all characteristic of scarlet fever, who do not desquamate. Sufficient and all around satisfactory evidence of the first week must not be thrown out of court through absence of desquamation. Again, many other conditions result in desquamation closely simulating that of scarlet fever. Measles, or German measles, with intense exanthem, may desquamate on the trunk and the upper extremities, including the palms. (I have never known either of these diseases to cause desquamation on the soles.) Counterirritants also, newly acquired habits of bathing, various forms of dermatitis, malnutrition with continued fever may bring about closely similar conditions. Hence we must differ from those who say that desquamation is the sure and infallible test, either for or against the presence of scarlet fever. With a history of preceding illness, with complications or sequelæ, desquamation often gives us valuable and sufficient corroboration; but, just as no rash however characteristic, without fever or angina, may be made the sole basis for a positive diagnosis, so desquamation, unsupported by other evidence, does not lift the burden of proof entirely from our shoulders. Isolation, until the offending scales are removed, is the safest course.

Concerning malignant scarlatina, I will quote a few sentences from a standard treatise of sixty years ago; remarking in passing, that the same ideas, with very little variation in expression, come right down the line to the present day: "In certain cases of extreme violence the system is at once overwhelmed by the force of the disease, . . . the affection of the throat not being essential to the malignancy; . . . feeble attempts may be made at reaction; febrile heat may be developed to disappear again; and even some violet specks may be seen as if they were endeavoring to struggle through the skin. But the resistance soon ceases, and the patient dies upon the second or third day." Further on, "violent initial pains in the loins" are mentioned and "reluctant partial and dark hued efflorescence." The same class of cases is referred to by a much more recent author when he says: "The patients have high temperatures or low temperatures with collapse, . . . bleeding from mucous membranes is often present. The eruption is irregular and dark colored. The patients die in from eight hours to two days."

I believe it is historically correct to say that an indefinite number of centuries ago, measles and scarlatina were regarded as varieties of smallpox; that later, measles emerged as a distinct disease carrying scarlet fever with it; and that scarlet fever continued to be talked and written about as a variety of measles until the middle of the sixteenth or the beginning of the seventeenth century. During this confusion among the exanthemata, the malignant cases must have been worst confounded, for they are most indeterminate. Smallpox and measles present malignant cases. What do they show? The quotations cited tell us exactly: An ill defined, scanty, dark hued erythema, internal hemorrhages, collapse, death within forty-eight hours —with an initial scarlatinal blush on the skin, and congested fauces to add to the uncertainty. With the disappearance of smallpox, however, these cases have also disappeared, for malignant measles is so rare in this community as to be practically negligible—furnishing only the exceptional case necessary to prove the existence of the rule. Concerning fatal cases of scarlatina, I submit that the severity of the throat affection is in accord with the intensity of the poisoning; that the temperature is high to the end; and that the fatal result does not occur as early as the second day from the onset; and, nowadays at least, is not by way of collapse and subnormal temperature.

Many more mistakes are made by giving scarlet fever to those who have not it than by withholding it from those who have. In any case, seen on the first or second day of the eruption, where doubt arises, either from mildness or irregularity of symptoms, a second visit, twenty-four hours later, is the best safeguard against a wrong diagnosis.

107 LEXINGTON AVENUE.

PRESCRIBING GLASSES.*

A Caution against Indiscriminate Prescribing in a Certain Class of Cases.

By D. Forest Harbridge, M. D.,
Philadelphia.

The following remarks apply only to that class of patients of school age up to possibly fourteen or fifteen years, patients in whom there may be present low degrees of simple hyperopia, or low hyperopia with a low amount of hyperopic astigmatism, the asthenopic symptoms being of an indifferent character, the axes of the cylinders being symmetrical. Myopia and mixed astigmatism may be entirely eliminated from the domain of this paper. It is believed by the writer that all are agreed such cases should always be fully and accurately corrected.

Possibly the writer may be accused of being a pessimist. He certainly pleads guilty to the accusation of not prescribing in the former type of case, and would emphasize the necessity for a rather more conservative use of glasses as a true therapeutic agent, and not the routine ordering largely to satisfy a form of community hysteria so often manifested. Undoubtedly we have all observed many instances in which a child is ordered glasses, and immediately others of the same family or community come seeking them, and in the vast majority of cases securing what they ask, entirely disregarding the real needs. Those of us who visit orphanages and places where numbers of children are cared for certainly see striking examples. The present system of school inspection brings to the oculist a great many children referred by the school physician. Particular attention is directed to those from the rural districts where the system has recently extended, but has not had time to fully mature.

The school physician's findings and recommendations certainly are not to be taken as final, for it is quite manifest that he is not in a position to determine accurately the static refraction of the eyes. His recommendations should be accepted purely as a suggestion that the child receive a more complete examination, with the view that if the degree and character of the refraction and symptoms warrant correcting lenses, they may be ordered. Otherwise a frank statement to the effect that they are unnecessary should be made to the parents.

Undoubtedly the children are sent by the school physician in good faith, and this is not to be taken as a reflection upon his ability to determine the real needs of the little patients. Therefore it is highly desirable that a cycloplegic be instilled and the static refraction accurately determined in each case.

The routine methods through which so many of these children go, of being examined, medicine ordered, and glasses prescribed, largely urged and abetted simply because they are referred by the inspectors, seem especially pernicious and an abuse of the confidence placed in the oculist by parents. Certain degrees of ametropia may be uncovered in practically every patient's eyes. It is also not very difficult to elicit many asthenopic symptoms, particularly from an impressionable child. Regulated diet and a dose of calomel clear many of these cases. Therefore it requires a well ordered judgment to sift the true from the false information.

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*Read at the May meeting of the Willis Hospital Ophthalmic Society.

In private practice there is perhaps in certain instances a commercial aspect; as one patient put it, "the idea of paying for nothing," or in other words, the patient comes with a preconceived notion of wanting glasses. An explanation setting forth the necessity of remunerating for time and experience involved in making a complete examination, which is not dependent upon whether glasses are prescribed or not, usually clears the situation.

It has always been the writer's personal practice to refuse to order glasses when in his judgment the errors were low and the true subjective symptoms when carefully inquired into, practically nil. Most patients have appreciated this advice; occasionally, however, some lead to embarrassing situations. To illustrate:

A child, aged nine years, with a refraction, under atropine, of O2+S 0.50, no glasses were ordered. The child returned in three months, again demanding glasses. Thinking possibly an error had occurred during the first examination, a subsequent test was made with the same result and a reiteration of the former advice regarding the uselessness of ordering such a lens. Nine months to a year later the child returned (in regard to other matters) wearing a pair of +S 0.50 lenses. The mother explained that she knew her daughter needed glasses, so she took her to another oculist (not optician), who very graciously told her (knowing her to be in very modest circumstances) that he would not charge her for treatment, but only the expense of glasses, or $5.50! They had the cheapest kind of gold filled frames. This is obviously an extreme case, but it clearly emphasizes the necessity for less of the commercial spirit and more real professional integrity. It is the office of the physician to instruct and guide the uninformed. What this child really needed was $5.50 worth of nutritious food and not a foolish pair of glasses. The parent knew no better and really believed she acted for the best interest of her offspring.

We have all undoubtedly observed many instances in which incorrect refraction has been used with asserted comfort. To illustrate: A patient was wearing low minus lenses sold to the patient by a so called "eye sight specialist"—an examination free type of optician—whereas in reality the true condition present was a low hyperopia. Yet these patients will boast of complete comfort and the absurdity in the use of a cycloplegic, etc. This seems to the writer to indicate, in a measure at least, the futility of indiscriminate ordering for low grade hyperopic errors. For here are cases having low grade hyperopia, increasing the same by wearing myopic lenses and still asserting comfort. In psychology lies the only hope of an explanation. It reminds the writer of a shrewd colored former maid in his employ, whose refraction proved to be +S 0.75. It was suggested that glasses were unnecessary and a needless expense. The maid insisted, and when pressed for a reason, explained that the personal adornment while attending church or entertainment would be most satisfying. Regarding the expense, it would prove a very profitable investment, by virtue of the fact that they could be easily rented to her friends at ten cents an evening whenever social aspirations seized them.

The oculist has been accused of committing, either in part or in whole, some fifty-seven varieties of ophthalmic blunders. The writer, however, wishes to caution against committing the fifty-eighth of being overenthusiastic in prescribing glasses for the cure of appendicitis, ingrowing toe nails, corns, etc. The use of the foregoing quality of lenses has its limitations. It is also well to remember that the amplitude of accommodation of a child at ten years is fourteen diopters. The hyperopic oculist cannot fail to theorize on the possibility of his professional judgment being brought into question. He will endeavor to estimate just when a reaction from the present high wave of hysterical popularity will set in.

We all know of many instances where the medical profession has become hysterical over some new therapeutic agent, only to see it gathered to its fathers and go the way of many of its predecessors. Sane judgment and glasses are valuable therapeutic agents, having a definite and permanent position in our armamentarium. The exercise of the former in the application of the latter to the *needs* of our patients and not their wants, seems to the writer to be the proper spirit.

256 South Fifteenth Street.

MEATOTOMY.

An Improved Technic for the Operation.

By Edgar G. Ballenger, M. D.,
Atlanta,
and Omar F. Elder, M. D.,
Atlanta.

Painful urination after meatotomy and the necessity for subsequent instrumentation to prevent the cut surfaces from growing together, may be prevented by cauterizing the incised area with a saturated solution of nitrate of silver in concentrated carbolic acid.

For the past year we have used this method when meatotomy was done, and have found it a distinct improvement in the technic. The penis should be thoroughly cleansed. A few crystals or a tablet of cocaine is deposited within the meatus and allowed to remain there five minutes, and a rubber band is wrapped around it so as to prevent hemorrhage. A straight, blunt pointed bistoury is used to incise the meatus to the desired extent. The cut surfaces are dried with sterile gauze and then cauterized with the saturated solution of nitrate of silver in concentrated carbolic acid. The application should be made carefully so as to avoid smearing the solution in the urethra or on the penis. The excess is wiped away, then a similar application is made with Monsell's solution. While it is still wet with this solution, the rubber band is removed and the part watched for a few minutes to see if there is any hemorrhage. In case there is, it may be checked by again applying the Monsell's solution. No dressing or after treatment is required. The chief point to bear in mind is that the bleeding should be stopped before using the silver carbolic solution.

The extent of the subsequent contraction is less than that seen after the usual operation, but should be considered when making the incision, which should be two sizes larger than that desired. We wish to warn against the extensive incisions sometimes made, as we feel they are worse than useless.

A CASE OF APOPLECTIC MALARIA.

By Bernard Kaufman, M. D.,
Maryville, Cal.

The following case is probably of some interest from two points of view: First, it seems to prove the existence of this type of malaria notwithstanding the fact that several good authorities on this subject deny its existence; second, it shows the dangers of hypodermic medication with quinine unless in a dilute state.

Case. E. G., aged fourteen years, was in apparently good health up to the time of attack. He had attended school the previous day, and had not complained of feeling unwell. He had had no headaches and no fever, nor in fact any of the prodromal symptoms of malaria previously. Several years before he had had an attack, which from the history given by the parents, was evidently of the tertian type. On the morning of July 20, 1910, he awakened at 7 a. m. and, calling his mother, asked for a piece of bread and butter. This was given. When the mother returned to the room to awaken him again for school she found him apparently asleep, but her attempts to arouse him failed. I was called at 9 a. m. when the foregoing history was learned. A smear of blood was taken from his ear, and later at my laboratory, estivo-autumnal parasites were found in the slide. The temperature per rectum was 102° F., pulse 120 and full and bounding, with stertorous breathing. A smart smack on the face at this time would cause him merely to turn his head to the other side. On calling again at 11 a. m. I found him in a still more comatose condition, so that now a similar smack on the face brought forth no movement at all. The temperature per rectum was now 104° F. He was removed to the hospital, and one hour later the temperature was 105° F. per rectum.

Hypodermic injections of quinine hydrochloride in ten grain doses were resorted to. The skin was sterilized and the solution of quinine was also made sterile. The important point is that the quinine was dissolved in about forty minims of water. This was injected subcutaneously in various parts of the body, as the accompanying photographs show. By midnight the temperature, in spite of ice packs, was 107° F. per rectum with no signs of abatement of the comatose condition. From this time, however, the temperature gradually fell, till, next day, at 10 a. m., it was 99° F., and the patient could be roused to answer his name. By evening he was perfectly rational again with still no rise in temperature.

At the sites of injections of the quinine hydrochloride whitish circular areas developed which were hardened and anesthetic and with no marginal areas of inflammation. These persisted for a few days. Then a line of separation became noticeable and gradually became more marked. During this time there had been no recurrence of high temperature, and the areas were becoming separated from their bases until they were ultimately shed, leaving scars in their places. One of them on the thigh became infected and needed a counteropening to drain, but soon cleared up.

The interval elapsing between the time when the mother gave the boy the bread and butter and when she found him unconscious was barely an hour. How soon after she saw him at 7 a. m., this condition developed, is a mystery; but it certainly seems a true case of the apoplectic type of pernicious malaria. Lavaran (1) and Cardamatis (2) doubt the occurrence of this form, while others have reported similar cases falling under this classification, including Ewing, Morris (3), and Davidson (4).

The results of the hypodermic medication serve to emphasize the need of greater dilution than that used in this particular case. We are usually so intent on the details of asepsis that other equally important factors are apt to escape our minds. Shoemaker (5), Tyson (6), Craig (7), and Manson (8) all warn against the bad results obtained from the hypodermic injections of quinine, and some of them have given up this mode of medication on account of the frequency of abscess formation, e. g., Shoemaker and Tyson. Deaderick (9), however, asserts that if the solution of quinine is dilute this method of administration is perfectly safe, and suggests the following formula as the most suitable: Quinine hydrochloride, fifteen grains; water, two and a half drachms. In this dilution he says that the intramuscular injections can be given with perfect safety.

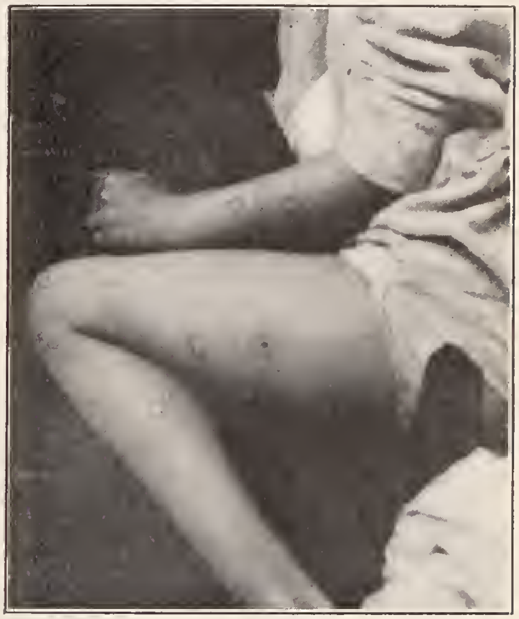

Fig.—Kaufman's case, showing the effect of too concentrated solution of quinine hydrochloride as hypodermic injection.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXX.—How do you treat subacute and chronic laryngitis? (Closed January 15th.)

CXXXI.—How do you treat psoriasis, and with what success? (Answers due not later than February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXIX has been awarded to Dr. Ben N. Wade, of Portland, Oregon, whose article appears below.

PRIZE QUESTION CXXIX.

THE MANAGEMENT OF CHRONIC ULCERS OF THE LEG.

By BEN N. WADE, M. D.,
Portland, Oregon.

In the treatment of this condition, the etiological factor or factors should be sought and corrected, for instance, uncleanliness, varicose veins, syphilis, or an occupation in which the patient is required to stand long hours should be changed.

Personal hygiene plays an important rôle in the treatment of this condition. The patient should be clean of body, as often filth is the very cause of the ulcer. The bowels should be kept open, and, if debilitated, the patient should receive a tonic, such as the official iron, quinine, and strychnine. Some authorities give potassium iodide in this condition, whether the ulcer be of syphilitic origin or not.

In all cases, if possible, it is best to place the patient in bed and keep the affected leg *elevated.*

The nonoperative treatment consists in the application of various antiseptic powders and lotions, such as thymol iodide or two per cent. boric acid solution. Balsam of Peru is valuable, not only for its antiseptic action, but also for its stimulating action on granulation tissue. Tincture of iodine applied once or twice a week also acts in this manner. Scarlet red ointment is also valuable for its stimulating effect on the granulation tissue, and sometimes causes a rapid healing of the ulcer.

An adhesive strap gives good results in some cases, or an elastic bandage or a silk bandage applied from below upward are of great use in cases where the patient is unable to stay in bed, especially in cases of varicose ulcers. Unna's casts are used with success in many cases. Bier's hyperemia sometimes hastens healing by increasing the local arterial blood supply. This is not applicable to all forms of leg ulcer, however, as in some cases of varicose ulcer, profuse hemorrhage results from the local hyperemia bursting the weakened veins in the ulcer.

Treatment of the complications of chronic ulcer is very important, as this alone will sometimes effect a cure. An almost invariable accompanying lesion is a chronic, squamous eczema which should be treated with some nonirritating lotion or ointment, as zinc oxide ointment. Inflammation around the ulcer (cellulitis) is best treated by elevation of the limb and hot boric acid applications.

Operative treatment alone effects a cure in some cases, as the ulcer will no more than become healed by some form of medical treatment than some slight trauma will immediately start the formation of another ulcer. If varicose veins are the cause, they should be removed, and in this operation it is always advisable to remove a portion of the internal saphenous vein about the middle third of the thigh (Trendelenburg's operation), an elliptical incision made around the ulcer about one inch from its border, and carried down through the aponeurosis is an excellent procedure and often a speedy cure follows. This was first advocated by Sir John Gay, of London. Bleeding from the wound is easily controlled by pressure and the skin sutures. Curetting of the sluggish margin of the ulcer and also of sluggish granulation tissue, followed by Thiersch grafts are followed by excellent results, especially in large ulcers. Covering the granulating surface with a neighboring skin flap does not give uniform good results as do the skin grafts.

Dr. Frank C. Carlton, of Salem, Mass., writes:

My treatment of all ulcers, so far as local applications are concerned, is the same; and the methods used have certain principles back of them, which, when carried out, have a marked effect upon the healing process. During all the time I am treating a case, I keep in mind the fact that wounds tend to heal best when kept sterilized and dry. I apply ninety per cent. alcohol to the ulcer, by soaking sterile gauze in the alcohol, and then carefully wash the whole surface of the lesion, taking special care to clean the margins thoroughly. I also wash the entire surface of the skin on the leg, around the region of the ulcer. The patient will complain a little of the burning sensation for a while, but this does not last long. The alcohol, in my opinion, does four things:

1. It sterilizes the surface of the ulcer and skin; 2, it stimulates tissues, and starts them growing; 3, it absorbs water from the tissues, and helps make the surface dry (I apply no watery solution of any kind); 4, it prepares the surface of the ulcer for the ointment used, which is as follows:

℞ Acidi borici, ...ʒii;
Adipis lanæ, }
Petrolati, } ....āā ℥ii.
M. ft. unguentum.

This ointment is spread liberally over a piece of sterile gauze and placed over the ulcer, and a firm bandage applied, extending from the foot to the knee, and left for twenty-four hours, at the end of which time the bandage and dressing are found soaked with serum and some blood; the wool fat, having an affinity for water, draws fluid from the tissues. The dressing is removed and the ulcer washed again with alcohol, the whole leg given a massage with alcohol and a stiff scrubbing brush. This helps to drive the blood out of the engorged veins, stimulates the nerves, and aids in the healing of the ulcer. The ointment is again applied, and remains twenty-four hours, as before. After a few days, the base and edges of the ulcer will become soft, so that all the old débris of coagulated serum and dead cells can be scraped off with a small knife or picked off with small pincers, so that a clean, granulating surface is obtained. It is also very important to cleanse the edges of the skin around the margins of the ulcer, so as to allow the new epithelial cells to grow, thus covering the surface of the ulcerated area. I use the wool fat ointment for two or three weeks, and then I begin with a more stimulating ointment, using a five to ten per cent. thymol iodide ointment, made up with cold cream as a base. I continue the same treatment with the alcohol, and apply the new ointment on gauze dressing, after washing the ulcer. Sometimes the granulations form faster than the epithelium, in which case I burn them with a caustic pencil of silver nitrate.

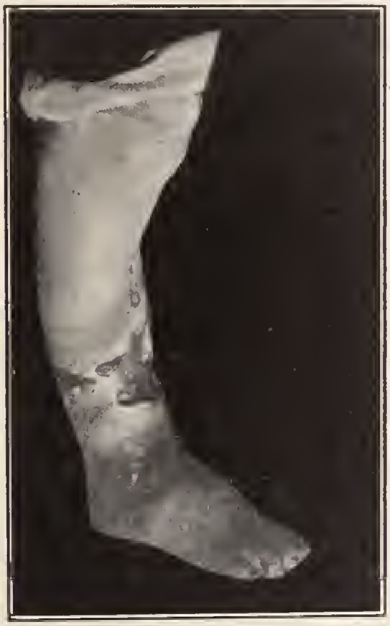

Fig.—Chronic ulcer of the leg treated by Dr. Frank C. Carlton.

To sum up my treatment in a few words: 1. I aim to keep the ulcerated area sterile. 2. I put on an ointment that does not kill growing cells, and one that helps to withdraw serum from the tissues, so that new serum can be brought in and feed the growing tissues. 3. I use massage, for the purpose of stimulation.

For syphilitic ulcers the same ointments are used, and the same care taken as has been described in connection with various ulcers; but in addition, I give a saturated solution of potassium iodide, five drops after meals, and increase daily one drop until forty drops is reached, or until the patient commences to have symptoms of iodism, when I stop the medicine.

In all my cases I keep the patient's bowels free with a laxative pill. I have found, in the cases I have treated, that even the worst ulcers can be permanently cured in from three to four months, provided the patient has not diabetes or Bright's disease, which conditions may be back of the local trouble. From what I have seen of cases treated by other physicians, I believe that personal interest in the case counts for much.

(*To be continued.*)

◆

Therapeutical Notes.

Potassium Salts in Carcinoma.—Dr. F. W. Forbes Ross, of London, in his book on *Cancer* (London, 1912), to which we refer editorially on page 248, says: "All patients with cancer should take sixty grains or more of potassium bicarbonate every morning, in warm water (with or without effervescence), on an empty stomach. . . ." The following is a useful prescription:

℞ Potassium bicarbonate (citrate)	ʒiij;
Potassium hypophosphite,	ʒiij;
Iron and ammonium citrate,	ʒss;
Solution of bismuth and ammonium citrate,	ʒiij;
Tincture of nux vomica,	ʒss to ʒj;
Tincture of strophanthus,	ʒj to ʒij;
Simple syrup,	℥iss;
Water,	℥vj.

Sig.: One twelfth part thrice daily in water.

Strophantus causes hyperperistalsis of the bowel, which may be controlled by opium.

Treatment of Chronic Rhinitis.—*Paris médical* for September 7, 1912, suggests the following ointment for use in chronic nasal affections:

℞ Acidi borici,	5 grammes;
Mentholis,	0.25 gramme;
Adipis lanæ hydrosi,	āā 10 grammes.
Petrolati,	

M. ft. unguentum.

The boric acid in this preparation should be finely powdered and strained.

For inhalation a teaspoonful of the following mixture may be placed in boiling water:

℞ Eucalyptolis,	10 grammes;
Mentholis,	5 grammes;
Resorcinolis,	20 grammes;
Guaiacolis,	25 grammes.

Misce.

Artificial Lymphocytosis.—Gerald B. Webb, in the *Johns Hopkins Hospital Bulletin* for August, 1912, states that he has found that a lymphocytosis can be caused by inducing constant hyperemia of the long bones, and that such lymphocytosis is associated with a certain degree of symptomatic improvement in tuberculous cases. The patients had applied to their upper arms, day and night, a garter elastic, one inch wide, which was just tight enough to leave an indentation in the skin after removal. They suffered no discomfort; nor did the arms visibly swell. About two weeks were required for the greatest results to appear. After this time the patients' sputum decreased, especially the thick, yellow portion. In one patient who estimated that she expectorated her body weight in eight months the amount was reduced to one quarter ounce daily. In some patients after several weeks' treatment both temperature and pulse dropped. Lymphocytes appeared in the sputum in large numbers, a few containing fragmented tubercle bacilli, and in some patients the number of bacilli in the sputum appeared to diminish.

The artificial lymphocytosis brings with it some increase in the polymorphonuclear leucocytes, and was found of value in certain other suppurative conditions, e. g., ear affections.

Treatment of Hydrophobia.—R. Tonin, in *Il Policlinico* for July 14, 1912, reports a case of rabies in a girl, aged thirteen years, in which, the customary sedative drugs proving ineffective and the prognosis being apparently hopeless, an intravenous injection of 0.3 gramme of salvarsan was administered. Eight hours later pharyngeal and laryngeal spasm had entirely disappeared, slight dysphagia alone remaining. On the following day general hyperesthesia was likewise gone. That the affection present was true hydrophobia was shown by the later developments, an ascending myelitis, which ultimately involved the medulla and brain proper, and was manifested in formication, muscular paresis, dyspnea, circulatory disturbance, violent headache, and facial and abducens paralysis. Under tepid baths, potassium iodide, and stimulants the child recovered. The effect of the arsenobenzol is believed by the author to have been a destruction of the living virus of the disease, without any influence on the toxines already elaborated, which remained to produce the secondary paralytic symptoms.

Treatment of Pruritus vulvæ.—J. Howell Evans, in the *Clinical Journal* for June 26, 1912, recommends the following ointments in this affection:

I.

℞	Bismuthi subcarbonatis,	āā grs. x;
	Zinci oxidi,	
	Adipis lanæ hydrosi,	q. s. ad ℥i.

M. ft. unguentum.

II.

℞	Unguenti picis liquidæ,	āā ʒii,
	Unguenti belladonnæ,	
	Tincturæ aconiti,	ʒss;
	Unguenti aquæ rosæ,	q. s. ad ℥i.

M.

For application to the vaginal wall, the author advises a paste composed of bismuth subcarbonate and glycerin, or a solution of silver nitrate, ten grains to the ounce. In conjunction with all local applications, a detail of considerable importance is the employment, not only of a diaper, but of a piece of gauze or soft tissue to separate the labia.

The x rays are useful in pruritus vulvæ, but when employed in severe cases to the degree necessary to give relief cause considerable depilation. Radium, on the other hand, has given the author better results than any other agent. He has found it invariably successful, and urges its use in all cases where the simpler remedies have failed.

Intense pruritus vulvæ has been cured by the use of the constant current, the anode being applied to the vulva and the cathode to the various other parts affected.

Operative measures include the application of caustics or the cautery to an erosion of the cervix; curettage, if endometritis exists; divulsion, under anesthesia, of the vaginal constrictors, with the introduction of Sims's glass tube or a thick gauze plug; removal of Bartholin's glands.

Treatment of Aphthous Stomatitis.—R. Oppenheim, in *Progrès médical* for August 31, 1912, advises that in mild forms of aphthous stomatitis, with but few lesions in the mouth and in the absence of general febrile reaction, the mouth be washed three or four times a day with the following solution:

℞	Sodii bicarbonatis,	āā 10 grammes;
	Sodii boratis,	
	Aquæ destillatæ,	500 grammes.

M. ft. solutio.

The ulcerations should be touched morning and evening with cotton dipped in:

℞	Sodii bicarbonatis,	5 grammes;
	Aquæ hydrogenii dioxidi,	āā 200 grammes.
	Aquæ destillatæ,	

M. ft. solutio.

Or, if pain is considerable, with the following collutory:

℞	Cocainæ hydrochloridi,	0.2 gramme;
	Sodii boratis,	2 grammes;
	Glycerini,	āā 15 grammes.
	Aquæ destillatæ,	

M. ft. solutio.

Where the ulcerations persist notwithstanding these measures, cauterization with silver nitrate should be practised.

In the more serious form of the affection, with confluent lesions and constitutional reaction, and which frequently results from transmission of the aphthous fever of cattle through the milk, special prophylactic measures should be carried out, such as boiling the milk, scalding the toilet and table utensils employed by the patient, and washing the mouth with vichy water each time the milk is taken. Cachets each containing 0.25 gramme of quinine hydrochloride and 0.15 gramme of acetphenetidine should be administered twice daily, a saline purge given at the outset of the disease, and intestinal antiseptics prescribed thereafter. The mouth and pharynx should be washed out every three hours with the following solution:

℞	Sodii salicylatis,	20 grammes;
	Aquæ destillatæ,	100 grammes.

M. ft. solutio.

and the ulcers subsequently treated with:

℞	Cocainæ hydrochloridi,	0.2 gramme;
	Sodii salicylatis,	10 grammes;
	Aquæ destillatæ,	50 grammes.

M. ft. solutio.

with a twenty per cent. solution of lactic acid in distilled water, or with:

℞	Sodii chloratis,	āā 4 grammes;
	Sodii boratis,	
	Glycerini,	āā 25 grammes.
	Aquæ destillatæ,	

M. ft. solutio.

In the later stages of the condition ulcers that have as yet shown no tendency to heal should be touched with silver nitrate.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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NEW YORK, SATURDAY, FEBRUARY 1, 1913.

FEDERAL QUARANTINE FOR NEW YORK.

The time seems ripe to reopen the question of transferring the quarantine station for the port of New York to the Federal government. The quarantine budget for 1912 was $335,990; Doctor O'Connell has just asked for an appropriation of $2,000,000 to enlarge and reconstruct the quarantine station. In few ways could Governor Sulzer better fulfil the promises of his attitude favoring an economical administration than by turning the New York quarantine over to the central government. This vast sum would be saved at once to the State, as well as the costly upkeep of the station from year to year, and politics would be eliminated absolutely. The periodic appointment of a new and inexperienced quarantine officer arouses apprehension with each new administration. We are in no spirit to criticise the present quarantine management; the question is far broader than that.

Physicians and well informed laymen will hail with enthusiasm the report on Quarantine in the Maritime Cities of the United States by the Public Health, Hospitals, and Budget Committee of the New York Academy of Medicine. The report contains an admirable résumé of the history and development of the idea of quarantine in Europe and in America, and an abstract of the organization and work of the United States Public Health Service, which operates forty-eight quarantine stations on the Pacific, Gulf, and Atlantic seaboards, and in Hawaii, Alaska, the Canal Zone, Porto Rico, and the Philippines. This service also conducts the medical examination of all emigrants, a most important quarantine measure.

The Federal Public Health Service is peculiarly fitted by long training and practice for quarantine administration; the statement that it lacks the requisite experience and ability to handle the New York quarantine is abundantly refuted by the history of the service itself and its magnificent work in many epidemics, such as yellow fever in New Orleans and plague in San Francisco, as well as by its efficient and successful conduct of its present great system of home and colonial quarantine.

Quarantine is logically a function of the National government. Exclusion of contagious diseases from any port is not a local matter; it affects the entire country most vitally. New York is the largest port in the United States, hence the country as a whole has the highest concern in the matter of its quarantine arrangements. The freight and passenger traffic of the port terminates in relatively small proportion in New York. It spreads rather through the entire country, which, therefore, has a legitimate right to demand that New York shall not be provincial, that the administration of this important function shall rest in the hands of the National government.

It is now a well established principle of law that quarantine rules constitute in effect regulations of commerce, and are therefore national in their scope and pertain to the Federal authority. This undisputed power of the Federal government to regulate maritime quarantine is shown by William E. Walz, dean of the Law School of the University of Maine (Federal Regulations of Quarantine, Michigan Law Rev., IV, 3, 1906), by numerous quotations from court decisions. He shows that in case of conflict between State and Federal laws on this subject, the State law must give way before the Federal, because of the higher power vested by the constitution. William Williams, commissioner of immigration for the port of New York, says (The Question of State or Federal Quarantine, NEW YORK MEDICAL JOURNAL, February 17, 1912) that the Federal government should perform those functions of government which are national in character and that from every standpoint the management of the quarantine of New York is such.

In contrast with the unblemished record and really magnificent history of the Public Health Service, the administration of the New York quarantine by New York has presented many humiliating and dangerous situations in the last fifty years.

This was illustrated in 1892 when the ineffectual efforts of the New York quarantine to exclude cholera from this port necessitated an eleventh hour rescue by President Harrison, who ordered cholera ships to be held twenty days in quarantine and sent Federal officers to assist those of the State. A very important advantage of the National government is its ability to command expert cooperation; the Public Health Service officers scattered all over the world, and the National consular representatives supply complete and accurate data as to the prevalence and characteristics of disease in foreign countries. The army, navy, revenue cutter service, custom service, and many others are at the call of the Federal government. No such resources in emergency are available for the State. Eliminate the patronage, direct and indirect, of the port quarantine, and little remains to keep it a State institution. Let the National government take charge and the sooner it can be accomplished the better for New York and the entire nation.

THE WELFARE OF EMPLOYEES.

Our readers are familiar through wide publication in the daily press with the plan of the associated telephone, Western Union telegraph, and Western electrical interests to provide, as an addition to their pension system for employees, a comprehensive scheme of personal hygiene and preventive medicine, whereby careful supervision of the force of nearly 175,000 employees will be maintained with the idea of instantly stamping out infection and eventually establishing efficient prophylaxis. It has naturally occurred to some physicians that this might tend to establish a medical bureaucracy and so eliminate the individual practitioner. An interview with the newly appointed medical director, Dr. Alvah H. Doty, who needs no introduction to readers of the Journal, enables us to state positively that not only will the preliminaries of his plan not interfere in the least with the practice of any physician, but as it works out, the results will be to enhance first the prospects of the practitioner himself and ultimately those of the profession at large.

Briefly stated, the plan of Doctor Doty compels a report by a properly qualified physician concerning any employee who is absent for forty-eight hours from his office; the physician may be in private practice and need not be connected with the company. For this report he will get a cash fee; subsequently, however, he must look to the patient for remuneration. The company is not going to pay for treatment, but will confine its energies to preventing illness. Office managers will be trained to keep an eye on employees and to report suspicious signs of headache, sore throat, skin eruption, etc.; cultures will be taken if required and a report telegraphed to headquarters. The company will satisfy itself that the patient's medical adviser is competent, i. e., that he bears a good reputation. The most modern sanitary appliances will be installed in every office, and employees will be taught to use them by lectures, booklets, and other means; they will also be urged, by example usually, to bathe, keep their hands clean, and maintain regular habits. It may be noted here that venereal diseases will be treated seriously, not humorously nor vengefully, and with care to safeguard those exposed.

There will be district medical inspectors, men of high local reputation, to see that the educational and prophylactic work is properly carried out, and it is hoped that willing cooperation will be offered by local boards of health and hospitals in matters of diagnosis and treatment. The more intelligent employees will readily comprehend the value of the plan and will soon educate the others to see that neglect or "soldiering" results merely in robbery of themselves by what are actually forged drafts upon the pension fund, a thing that will obviously not be tolerated once the plan is fully understood.

When one remembers that there is not a hamlet of half a dozen cottages in the country without a telegraph or telephone office, the opportunities for speedy communication and its immense value are immediately apparent. The imagination kindles at the prospect opened up in the future to the medical profession when similar plans are made, as they surely will be, by other corporations. A demand will ensue for thoroughly trained sanitary experts to engage in this work of education and prophylaxis at liberal salaries, while their labors need not necessarily exclude private practice, mostly surgical probably, since the infections should tend rapidly to disappear.

The consequences of this plan of welfare, political, economic, sanitary, and professional, are momentous. These 175,000 educated employees will influence in their homes at least one million people, to their advantage and that of scientific medicine. The scheme reflects the highest credit on the intelligence of the heads of the American Telephone and Telegraph Company who devised it and chose to put it into operation a tactful, widely known, and thoroughly competent medical scientist.

CANCER.

Hardly a month passes without an article in the medical literature on cancer, either discussing its etiology or giving points on treatment. In America we have found lately advocated cataphoresis with a forty per cent. solution of cocaine; in Germany an old discarded remedy which had been used in England and the United States was revived with the approval of one of the leading cancer specialists. Among these, Dr. F. W. Forbes Ross, of London, England, has held a conspicuous place for the last decade; he advocates the treatment of cancer with potassium salts. Based upon his papers he has published a book on the problems of the genesis and treatment of cancer. After speaking of the poor results obtained from surgical interference and the empirical use of x rays and radium—"the use of radium and x rays without a proper balance of the mineral salts of the body is like using a sewing machine on cloth to make a garment and forgetting to use thread"—he advances the hypothesis that cancer is due to a want of balance in particular mineral salts in the body which disturbance will lead to the disorderly and malignant growth of epithelial cells, epiblastic as well as hypoblastic. He thus divides cancer into a malignant growth of the epithelial cells (cancer proper or carcinoma) and a malignant disease of the mesoblastic tissues (sarcoma). In explanation of his hypothesis he reasons as follows: Potassium is the salt of the cells and nuclei of all vegetable and animal tissue throughout the universe under conditions of health. Careful research has shown that the disturbance in epithelial cell growth, known as epithelioma, is entirely a matter of the disturbance of the nuclear function of epithelial and other cells in the body of man. It has been proved that this disturbance in the nucleus renders certain bodies, the chromosomes, deficient in number. Ross has observed that the potassium salts of the body during cancer become more and more diminished and scanty. We thus find that the red blood corpuscles in the course of a case of cancer suffer by reduction in number from five million to the c. mm. to only one million to the c. mm. Our investigator thinks that the potassium salts in the tissues and blood are not used up and removed during cancer to free the body of a harmful material, but are used as fighting material against the disease. Therefore, concludes the author, we should support Nature in her fight by introducing potassium salts into the attacked body. He closes his book with the statement that "assimilable salts of potassium, when administered in a bona fide case of cancer, will be found to benefit the patient in an astonishing manner, and will never cause the least harm or injury, even to the most feeble and exhausted sufferer."

We doubt very much that Doctor Ross's theory will find many followers or that the cures which he asserts he has succeeded in effecting can be easily reproduced by his colleagues.

THE SCIENTIFIC PRACTICE OF CHIROPODY.

The State of New York has taken steps to improve conditions in the practice of chiropody. As the result of an amendment to the Public Health Act, which became effective September 1, 1912, the law now provides that the State Board of Medical Examiners shall determine the fitness of future chiropodists and that a candidate for license must be graduated from a school of chiropody, registered by the regents as maintaining a proper standard both as to academic preparation and scientific fitness. Under this new regulation, the New York School of Chiropody, in which the proper standard will be maintained has just been established. All the members of the faculty are physicians in good standing, who will be presided over by the retiring secretary of the New York State Board of Medical Examiners, Dr. Maurice J. Lewi. This new departure is bound to render the public a great service by placing the treatment of even the minor diseases of the feet on scientific and therefore safer lines.

THE PUBLIC HEALTH COMMISSION.

In our news columns will be found a plan for the reorganization of the present method of public health administration in New York State. In general it will be seen that this plan admirably meets the requirements enumerated in the editorial columns of this JOURNAL last week (page 194), and combines local representation with efficient centralization. The idea of having a representative body like the State Health Session endowed with wide powers seems particularly sound and certainly in harmony with the spirit of our institutions. The details of this plan have not yet been made public, so it is impossible to judge them as a whole; the outline presented, however, seems to be eminently practicable and designed to bring about efficient public health administration throughout the entire State.

EXTENSION OF GOVERNMENT MEDICAL SUPERVISION.

Surgeon L. L. Lumsden, in *Public Health Reports No. 104*, gives details concerning an outbreak of gastroenteritis and typhoid fever which was traced beyond all possible doubt to the water supplied on an excursion steamer plying between Davenport, Ia., and Albany, Ill. The writer recommends, therefore, that the water supplies used on river steamers and the sanitary conditions prevailing thereon be made the subject of adequate official inspection, by members of the Public Health Service when traffic is interstate, by local authorities when it is confined within the boundaries of one State; also that the sources of water supply be certified as being safe by competent authorities. We can see here the inevitable extension of official medicine along perfectly justifiable lines; no number of ununited private practitioners could possibly meet such a condition as that set forth in this report.

EXTRACT OF HUMAN PROSTATE GLAND.

Battez and L. Boulet, according to *Semaine médicale* for January 15, 1913, reported at a recent session of the Société de biologie that they had had a fortunate opportunity to corroborate their experiments with extract of canine prostate gland as causing, on intravenous injection, lively contractions of the bladder. Half an hour after his execution they were able to secure a perfectly healthy gland from a criminal, aged twenty years, and to make an extract therefrom. They found that this human extract had the same effect on the bladder as the canine preparation and also possessed marked hypotensive action on arterial pressure.

Medical Law.

VII. RECOVERY OF COMPENSATION.

When a physician is reduced to the necessity of suing a patient to recover a fee, the situation usually should be considered by him in a serious light, but it appears from the opinion in the case of Hall vs. Mooring, 76 Southeastern Reports, 759, that the situation is sometimes otherwise considered by the court. The opinion of Mr. Justice Pottle in this case seems worth reproducing and is printed in full.

This was a contest between two members of the gentler sex. The plaintiff was a practitioner of the art or science of osteopathy, and the defendant either needed, or thought she did (which is the same thing), the services of the plaintiff. Several visits were made at $3.10 a visit, the ten cents being added for street car fare, and the whole bill amounted to $27.90. The defendant says she paid all she really owed, and that the plaintiff charged her for a number of social calls, during the course of which the defendant was importuned to continue the treatment. The defendant says that she declined to do so, and that the services rendered by the doctor gave her no relief, and were so unsatisfactory that she was forced to resort to a physician of the regular school, who administered pills and mixtures in the good old fashioned way. On the issues of fact the plaintiff outswore the defendant, or at least the jury in the justice's court thought she did, and the judge of the superior court refused to interfere. This is the end of the law so far as this branch of the case is concerned. It would never do to hold that a doctor is entitled to recover only where he cures the patient. If we did, the members of this learned profession might hesitate to respond in extreme cases where the chances were against them. So far as we are concerned, the doctors may continue to bury their mistakes and recover for their services as they have always done. If we were dealing with lawyers, the rule might be different; but sufficient unto the day is the evil thereof. The defendant says that she ought not to pay the extra ten cents a visit because the doctor usually walked. However, the plaintiff testified that the charge was usual and reasonable. If so, "she had a right" to walk and save the ten cents.

It appears from the record that the trial waxed warm, and during the testimony of the defendant, the plaintiff became excited and exclaimed, "Liar, liar, liar," and, while the defendant's counsel was endeavoring to persuade the jury to accept his client's theory of the case, the plaintiff did, at intervals, "yell out in court that the defendant was a liar and had lied." Complaint was made that this conduct of the plaintiff humiliated and embarrassed the defendant and prejudiced the jury against her, and that the verdict ought to be set aside because the magistrate failed to punish the plaintiff for contempt. Doubtless the conduct of the plaintiff overawed the chivalrous young justice and embarrassed him quite as much as it did the defendant, and we are not disposed to criticise too harshly his exhibition of judicial timidity. At all events, the failure of the magistrate to punish the contumelious plaintiff must be allowed to rest upon his judicial conscience. If we had any means of knowing that the plaintiff's conduct terrorized the jury and coerced the verdict in her favor, we would, in the interest of a fair and impartial trial, direct another hearing. But the jury doubtless felt secure under the protection of the bailiff and the sacred precincts of the courtroom, and, if they had returned a verdict adverse to the plaintiff, there was, no doubt, some rear door through which they might have dispersed and thus have escaped violence at the hands of a litigant outraged at the injustice which had been meted out to her. Viewing the matter from this safe distance, we are inclined to think that the unseemly conduct of the plaintiff would more likely have prejudiced her own cause than it did the defendant's.

There are other errors assigned in the petition for certiorari, but the magistrate in his answer seems to have effectually disposed of these. According to the answer, the appeal was entered in due time, and the defendant's demand for a bill of particulars was complied with. The amendment attaching the itemized statement was filed in court. This was sufficient service upon the defendant.

News Items.

Harvey Lecture.—The postponed lecture by Major F. F. Russell on the Prevention of Typhoid Fever will take place on February 8, 1913, at the New York Academy of Medicine, at 8:30 p. m.

The Vanadium Chemical Company of Pittsburgh, Pa., announce that Dr. Francis M. Turner has resigned from the general managership of the company, the resignation to be effective February 1, 1913.

French Physicians Increase Their Fees.—The American consul stationed at Havre reports that as a result of increased cost of living in France, the physicians practising in Havre have decided to raise their fees, and the public has been notified accordingly through the press.

Hartford Medical Society.—At the annual meeting of this society, held on the evening of January 6th, the following officers were elected: President, Dr. Charles D. Alton; vice-president, Dr. Everett J. McKnight; secretary, Dr. John Carter Rowley; assistant secretary, Dr. Arthur H. Griswold; treasurer, Dr. Philip D. Bunce; librarian, Dr. Walter R. Steiner. Dr. Albert R. Keith is chairman of the press committee.

New York Neurological Society.—At the recent annual meeting of this society the following officers were elected: Dr. Smith Ely Jelliffe, president; Dr. E. G. Zabriskie, first vice-president; Dr. E. W. Scripture, second vice-president; Dr. J. Ramsay Hunt, corresponding secretary; Dr. C. E. Atwood, recording secretary; Dr. Charles L. Dana, Dr. M. Allen Starr, Dr. B. Sachs, Dr. Joseph Fraenkel, and Dr. R. F. Kennedy, councillors.

Atlantic County, N. J., Medical Society.—This society held its annual meeting in Atlantic City on January 10th, under the presidency of Dr. David Berner. Officers were elected as follows: President, Dr. Walt P. Conway; vice-president, Dr. S. Barbash; secretary and treasurer, Dr. Edward Guion. Two new members were received into the society, Dr. L. H. Dewley and Dr. O. D. Stickney.

The Guild of St. Luke's.—At the next meeting of this society, which will be held in the Catholic Club on Thursday evening, February 6th, at 8:30 o'clock, the subject for general discussion will be How Much of Eugenics is Scientific? and will be introduced by Dr. James J. Walsh. Gentlemen who are interested may obtain invitations to the meeting by addressing either Doctor Walsh, who is corresponding secretary of the guild, or Dr. Charles E. Nammack, president.

Medical Association of the Greater City of New York.—A special meeting of this association will be held under the direction of the chairman for the Borough of the Bronx, on Monday evening, February 3d, in the Bronx Masonic Temple. The paper of the evening will be read by Dr. William P. Healy on Fibromyoma Uteri, Occurrence, Complications, and the Necessity for Operation. A general discussion will follow, which will be opened by Dr. Howard C. Taylor.

Medical Society of Franklin County, Pa.—This society held its annual meeting on January 21st and elected the following officers for the year 1913: President, Dr. William C. Schultz, of Waynesboro; first vice-president, Dr. Benjamin F. Myers, of Chambersburg; second vice-president, Dr. M. Webster Stofer, of New Franklin; secretary, Dr. John J. Coffman, of Scotland, reelected; assistant secretary, Dr. Paul P. Allen, of Chambersburg; treasurer, Dr. Johnston McLanahan, of Chambersburg, reelected.

Physicians' Home Planned.—At a recent meeting of the Aid Association of the Philadelphia County Medical Society the advisability of establishing a home for destitute physicians and their wives was discussed. Much interest is being shown in the movement, and the widow of a physician has offered a residence in the suburbs of Philadelphia for the purpose. The committee appointed to consider the matter, consisting of Dr. Roland H. Curtin, Dr. S. D. Risley, Dr. Oscar H. Allis, Dr. James M. Anders, and Dr. Lewis H. Adler, will present a report at the February meeting of the society.

Federation of State Medical Boards.—The annual meeting of the Federation of State Medical Boards will be held in the Congress Hotel, Chicago, on February 25th. The topics selected for discussion are all of practical and vital interest to medical colleges, medical examining boards, and the profession at large, and all who are interested in securing the best results in medical education and legislation are invited to attend. Dr. Arthur B. Brown, of New Orleans, is president of the federation; Dr. George H. Matson, of Columbus, Ohio, is secretary-treasurer, and Dr. James A. Duncan, of Toledo, Ohio, is chairman of the executive committee.

Mount Sinai Hospital Extension.—The directors of Mount Sinai Hospital are planning to build a $1,250,000 extension opposite the present hospital building on Fifth Avenue. Of the total amount neded $650,000 has been raised already, and at the annual meeting of the directors, held on January 26th, Dr. Abraham Jacobi announced that a campaign would be started at once to raise the remainder. The new extension will add two hundred beds to Mount Sinai's equipment. There will be wards for children and women, and a laboratory for the study of diseases. The hospital treated 8,204 patients last year. Of these, 5,386 were free patients, and 1,070 pay patients.

A Department of Tropical Medicine at Harvard University.—Dr. Richard Pearce Strong has been appointed professor of tropical medicine at Harvard University, and will organize a department in the medical school to be devoted to a systematic study of tropical medicine and research work therein. The new department has been guaranteed sufficient funds for five years, and it is expected that a permanent endowment fund will be raised to carry on and extend the work. Doctor Strong is now professor of tropical medicine in the Philippine Medical School. He was a member of the International Plague Commission appointed in 1911 to investigate plague conditions in Manchuria.

Canandaigua Society of Physicians and Surgeons.—At the annual meeting of this society, held on the evening of January 9th, Dr. Alfred W. Armstrong was elected president, Dr. Harry C. Buell, vice-president, and Dr. Henry C. Burgess, reelected secretary and treasurer.

American Society for Physicians' Study Travels.—This society was organized in Philadelphia on Saturday, January 25th, and is the first medical organization of its kind in this country. It is modelled along the lines of the German Central Committee for Medical Study, members of which visited this country last fall. Its main object is to encourage physicians to study in foreign countries, and it is planned to send members abroad upon occasions of special interest or when work is being done where investigation would be helpful to American medicine. These trips will be in charge of the officers of the club. Dr. J. M. Anders, of Philadelphia, was elected president at Saturday's meeting and Dr. Albert Bernheim secretary. An executive committee of twenty-five members was also appointed, among the New York members being Dr. Theodore C. Janeway, Dr. Linsly R. Williams, and Dr. Richard Kovacks.

The De Roaldes Prize.—A prize consisting of a gold medal is offered by the American Laryngological Association for the best essay upon some subject relating to laryngology or rhinology, preference being given to essays offering new suggestions of practical value arising from original work. The competition is open to practitioners in regular standing of the United States and Canada who are not members of the American Laryngological Association. The essays must be typewritten in English, and placed in the hands of the secretary before May 1st. The author's name and address with the title of his paper must be enclosed in a sealed envelope which will be opened after the award has been made. The successful essay will be published in the *Transactions* of the association, but it may also be given to any other journal for publication. Harmon Smith, secretary, 44 West Forty-ninth Street, New York.

Cerebrospinal Meningitis.—The outbreak of cerebrospinal meningitis that has been in progress during the last six or eight weeks does not seem to be extending into new territory. From reports received by the Public Health Service it is known that localities in the States of Arkansas, Tennessee, Kentucky, and southern Illinois have been involved. If the disease has been epidemic in other States, the fact has not as yet been made known. Sporadic cases of cerebrospinal meningitis occur almost continually throughout the country. Only occasionally the disease becomes acutely epidemic, and, starting from one or more foci, has a tendency to spread over considerable territory. Last year the centre of the outbreak was in Texas, and the disease spread into Oklahoma and neighboring States. This year the centre of the epidemic has appeared to be in Arkansas, Tennessee, Kentucky, and southern Illinois. From the course the disease has taken it is expected that the present epidemic will soon be under control.

Medical Department of the New York State Library.—The medical reading room of the State Library, at Albany, N. Y., was opened to the public on January 15th, with about 12,000 books on its shelves available for consultation and lending. The library receives regularly between five and six hundred medical periodicals, both domestic and foreign, which are on file in the medical reading room. Attention is also directed to the fact that medical books may be borrowed from the State library for two weeks with option of renewal for an equal time, by any licensed physician in the State, by full time instructors on the faculty of any medical college, members of the house staff of any hospital, registered and certified nurses, or any one engaged in medical work who offers suitable references and credentials. The library lends its books through local libraries or schools whenever possible. In the rare cases where there is no local library or school, loans are made direct on personal application or on a written order assuming full responsibility for books borrowed. All transportation charges are paid by the borrowing library or individual. Advance notice as to what books are desired for consultation or what subjects are to be studied will enable the librarian to get the books together and have them ready at a stated day and hour. Information will also be given as to books or articles on specific topics.

Industrial Hygiene Courses in Medical Colleges.—At the first annual meeting of the Efficiency Society, held in New York on January 27th and 28th, resolutions were adopted recommending courses in industrial hygiene in every medical and technical school in the United States. The subjects suggested include sanitary inspection, mechanical and clerical work and their physiological and psychological effects, prevention and treatment of accidents, disease and its prevention, fatigue and its causes, industrial legislation, the relation of the employer to the physician and the relation of the physician to the employee, the latter including the physical examination of the employee and his instruction; the relation of the physician to the State and municipality, including the reporting of work, accidents, and diseases, and the economic and social results already obtained in the prevention of accidents and disease.

The Control of Epidemics.—On account of the relation of epidemics to the hygienic and commercial welfare of the country, the Federal Public Health Service may assume responsibilities in respect to their control under the direction of the Secretary of the Treasury and the President. In the event of outbreaks of cholera, yellow fever, smallpox, plague, or typhus fever in any part of the United States, the President is also authorized to cause sanitary regulations to be issued and enforced to prevent their spread, and an epidemic fund of approximately half a million dollars is appropriated annually for expenditures of the Federal Public Health Service in suppressing epidemics of these diseases. It is under such authority that the epidemics of yellow fever in the southern States, the outbreaks of plague in California and our island possessions, and similar outbreaks have been handled. In every instance, however, there has been thorough cooperation on the part of the Federal, State, and local authorities. The equity of our form of government requires that the two latter shall exercise their police powers to the fullest extent, and it is on request of these authorities that the Federal government goes to their assistance. This may be advisory in character, or may assume a more active form. When material aid is extended, the government's funds are required to be expended by officers of the Federal Public Health Service, and these latter are therefore placed in charge, and have the cooperation of State and local officials as well as officers of the Federal government. The occurrence of epidemics affords opportunity for investigations of an epidemiological character, and advantage is taken of such situations. As an example may be mentioned the studies of plague in California and typhus fever in Mexico City.

Chief of the Department of Medicine (Male), Philippine General Hospital.—The United States Civil Service Commission announces an open competitive examination for chief of the department of medicine, Philippine General Hospital, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in Manila, Philippine Islands, at a salary of $4,000 a year, and vacancies as they may occur in positions requiring similar qualifications. The Philippine hospital is probably the best instituton of its kind in the Eastern Hemisphere, of 350 beds capacity, with an equipment which will compare favorably with that of any hospital in any part of the world. The new conditions, and the as yet undescribed diseases, that are constantly encountered furnish a wide field. The Bureau of Science, which is on the hospital grounds, has one of the largest and most favorably known research laboratories in existence. If after a year's trial the services rendered prove thoroughly satisfactory, promotion may be possible. The position is stated to be permanent during good behavior and satisfactory service. Applicants must be graduates in medicine, must have had thorough laboratory training followed by good clinical experience in a general hospital, must be desirous of continuing in the field of internal medicine, and must have reached their twenty-eighth but not their fortieth birthday on the date of the examination. Persons who meet the requirements and desire this examination should at once apply for Form B. I. A. 2 to the United States Civil Service Commission, Washington, D. C. No application will be accepted unless properly executed, including the medical certificate, and filed with the commission at Washington prior to the hour of closing business on February 17, 1913. In applying for this examination the exact title as given at the head of this announcement should be used.

Personal.—Dr. L. J. Rhea has been appointed assistant professor of pathology at Harvard University.

Major Sir Ronald Ross, F. R. S., professor of tropical sanitation in the University of Liverpool, has been appointed physician for tropical diseases in King's College Hospital, and will assume his new duties in the fall.

Dr. Oscar Richardson, of Boston, has been appointed associate medical examiner for Suffolk County, to fill the place made vacant by the death of Dr. Charles Sturtevant, of Hyde Park.

Dr. E. H. Galloway, of Jackson, Miss., has been elected secretary of the Mississippi State Board of Health, to succeed Dr. W. W. Smithson, who has been appointed head of the State Insane Asylum.

Dr. John S. Fulton has accepted the secretaryship of the Baltimore State Board of Health, succeeding Dr. Marshall L. Price, who resigned recently.

Medical Director Daniel N. Bertolette, of the Medical Corps of the Navy, was placed on the retired list on January 22d, on account of age. He has been in the service nearly forty years.

The Public Health Commission.—The hearings before the Public Health Commission headed by Dr. Hermann M. Biggs have developed a striking unanimity of opinion that the present method of public health administration in this State needs radical reorganization, and greater centralization of authority. That dissatisfaction with the present methods is felt even by the health officers themselves is indicated by the fact that the legislative committee of the Sanitary Officers of the State of New York last year succeeded in passing through the legislature a bill giving the local health officers some real power to execute their mandates, a bill which was vetoed by the governor. At the present hearing, Doctor Overton, chairman of the legislative committee, brought forward striking testimony to the lack of authority possessed by the present local health officer. On the other hand, he pointed out, that there was no power in the State to compel the local health officer to quarantine a case pronounced by the diagnostician of the State health department to be smallpox, if the local health officer chose to say it was not smallpox. This statement was confirmed by Doctor Bolduan, who knew of an instance where a local health officer refused to regard a case as one of typhoid fever, even though the attending physician so diagnosticated it and the Widal reaction was positive. A curious exception to the general trend of opinion was that given by Professor Winslow, who believed that the present scheme of organization was, in the main, correct and that it was not wise to effect greater centralization. Moreover, in his opinion, it was not essential that the health officer be a physician; young sanitary engineers would often do better work and could be obtained at a lower salary. These views were vigorously combated by the other experts. A comprehensive scheme of reorganization was presented by Doctor Bolduan, of the New York City Department of Health, who believes strongly in greater centralization, also that this can advantageously be combined with a certain amount of representation of the local communities. An abstract of his plan contains the following novel suggestions:

> The supreme public health authority is vested in a State Health Session, composed of the State commissioner of health, the health officer of the Port of New York, the health commissioners of each of the cities in the State, and all the county health officers. The last named are new officials described below. This session meets annually, and has wide powers, practically identical with those exercised by the Board of Health of the City of New York.
>
> The State Health Session enacts Statewide public health laws, the enforcement of which is vested in the State commissioner of health and the county health officers.
>
> A smaller body, the State Health Council, composed of six members of the session and elected by the session, together with the State commissioner of health, and the general medical officer of the city of New York, act in place of the session between the annual meeting. The council also coordinates the work between various county health officers or between county and city health officers.
>
> The State commissioner of health is the chief executive of the State public health administration, but is subject to the rules and regulations of the session.
>
> The unit of public health work is the county, and the executive of county public health administration is the county health officer. He is a trained official, devoting full time to his work and not practising medicine. He enforces the State public health law, and carries out all proper orders of the State commissioner. The present local boards of health are abolished and practically all the powers and duties of these boards fall on the county health officer.
>
> The present local health officers are retained, and with very similar duties, but they are subject to the proper orders of the county health officer.

Pith of Progressive Literature.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

December 15, 1912.

Localization of Emboli of the Lung.—Reye concludes that embolic infarcts may occur at any place in the lung, irrespective of the primary site of the embolus. The part most commonly involved is the lower lobe.

LYON MÉDICAL.

December 29, 1912.

Improvements in Diagnosis of Alternating Pulse.—L. Gallavardin and L. Gravier had observed in taking the systolic blood pressure in certain severe cases of nephritis, that when this pressure was attained, the finger placed over the radial artery did not feel a sudden cessation of the pulsations, but for a certain period perceived alternate beats. From this they have developed more sensitive methods of detecting pulse alternation than those hitherto in use, digital palpation and the sphygmograph. The first requires the use of the ordinary mercury sphygmomanometer. When the pressure in the cuff is still ten to twenty mm. below the systolic level, the finger palpating the radial perceives, in a case of alternating pulse, first an increased difference between the strong and weak beats, then a sudden cessation of the weaker beats. By substituting a sphygmograph for the finger, tracings illustrating these changes can be obtained. With a dial sphygmomanometer, similar modifications are seen in observing the movements of the needle. Where no instrument is at hand, the brachial artery should be compressed against the humerus, just above the bend of the elbow, with the index and middle fingers of one hand. By gradually increasing the pressure, the other hand, palpating the radial, will at a given period feel only alternate beats. Although it is somewhat difficult to maintain an even pressure over the brachial, very slight degrees of alternation, which cannot be detected by mere radial palpation and are hardly noticeable in ordinary sphygmographic tracings, can thus be demonstrated. The importance of early recognition of the *pulsus alternans* lies in that the latter is the only form of arrhythmia which gives direct information concerning the contractile power of the myocardium, without regard to irritability and conductivity.

Section of Spinal Nerve Roots in Parkinson's Disease.—R. Leriche reports a case of paralysis agitans in a man, fifty-seven years of age, in which the sixth, seventh, and eighth cervical roots were cut on both sides. During the anesthesia it was noted that the tremor, previously intense, ceased, while the rigidity persisted. This condition was maintained for six days, and convalescence seemed assured, when the patient suddenly succumbed to asphyxia in the night. Notwithstanding the unfortunate result, which the authors ascribe to infection in the vicinity of the medullary centres, the therapeutic effect of the operation in patients not too greatly weakened was demonstrated. The cessation of the tremor seemed to show that the symptom is mainly of peripheral origin.

PARIS MÉDICAL.

January 11, 1913.

Parotiditis in Lead Poisoning.—M. Klippel and E. Chabrol assert that parotiditis is now recognized as a usual symptom of lead poisoning. It is characterized by its insidious and slow onset, it is bilateral, indolent, chronic, benign, and without fever. It is caused probably by the gradual elimination of lead through the saliva and is preceded by stomatitis and inflammation of Steno's duct. In two cases, however, that came under the writers' observation, the parotiditis was painful and was not accompanied or preceded by any stomatitis; coincident with the glandular inflammation were the usual colic and jaundice.

Value of Radium Therapy.—Adolphe Bickel believes that radium emanation is valuable in small doses as an analgesic in neuralgia, etc., but thinks all other actions have been greatly exaggerated. He has seen good results from the administration *per os* of 500 Maché units in rheumatism. Bickel does not believe that radium emanation has any power to render uric acid soluble.

PRESSE MÉDICALE.

December 21, 1912.

The Hyposphyxic Syndrome.—Alfred Martinet designates as hyposphyxia a combination of symptoms encountered with great frequency but not described *in toto* in textbooks. The chief feature is a permanent feebleness of cardiac action, with a tendency to venous plethora, local or general. The blood pressure is low, the systolic pressure, if from fourteen to seventeen cm. Hg are taken as normal, being diminished to thirteen, eleven, or even nine, while the pulse pressure, normally from five to seven, is four to 1.5. There is also a pronounced excessive viscosity of the blood, though this may be obscured if anemia, and consequently hydremia, be present. The clinical signs consist of a small, easily compressible radial pulse; a pronounced venous pulse in the neck when the subject is recumbent; wine colored or actually somewhat cyanotic cheeks and lips; an abnormal tendency to chilliness of the extremities, which are habitually cold, moist, and even livid; a more or less marked, permanent, or intermittent congestion of the liver, met with in three fifths of the subjects; hemorrhoids, somewhat less frequent; oftener, a varicose tendency or actual varices of the lower extremities; habitual oliguria; some tendency to obesity, though a few of the subjects are thin; the heart ordinarily small upon percussion, with enlargement of the right auricle sometimes noticeable; various unpleasant phenomena such as painful tension in the calves of the legs and kidney regions, lumbago, great tendency to fatigue, headache, dyspepsia, neurasthenia, or finally, sensations of constriction, palpitation, or angor in the heart area. This symptom complex is met with in cases of mitral disease, especially stenosis, and in tricuspid stenosis; in acute or chronic tuberculosis; in chronic lung sufferers with emphysema and bronchitis; in cyphotics, and in the majority of instances—in individuals otherwise apparently normal, especially young girls or women with sedentary tendencies or occupation. It is frequently hereditary and dependent upon a congenital hypotrophic state of the heart. The venous congestion is a necessary consequence and constitutes a mode of adaptation or defensive reaction to unusual circulatory conditions.

December 25, 1912.

Method of Preventing Operative Pneumothorax.—Robert Danis describes a relatively simple apparatus by means of which collapse of the lungs in operations involving entrance into the pleural cavities may be avoided. The apparatus consists essentially of a small metallic cylinder with an opening on one side occluded by a piece of felt, and other orifices leading to a mouthpiece, to the source of oxygen or air, and to a valve by which the pressure in the apparatus is regulated. The mouthpiece fits under the lips, where it is held by adhesive plaster or a stitch on either side. Chloroform or ether is dropped on the felt and by capillarity mixes with the current of oxygen or air in the cylinder without the loss of any of the internal pressure. The latter is kept sufficient, by regulation of the inflow and valve, to maintain expansion of the lungs when the pleuræ are entered, the nostrils being artificially occluded.

December 28, 1912.

Plantar Ecchymosis in Fractures of Os Calcis.—H. Mondor reports four consecutive cases of fracture of the calcaneum, in which ecchymosis appeared beneath the plantar arch. It was observed soon after the injury, and always remained distinct from other ecchymotic areas, the marginal portions of the foot never being similarly involved. Heretofore, late appearance and perimalleolar situation have been considered the chief characteristics of the ecchymosis in this form of injury. The author's observations show that this view is not wholly correct. In two cases, in which there was no appreciable bony deformity, crepitus, or localized pain, the plantar ecchymosis proved of great diagnostic value. One of the cases showed also that digitoplantar ecchymosis, i. e., ecchymosis at the bases of the metatarsals and along the lateral surfaces of the toes, hitherto considered pathognomonic of metatarsal fracture, may occur in fracture of the os calcis without involvement of the metatarsals.

Cervical Galvanization in Epilepsy.—P. Hartenberg reports good results with this measure. The positive electrode is placed as a collar around the neck; the patient is seated on the negative electrode. A strong galvanic current, from fifty to sixty milliampères, is passed for one half hour daily or on alternate days. The author refers to four cases in which the seizures, after gradually yielding to the treatment, have not returned for two or three years. Success for the method in all cases is not asserted. It is harmless and should be tried in cases refractory to the ordinary therapeutic procedures.

SEMAINE MÉDICALE.

January 1, 1913.

Treatment of Osseous and Articular Tuberculosis.—F. de Quervain discusses this subject from a general standpoint and concludes that surgical treatment is not to be abandoned because of the success of new methods such as heliotherapy and the x rays. The essential point is to know definitely the value of each method in every form of tuberculosis and plan the treatment accordingly. It is especially important to adopt the right procedure from the start, in order not to have to alter the treatment later, after compromising tne functional result. In coxalgia the author advises surgical intervention only under following circumstances: 1. Where x ray examination shows, in an adolescent, a sharply circumscribed tuberculous focus limited to the trochanteric region; 2, in the presence of a sequestrum, with sinus formation; 3, in cured coxalgia with deformity.

REVUE DE MÉDECINE

December, 1912.

Symptomatology of Peripheral Facial Paralysis.—H. Nimier and A. Nimier discuss the mode of production and prognostic significance of certain objective and subjective phenomena observed when in one of the authors facial paralysis developed as the result of a fall. The first was an external deviation of the eyeball, occurring whenever an attempt was made by the patient to close the lids on the affected side; the tendency to abduction gradually disappeared as the power to shut the lids returned. This sign does not appear to have been reported by any previous author. Other signs discussed are Bell's sign, elevation of the cornea behind the upper lid, when an ineffectual attempt is made to close the latter; an involuntary closure of the lids of the affected side in laughing; painful audition; and Hitzig's sign—muscle sound in the affected ear.

Tuberculous Nature of Ascites in Hepatic Cirrhosis.—Germain Roque and Victor Cordier assert, on the basis of a careful study of twenty cases, with numerous laboratory tests, that ascites occurring in the course of hepatic cirrhosis of the Laënnec type is always of tuberculous nature. It is even of tuberculous origin, and implies the presence of an inflammatory process involving the peritoneum. This process may be of a noncharacteristic type, presenting neither the clinical nor pathological appearances belonging to the forms of tuberculous peritonitis hitherto described, and yet being actually of tuberculous origin and nature. Increased pressure in the portal system is not denied by the authors an important, or even exclusive rôle, in the production of the serous effusion, but they believe that its influence is exerted later than that of the tuberculous process, which is primary.

Prolonged Malta Fever.—J. Courmont, P. Savy, and P. Mazel report a case in which the affection lasted eleven months. In addition to the characteristic fever a wide variety of other symptoms and signs was noted, including neuralgic pains, consolidation of the right apex, cardiac weakness, arthritis, hematuria, recurring epistaxis, diarrhea, intermittent albuminuria and marked emaciation unaccompanied by anorexia.

ROUSSKY VRATCH.

December 8, 1912.

New Method of Preparing Antigen for the Wassermann Reaction.—V. N. Gos describes, in a preliminary report, a method of extracting the syphilitic antigen by means of glycerin. The fresh or dried liver of a syphylitic fetus is macerated with five to ten or fifteen to thirty times the volume of glycerin and placed in a thermostat at 37° C. for several days, with occasional shaking. The glycerin extract is then centrifugated and the supernatant fluid used for the test. The effective quantity was found to be from 0.05 to 0.1 c. c. The author asserts superiority for the glycerin extract on account of its greater effectiveness and stability.

December 15, 1912.

Tryparosan in Pulmonary Tuberculosis.—S. V. Levasheff reports very favorable results obtained from tryparosan in the treatment of far advanced pulmonary tuberculosis. The administration of this remedy, which is a parafuchsin containing a molecule of chlorine, was followed by a marked reduction of the fever and amelioration of the other signs and symptoms. The dose is from three to eight grammes daily, and, owing to possible irritation of the stomach, should be given with some bland powder, such as marshmallow or sugar of milk, or suspended in oil.

The Cultivation of Living Tissues outside the Organism.—V. N. Shamoff repeated some of Carrel's experiments in growing living tissue *in vitro,* and by using the spleen of a cat, obtained evidence of new growth in a series of ten preparations. The author presents three striking illustrations of new cell formation and also reviews the literature.

Clinical Picture of Primary Cancer of the Lungs.—I. A. Buchstal found in the records of the St. Petersburg City Hospital for 1910 to 1911, eleven cases of primary cancer of the lungs in 2,089 autopsies or 0.53 per cent. Three of these cases came under his observation and he reports them in detail, discussing the various diagnostic signs; he concludes that while the diagnosis is extremely difficult in the majority of cases, yet a careful study of the symptoms together with the more modern diagnostic method will frequently reveal the disease.

REVISTA DE MEDICINA Y CIRUGÍA PRÁCTICAS.

December 21, 1912.

Salvarsan in Ophthalmology. — García del Mazo says that recent studies show that as soon as syphilis is generalized throughout the organism all the tissues are invaded by the treponema, being found principally in the lymphatic spaces, through which it reaches the brain and spinal cord, producing meningitis, myelitis, etc. The cerebrospinal fluid is greatly altered and as the optic nerve, the common ocular motor, the external ocular motor, and the acoustic and facial nerves are found in the base of the skull bathed in this fluid, it is natural to suppose this is the cause of the nerve disturbances. The ocular accidents must be considered as neurorecurrences, as the clinical characters do not look at all like those observed when atoxyl and arsacetin are administered, which from the beginning are of atrophic type. A fact which shows that there are a number of ocular disturbances due to salvarsan is that we see a great number of patients with paralysis of the eye muscles and ocular disorders which are not very frequent in the first period of syphilis when only mercury is employed. The pathogenic symptoms of ocular disorders are very obscure and there are several hypotheses to explain them: 1. The slight toxic action of salvarsan upon cranial nerves shows a *locus minoris resistentiæ* and fixing consecutive of the syphilitic virus; 2, the treponema is hastily expelled from the cutaneous mucous tissues to the nerve centres; 3, a great number of endotoxines, which cause complications, remain free when salvarsan is used; 4, the ocular disturbances are complications of a latent disease in which salvarsan has no influence. Many authors also believe in the influence of the idiosyncrasy upon anaphylaxis, upon hypoalkalization, upon the reaction of Herscheimer, in an excess or defect of the administration of the drugs or in a fault of technic. The author reports the results of a series of cases and finishes by saying that salvarsan does not sterilize the organism; that it does not seem to be dangerous to the healthy eye, and that the results obtained in the treatment of ocular syphilis are not better than those obtained with mercury; therefore "606" must be used only when mercury is not tolerated, and a rapid action is needed.

Rapid Qualitative Analysis of Sugar in the Urine.—Martínez Añíbarro says that the qualitative analysis of the urine has become complicated since it has been known that the normal secretion contains glucose and other carbohydrates. To say that there has been found sugar or sugar reducers unless they are found in exaggerated quantity, is to say nothing. Not all reagents nor all the reactions are useful for the case. When the proper elements of the normal urine are found in considerable proportion with respect to the copper introduced as a reagent, a precipitate is obtained whose color does not resemble the brick red or yellow of the copper oxide which is produced by the action of the glucose in the Fehling solution. This color is brown with a violaceous tint. This tint can be seen better than the yellow or yellowishness which can be easily produced by several incidental causes, including the characteristic color caused by the action of the urine. The analysis must be based on the copper percentage, which must be very small, and the trial is intended to fix a limited proportion, for instance, one or two grammes of sugar to each litre of the secretion. The author considers that when the principal reducing agents are combined in a proportion less than two or three grammes to the litre they are of no practical importance. The copper salt is placed in small cardboard strips in fixed proportions that cannot be attacked by the Fehling reagents or other similar reagents which are employed separately. The author has introduced a modification in the process which consists in placing on the cardboard, near each other, two small equal portions of the white mass produced by the reagent of the copper salt, therefore it is possible to know at once, by comparison, the results of the brown color to which he refers. That the color is due to the elements of the urine, which are different from the sugars which take part in the reaction, is shown by the substitution of the urine by a simple aqueous solution of the sugar reducers, as the reddish or yellow tone will then appear.

BRITISH MEDICAL JOURNAL.

January 11, 1913.

Insect Porters of Bacterial Infections (*Lecture II*).—C. J. Martin epitomizes the evidence bearing upon the rôle of the rat flea in the transmission of plague, and summarizes the claims that flea transmission is the predominating mechanism from rat to man as follows: 1. Experimental evidence shows that plague is easily carried from animal to animal by rat fleas; 2, in the presence of fleas, the epizootic, if started, varies in severity and rate of progress with the number of fleas present and the season of the year, whereas all attempts to induce epizootics in the absence of fleas have failed; 3, under natural conditions an animal can be protected from plague infection by any procedure which excludes the visits of fleas; 4, the only discovered infection in plague houses resides in plague infected fleas; 5, rat fleas readily bite man; 6, the conclusions drawn from animal experiments, when applied to the problem of the spread of plague among men, afford a reasonable interpretation of every cardinal epidemiological fact. It has been found possible to transmit plague experimentally by means of the human flea, but the direct transmission of infection from man to man in this manner cannot be of frequent occurrence, else we should have evidence of it instead of dependence on the epizootic. The reason for the ineffectiveness of the human flea is to be found in the fact that in man the degree of septichemia before death is so much less than in rats that the chance of a flea imbibing even a single bacillus is small. The present position with regard to the transmission of typhus fever by lice may be summarized thus: 1. The infection, which circulates in the blood during and for some time after the febrile period, is taken up by lice and may be transmitted to monkeys by them; 2, there is reason to believe that the virus proliferates within the lice; 3, the infectivity of lice endures for seven days and seems to be greater some days after feeding than at once; 4, there is reason to believe that the infection may be transmitted to a second generation of lice; 5, the present limitation of typhus fever, and its climatic and seasonal variations, are readily interpreted on assumption that lice are the essential porters of infection. Martin says of the bed bug that there is no evidence to incriminate it in the case of either typhus or relapsing fever. While it is possible to transmit plague experimentally by this means, there is no evidence for supposing that this occurs to any extent in Nature.

Salvarsan in Pernicious Anemia.—E. F. Maynard mentions some of the reports of the strikingly favorable effects of the use of this drug in such cases, and in turn reports the total failure in his hands of the treatment of one case. He believes the record of this failure to be necessary to dispel the growing view to the effect that the drug is a specific in pernicious anemia.

LANCET.

January 11, 1913.

Colloid Tumor of the Third Ventricle, Causing Death.—A. J. Hall reports two cases of this rare condition and adds a brief survey of seven others from the literature. The symptoms do not differ from those of any intraventricular tumor of different structure but similar location, but he believes that an effort should be made to secure an accurate diagnosis of the colloid tumors as it seems probable that ventricular puncture with free removal of fluid would give temporary relief. There is also a possibility of removing the tumor, or of establishing a permanent communication between the lateral ventricles and the subarachnoid space. The tumor produces its symptoms by obstruction to the veins of Galen and the foramen of Monro.

Pneumonotomy for a Foreign Body.—T. H. Kellock opened the chest of a child, four and a half years of age, and incised the lung, removing a pin which had been drawn into the trachea some time before. The lung was then sutured and the chest closed save for a small drainage tube, inserted on account of the presence of a small amount of pus which was found about the pin. The child made an excellent recovery, and the case is reported to show the small risk of such an operation as pneumonotomy on a healthy lung, though done without resort to pressure cabinet or other means of preventing pulmonary collapse after the opening of the thorax.

Alleged Diagnostic Value of the Provocative Injection of Old Tuberculin in Suspected "Closed Pulmonary Tuberculosis."—E. E. A. T. Rigg made observations in sixty-one cases of old tuberculosis in which no tubercle bacilli had ever been found. In four cases, 6.5 per cent., the injection of old tuberculin caused bacilli to appear in the sputum. However, the value of this observation is reduced to nothing by a study of control observations which showed that cases of tuberculosis would reveal bacilli in subsequent examinations when the first examination was negative—this occurring in 12.5 per cent. of cases. Focal signs were produced or increased in fourteen patients, or 22.9 per cent., after the injection of tuberculin. Control observations on this point showed that such observations after tuberculin are of little importance as a large number of cases show spontaneous increase in focal signs without tuberculin. Last, tuberculin often fails to produce any reaction in known tuberculosis.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

December, 1912.

True Serous Leptomeningitis Cured by Operation, with Considerations on this Interesting Otitic Complication.—S. Citelli announces that the cytodiagnosis gave him the sure proof of the presence of leptomeningitis, the condition being characterized by the opaline tint and the increase of pressure of the fluid, the existence of numerous leucocytes, and particularly of the polynuclear bodies. He suggests that every time an increase of the meningeal or ventricular fluid is suspected in a patient attacked by an aural suppuration, it should be remembered that not only simple, serous leptomeningitis, but even multiple localized or general pathological changes can cause increase of the meningoventricular fluid. Such a condition of meningoventricular dropsy may be produced in cases of cardiac weakness, or in embarrassed pulmonary circulation, or by the compression or thrombosis of the internal jugular, and also following thrombosis or compression of the sinuses of the dura mater; at the same time not denying that there exists true leptomeningitis of aural origin. Whether the acute serous leptomeningitis be consecutive to general infections or be of otitic origin, the author states that in either case a phlogistic edema of the meninges is produced, making also possible an accumulation of fluid in the ventricles (acute ventricular dropsy). From the clinicotherapeutical point of view, it must always be established before operation whether the signs are referable to the aural lesion. This can be done by determining the presence or absence and character of the fever, age, and temperament of the patient, and by the clinical examination of the cardiovascular system, liver, urine, intestinal discharges—especially if there are indications of an intestinal toxemia. The author further advocates lumbar puncture when otitic serous leptomeningitis is suspected, both for diagnosis and cure. He believes that otitic serous leptomeningitis exists, but that it is rare. It is difficult to reveal it at the serous stage because of its transitory nature. It must not be confounded with other conditions with meningeal symptoms. He further believes that to establish the differential diagnosis between true serous leptomeningitis and noninflammatory meningoventricular dropsy, it is expedient to have recourse to the cytological examination of the cerebrospinal fluid.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

December 2, 1912.

Rare Eruption in Smallpox.—Lawrence G. Fink reports a case in which, two and a half months after convalescence from smallpox, the patient had an attack of fever, followed next morning by the appearance of papules, some of which developed into vesicles. A few of the latter became pustular and scabs formed, the lesions being in every respect similar to those of mild chickenpox or modified smallpox. The patient had not been in contact with any person suffering from either of these diseases. The lesions were most numerous on the back and chest. Two "seeds" were found on one of the palms. Shortly after the appearance of the eruption the axillary and femoral glands became enlarged. The author deems it best to designate the condition a "residual" eruption.

Cell Inclusions.—Aldo Castellani reports from Ceylon the finding of chlamydozoalike bodies in epithelial cells of the urethra in a case of chronic, nongonorrheic urethritis of the conjunctiva in a case of malaria with serous discharge from the conjunctivæ, and of the oral mucosa in a case of sprue. He considers them, with the possible exception of those found in the conjunctiva, as merely products of cellular degeneration. Other cell inclusions, oval or roundish and staining deep blue, occasionally vacuolated and generally presenting some chromatin dots, were found in yaws, psoriasis, and many other pathological conditions in the leucocytes and epithelial cells. The author does not consider them to be of parasitic nature.

December 16, 1912.

Copra Itch.—Aldo Castellani and Stanley Hirst present a report on a peculiar eruption noticed by the former in persons working in copra mills in Ceylon. Copra, as is well known, is derived from coconuts. The skin condition greatly resembles scabies, but no burrows or cunicula are present. The eruption generally begins on the hands, and from there spreads to the arms, legs, and trunk, never affecting the face. It has very little tendency to heal spontaneously while the patient continues working in the mills, but disappears if he remains away for some time. The cause was found to be a small, white mite, which was discovered in great numbers in copra dust, and reproduced the pruriginous eruption when applied to the skin of uninfected individuals. A five or ten per cent. betanaphthol ointment was found very useful in relieving the condition. Hirst identified the mite as a new variety of *Tymglyphus longior,* which is found widely distributed in Europe on various sorts of dried or preserved animal and vegetable matter.

INDIAN MEDICAL GAZETTE.

December, 1912.

Influence of the Monsoon on the Incidence of Eclampsia.—G. C. Fraser has noticed that the number of cases of eclampsia increases greatly during the clammy moist heat of the monsoon, and suggests this as an explanation. Eclampsia is a condition of toxemia associated with pregnancy, due to the retention or formation of an undetermined poison or poisons in the system, which, acting on the higher centres, produces reflex convulsions and coma. Albuminuria is a common, but not necessary accompaniment. In a hot, dry atmosphere the sweat evaporates as fast as it is secreted and the ducts are kept constantly clear, but when the air becomes moist and the temperature lower the sweat accumulates on the skin, the ducts become waterlogged, and, as a natural sequence, a great accumulation of waste bodies, toxic to a degree, which would otherwise have been got rid of, collect in the deep layers of the skin, are carried off into the circulation and to the higher centres, where they act as powerful excitants to set up acute inflammations of the kidneys and other organs. This effect is increased in pregnancy, because of the normal oversecretion from most of the secretory organs and the greater accumulation of toxic bodies when the sweat glands are thrown out of gear. This primary accumulation causes the secondary involvement of the kidneys and the final grave toxemia. If this is the case eclamptics should be treated by being placed in a dry, hot atmosphere, and the writer suggests wards of special construction for such patients, or rather for those who present premonitory symptoms of the disease.

Preliminary Note on Some Cases of Spirillar Fever in the Darjeeling District.—A. M. Jukes calls attention to some small localized epidemics of fever, the diagnosis of which has presented some difficulty. The mortality has been very high in some of them. The patients fell ill in batches of two or three at a time, with an interval of about three weeks separating the batches. All presented the same symptoms: Fever, usually about 101° to 102° F., but in some cases 104° or 105°; headache, jaundice, the intensity of which varied considerably, nausea, but no vomiting; no albuminuria. In the fatal cases the patients became delirious, comatose, and died on the seventh or eighth day. The blood of the patients contained spirilla, which the writer thinks were shorter, thinner, and less actively mobile than *Spirillum Obermeieri,* which diminished in each case after the sixth day, while at the same time there was a rise in the number of polymorphonuclear lecucocytes. The spirilla disappeared from those who recovered on the eighth or ninth day. Attempts failed to keep the spirillum alive either in culture media, or by inoculating white rats.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 16, 1913.

Antitoxine Administration.—William H. Park urges the importance of giving all the required antitoxine promptly and usually in a single dose. The object is to get, as quickly as possible, enough antitoxine into the blood to neutralize any toxine present there, so that no further toxine can pass out to the tissue cells. When injected subcutaneously the absorption is slow, and the patient gains from a single injection an increasing accumulation in the blood during the first three or four days, which reaches its highest point from the second to the fifth day. In some patients antitoxine formation goes on rapidly, excited by the toxine produced in the diseased tissues to add to its amount to that given. Two examples given were: An infant received one injection of 10,000 units; at the end of twelve hours the child had 1.5 unit in each c. c. of blood; at the end of twenty-four hours, 2.5 units; in forty-eight hours, 3.5 units; in seventy-two hours, 4.5 units. The amount slowly increased and reached its highest point at the end of the fifth day. In another child the content of the blood at the end of a day was but 0.5 unit; then antitoxine formation suddenly began, and at the end of the fifth day the child had sixty units in each c. c. of blood, at least ninety per cent. of which was due to its own production. The fact that a subcutaneous injection is absorbed thus slowly is not, he thinks, widely appreciated. The disappearance of the swelling after the injection indicates only the absorption of the water, not that of the antitoxic globulins and their entrance into the blood. The giving of larger doses than necessary does no harm, but an insufficient first dose may be a serious mistake; hence the writer believes that we should give in the first dose all that we think is required for the entire disease, and that we should give it intravenously rather than subcutaneously in all bad cases of diphtheria, and in all cases of tetanus, because the difference in the amount of antitoxine in the blood during the first day is very great as it is given in the one way or the other. At the end of six hours one has with a suitable amount by the subcutaneous method two units, by the intravenous method twenty units in each c. c. of blood. He feels certain that 5,500 units given intravenously are as efficacious as 20,000 given subcutaneously. As the hours pass the amount in the blood decreases after an intravenous injection, while it increases after a subcutaneous. He has never observed any bad results from this method of administration. He urges that 20,000 units of antitoxine be injected intravenously in all cases of tetanus at the very first sign of the disease. If only a smaller quantity is available it should be injected at once and a larger quantity later, for time is of more importance than quantity. When rigidity continues he advises to continue giving smaller injections every twelve hours, but he is growing doubtful as to the value of repeating the injections. At intervals of twenty-four hours they maintain the strength of the antoxine. Above all he urges to waste no time, but to act at once.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

January 18, 1913.

Diagnosis of Gallstone Lodged in the Common Duct.—William Fitch Cheney's conclusion is that the diagnosis of gallstones lodged in the common duct depends most on history. The physical examination is valuable chiefly in eliminating other resembling conditions. The ultimate determination of the true nature of the affection is derived from careful observation of the course of events in the case, verifying the patient's own story, and from a judicious weighing and sifting of all the evidence, from whatever source obtained.

Anomalous Internal Carotid Artery and Its Clinical Significance in Operations on Tonsils.—P. G. Skillern calls our attention to many cases of anomalous carotid artery, reminds us that this condition may be present in any case, and advises thorough ocular and digital exploration of the pharynx for arterial pulsations before proceeding to operations upon the tonsils. Where operation is indicated, in the presence of the anomaly, preliminary ligation of the internal carotid opposite the upper border of the thyroid cartilage should be done. If in doubt as to whether the anomalous artery is the ascending pharyngeal or the internal carotid, the common carotid should be occluded in the same situation with a Matas metal clip. If the artery is discovered and injured during operation compress the common carotid artery against Chassaignac's tubercle (the prominent anterior tubercle of the transverse process of the sixth cervical vertebra), and then perform ligation.

History of a Typhoid Carrier.—Donald H. Currie and F. H. McKeon report the history of a patient who had typhoid in 1908 and who until June, 1912, probably discharged virulent typhoid bacilli frequently, which caused the illness of twenty-eight men, four of whom died. The patient was treated with autogenous vaccine for two months, ten doses being given, ranging from twenty-five thousand to a billion bacilli. This is a further confirmation that a patient after recovering from typhoid may become a carrier of virulent bacilli for a long time. Although autogenous vaccine will apparently rid such patients of their bacilli, a positive conclusion as to its uniform value should be reserved until further evidence has been adduced.

Results of Two Hundred Chromoureteroscopies, Employing Indigocarmin as a Functional Kidney Test.—For B. A. Thomas's article, see this JOURNAL for June 8, 1912, page 1229.

Practical Value of Blood Cryoscopy for the Determination of Renal Function.—For M. Krotoszyner and George W. Hartman's article, see this JOURNAL for June 8, 1912, page 1229.

Study of the Accuracy of the Phenolsulphonephthalein Test for Renal Function.—For this article by J. T. Geraghty, see this JOURNAL for June 8, 1912, page 1229.

Double Infection with the Human and Bovine Types of Bacillus Tuberculosis.—Paul A. Lewis reports a case of pulmonary tuberculosis (chronic) due to the human type of bacillus tuberculosis, and a tuberculosis verrucosa cutis due to the bovine type of organism at one and the same time. The finger infection had existed for five years and was acquired from cattle in connection with the man's occupation as butcher.

MEDICAL RECORD.

January 18, 1913.

Radium and Thorium Therapy.—Carl von Noorden formulates certain contraindications to radioactive therapy which have been tested out in his own clinic in Vienna. These are conditions of cardiac weakness of every kind, neuroses of the vegetative nervous system, especially the sympathetic, and severe neurasthenia. It should not be used in Basedow's disease, diabetes, or in febrile conditions. It is positively harmful when there is tendency to hemorrhage of any kind, especially menorrhagias, metrorrhagias, hemoptysis, hemorrhagic diathesis, and hemopyhilia, as well as in far advanced affections of the erythroblastic and the leucoblastic systems, in contrast to early stages which are favorably affected by this treatment. It is contraindicated in cachexias of every kind and has a pronounced unfavorable influence on cancerous cachexia, and in senile marasmus, in contrast to the beginning phenomena of old age, which are benefited by this treatment. The writer concludes that the weak emanatoria are harmless and often a mere therapeutic byplay. With the stronger radioactive methods, however, the greatest precaution is necessary, for they are as potent for good or evil, for healing or danger, as are the strongest alkaloids.

Prognostic Value of Rinne, Weber, and Schwaback Tests.—A. B. Bennett, Jr., concludes that tuning fork tests are of value as aids in prognosis when they point to middle ear disease. He advises us against giving an unfavorable prognosis until treatment has been given and found to be useless. Instead of recording a positive or negative Rinne test he suggests that the record show the proportion of time for the plus figure thus: Rinne—Right, Air + 10/30; Left, Bones + 5/20. The numerator tells the number of seconds air or bone conduction exceeded the other, and the denominator indicates the total time of hearing for the stroke of the fork.

Three Important Don'ts in Bone Plating.—G. P. Coopernail cautions against plating a compound fracture until the wound has healed and all danger of infection is past. A fracture that fails to unite where there is good apposition and no tissues between the ends of the bones, should not be plated, for the plate will not increase your chances of obtaining a good, strong callus; inject blood between the ends of the bone (Bier), or glycerite of tannin (Dawbarn). Don't put your fingers in the wound if you *do* wear gloves; all instruments after being used in the wound should be boiled before using a second time.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

December, 1912.

Cæsarean Section; Technic of the Operation.—A. B. Davis calls attention to the fact that despite the broader scope and the greatly increased number of pathological conditions complicating labor which are now considered indications for the performance of this operation, the maternal mortality has been greatly reduced. A few years ago it was almost prohibitive, but at the present time it is the consensus of most operators and writers that not more than two per cent. of the mothers, in ordinary favorable cases, fail to survive Cæsarean section. The author believes that many mothers and infants lose their lives each year and many others are left more or less permanent wrecks who could have been saved by the timely employment of Cæsarean section. Of the last sixty-nine such operations by Davis, 94.21 per cent. of the mothers survived and 88.57 per cent. of children. The technic of the operation advocated is given in full.

Acute Dilatation of the Stomach Following Cæsarean Section.—A. B. Davis reports in this second communication a fatal case of this condition and believes that much of the bad status of the patient was due to the crudely conducted anesthesia in the hands of an untrained interne.

Mechanism and Treatment of Placenta prævia.—H. Schwarz maintains: 1. No form of placenta prævia, as such, ever offers a justifiable indication for Cæsarean section; 2, version after Braxton-Hicks in the presence of a viable child deliberately sacrifices the life of that child and has no place in modern obstetrics; 3, the cervical and vaginal tampon and the intrauterine use of rubber bags are safe and efficient means for controlling hemorrhage and for securing sufficient dilatation for delivery through the natural passages.

Ectopic Gestation.—S. W. Bandler contributes an interesting article on this subject and reports what he considers to be the earliest recorded tubal ovum. It was removed from a patient who went only a very few days over her period and then began to bleed and spot for some days, which symptoms were accompanied by cramplike pains of great severity in the right side Microscopical examination showed that the embryo as such was not present. It was represented by several large masses and streaks of trophoderm which lay near the trophoblast. There was as yet no true chorion formation.

Training of Midwives.—Clara D. Noyes calls attention to the great number of births, about fifty per cent., that are conducted by midwives, consequently the necessity of having these women properly trained and controlled.

The Relation of Prolonged Pregnancies to some Cerebral Lesions.—H. L. Winter gives a brief but interesting presentation of the relation of prolonged pregnancies to deficient mental states. Out of 785 mentally deficient children, seventy-five are known to have been born after prolonged pregnancies. Such a condition places the infant brain in jeopardy before and during birth.

AMERICAN JOURNAL OF UROLOGY.

October, 1912.

Surgical Treatment of Renal and Ureteral Calculi.—D. P. Kouznetzky reviews eighty-two cases from Fedoroff's clinic; the author considers pyelolithotomy *in situ* the ideal operation, and insists that any stone of the kidney pelvis may be removed in this way. Guyon's incision is used in cases in which the radiograph shows the lower end of the stone at the level of, or above the twelfth rib. The lower posterior surface of the kidney is exposed, the assistant holding the fascia of the capsule with a clamp. If necessary the twelfth rib is resected. It has never been necessary to separate the upper pole of the kidney or to expose its anterior surface. The advantages of the operation are that the kidney suffers little traumatism, that less scar tissue forms around the kidney than when the kidney is delivered, and that the wound in the kidney pelvis heals as well as a nephrotomy wound. The author does not consider it necessary to continue the incision into the kidney substance, as suggested by Zuckerkandl and Makkas.

Unrelieved, Inexplicable Vesical Tenesmus.—F. R. Hagner reports a case of frequent urination and great tenesmus. One week previously the patient, sixty-seven years old, had complete retention relieved by catheterization. Cystoscopy and rectal examination revealed a moderately enlarged prostate; examination for central nervous lesions was negative. There was nothing suggestive of malignancy. A perineal drainage of the bladder did not relieve the tenesmus. Suprapubic cystostomy was also useless. The patient died thirty-six hours after the second operation, frightful tenesmus continuing almost to the time of his death. Autopsy revealed no explanation for the condition.

My Latest Views on Salvarsan.—A. Ravogli has given nearly 300 injections of salvarsan, one third intravenously, two thirds intramuscularly, and believes that infants with hereditary syphilis do better under the old mercurial treatment than under salvarsan. Of nine babies, from one to six months of age, who received twenty c. c. of salvarsan, according to Alt's method, five died between the second and third weeks after injection, and four showed progressive improvement.

December, 1912.

Surgery of the Kidney, Based on Case Records of Ten Years.—J. F. Baldwin and H. A. Baldwin again call attention to their operation of nephropexy, in which after the kidney is brought up into the original wound a secondary incision is made through the fascia, about one half inch from, and parallel with the original incision. One flap of the kidney capsule is sutured into this secondary incision and the other into the original incision. Out of fifty-four patients, on whom this operation was done, forty-five had complete cessation of symptoms; four were improved; and five considered the operation a failure.

Hypernephroma in a Horseshoe Kidney.—T. R. Wolff reports a case of severe epigastric pain and emaciation, in which hematuria had not been noticed. A large tumor in the vicinity of the navel was felt and smaller tumors in the left axilla. The patient died one month later. Autopsy showed that the abdominal tumor was a hypernephroma, occupying almost the whole right segment of a horseshoe kidney. There were metastases on the surface of the left kidney, in the mediastinal lymph glands, on the surface and in the parenchyma of the liver, in the myocardium, and in the left axilla.

ANNALS OF OTOLOGY, RHINOLOGY, AND LARYNGOLOGY

September, 1912.

Prevention of Deafmutism.—Macleod Yearsley makes a strong plea for the early recognition of deafness in children by the family physician, in order that if it is congenital, the child may be sent to proper schools for talking, while if it is acquired, the cause may be ascertained and if possible removed. Congenital deafness is most frequently seen in families with this same defect, either in the direct ancestry or in collateral branches. The marriage of blood relatives, as of cousins, shows a large number of children born deaf. Beside these two points, the other causes of congenital deafness are alcohol, insanity, and syphilis. Acquired deafness results most often from the infective diseases, measles, scarlatina, diphtheria, pertussis, influenza, German measles, typhoid, epidemic cerebrospinal meningitis, varicella, mumps, and smallpox. These diseases account for 34.4 per cent. of acquired deafness. In addition, pneumonia, rheumatic fever, tuberculosis, and congenital lues may result in deafness. Diseases of the nervous system, as meningitis, exclusive of the epidemic type, hydrocephalus, etc., give 18.7 per cent. Primary ear disease was responsible for 29.7 per cent. of acquired deaf cases. Of these fully one half were eminently preventable, because resulting from adenoids. Yearsley's conclusions are that congenital deafmutism would be vastly lessened if the marriages of deaf born, blood relatives, alcoholics, syphilitics, and those with a family taint of insanity could be prevented; he advocates sterilization as a positive means of obtaining this end. Acquired deafmutism will be lessened with better care of the ears in the exanthemata; the proper treatment of congenital syphilis; and correcting the causative adenoid condition and nasal disease. Prophylaxis in the nose, mouth, and ears in the infectious diseases and removal of adenoids, etc., would give this great reduction in the number of these very unfortunate persons.

Middle Ear Suppuration and Life Insurance.—Emil Amberg says that a person who has undergone radical mastoid operation and whose osseous cavity is covered with epithelium is "cured"; also cases are to be considered cured, even if the region of the ostium of the tube is not epidermized, providing the cavity is otherwise smooth and open to inspection. In nonoperated cases, a marginal perforation is classed as dangerous, as a suppuration of the bone, especially if cholesteatomatous material is present. A central perforation is comparatively not dangerous; so that it seems that not all cases with chronic middle ear disease, even if not operated in, should be excluded from life insurance.

Relief of Tinnitus by the Use of Silver Nitrate, Applied within the Eustachian Tube.—W. C. Braislin has used this method with great benefit in conjunction with the catheter and other means, especially in tinnitus due to swelling and engorgement of the mucous membrane lining the tube. Application of silver nitrate, five per cent., is made by a cotton applicator, passed inside a catheter and for a distance of one quarter to one inch within the Eustachian tube. This treatment is done after inflating the ear *per tubam*. It is not of use in tinnitus due to otosclerosis or to labyrinthine or to auditory nerve lesion, nor where the nerve centres are at fault. Tinnitus of digestive or of circulatory origin must receive treatment in addition to local measures. Hypertrophy of the posterior ends of the turbinates, polypi, specific ulcers, etc., are to be looked for by the pharyngoscope, and treated. Braislin has found the silver applications of more help than the simple bougie or the bougie for carrying the electric current.

BULLETIN OF JOHNS HOPKINS HOSPITAL.

December, 1912.

Carcinoma Skin Reaction.—Hans Lisser and Arthur Bloomfield report the results obtained in sixty-two verified cases of malignant disease and in ninety-four healthy individuals or patients suffering from various nonmalignant ailments with the skin reaction of Elsberg, Neuhof, and Geist, which consists in the subcutaneous injection into the forearm of five minims of a twenty per cent. suspension in normal salt solution of washed human red corpuscles from a normal individual. The cutaneous reaction begins to appear between three and five hours after the injection, gradually increasing in intensity until the end of six to eight hours, when it is manifest as a somewhat irregular, but well defined, area of a brownish red color, often with a bluish tinge. The lesion is raised, slightly boggy, and frequently somewhat tender. Of the cases of verified malignant disease, two thirds gave a positive reaction, and one third were negative; while in the control cases, 91.6 per cent. were negative and 8.4 per cent. positive. As a practical diagnostic adjunct, a negative skin test adds little or no weight to the evidence against cancer, but a positive reaction is strong presumptive evidence of it. To obtain reliable results, corpuscles must be used which are neither agglutinated nor hemolyzed by any sera *in vitro*, as is the case in a certain proportion of all persons. In the author's tests, the corpuscles were always obtained from the same individual.

LONG ISLAND MEDICAL JOURNAL.

December, 1912.

Poisoning by Eggs.—R. A. Henderson relates his own symptoms arising from the ingestion of lightly cooked eggs. The first attack began when about fourteen years of age, and was ushered in with a sudden appearance of blindness in the left eye. This lasted for about half an hour and was at once followed by severe pain in the right temporal region, accompanied by nausea, vomiting, and diarrhea. Attacks such as this took place at frequent intervals, but the blindness has never recurred. The attacks are typical, acute, migrainous seizures. From the age of about twenty-three years the attacks have always come on in a definite manner; when he was in the best of health, usually in the morning, objects would suddenly appear brighter than usual, then an inability to read developed, which was followed by aphasia, vertigo, and annoying anesthesia in various parts of the body. After an hour or more there would be a sudden change; there would be comparative comfort for a few moments, when a violent temporal headache would begin, accompanied by nausea and vomiting. Treatment was without avail. Through the suggestion of another physician the cause of these attacks was found to be the ingestion of a lightly cooked egg, or of some other closely similar proteid. Eggs which had been boiled for half an hour were tried, and it was found that these could be taken without any ill effect. Henderson suggests that the phenomena may be in the nature of an anaphylactic response to the egg proteid, though this would seem to be somewhat invalidated by the absence of symptoms when a hard boiled egg is used, heat not destroying the proteid toxines.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

December, 1912.

Determination of the Functional Activity of the Liver as Indicated by the Presence of Urobilinogen in the Urine.—Allan Eustis urges the use of the aldehyde reaction to determine the functional activity of the liver, through the reaction produced in the presence of urobilinogen. As the reaction is so easily carried out, and, when marked, is so simple to interpret, he fails to see why it has not met with more universal favor. To ten c. c. of freshly passed urine is added two or three drops of a solution of four grammes of paradimethylamidobenzaldehyde in 200 c. c. of twenty per cent. hydrochloric acid. If urobilinogen is present a scarlet red color appears which persists on dilution with water. While urines in which there is no urobilinogen may give a reddish color (due to pyrrhol derivatives), on the addition of the reagent, on diluting with water the reddish tinge changes to yellow, while those urines giving a *positive* reaction change to pink, the color persisting up to a very high dilution. The experiments of Bauer prove that the presence of the aldehyde reaction in the urine denotes lack of liver function, cirrhosis, carcinoma, etc., the degree of loss being denoted by the intensity of the reaction. In icterus from occlusion of the common duct, in which there has been an absence of the aldehyde reaction, if this suddenly reappears, it denotes a reappearance of bile in the intestines or an overcoming of the obstruction. In cases of diagnosticated cholelithiasis, in which for some reason operation is deferred, and in which the aldehyde reaction has been present, but has disappeared, and persists negative for several days, immediate operation is indicated to remove the obstruction. The writer reports several cases and tabulates the results of 363 cases in which the reaction was used and in which a positive reaction was obtained in those cases only where there was evidence of interference with hepatic function.

Diagnosis of Aneurysm of the Thoracic Aorta.—Isaac I. Lemann finds that thoracic aneurysm is much more common than usually supposed. It may often be found if we learn to look. In percussing the outlines of the heart we should include percussion of the space at the base of the heart. The earliest signs of mediastinal changes are derived from percussion. In all suspicious cases fluoroscopy and skiagraphy should be employed. The presence of pains in the precordial region, intercostal neuralgia, and pains in the arms should suggest careful examination of the mediastinum, as the pains may be referred pains (areas of head). The neuralgias may be pressure neuralgias. A point brought out is the percussion of the back over the vertebræ, from the first to the fourth or fifth. Aneurysm should be suspected at once if dullness or flatness is found.

NEW YORK STATE JOURNAL OF MEDICINE.

December, 1912.

Diathetic Deafness.—S. F. Snow classes the causes of deafness as operable and constitutional. He believes that one cannot emphasize too strongly the importance of recognizing the systemic factors of deafness, and that those who attempt to conduct a case from a purely local standpoint are doomed to failure from the start. The prime constitutional cause is autointoxication, which might be considered as the predetermining cause of all cases of catarrhal deafness that become extreme or chronic. If an occluded passage or some pressure on a sensitive nasal area is to produce a progressive catarrhal state in the middle ear, there must be some depressing organopathic influence at work. The elimination of the enterotoxines through the nasal and aural mucosa induces frequent inflammation of these parts. Autotoxic energy exerted thus along a special course predisposes to catarrhal states that lead to deafness. The use of calomel will often save an autotoxic patient acute suffering by an unloading of the accumulated toxines. To retain and make permanent the results secured from local treatment of cases of deafness we must correct systemic faults and the diathetic influences are apt to be the chief predetermining causes in the most intractable cases.

Otosclerosis.—J. E. Sheppard concludes as follows regarding the relation of this condition to deafness: 1. There is a diseased condition of the temporal bone, found at necropsy and by microscopic investigation, which has been termed otosclerosis. It may well be that many temporal bones which are the seat of this condition are passed by without investigation because of an absence of clinical symptoms; 2, we do not as yet know whether this lesion originates in the middle or internal ear; 3, the disease attacks the labyrinthine windows most frequently, though not always; 4, when the windows are involved demonstrable symptoms may result; but, 5, an interdependence between the described anatomical changes and the known clinical phenomena seems to be not proved; 6, therefore, this being true, a diagnosis of otosclerosis in its essence cannot be made; 7, the etiology of this condition is not yet known; 8, we do not know all that is required of its pathology, hence no satisfactory treatment has as yet been proposed.

Maternal Impressions.—L. W. Bellows presents the record, together with photographs, of a remarkable series of events which he offers as throwing some light on the mooted question of the influence of maternal impressions. A young and very impressionable, though ignorant woman gave birth to an anencephalic monster which strongly resembled, in general characters, the picture of deformity which her husband could voluntarily produce in himself, and with which he actually frightened her early in her pregnancy. One year later, having been shown this monster at the time of its delivery, she gave birth to another monster which was almost exactly similar to the first. Bellows contends that the history which he presents, of fright innocently caused by the husband, was responsible for the malformation of the first baby, and that the sight of this monster, together with the memory of the previous fright and the additional worry as to whether or not her next child was to be the same, was responsible for the abnormality in the second child. He believes that should this woman again become pregnant one might expect her to give birth to another monster.

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Proceedings of Societies.

MEDICAL ASSOCIATION OF THE SOUTHWEST

Seventh Annual Meeting, Held at Hot Springs, Arkansas, October 8, 9, 10, 1912.

The President, Dr A. L. Blesh, of Oklahoma City, in the Chair.

The Necessity of Gastric and Stool Analysis in Digestive Disorders.—Dr. E. D. Holland, of Hot Springs, Arkansas, thought the treatment of digestive disturbances with the stomach tube was overdone, but that gastric juice analysis was not made nearly as often as it should be. Every case of digestive disorder that presented itself should have a gastric juice analysis, and this analysis should be repeated every five to seven days until conditions resumed the normal. Next in importance to the gastric analysis was the examination of the stool. There was absolutely no way to diagnosticate hookworm, in most cases, except by examining the stools, and we were finding out all the time that hookworm, like malaria, was not confined to any southern locality, but was found all over the country, although it was more frequent in the south.

Dr. E. H. Eastman, of Hot Springs, stated that very few stopped to realize how much abuse the stomach would stand, and how beautifully it could be made to return to its normal function when it had suffered from disease as a result of abuse. He thought the average American stomach was subjected to more abuse than the stomach of any other nationality. People in this country did not pay enough attention to the diet and care of their stomachs. They poured a conglomeration of food into their stomachs in a helterskelter way, and were it not for the wonderful recuperation of the stomach, the business and society people of the United States would all be under the care of specialists. As to patent medicines, moreover, a lady came to him a short time ago suffering from stomach trouble. She had gastric neurosis, and at that time was taking somebody's nervine for her nerves, swamp root for her kidneys, and some other kind of patent medicine for constipation. It took him about a week to coax this woman away from using patent medicines. He made an analysis of her stomach contents and soon convinced her that his way of thinking was correct, and she gave up the use of patent medicines.

Dr. Jacob W. McClendon, of Hot Springs, said the real thing in these cases was diagnosis. Stomach troubles were misleading, at least many of us. We did not get the results we expected because our diagnosis was not correct. It was his belief that if we exercised more care in the consideration of stomach disturbances and tried to find out the real cause, we should be more successful in our treatment of this class of cases.

The Proper Lubricant and How to Use It in Urethral Instrumentation.—Dr. Thomas M. Paul, of St. Joseph, Mo., said he pursued the following plan: 1. He immersed a small granite ware bowl for ten minutes in boiling water. 2. He placed this bowl on a small gas stove and poured in a little over 200 c. c. boiling water. 3. He added six grammes tragacanth, and forty-six grammes of glycerin. He added 0.492 gramme oxycyanide of mercury and half a drachm of liquor cresolis compound. 5. He allowed the whole to boil ten or fifteen minutes, constantly stirring with a previously sterilized glass rod or spatula. The stirring was essential to keep the tragacanth from settling to the bottom and burning. In the meantime, a glass stoppered, salt mouth bottle could be immersed in the sterilizer. These bottles were used as containers for medicated lozenges and could be obtained free at most drug stores. The lubricant could now be poured into the bottle and the latter stopped. The compound cresol solution was added, not only as an antiseptic and preservative, but also on account of its anesthetic properties. If the mixture seemed too thin, a little more tragacanth might be added; if too thick, a small quantity of glycerin and water.

As to urethral instrumentation, the best way was to lubricate the urethra instead of the instrument. To do this, an ounce glass syringe, with blunt urethral tip, was sterilized by boiling and filled with the lubricant. The air was expelled and the patient's urethra distended by injection. The excess of lubricant was allowed to flow out into absorbent cotton held over the meatus. By this method, the instrument passing into the urethra advanced upon a surface well coated with the lubricant. The excess remaining in the urethra was pushed ahead of the lubricant's tip and forced through the compressor urethræ into the posterior urethra. This method of lubricating the urethra, instead of the instrument, was especially desirable in cases of tight stricture and enlarged prostate or where the urethra had been lacerated from rough instrumentation or external violence.

Cerebrospinal Fluid Diagnostics.—Dr. A. L. Skoog, of Kansas City, Mo., drew the following conclusions: The diagnostic data resulting from careful cerebrospinal fluid examinations in a number of neuropathological conditions was of great importance in arriving at conclusions regarding proper therapy and prognosis. Cerebrospinal fluid diagnostics never supplanted clinical diagnosis. All the necessary accurate clinical neurological findings should be at hand first before rhachicentesis was attempted. Rhachicentesis was indicated in several diseases where its utilization was both for diagnostic and therapeutic measures at the same time.

The Fee Splitting Evil.—Dr. David A. Myers, of Lawton, Oklahoma, stated that if a doctor called him over the telephone, or sent a patient to him, he took advantage of the first opportunity he had to thank him for his kindness, and in the meantime he tried to do the best work he knew how to do for his patient, and sent the patient home to the family doctor for after care and attention. He considered that he owed no man a cent for referring a case to him, unless the physician spent time and took the trouble to come with the patient at his or her request.

Dr. S. S. Glasscock, of Kansas City, Mo., did not believe in fee splitting. He said this was not a theory that confronted the medical profession, but a condition, and one of the most serious conditions that the American physician had ever had to deal with, and in some form it was here to stay. Any idea that a discussion of this kind would in a short time eliminate fee splitting was a mistake; it would not. He was very glad to defend the country doctors, because the country doctor in ability, morals, and from every standpoint one could possibly conceive of, was the equal, if not the superior, of the city physician. The country physician should be paid for his services in referring a case to a surgeon. The surgeon should insist, and have an understanding with the patient or the patient's friends, that the physician should get a respectable fee aside from the fee of the surgeon for doing the operation. This was the best solution of the problem.

Dr. Jabez N. Jackson, of Kansas City, Mo., said the time had come when the profession should take some action if it would keep its skirts clear with the lay people. This subject was not only a matter of conversation among doctors, but the people were already becoming conversant with the fee splitting evil. In a great measure the faulty conditions as they existed lay with the specialist for two reasons. In the first place, there was a lack of consideration on the part of many specialists of the man who referred work to them. The general practitioner felt that he was not properly treated. Another indictment against the surgical profession was that the practitioner had been solicited to do this thing. The speaker would go further and remark that the practitioner had been educated to believe in it, and if he were to make one indictment stronger than another, it was that the proprietary medical schools of this country had been charnel houses in the moral undoing of practitioners.

Dr. John F. Binnie, of Kansas City, Mo., said that the family practitioner ought to receive a dignified fee for his services, that is, for making the diagnosis, his time, judgment, and advice. But there was another point of view. The family physician attended Mr. Brown, for instance, when he had typhoid fever. He was in charge of this case for two or three weeks, charging perhaps $2 or $3 a visit and making two or three visits a day. For this quite a considerable bill for services was rendered. Again, Mrs. Brown got in the family way, the doctor attended her, and received a good fee for it. Then little Johnnie or Mary got diphtheria. Another child the measles, so that year in and year out, the family physician was getting a considerable income from this one family. Under the circumstances it was his duty to give the best advice that he could. Should he receive a big fee for referring a case in that family to a surgeon for operation? He did not think so. He owed it to the family and to the confidence that the family deposed in him to refer the case to the best surgeon that could be had.

Treatment of Extrauterine Gestation.—Dr. Walter B. Dorsett, of St. Louis, stated that upon the surgeon's shoulders fell the responsibility of the operation and subsequent treatment. If he were asked what were the dont's to be observed in the operation for extrauterine gestation, he should mention them as follows: "Don't delay until the patient is *in extremis* from loss of blood. Don't examine the patient by palpation for bimanually too frequently or too roughly for fear of disturbing a blood clot and causing renewed bleeding. Don't disturb the patient mentally. Don't operate in a residence, if it is possible to get her to a hospital. Don't administer a general anesthetic too abundantly, but in extreme cases resort to local hypodermic anesthesia, but don't use the hyoscine, morphine, cactine tablet as the patient's heart would not tolerate the baneful effects of such a combination. Don't waste time in getting into the abdominal cavity and getting hold of the bleeding point, but as soon as the opening was made grasp the bleeding point with the fingers and slide down a clamp and secure it. In desperate cases leave the clamp on, close the wound around the clamp, and put the patient to bed. In such cases don't waste valuable time in searching for small blood clots or a little fetus. Don't give hypodermic injections of strychnine that would whip up an already flagging heart, but rather start proctoclysis or intravenous infusion of normal saline when beginning the operation. When once the bleeding vessel had been secured ten minims hypodermic injections of neutral camphor would most frequently be all that was needed in the way of drug stimulation. Where it was reasonable to surmise that no active hemorrhage was going on and the patient was in a fair condition, less hurry might be enjoined and a more careful toilet of the peritoneal cavity might be undertaken. Don't use the vaginal route. If you had done so and had not had your patient bleed to death on the table, don't do it again or you would meet your Waterloo sooner or later. However clever one might be in his diagnostic ability, one could not always locate the placental attachment, and when once an active hemorrhage was brought on, no matter how quickly one might open the abdomen to secure the bleeding vessel the patient was liable to bleed to death on the table, or succumb in a short time afterward. If the cul-de-sac was to be opened for drainage it could be done more safely and equally well from above, particularly if one had used good judgment in having placed the patient in the Trendelenburg position.

Dr. David A. Myers, of Lawton, Oklahoma, stated that the first case of extrauterine gestation he remembered having in his practice occurred in the wife of a physician. He examined her, kept her under observation, and thought she was having a miscarriage. He found a mass in the cul-de-sac, and he thought it was a suitable case to open into behind the uterus. Being inexperienced, he did that and about a week afterward he hurriedly opened her abdomen and fortunately saved her life. She had since given birth to a child. A great many cases were not diagnosticated as extrauterine gestation, but we thought there was something else the matter with these patients. When the history was clear and unmistakable, we concluded they had extrauterine gestation. He would like to ask Doctor Crossen if it was possible to determine what cases were surgical and what cases were not surgical.

Dr. St. Cloud Cooper, of Fort Smith, Ark., recalled one case of extrauterine gestation where the patient was taken with pain similar to that of gallstone colic. She had missed menstruation about three months. She had pain in the upper quadrant of the abdomen which simulated very much a gallstone colic. She had no elevation of temperature and presented no symptoms of shock. In the last attack, which was accompanied with severe pain, his attention was drawn to the lower part of the abdomen. On examination he found a mass on the right side and suspected the woman was pregnant. A closer examination fully convinced him that that was the case. The physician who called him decided to operate through the vagina against his judgment. The cul-de-sac bulged considerably. He told the physician that if he was going to operate by the vagina, he had better be prepared to go in above as well. He made an incision in the cul-de-sac, which was followed by such a large stream of blood that he thought the woman would die. An incision was then made in the abdomen, the bleeding vessel found and tied. A fetus and cyst were found. There had not been a rupture. The fetus was removed and drainage established through the cyst wall. She recovered.

Dr. JOE BECTON, of Greenville, Texas, said the surgeon was called very often in these cases too late, because the average country practitioner was loath to make a vaginal examination. Physicians who lived in cities did not appreciate this. There were many country practitioners who never made a vaginal examination except during confinement. His first case of tubal gestation was diagnosticated by a general practitioner, he operated, and the woman made a nice recovery.

Dr. HOWARD HILL, of Kansas City, Mo., said those cases of extrauterine gestation which began slowly and progressed, like an inflammatory condition, were confusing. This spring he had a patient who went through a series of treatments. She was in the hospital three weeks. Four different doctors curetted her uterus, and still she was not well. She was in a bad physical condition. She had a fluctuating mass behind the uterus. He made an incision and out came a fetus. He removed a lot of stuff with gauze covered forceps, but the patient died of sepsis.

Dr. A. L. BLESH, of Oklahoma City, recalled a case of a ruptured tubal gestation sac that went on to term. The abdomen was open, and a living child was extracted. The physician was very much puzzled as to the condition found at the time of the examination. He called him in to see the case, and they diagnosticated extrauterine gestation at term, operated, made a rapid delivery, and the child lived two and a half years, and then died of pneumonia. They dealt with the sac by packing the membranes full of gauze and letting it slowly separate by granulation.

Doctor CROSSEN stated that part of the surgeon's work was to determine when to operate as well as when not to operate, but this was very difficult to do sometimes. There were some cases of tubal gestation that improved without operation, particularly those in which the fetus disintegrated. The hematocele behind the uterus was well shut off above. One could not always make that out. Where it could be made out, those were the cases to be let alone and kept under observation. He recalled two cases of patients who recovered without any special trouble. There was no indication for operation, but there was need for close observation. Such patients should be in a hospital.

Doctor DORSETT stated that he had never made a diagnosis of extrauterine gestation before rupture except in one instance, and it was his fortune to have operated in sixty-four of these cases. Women did not go to physicians to be examined at regular intervals, and they suffered a good deal before they submitted to operation. This was particularly true in rural districts. There were two elements in connection with this question which must be considered. The first was that women did not present themselves for examination, and the second was that the country physician was not disposed to make very many vaginal examinations. The general practitioner in the city did not make very many of these examinations, so that his experience had been among that class of patients who had had rather definite symptoms of pelvic trouble, but he was free to say that he had done several of these operations without making a diagnosis of extrauterine gestation before operating. But the indications of trouble were sufficient to warrant him in opening the abdomen and finding out the cause of the trouble.

Fallacies in the Work of the Untrained Surgeon.—Dr. C. S. PETTUS, of Eldorado, Ark., stated that the idea the public had of surgery was a stimulus to many that beckoned them on and caused them to conclude they had some surgical ability. For instance, a curettement was by them considered an operation. To do that they were under the impression it demanded as much surgical skill as to do an anastomosis. Such an idea of surgery was entertained by many doctors. This was the opinion of a certain physician who never did an operation and whose clinical experience extended to a school which graduated in three years. He lamented the fact that he had no infirmary to take surgical patients, as so many of his clientèle wanted him to operate The amount of surgery done throughout the country by those unprepared was surprising. He knew an undergraduate who had done several laparotomies, and had assured the public that he was thoroughly capable of doing all kinds of surgery. The development of surgery at the expense of human life was entirely too dear, and certainly something should be done by the profession to protect humanity from the dangers and mutilation at the hands of the untrained surgeon. The work of the unfit in surgery should be only a memory, and the purpose of honest, scientific surgeons was and should be the conservation of life and limb.

Dr. A. L. BLESH, of Oklahoma City, said that unfortunately a great many men in America learned their surgery or specialty upon the human being independently of instruction under a master, forgetting the fact that much of the technical part of surgery, such as resecting or suturing the intestines, etc., could be learned equally well upon the dog or cadaver. He ventured to say that of the men doing surgery in the United States of America, not twenty-five per cent. had had that fundamental technical training which was so essential to a speedy, proper, and complete surgical operation, while fewer still had had any fundamental training in pathology, and their remarks at the operating table had no basis in the fundamental principle underlying all surgery, and that was pathology.

Dr. M. G. THOMPSON, of Hot Springs, Ark., stated that many times he had cases referred to him of tumors of the breast that he thought would become cancerous if they were not operated on. These patients had subsequently gone to the eclectic and to the homeopath who said that we were too anxious to operate on them; hence, great harm was done by the practitioners of these irregular schools who were educated to make their success by prejudice and by making false statements.

(To be concluded.)

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Ninth Annual Meeting, Held at Atlantic City, N. J., June 3, 1912.

The President, Dr. JOSEPH H. WHITE, in the Chair.

(Concluded from page 213.)

A Malarial Hotbed within Sight of the National Capitol.—Dr. THOMAS W. JACKSON, of Fort Washington, Md., desired to call attention to the continued existence of malaria within fifteen miles of Washington. The disease continued to prevail annually, but in a greatly diminished degree, owing to improved sanitary condition and the extermination of the mosquito. The medical phases were: 1. Advisability of quinine prophylaxis; 2, the duration of the treatment period; 3, the cause and percentage of recurrences; 4, the management of civilian cases occurring near military stations; 5, antimosquito. Quinine prophylaxis had been disappointing; practically a failure. It was a false and dangerous doctrine.

Dr. DAMASO RIVAS, of Philadelphia, said that his experience had been that it was very difficult to get patients to take the quinine faithfully, and that it was most efficacious to give it one hour after the temperature began to fall. They knew that at that time the parasite was very young, and was apt to take more quinine then than it would later. The doses were about one half grain to seven and one half grains, always dissolved in hydrochloric acid. In regard to the recurrence of malaria, unquestionably these were attributable to bad management—i. e., giving quinine at the wrong time.

Dr. William Kraus, of Memphis, Tenn., about a year ago had a patient referred for the administration of salvarsan. On the day he arrived, he had a chill. The result of the salvarsan was partial disintegration of rings—pseudoautumnal form—and no subsequent paroxysm of this same fever. On the day following, however, the malaria became more active, but coincident with that there was the disappearance of parasites and since that time the patient had not had any further recurrence. It was possible that this remedy might have a differential effect, which is the very thing they had been unable to obtain with quinine.

Dr. Charles Craig, of Washington, D. C., was surprised that Doctor Jackson took so strong a stand about quinine prophylaxis. He did not think that it could be compared for a moment with mosquito extermination. Certainly, however, no one could doubt for a moment that quinine prophylaxis had had a great deal to do with the eradication of malaria. He believed Doctor Jackson's experience at Fort Washington was unfortunate. The speaker had had an experience at Fort Stoltzenburg which was the opposite. Stoltzenburg was supposed to have the worst record for malaria of any post in the United States Army. They tried every way they could to exterminate malaria, and finally started on a thorough quinine prophylaxis. They had the patients come to the hospital twice a week, and made them take it in the presence of an officer. When they did that, the numerical ratio went down over fifty per cent.

Dr. John M. Swan, of Rochester, N. Y., used to teach his students that it was necessary for them to administer quinine to their patients after their clinical recovery for at least two years. His reasons for teaching that was that he accepted the theory that the recurrences or relapses were due to parthenogenesis. There always seemed to him to be a parallel between this disease and another that he thought due to an animal parasite; namely, syphilis. They knew well that after the clinical manifestations of syphilis were got rid of, it was necessary to continue treatment for a long period to prevent tertiary symptoms. He believed the administration of quinine would probably prevent relapses. Referring to the diagnosis of unique carriers by means of the microscope, he would like to recall to their minds a case he reported in 1910. A patient who reported being perfectly well with a normal temperature and a normal picture in regard to red cells, differential leucocyte count, etc., in March, when there were no mosquitoes in the place, he had a case of a typical attack of malaria with the organisms in the blood. It was possible for a person with the parasites in the blood to present a perfectly normal blood picture until he relapsed.

Dr. Joseph H. White felt that proper prophylaxis demanded not only the destruction of the mosquitoes and the destruction of the unique carriers, but also the use of quinine as a prophylaxis. Just one instance with regard to a unique carrier: Four years ago he was called up at midnight by a gentleman, and asked if he would not go to a certain town where, it was thought, there was a case of yellow fever. The speaker went, very much afraid of finding yellow fever, and looked the patient over carefully, but he could not say that he had malaria. He examined this man's blood for about an hour, taking two or three specimens, and got nothing. He went back and looked him over again, after being away two hours in the laboratory; found him with a rising temperature; took another specimen, and found organisms.

Doctor Jackson did not by any means condemn quinine prophylaxis generally, except that it could not be substituted for mosquito work. As to the results at Camp Stoltzenburg, he believed that where a certain procedure could be carried out effectively, year after year, antimosquito work was far more effective. The principal objection to the widespread, indiscriminate use of quinine was that it undoubtedly vitiated blood diagnosis. Under those conditions, they might frequently be badly put about for a diagnosis, when the quinine taken had been sufficient to drive the parasite from the peripheral circulation. As to the reaction, he did not think that any of them were in a position to lay down a dogmatic length of time over which medicine should be given; but he thought they often made the period too short. He had little fear of the drug quinine; they could use it, without fear of injury, over a long period of time. Usually treatment was resumed and blood researches were not kept up, and that was the very reason why there were recurrences year after year. He believed that the only guide was repeated examination of the blood.

Doctor Craig presented the following resolution:

Resolved, That the American Society of Tropical Medicine endorse the creation of a United States Commission for the Study and Prevention of Malaria.

Resolved further, That Congress be called upon to appropriate funds for this purpose.

These resolutions were duly seconded and carried.

Election of Officers.—The following were elected as officers for the ensuing year: President, Dr. Edward R. Stitt, of Washington, D. C.; first vice-president, Dr. Richard P. Strong, of Manila, P. I.; second vice-president, Dr. Creighton Wellman, of New Orleans; secretary, John M. Swan, of Rochester, N. Y.; assistant secretary, Dr. Allen J. Smith, of Philadelphia; treasurer, Dr. C. Lincoln Furbush, of Philadelphia.

The next meeting will be held in Washington, D. C., in May, 1913.

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Letters to the Editor.

THE RIDEAL-WALKER TEST; A REPLY TO DOCTOR ANDERSON'S CRITICISM.

New York, *January 27, 1913.*

To the Editor:

In view of the recent appointment of the joint committee of the VIII International Congress of Applied Chemistry and the XV International Congress on Hygiene and Demography, with the object of formulating an international standard method of testing disinfectants, and in response to the request of a number of public health workers in this country, I feel it incumbent upon me to publish the following observations made by me in the course of the discussion on the paper read by my colleague, Dr. Samuel Rideal, at the VIII International Congress of Applied Chemistry, with the object of removing the misconception which would appear to have arisen out of Dr. John F. Anderson's wholly misleading criticism of the Rideal-Walker test.[1]

"In Great Britain and her Colonies the test which Doctor Rideal and I introduced in 1903 has been officially adopted for a number of years; in South Africa for instance, it is used to assess the import duty on disinfectants, those with a Rideal-Walker coefficient under five being subject to an ad valorem duty of fifteen per cent., while those with a Rideal-Walker coefficient of five or over enter duty free. In this connection, the following extract from the report of the Medical Officer of Health for Cape Colony is of interest:

"'Samples of disinfectants submitted by agents tendering for contracts to supply government departments, as well as samples from all consignments of unknown brands of disinfectants passing through the customs, continue to be examined by the Rideal-Walker test in the Public Health Laboratory.

"'The majority of the higher grade disinfectants have shown a marked rise in the Rideal-Walker coefficient, and from the samples received from the controller of Customs it would appear that this Colony is no longer being made the dumping ground for worthless so called disinfectants, whose only resemblance to germicides consisted in their possessing a strong smell of coal tar and being able to produce an opaque emulsion when added to water.'

"In this country the Rideal-Walker test has been adopted by one State and several cities; that it is not more widely used, I attribute to the misleading criticism to which it has been subjected by Doctor Anderson, whose indictment, published in the *Journal of Infectious Diseases*, contains the following five counts:

"1. Lack of simplicity in technic.

"2. Lack of definiteness in the proportion of culture added to the disinfectant.

"3. Extensive latitude allowed in the temperature of medication.

"4. Difficulty in manipulating the test tubes.

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[1] *Journal of Infectious Diseases*, January, 1911.

"5. Latitude allowed in determining the coefficient.

"With regard to 1, I may say that if there is any single feature which renders the Rideal-Walker test unique, it is its extreme simplicity, a fact which will be at once apparent to any unbiased worker.

"Professor Hewlett, of Kings College, London, the Milroy lecturer on Disinfection and Disinfectants, in referring to the test said: 'I think that all those who have had anything to do with this Rideal-Walker test must agree as to the beautiful simplicity of the method.'

"Two deals with what is termed 'lack of definiteness in the proportion of culture added to the disinfectant, a drop being a variable quantity.' No mention is made of the fact that this drop has for years past been standardized at 0.1 c. c. Reference to this fact will be found in Partridge's *Bacteriological Examination of Disinfectants*, published in 1907, also in Doctor Rideal's contribution to the proceedings of the British Pharmaceutical Congress held at Cambridge in 1910.

"That the 2° range of temperature which is provided for in the test, and to which Doctor Anderson takes exception in 3, is not excessive, is shown by his own experiments giving results of tests conducted at 15° to 25° C. From these experiments it will be found that a rise of 2° C. gives an advance in the coefficient of only 0.1, a figure which, it will be admitted, is well within the experimental error.

"The reply to 4 will be found in the answer to 1. At every stage of the test all manipulations are under the complete control of the worker.

"5. 'Latitude allowed in determining the coefficient' refers, I presume, to the interpretation of results. Three tables are set out—*with two phenols*, not one, as called for in the Rideal-Walker test—from which are taken ratios of the postulant and the control at 2.5, ten, and fifteen minutes, showing certain variations. The actual figures are 4.4, 5.5, and 5.9. I should like to point out what ought to have been within Doctor Anderson's knowledge, viz., that no such latitude is allowed in the Rideal-Walker test. Nowhere in the literature published in Europe or elsewhere will be found any test showing such latitude as Doctor Anderson suggests. Doctor Rideal and I have always contended that *time must be the constant*, and that if the phenol control shows life in 2.5 and five minutes only, uniformly consistent results are obtained. At the International Congress of Hygiene and Demography as far back as 1907, Doctor Rideal referred to the desired result in the phenol control as 'life in 2.5 and five minutes.' In an earlier paper by Sommerville and myself we emphasized the same point.[2]

"I have always found when investigating alleged discrepancies in results obtained by the Rideal-Walker method, that one or more of the conditions called for in the test have been ignored. In the case of the *Lancet* commission, for instance, the explanation was found to lie principally in the fact that the commissioners had been working with broth prepared from bullock's heart, instead of the Rideal-Walker Liebig broth, which had the effect of depressing the coefficient by about fifty per cent.

"In conclusion I would like to state that on my arrival in this country in January last, I placed these facts before Doctor Anderson, who, after expressing surprise that he should have overlooked the references produced by me, promised to take the earliest opportunity of correcting the wrong impression created in the paper published by him in the *Journal of Infectious Diseases*. Up to the present moment his promise is still unfulfilled, which is the more to be regretted in view of the fact that standardization of disinfectants has now attained international interest."

With every desire to avoid the *tu quoque*, I am constrained to say that the modification of the Rideal-Walker test put forward by Doctor Anderson as an improvement on the original, to quote from a recent article dealing with this subject, "marks a distinctly retrograde step."[3] That no uniformity of result can be obtained by this method, I am prepared to demonstrate to any public health worker who may be sufficiently interested in this subject to desire further particulars.

J. T. AINSLIE WALKER, F. R. S. M., F. C. S.

PERINEAL ENUCLEATION OF THE PROSTATE.

MERIDIAN, MISS., *January 20, 1913.*

To the Editor:

Regarding my article which appeared in your JOURNAL for December 14, 1912, entitled, Simple Perineal Enucleation of the Prostate Gland, several doctors have written to me asking about postoperative treatment and for reprints. I wish to say that the smaller the incision the better, and instead of introduction of the entire hand in some cases, all the fingers of the hand are formed into a cone and introduced as far as the thumb. Some cases may not require the introduction of the entire hand.

J. M. WHITE, M. D.

P. O. Box 48.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Course of Operative Surgery. A Handbook for Practitioners and Students. By Professor Dr. VICTOR SCHMIEDEN, Privatdozent of Surgery in the University of Berlin, Assistant in the Royal Surgical University Clinic. Second Enlarged Edition. With a Foreword by Professor Dr. A. BIER. Translated and Edited by ARTHUR TURNBULL, M. B., M. A., B. Sc., Demonstrator of Anatomy in the University of Glasgow. New York: William Wood & Co., 1912. Pp. xx-345. (Price, $4.)

An English edition of Doctor Schmieden's book will be as gladly welcomed in this country as it has been in England. The book offers a marked contrast to the earlier books on operative surgery in that it suggests more the operating theatre than the dissecting room. Furthermore the operations of ligations, amputations, and resections which were described so much in detail in the earlier books have been given a secondary place here and have been superseded in prominence by the more modern operations such as those on the abdominal viscera, brain, spinal cord, etc. The great developments in surgical procedure are given full justice, and the student or practitioner who wishes to learn the most approved methods used by the surgeon of to-day will find this book of great value. All that is not essential to a clear description of the operative technic in question has been omitted so that the book is of convenient size. Those methods alone are described which the author has used or seen used in Doctor Bier's famous clinic in Berlin and which have shown themselves to be reliable and safe. The text is accompanied by 354 illustrations, unusually well done. Many of these represent sketches from dead and living subjects. The appearance of this second edition within two years testifies to the good reception of the book in Germany. There is every reason to believe that it will be used widely in English speaking countries, both as a textbook and a book of reference. The author has been broad minded enough to select the best methods from all countries and to give credit where it belonged. The result is that the book has an international character. The translator has succeeded well in his work. The English is idiomatic, and the descriptions are accurately reproduced.

Diseases of the Eye. By C. DEVEREUX MARSHALL, F. R. C. S., Surgeon to the Royal London (Moorfields) Ophthalmic Hospital and Ophthalmic Surgeon to the Victoria Hospital for Children, Chelsea. Fully Illustrated. London: University of London Press, 1912. American Agents, Oxford University Press, New York. Pp. xiii-303. (Price, $3.75.)

Perhaps we expected too much from a writer of such high standing as Mr. Marshall when we began to read his book, but we laid it down with a sense of disappointment. It is another of the many attempts to compress a large subject into a small space, and has the faults common to this class of books, a very sketchy presentation of all matters, the omission of much that is valuable, and the elimination of the author's personality in the endeavor to be brief. Evidently the author has felt this, for he refers the reader in several places to larger works in regard to essential matsers. Unfortunately it is just these essential matters concerning which the reader, whether student or general practitioner, is apt to desire information. The omission of details concerning the major operations on the eye may well be pardoned, if not indeed commended, on the ground that no textbook can teach the inexperienced how to perform them, and the portrayal of the exactitude and perfection of technic necessary for the successful performance of such operations is certainly to be praised as it will tend to cause the tyro to hesitate to try the adventure. Competent knowledge can be gained, exactly as he says, only by watching a competent surgeon, and by operating under his direction. But should the treatment of serious diseases be passed over lightly? Mr. Marshall says truly that antitoxine has done more to eliminate the terror of diphtheritic conjunctivitis than all other remedies combined. Would it not be better to give directions how to use this remedy than to tell how to make and apply an admittedly less efficient quinine lotion? Fresh cases of trachoma may well be treated in the manner described, but how about the old cases? Is nothing to be done to relieve them? Mention at least of some method of treatment would do no harm. Many more cases of heterophoria than of strabismus are to be seen in the course of a month's practice, yet they receive proportionately much less attention. The article on retinoscopy accords with the views generally held in this country, but some of us would question the equal normal activity of the ciliary muscle in myopia and hypermetropia, so that when this method gives us —6 D "the real lens the patient will see with ought to be —7, and if we again allow 1 D for the atropine his full correction will be —8." We are apt to find the accommodation pretty weak in myopia of this degree. Most of these faults are due to too great condensation, and it is a pity that so good a writer was confined to such narrow limits. The chapters on sympathetic ophthalmitis and color blindness are particularly good. The publishers have done their part well in the choice of excellent type and of a tasteful binding.

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[2] *Public Health*, March, 1906.

[3] Standardization of Disinfectants, *Medical Times*, October, 1912.

A System of Clinical Medicine Dealing with the Diagnosis, Prognosis, and Treatment of Disease. For Students and Practitioners. By THOMAS DIXON SAVILL, M. D., Lond. Third Edition. Thoroughly Revised. New York: William Wood & Co., 1912. Pp. xxvii-942. (Price, $7.)

Not quite two years have passed since the second edition of this excellent work appeared (see JOURNAL for April 16, 1910). In the present edition the arrangement and scheme of the book have in no way been altered. The book has been carefully revised and, although much new matter has been added, the size of the volume remains the same. Among the additions may be mentioned acute pulmonary edema, family congenital cholemia, aplastic anemia, serum disease, multiple myeloma, psittacosis, enterogenous cyanosis, and atrophic spinal paralysis of infants.

An Introduction to the Study of Infection and Immunity. Including Chapters on Serum Therapy, Vaccine Therapy, Chemotherapy, and Serum Diagnosis. For Students and Practitioners. By CHARLES E. SIMON, B. A., M. D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons, etc. Illustrated. Philadelphia and New York: Lea & Febiger, 1912. Pp. x-301.

Inasmuch as the subjects discussed in this work have in past years acquired a very important position in medicine Doctor Simon has done the profession a favor in writing this book. Immunity is a topic that is inherently difficult to understand, as it is based largely upon hypothetical deductions. Add to that the complicated nomenclature, and the result is such that most men carefully avoid any attempt to study the matter. Doctor Simon has started with the simplest conditions and has explained most clearly, so that the more difficult parts can be quite readily grasped. The chapter on active immunization both for prophylactic and therapeutic purposes is good. It is interesting to note that in the determination of the number of bacteria in a given vaccine by counting against the red cells, the author states that the method has no claims to accuracy. This book is one that can be highly recommended, not only to the laboratory worker, but to the general practitioner who wants a clear and readable exposition of this field of medicine.

Hygiene for the Worker. By WILLIAM H. TOLMAN, Ph. D., Director of the American Museum of Safety, New York, and ADELAIDE WOOD GUTHRIE, Department of Research, American Museum of Safety. Edited by C. WARD CRAMPTON, M. D., Director of Physical Training, Department of Education, New York City. New York, Cincinnati, and Chicago: American Book Company, 1912. Pp. vii-231.

This comparatively small book contains more common sense and practical information than is present in many larger works. The advice is good, is clearly expressed, and makes no demands upon the individual that cannot be readily satisfied. There seems to be nothing overlooked, and the brief summary at the end of each chapter is a very good way of impressing upon the reader the valuable points that have been discussed. One of the most pleasing features is the moderate tone that is taken throughout. No extreme statements are made in order to support a point, this being particularly noticeable in the chapter on alcohol and tobacco. No moral side is brought forward, but there is a clear and dispassionate presentation of facts showing the harm that can be directly traced to the use of these substances. This book should be placed in the hands of all boys and girls who are about to begin self supporting work. It is also valuable to those who deal with labor directly, as employers, indirectly as physicians, and to all others interested in the welfare of humanity.

Meetings of Local Medical Societies.

MONDAY, *February 3d.*—German Medical Society of the City of New York; Clinical Society of the New York Nose, Throat, and Lung Hospital; Utica Medical Library Association; Niagara Falls Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association.

TUESDAY, *February 4th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity; Long Island Medical Society; Bridgeport, Conn,. Medical Association; Society of Alumni of Lebanon Hospital, New York; Lockport Academy of Medicine; Amsterdam City Medical Society.

WEDNESDAY, *February 5th.*—Bronx Medical Association; Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Elmira Academy of Medicine; Schenectady Academy of Medicine.

THURSDAY, *February 6th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva, N. Y., Medical Society; Dansville, N. Y., Medical Association.

FRIDAY, *February 7th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society.

SATURDAY, *February 8th.*—Therapeutic Club, New York.

Official News.

United States Public Health Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 22, 1913:

Banks, C. E., Senior Surgeon. Granted fifteen days' leave of absence, on account of sickness, from date of departure from station. **Brecht**, N. D., Assistant Surgeon. Relieved from duty at the Marine Hospital, San

Francisco, Cal., and directed to report to the medical officer in command, San Francisco Quarantine station, Angel Island, Cal., for duty and assignment to quarters. **Clark**, T., Surgeon. Granted seven days' leave of absence en route to station. **Guthrie**, M. C., Passed Assistant Surgeon. Directed to proceed to Washington, D. C., for conference regarding Indian investigation. **Hough**, J. Spencer, Acting Assistant Surgeon. Granted nine days' leave of absence, on account of sickness, from November 26, 1912. **Hurley**, J. R., Passed Assistant Surgeon. Relieved from duty at the Immigration Station, Angel Island, Cal., and directed to report to the medical officer in command, Marine Hospital, San Francisco, Cal., for duty and assignment to quarters. **Kolb**, L., Assistant Surgeon. Granted seven days' leave of absence from January 15, 1913. **Oakley**, J. H., Surgeon. Granted three days' leave of absence from January 18, 1913. **Richter**, H. C., Acting Assistant Surgeon. Granted thirty days' extension of annual leave, on account of sickness, from October 23, 1912, and forty days' leave of absence, without pay, from November 22, 1912. **Rodman**, J. C., Acting Assistant Surgeon. Granted three days' leave of absence, without pay, from January 14, 1913. **Spratt**, R. D., Passed Assistant Surgeon. Granted one month's leave of absence from January 22, 1913. **Warner**, H. J., Passed Assistant Surgeon. Granted seven days' leave of absence from January 19, 1913. **White**, J. H., Surgeon. Granted four days' leave of absence from January 12, 1913, under paragraph 189, Service Regulations.

Boards Convened.

Board of medical officers convened to meet at the Revenue Cutter School of Instruction, Fort Trumbull, New London, Conn., as soon as practicable, for the physical examination of certain cadet engineers of the Revenue Cutter Service to determine their fitness for promotion to the grade of third lieutenant of engineers. Detail for the board: Passed Assistant Surgeon H. J. Warner, chairman; Acting Assistant Surgeon J. G. Stanton, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending January 25, 1913:

Archer, W. M., Jr., First Lieutenant, Medical Reserve Corps. Leave of absence extended ten days. **Blanchard**, R. M., Major, Medical Corps. Left Fort Sheridan, Ill., on January 21st, for duty at Fort Strong, Mass. **Connolly**, P. B., Lieutenant, Medical Corps. Returned to Fort McPherson, Ga., on January 19th, from detached duty at Fort Morgan, Ala., and will accompany troops to San Francisco, Cal. **Dailey**, M. A., Lieutenant, Medical Corps. Relieved from duty at Fort Sheridan, Ill., and ordered to Fort Bliss, Texas. **Duncan**, W. A., Captain, Medical Corps. Ordered to proceed to Fort McPherson, Ga., Fort Oglethorpe, Ga., Army and Navy General Hospital, Hot Springs, Ark., and Fort Wayne, Mich., to install x ray machines. **Duval**, D. F., Major, Medical Corps. Returned to Fort Benjamin Harrison, Ind., on January 19th, from leave of absence. **Foley**, F. M., Lieutenant, Medical Corps. Reports arrival at Washington, D. C., on January 22d, on forty-five days' leave of absence. **Holland**, J. H., Lieutenant, Medical Corps. Granted two months' and fifteen days' leave of absence, from January 14th, before sailing to the Philippines. **Meehan**, J. W., Lieutenant, Medical Corps. Granted ten days' leave of absence from January 19th. **Mudd**, Leo C., Lieutenant, Medical Corps. Leave of absence extended ten days. **Weston**, H. R., Lieutenant, Medical Corps. Granted leave of absence for fifteen days before sailing for the Philippines.

Births, Marriages, and Deaths.

Married.

Baker—McKee.—In Vallejo, Cal., on Tuesday, January 14th, Surgeon Myron C. Baker, United States Navy, and Miss Helen McKee. **Coghlan—Guerin.**—In New York, on Wednesday, January 15th, Dr. John Nicholas Coghlan, of Portland, Ore., and Miss Helen Guerin. **Davis—Watt.**—In Lancaster, Pa., on Tuesday, January 21st, Dr. Henry Blaine Davis and Miss Annie Slater Watt. **McNeil—Babbitt.**—In Ashtabula, Ohio, on Tuesday, January 14th, Dr. Charles A. McNeil, of Erie, Pa., and Miss Margery Babbitt. **Muhlenberg—Miller.**—In Reading, Pa., on Wednesday, January 22d, Dr. Hiester H. Muhlenberg and Miss Anna Miller . **Strait—Connor.**—In Memphis, Tenn., on Wednesday, January 15th, Dr. Claude M. Strait, of Birta, Ark., and Miss Ruby Connors.

Died.

Abdelal.—In Kansas City, Mo., on Saturday, January 25th, Dr. Alfred G. Abdelal, aged eighty years. **Allen.**—In Philadelphia, on Sunday, January 19th, Dr. Richard Allen, aged eighty-four years. **Ames.**—In Springfield, Mass., on Saturday, January 25th, Dr. Robert P. M. Ames, aged fifty-six years. **Bell.**—In Ellwood City, Pa., on Thursday, January 16th, Dr. S. M. Bell, aged sixty-five years. **Black.**—In Calais, Me., on Tuesday, January 14th, Dr. William T. Black, aged eighty-two years. **Braman.**—In Dade City, Fla., on Wednesday, January 15th, Dr. Francis Nelson Braman, of New London, Conn., aged seventy-five years. **Chase.**—In Dedham, Mass., on Saturday, January 18th, Dr. John Winslow Chase, aged seventy-three years. **Dearborn.**—In London, Ontario, on Sunday, January 19th, Dr. Reuben Fletcher Dearborn, of Lynn, Mass., aged sixty-two years. **Edwards.**—In Grand Rapids, Mich., on Saturday, January 18th, Dr. Eliphalet G. Edwards, aged seventy-nine years. **Emery.**—In Spokane, Wash., on Tuesday, January 14th, Dr. Horace J. Emery, aged fifty-four years. **Hale.**—In Syracuse, N. Y., on Monday, January 20th, Dr. Colwell D. Hale, aged seventy-one years. **Hayes.**—In Brownsville Junction, Me., on Tuesday, January 21st, Dr. Daniel William Hayes. **Holman.**—In Philadelphia, on Tuesday, January 21st, Dr. William A. Holman, aged seventy-six years. **Johnson.**—In Amsterdam, N. Y., on Monday, January 20th, Dr. Richard G. Johnson, aged fifty-four years. **Lewis.**—In Alliance, Ohio, on Thursday, January 16th, Dr. John V. Lewis, aged seventy-seven years. **McElroy.**—In Decatur, Ill., on Wednesday, January 15th, Dr. A. J. McElroy, aged eighty-six years. **Mead.**—In Vineyard Haven, Mass., on Saturday, January 18th, Dr. Frank W. Mead, United States Public Health Service, aged seventy-four years. **Morrison.**—In Somerville, N. J., on Wednesday, January 22d, Dr. John Morrison, of New York, aged sixty-two years. **Mudd.**—In St. Charles, Mo., on Tuesday, January 14th, Dr. James R. Mudd, aged sixty-seven years. **Palmer.**—In Brooklyn, N. Y., on Monday, January 20th, Dr. Ernest Palmer, aged sixty-two years. **Petrie.**—In Philadelphia, on Thursday, January 23d, Dr. James Alexander Petrie, aged seventy years. **Price.**—In Vienna, Md., on Wednesday, January 15th, Dr. Robert J. Price, aged seventy-three years. **Rabe.**—In Dwight, Ill., on Monday, January 13th, Dr. William Louis Rabe, aged seventy-four years. **Reynolds.**—In Hayward, Cal., on Saturday, January 11th, Dr. George Edmund Reynolds, aged fifty-six years. **Riggs.**—In Moundsville, W. Va., on Wednesday, January 15th, Dr. Leroy S. Riggs, of Wheeling, aged fifty-two years. **Robertson.**—In Litchfield, Minn., on Monday, January 13th, Dr. James W. Robertson. **Ross.**—In Ambridge, Pa., on Monday, January 20th, Dr. Daniel C. Ross, aged thirty years. **Stevenson.**—In New York, on Wednesday, January 22d, Dr. Clinton Stevenson, aged forty-seven years. **Sturtevant.**—In Hyde Park, Mass., on Sunday, January 19th, Dr. Charles Sturtevant, aged seventy-three years. **Talbot.**—In Nashville, Tenn., on Sunday, January 12th, Dr. John Boyd Talbot, aged eighty-one years. **Wadsworth.**—In New York, on Monday, January 20th, Dr. Sarah Josephine Wadsworth, of Maplewood, N. J., aged seventy-one years. **Wilkinson.**—In Baltimore, Md., on Tuesday, January 21st, Dr. Guilford Dudley Wilkinson, aged seventy-seven years. **Wood.**—In Lexington, Tenn., on Thursday, January 16th, Dr. W. Riley Wood, aged sixty-two years.

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Original Communications.

THE DOUBLE FUNCTION OF FATS AND CARBOHYDRATES IN NUTRITION AND THEIR DIFFERENT NUTRITIVE PROPERTIES.*

By Henry Dwight Chapin, M. D.,
New York.

CALORIC METHOD OF FOOD VALUATION.

In nearly all textbooks and articles on nutrition, fats and carbohydrates are classed as foods whose function is merely to supply heat and energy. It is customary to express their nutritive value in calories, a calorie[1] being the quantity of heat required to raise the temperature of one litre of water one degree centigrade. To determine the caloric value of a fat or carbohydrate a definite quantity of the material to be valued is burned with oxygen in a vessel surrounded by a known amount of water, and from the rise in temperature of this water the number of calories the fat or carbohydrate yielded may be readily calculated. Numerous experiments have shown that one ounce of fat yields about 280 calories and one ounce of carbohydrates 120 calories.

In calculating human dietaries it has become a common practice to work out the number of calories the different components of a feeding will furnish and by adding them together to determine the nutritive value of the feeding or food, on the assumption that the nutritive value of the different food elements and foods varies directly with the amount of heat they will yield when burned outside of the body; and attempts have been made to work out tables for practical feeding on the basis of a certain number of calories for a certain amount of body weight.

BODY HEAT A BY PRODUCT.

If the animal organism demanded food primarily for the heat it would yield, and the stomach was a furnace in which the food was burned to produce this heat, the method of valuing foods by their heats of combustion would probably be useful and exceedingly accurate. But food is not used in this manner. It must be digested, assimilated, and carried to the muscles, organs, and tissues before it can be of value to the body or burned. It has never been shown that the animal organism uses heat derived from the food, except to maintain body temperature, and in summer and in hot countries little or no food at all would be needed for this purpose. Yet food is required under such conditions. An infant needs just as much breast milk in the tropics as elsewhere, and the heat produced by the burning of the fats and carbohydrates of forty-eight ounces of breast milk would be enough to raise the temperature of a twenty pound infant to the boiling point of water. But no such result follows, for the heat above that needed to maintain body temperature—which in hot weather may be *all* that is produced—is excreted. The production of so much heat from the breast milk simply for the purpose of excreting it, would be an exceedingly wasteful process and not in accordance with Nature's usually economical methods. Again, if the food requirements of the animal body are determined by the amount of heat excreted, which results from the burning of the food, how can growth which is a storing up of unburned food take place? It is evident, then, that the demands of the body for fats and carbohydrates are not primarily for the heat they will yield, and that the heat excreted is not a measure of the food needed for growth.

BODY HEAT PRODUCED BY EXPENDITURE OF ENERGY.

In this connection experiments made by Benedict and Carpenter with groups of men in calorimeter tests are highly instructive and suggestive. The consumption of oxygen and the production of heat or calories when men were sleeping, awake and sitting up, standing up, and when making severe muscular exertions were determined and are shown in Table 1.

TABLE I

	Average body weight, Kgms.	Oxygen absorbed grammes, per hour.	Heat produced, calories.
Men at rest, sleeping................	66.6	21	71
Men at rest, awake, sitting up.......	64.5	27	97
Men at rest, standing (calculated)...	64.5	31	114
Men at very severe muscular exercise (calculated)	64.5	213	653

During sleep, when there is a suspension of external activity and the heart, lungs, and digestive organs, if they contain food, only are at work, heat production is at a minimum. When the men are awake and sitting up or standing, more muscles are brought into activity and heat production increases

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*Read before the Pediatric Section of the New York Academy of Medicine, December 12, 1912.

[1] It does not seem to be generally understood that there is a great difference in the significance of the term calorie when used by chemists and by dietitians. The latter calorie means the amount of heat required to raise the temperature of one litre (1,000 grammes) of water one degree centigrade; calorie to the chemists represents merely the amount of heat required to raise the temperature of one gramme of water one degree centigrade. Thus, the value of the dietitian's calorie is 1,000 times greater than the chemist's calorie. A confusion in medical writing has resulted from an inexact use of this term. Throughout this article the dietitian's calorie is meant.

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proportionately. When severe muscular exertions are made, heat production increases at a tremendous rate, being over nine times as great as during sleep.

HEAT PRODUCTION NOT DEPENDENT ON SIZE OF BODY.

From the figures given it is apparent, then, that the heat or calories produced in the body does not depend upon its size or weight, but upon the amount of activity of the body or its organs. Activity depends upon the expenditure of energy, and this may be either mechanical or chemical. The motions of the muscles use mechanical energy. When the food is digested the changes from one form to another form call for chemical energy. The energy of the body is derived from the combination of the oxygen of the air with the assimilated fat and carbohydrates and a part of the proteins of the food. When energy is expended in the body it is changed into heat and then becomes a waste product which must be excreted. This fact explains why there is such a great increase in heat production when there is much physical activity.

The energy content of a food cannot be determined or measured directly, but as the expenditure of a definite amount of energy always liberates a definite quantity of heat, potential energy can be measured indirectly by the heat of combustion of the food.

DIGESTION OF FOOD LIBERATES HEAT.

Heat production is at the lowest point during sleep with an empty stomach, when little energy is being expended. When a meal is taken, expenditure of energy is required for its digestion and the production of heat increases. The amount of heat produced during digestion and assimilation depends directly upon the digestibility of the food, that is, upon the amount of energy needed to bring about its digestion. Easily digested food causes little expenditure of energy for digestion, while food that is digested with difficulty calls for much energy with a consequent high heat production.

To illustrate the point in calories, suppose two specimens of food when burned in a calorimeter yield 1,000 calories each. From the caloric standpoint they are equal in nutritive value. However, before they can be burned in the body they must be digested and assimilated, and it may be found that the digestion of one of the foods calls for an expenditure of energy equal to 100 calories, and that 700 calories of energy are used in the digestion and assimilation of the other food. Therefore, when the two foods are ready for use in the tissues, one has a net value of 900 calories, and the other of 300 calories. Armsby (2) has shown that some materials that are eaten as foods actually have no nutritive value because the energy required for their digestion is greater than the energy they contain, and that the digestion of some foods causes the production of more heat than they themselves will produce when burned outside of the body. Such foods will cause starvation sooner than no food, because some of the body tissue has to be used to furnish energy to carry on the work of digestion, the food itself not containing enough energy to insure its digestion.

GROSS AND NET CALORIC FOOD VALUES.

Zuntz (3), in Germany, made some experiments to determine the amount of energy required for the chewing of different foods having practically the same nominal caloric values, with the following results:

1 pound hay	76	calories
Green fodder equal to one pound of hay	47	calories
1 pound oats	21	calories
1 pound corn	6⅓	calories

To quote Jordan (3): "This author goes further and calculates that the work of mastication and digestion combined is forty-eight per cent. of the energy value of the digested material of hay, and 19.7 per cent. of that from oats. . . . If we wish to ascertain the comparative energy worth of two unlike rations, it would obviously be incorrect to multiply the total quantities of protein, carbohydrates, and fats in each by the unit heat values in order to ascertain the relative energy gain to the animal body. We may define *available* energy as total energy minus that which is lost in the excreta and in gases which escape, and *net* energy as available energy minus the cost of digestion and of preparing the food for use."

PHYSIOLOGICAL FOOD VALUE AND CALORIC VALUE NOT IDENTICAL.

It has been often observed that small quantities of some forms of food were more nutritious in practice than larger quantities of other forms of food which theoretically had the same nutritive value, i. e., yielded the same number of calories. It has been demonstrated on a large scale with groups of animals, covering several generations, at the Wisconsin Agricultural Experiment Station (4), that equal quantities of protein, fats, carbohydrates, and calories from different sources, all digestible, differ markedly in their practical nutritive values. The differences in growth and vigor produced in several generations of cows, by equal quantities of protein and calories derived from wheat, oats, and corn plants, are truly remarkable, but an inkling of the cause for these differences may be gained by a glance at the table giving the different amounts of energy expended in digestion of hay, oats, and corn, which shows that these foods differ in net nutritive value. In the course of a year or of several years these differences would be appreciable, although they may not account for all of the differences observed. To quote Hart, McCollum, Steenbock, and Humphrey (4), who conducted the experiments: "There is evidence from the data that there is a distinct and important physiological value to a ration not measurable by present chemical methods or dependent upon mere supply of available energy. While the latter are important and give valuable data for a starting point, they are, nevertheless, inadequate as final criteria of the nutritive value of a feed."

FOOD NEEDED FOR GROWTH NOT SHOWN BY HEAT PRODUCED IN BODY.

Growth consists of an increase of the number of cells of the body, and as each new cell contains fat and carbohydrates, there must be more of these substances in the food that the heat excreted shows has been burned, or growth cannot take place. Therefore the heat excreted cannot be used as a standard for determining the quantity of fats and carbohydrates needed in the food when growth is taking place. Gain in weight shows that the food contains more energy food than is being used up, and that the excess is being stored up in new cells or as body fat.

BODY HEAT PRODUCED ONLY BY EXPENDITURE OF ENERGY.

In Table 1, it is shown that with an increase in bodily activity there is a rapid increase in heat production, and also that the quantity of oxygen absorbed increases at about the same rate. This oxygen is obtained from the air, which is about one fifth oxygen. The blood takes up the oxygen in the lungs and carries it to the tissues, where it combines with the fats and carbohydrates and produces heat *only when there is an expenditure of energy.* The familiar sight of men swinging their arms on a cold day to warm themselves is a practical illustration of the fact that the production of body heat or calories varies directly with the amount of energy expended and that heat is a secondary product. On a cold day the body feels the need of more heat, but it is not provided, although the materials needed to produce it are present and available, which is convincing evidence that heat is not produced in the body from food in the same manner as it is when food is burned outside the body to determine its caloric value.

Bodily activity rapidly depletes the stored up carbohydrates, and when these are used up the body fat is drawn upon, while there is practically no increase of excretion of protein wastes, which shows that carbohydrates and fats are primarily suppliers of energy and secondarily of heat.

Ostwald (7) makes the following statements: "Chemical processes are the source of the energy which all living things, plants as well as animals, require for the maintenance of life. . . . Heat is a kind of energy. It is distinguished by the property that it is produced with special ease from the other forms of energy. When any chemical reaction occurs, the substances which are produced have, in general, a different energy from the original ones, and the difference of the two amounts appears as *heat,* if, as is not difficult, the production of other forms of energy be avoided. *Heat is developed if the energy of the products is smaller than that of the initial substances.* . . . The amounts of heat given out and taken in are a measure of the *changes of energy* connected with chemical processes. There is a whole branch of scientific chemistry, known as thermochemistry, which has the study of these relations for its object."

In writing chemical equations in thermochemistry the amount of heat produced is always taken into consideration. For instance, 2 grammes hydrogen + 16 grammes oxygen = 18 grammes water + 69 calories. Water thus has less energy content than the hydrogen and oxygen that compose it possessed. Carbon, when oxidized, gives off heat, and the carbon dioxide exhaled from the lungs contains less energy than the carbon of the fats and carbohydrates contained. It is thus easy to see that it is the energy content of these foodstuffs, and not their heat, that is utilized by the body.

PRODUCTION OF METABOLIC WATER FROM FATS AND CARBOHYDRATES.

In considering the function of fats and carbohydrates in nutrition, it has been customary to stop at this point, but Babcock (5) has recently shown that they have another function, equally important, which is to supply water to the cells in a manner that controls cell nutrition and growth. To understand this function, a study of what takes place when fats and carbohydrates are utilized in the cells will be necessary.

The principal carbohydrates used in animal nutrition are cellulose, starch, glycogen, cane sugar, milk sugar, dextrin, and maltose. Cellulose, starch, and glycogen are practically insoluble in water. The others are all soluble. All are composed of carbon, hydrogen, and oxygen, and the following table shows the chemical formulas for these substances as they are generally written, and also their relative composition when on a common carbon content basis.

	Chemical formula.	Common carbon content basis.		
			Carbon.	Water.
Cellulose Starch Glycogen Dextrin	= $C_6H_{10}O_5$	= $C_{12}H_{20}O_{10}$	= C_{12}	+ $(H_2O)_{10}$
Cane sugar Maltose Milk sugar	= $C_{12}H_{22}O_{11}$	= $C_{12}H_{22}O_{11}$	= C_{12}	+ $(H_2O)_{11}$
Dextrose or Glucose	= $C_6H_{12}O_6$	= $C_{12}H_{24}O_{12}$	= C_{12}	+ $(H_2O)_{12}$

When two parts of hydrogen combine chemically with one part of oxygen, the two elements neutralize each other and form water, H_2O. The carbohydrates, therefore, when reduced to a common carbon content basis, on the principle of the common denominator in fractions, consist of twelve parts of carbon united with ten, eleven, or twelve parts of water. Digestion of carbohydrates consists in converting them into dextrose, the sugar of the blood, and this is brought about by the digestive enzymes adding two parts of water to cellulose, starch, glycogen, and dextrin; and one part of water to cane sugar, maltose, and milk sugar. The assimilation of carbohydrates consists of converting into glycogen, which is insoluble, the portions not needed for immediate use, and the process consists of removing two part of water from dextrose. The methods of producing nutrition and growth consist essentially of hydration and dehydration.

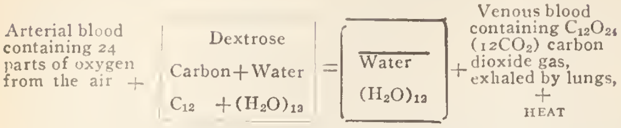
PRODUCTION OF METABOLIC WATER FROM CARBOHYDRATES.

As the hydrogen and oxygen are present in carbohydrates in the proportions that neutralize each other and form water, the carbon is the only portion of the carbohydrates which can combine with the oxygen from the air and be available as an energy producer.

To make clear what takes place when the carbon of the carbohydrates is used to supply energy, let Fig. 1 represent a cell containing dextrose before oxygen has been brought to it by the arterial blood, and Fig. 2 the cell after it has been oxygenated and the dextrose used to supply energy.

Production of Metabolic Water from Carbohydrates.

Fig. 1. Fig. 2.


Cell
Cell
Arterial blood containing 24 parts of oxygen from the air +
Dextrose
Carbon + Water
C_{12} + $(H_2O)_{12}$
=
Water
$(H_2O)_{12}$
+
Venous blood containing $C_{12}O_{24}$ ($12CO_2$) carbon dioxide gas, exhaled by lungs,
+
HEAT

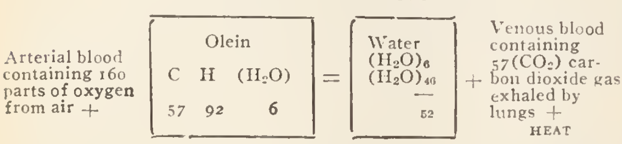
It will be seen that the oxygen combines with the carbon and both pass out of the cell as a gas, leaving behind the water of the carbohydrate.

PRODUCTION OF METABOLIC WATER FROM FAT.

Edible fats are much alike in composition, and for purposes of illustration may be typified by olein, C_{57} H_{104} O_6, or as when arranged to show the available energy producers, C_{57} H_{92} $(H_2O)_6$. What takes place when this fat is completely oxidized in the cell is shown in Figs. 3 and 4.

Production of Metabolic Water from Fat.

Fig. 3. Fig. 4.


Cell
Cell
Arterial blood containing 160 parts of oxygen from air +
Olein
C H (H_2O)
57 92 6
=
Water
$(H_2O)_6$
$(H_2O)_{46}$
52
+
Venous blood containing 57(CO_2) carbon dioxide gas, exhaled by lungs +
HEAT

Fats and carbohydrates when oxidized in the cells are both changed into carbon dioxide gas and water, the water in the case of the carbohydrates being about two thirds of the weight of the carbohydrates, while in the case of fats the water produced weighs more than the original fat. But there is also a difference between fats and carbohydrates in the way this water is produced. In the carbohydrates it is merely split off from the carbon, while in the case of fats it is actually produced in the cells by the oxidation of hydrogen of the fat. As energy producers fats and carbohydrates are interchangeable in certain proportions, but as water producers in the cells they have unlike properties.

CELL NUTRITION AND GROWTH DEPEND UPON METABOLIC WATER.

Babcock (5) calls the water thus chemically produced from the food metabolic water, and shows that its function is to cause growth and a flow of nutriment from the blood to the cells instead of from the cells to the blood. If cells are to obtain nourishment from the blood by osmosis, the cell contents must be of less concentration than the blood, or the soluble contents of the cells would flow to the blood and the cells would be starved. When dextrose or fat is oxidized in the cells, the carbon is removed as a gas and the water split off from the carbon of the dextrose, or produced by oxidation of the hydrogen of fat, is left behind to dilute the cell contents. The blood is now more concentrated than the cell fluids and its nutriment flows toward the cell. The greater the difference between the concentration of the cell fluids and the blood, the more rapid will be the osmotic flow toward the more dilute fluid. As fats, when oxidized in the cells, dilute the cell contents almost twice as much as the same quantity of carbohydrates and thus stimulate a more rapid flow of nutriment to the cells, it is not difficult to see why codliver oil, butter, and cream are so useful in tuberculosis as reconstructives. They are not needed for their energy content, because patients needing these foods are not abnormally active and are kept as quiet as possible to reduce the output of energy.

MILK FAT AS A PRODUCER OF METABOLIC WATER.

In infancy there is little demand for energy to be used externally. Infants sleep most of the time, when, as is shown in Table 1, caloric requirements are lowest, yet all milks contain fat which has high caloric value. In cow's milk, containing four per cent. fat and five per cent. carbohydrates, two thirds of the caloric value lies in the fat and one third in the carbohydrates. Fifty ounces of this milk will yield two ounces of fat and two and one half ounces of sugar. The fat will produce over two ounces of metabolic water to dilute the cell fluids, and the sugar about one and one half ounce of metabolic water.

While a chick is developing inside the egg shell it is not expending energy through bodily activity, and its body heat is maintained by the hen or incubator. It, therefore, needs little food to meet its energy and heat demands. Yet the yolk of hens' eggs contains nearly twenty-three per cent. fat, but no carbohydrates, and the fat contains less carbon than other fats (Hammersten) (6). Tangle "found the chemical energy necessary for the development of one gramme of ripe or nearly ripe hen's embryo (Plymouth egg) was equal to 658 (small) calories. This energy originated chiefly from the fat."

When it is remembered that growth consists of enlargement and division of the cells, which calls for rapid assimilation of nutriment, it will be seen that a substance with great capacity for producing metabolic water and thus causing a rapid flow of nutriment to the cells would be just what was needed in milk and eggs. It is supplied as fat.

METABOLIC WATER ALL THAT SOME ANIMALS REQUIRE.

The metabolic water derived from the food is all some animals require or ever get. Babcock (5) has shown that the imbibed water of other animals is needed mostly as a vehicle to carry off surplus heat by changing it into latent heat when the amount of heat produced is too great to be removed by radiation, and for protein wastes when they are in a soluble form, as urea. To quote Babcock (5):

> Serpents and other reptiles that live in arid regions and rarely if ever have access to water, except that contained in their food, are said by Vauquelin to excrete all of the waste nitrogen as salts of uric acid. The same is true of birds that live on desert islands where only salt water is available. It is essential that animals of these types should produce as much metabolic water as possible from assimilated food, and the waste of water through the excretion should be reduced to a minimum. Since the food is largely protein both of these ends are attained by the excretion of uric acid which contains the least hydrogen of any nitrogenous substance excreted by animals, so that the maximum amount of metabolic water has been derived from the food consumed. Uric acid and its salts, however, are practically insoluble in water and may be voided in solid condition, thereby conserving large quantities of water for other purposes that would be lost if the excreted product were soluble in water as is the case with urea. . . . Many animals that excrete uric acid instead of urea never have access to water and subsist in every stage of their development upon air dried food which usually contains less than ten per cent. water. . . . Mice will live for months upon air dried grain containing about ten per

cent. of moisture and under these conditions will give birth to young. . . . I once knew of a hen that lived for six weeks without a particle of food or a drop of water and although extremely emaciated and weak when discovered, she quickly regained her strength and weight and was soon apparently as well as ever. . . . Hibernating animals, which subsist chiefly upon stored body fat, and in which protein metabolism is reduced to a minimum, go for several months without food or water, metabolic water being ample for all their needs. . . . Metabolic water derived from the oxidation of organic nutrients would probably be sufficient for all animal needs were it not for the elimination of poisonous substances resulting from protein degeneration.

SUMMARY.

Fats and carbohydrates serve two distinct purposes in nutrition which are equally important: They furnish energy which, when expended, liberates heat, and they also supply water to the cells in such a manner that it dilutes the cell contents and reduces their osmotic pressure so as to produce an automatic flow of nutriment to them from the more concentrated blood as soon as it is needed.

Fats are more effective producers of metabolic water than carbohydrates. Metabolic water produced from fats weighs more than the original fat and results from a combination of the hydrogen of the fat with oxygen from the blood. Metabolic water derived from carbohydrates is a residual product obtained by splitting the carbohydrate, and weighs about two thirds as much as the original carbohydrate.

In milk, the natural food of rapidly growing young animals, which require much metabolic water to promote cell nutrition, fat supplies the greater part of the metabolic water. In hen's eggs it supplies practically all of it.

The amount of heat or the number of calories excreted is a measure of the food that is being burned, but does not show how much is needed for growth. The energy or caloric need of the body does not depend upon its size or weight, but upon its activity. The number of calories a food will yield is not an indication of its nutritive value.

The caloric requirements of the body to maintain it intact depend upon the amount of energy expended. The number of calories the food, which is to supply these requirements, should yield, depends upon its caloric value after deducting the number of calories needed for its digestion and assimilation. The amount of energy needed for digesting a food depends largely upon its physical condition.

PRACTICAL OBSERVATIONS.

It is quite evident that an overemphasis has been placed upon the caloric values of foods, particularly as far as the nutrition of the infant and growing child are concerned. Infants need little food for its energy, except as this is expended in digestion and assimilation of food. Their natural food is highly specialized in composition and in digestive properties and is peculiarly suited to them. Milks of various animals vary in composition and digestive properties directly with the variation in type of the animal. A proper estimation of foods, in a last analysis, depends upon digestive suitability and capacity to produce true growth and proper development.

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51 WEST FIFTY-FIRST STREET.

THE RELATION OF SCOLIOSIS TO SCHOOL SEATING.[*]

By JAMES WARREN SEVER, M. D.,

Boston,

Junior Assistant Surgeon, Children's Hospital.

I wish to speak on the relation of the occurrence of lateral curvature and round shoulders, beside other bad or faulty anteroposterior positions to the school life of children, together with certain conditions which may increase these abnormal postures.

When you realize that at present about twenty per cent. of the total population of the United States spends from three to five hours a day in school, and that this percentage is likely to be higher than lower with the increase in the extensions of the public school system, the responsibility of the proper care and supervision of this enormous number of children is great.

The total number of persons, as shown by the United States census of 1910, of school age,—that is, from six to twenty years inclusive,—in continental United States in 1910 was 27,750,599, of whom 17,300,202, or 62.3 per cent., attended school (1). The period of maximum school attendance is in the ages ten to fourteen years. For these years a comparison may be made with the census of 1900. In 1900, 79.8 per cent. of the children attended school compared with 88.2 in 1910, showing an increase of almost ten per cent. In the group of six to fourteen years inclusive,—the most common years of school attendance,—there was a total of 16,832,374 persons reported in 1910, and of this number, 13,706,980, or 81.4 per cent., attended school.

School life is to a certain extent an artificial one for the growing child, whose normal growth depends considerably on its muscular activity. The child entering in ordinary schools undergoes a physical as well as a psychical depression. Schoolroom discipline naturally tends to check this muscular activity, which in turn tends to develop muscular fatigue, resulting in, or causing bad postures, nervous tension, strain, and exhaustion.

In fact, the school life of a child has a very real and important influence in direct relation to its physical development. School deformities are usually due to, or if present, increased by prolonged sitting in faulty positions, combined with too little muscular activity. It is thought, however, by many observers that faulty postures alone are not enough to cause marked structural deformities; but given conditions in the child which imply lack of bone or muscle resistance, the deformity—more or less severe—may develop. Anything which reduces the general vigor and health of the child will consequently decrease its resistance to abnormal and long continued strain.

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[*] A lecture delivered, in part with lantern slides, to Assistant Professor Norton's class in pedagogy at Harvard University, March, 1912.

The common type of school deformity is, however, not a severe structural scoliosis, but generally a so called functional or false scoliosis, generally convex to the left. Variations in the anteroposterior plane are also very common. See Figs. 1 and 2. These latter variations may be classified under the following headings, namely: Round Shoulders; Forward Shoulders and Round Back; Round Back and Round Hollow Back with Forward Shoulders.

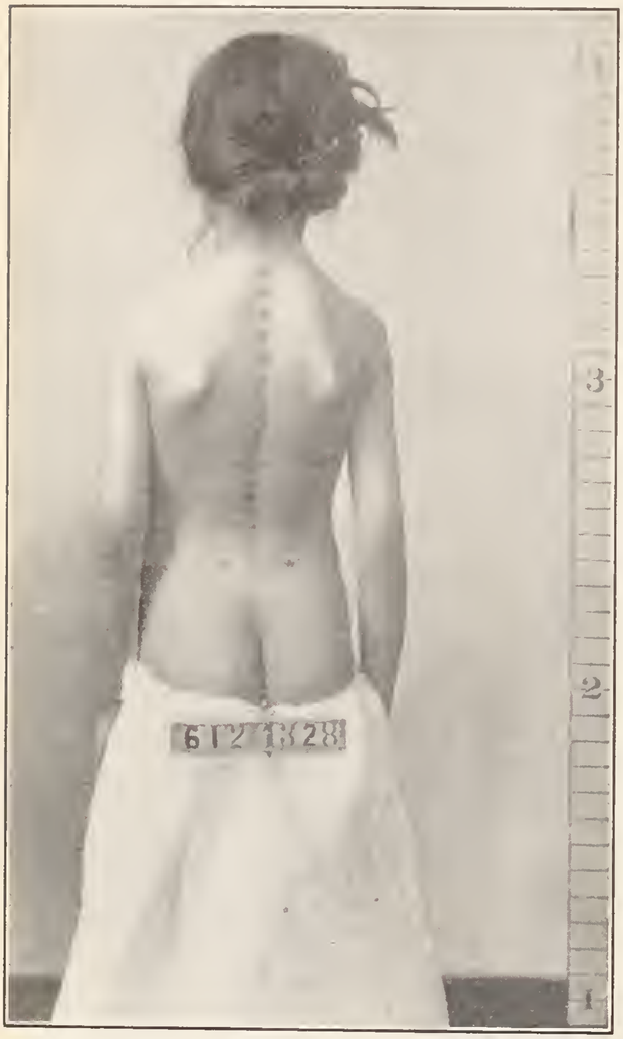

Fig. 1.—Showing typical case of left total scoliosis; physiological curve.

Round shoulders is the condition commonly seen where the head is carried forward, together with an increase backward of the normal physiological dorsal curve, with drooping shoulders, flat chest, and protuberant abdomen.

Forward shoulders and round back is simply an exaggerated condition of the foregoing.

Round back is a condition somewhat similar to the foregoing conditions, but where the increased backward dorsal curve is the predominant factor.

Round hollow back and forward shoulders form a condition well shown in Fig. 2. It is similar to the other conditions, but is accompanied by a marked increase in the normal lumbar lordosis.

These conditions may be due to too much study and too much indoor life after school hours. Carrying many books home for study has also been suggested as a cause for lateral curvature tendencies, in that in New York the grammar school children habitually carry five pounds of books to and from school. This weight carried daily in one hand, or over one shoulder, exerts a distinct tendency to deformation. The schools are probably less to blame for the occurrence of lateral curvature than is generally believed; even with the most complete development of school hygiene, lateral curvature will not altogether disappear in school children, for the tendencies are probably implanted before the school life begins. It has been shown that twenty-five per cent. of the school children in Germany, for example, hold themselves crooked.

In the absence of direct pathological causes, it is believed that the chief factor in the production of faulty postures is fatigue of the back muscles, resulting in the assumption of a position which, taken originally to relieve strain, becomes habitual, and finally, owing to structural changes, permanent. Such fatigue usually results from prolonged standing and sitting rather than from active exercises. The fact that in all cases subjected to these same conditions of strain curvatures do not develop shows that individual predisposition also plays a part. Other conditions may cause bad postures, such as unequal hearing, which causes tilting of the head habitually to one side, as will also poor or unequal vision (2).

WRITING POSITIONS AND METHODS.

The bad postures taken in using the slanting handwriting at a school desk has been urged as a factor in the production of scoliosis in school children; and for that reason the vertical system was introduced several years ago. This system, in spite of some favorable statistics, has not proved wholly efficient. The fact that a child when using the vertical system has its hand directly in the line of vision of the penpoint when sitting properly, causes it to bend the head or body to one side, and so tends to produce a bend and twist in the spine. There has been an attempt made to overcome this difficulty by using a penholder in which the pen is set off to one side of the line of the holder, but this has not proved an adequate solution.

The statistics in favor of the vertical system are as follows, and are the result of separate investigations in the following cities:

	Slanting writing.	Vertical writing.
Nuremburg	24%	15%
Zurich	32%	12%
Munich	24%	15%
Fürth	65%	31%
Wenzburg	28%	8%

The figures represent the percentage of the occurrence of lateral curvature under the two methods employed.

In writing, the position should be a good one, i. e., with the back straight and the shoulders even, with the child directly facing the desk. The child should sit squarely in the seat, with the whole forearm resting on the desk, the elbow near the lower right hand corner. Figs 3 and 4 give a good idea of a good and of a fair position, with the relations of the arms, pen, and paper to the desk top.

PHYSICAL EDUCATION AND HYGIENE.

School children should not be required to remain sitting for long periods, and while sitting the back should be supported in such a way as to relieve the muscles from undue strain and stretching forces. It is therefore obvious that the first aim of any adequate treatment is to secure rest of the muscles. This may be done by frequent exercise periods of short duration, and by proper seating, as obtained by the proper relation of the desk and chair to the individual, combined with proper support to the back in a normal sitting position. An exercise period of three to five minutes at the end of each hour, or even at the end of every two hours, may be enough to counteract deleterious effects of the school desk and chair and of too long rest in a bad posture. Improper attitudes invariably result from fatigue, and that fatigue must always follow any attitude which is maintained without change for any length of time, is obvious.

School departments in all the various cities of this country are alive to the necessity of the establishment of departments of physical education and school hygiene, combined properly with the development of athletics in the schools. Many such departments are now established under the charge of a competent instructor for both girls and boys, who often does more than merely conduct routine setting up drills, but is also on the lookout for postural or structural deformities of the spine. This instructor should be versed sufficiently in corrective work to undertake the care herself, or to know enough to send the case to some one who can handle it.

The work done in Oakland, California, by the Department of Physical Culture under the charge of G. H. Pfund is very interesting and suggestive. I will abstract freely from Mr. Pfund's report as follows:

DEPARTMENT OF PHYSICAL CULTURE.

The aim of this department is threefold:

I. Improvement of the functional activity of the body, especially the functions of the lungs and heart.

Breathing Exercises.

II. Prevention and correction of tendencies to abnormal development, especially those resulting from "sedentary attitude during school life."

Orthopedic Exercises.

III. Development of the body into a harmonious whole, under perfect control of the will. It is not to produce great bulk of muscles (professional athletes), but to cause that already present to respond readily to volition.

Standard Chest Expansion.

The standard chest expansion of all grammar grades combined was 2.87 inches in February, 1908; and reached 4.48 inches in December, 1911, which is an increase of fifty-six per cent. in a four years' period.

Aims of Deep Breathing Exercises.

The system of deep breathing exercises prescribed by this department has the following physiological aims:

1. Strengthening of the lung muscles proper, the diaphragm, and the intercostal muscles.
2. Strengthening of the muscles that are helping in the breathing process. (Muscles leading down from the neck, shoulders, arms, chest, loins.)
3. Increasing the elasticity of the lungs and the chest.
4. Equal development of all parts of the lungs.
5. Enlarging of the chest cavity and permanent increase of the breathing capacity of the lungs.
6. Deepening the ordinary breathing.
7. Increasing of the circulation and purification of the blood.

Work toward Erect Postures.

Children, on account of hereditary tendencies, general weakness, rapid growth, malnutrition, poverty of blood, scrofula, or other protracted illness, are particularly inclined to spinal troubles.

The most common trouble among children is the "kyphotic back," or posterior curvature of the spine, with the corresponding depression of the chest wall.

So much has this condition been, and is still being, neglected in most of the schools of this country, that we have come to believe that a stoop back is physiologically normal! See about town and convince yourself of the truth of this fact.

The first conditions mentioned in connection with *bending over the desks while writing, drawing, reading, etc.,* will undoubtedly produce a posterior curvature of the spine (kyphosis); and if the body *is allowed to twist in the seat at the same time,* a lateral curvature of the spine (scoliosis) will surely result in time.

In order to ascertain and to prove such faulty postures in the desks while performing written work, the physical director has taken a number of photographs, the children being entirely unaware of it. These pictures will be used for lectures for the teachers and pupils when ready.

Examination of Postures.

The nature of the postures on the photographs thus obtained showed the necessity of some action. The physical director thereupon made an examination on postures of all the children (14,000) in the school department. The records of each child individually, as well as of the class collectively, are kept by the teacher, who is instructed especially to watch and to help the stooping ones.

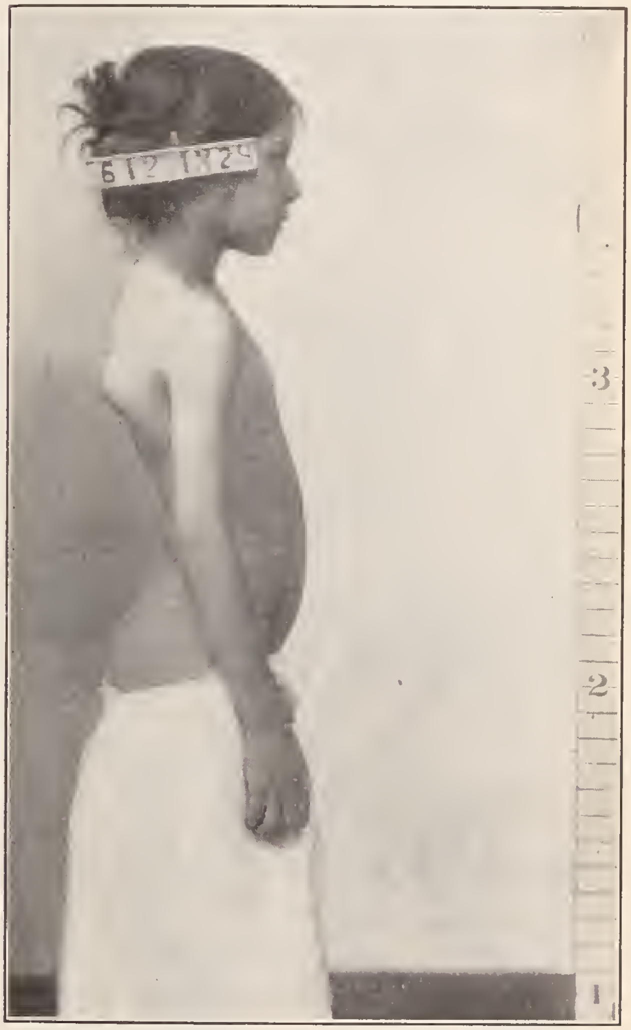

FIG. 2.—Showing anteroposterior position of same child as that shown in Fig. 1. Note round hollow back, with forward shoulders.

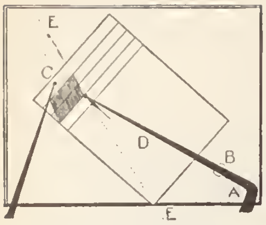

FIG. 3.

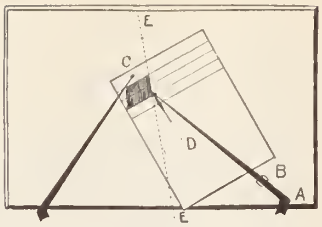

FIG. 4.

These diagrams are intended to show clearly the position of the writing paper on the desk, the relative positions of arms, paper, and desk, and the direction in which the pen moves to secure uniform slant. Fig. 3 is the half side position mostly used in public schools and best adapted to them, because of the character of the desks. Fig. 4 is the square front position.

In both diagrams, *A* represents the square turn at the right elbow and its position on the desk, *B* is the muscular rest of the forearm, *C* the position of the left hand in its relation to the paper and the right hand, *D* the penholder, and *E E* the imaginary line between the eyes along which the pen should travel in upward and downward strokes.

With the right forearm crossing the lower edge of the paper a little to the right of the centre, the pen should progress one fourth or one third of the distance across a sheet of paper eight inches wide, hefore the position of the paper is changed. Always use the left hand to move the paper. Paper of this width should be shifted two or three times, and when the end of the line has been reached, the paper should be returned to its original position. Lift the pen before moving the paper.

In order to increase the "sense of being" and of keeping straight, several outlines of back and chest of the physiologically best looking pupils were drawn on the blackboard, and afterward the outlines of the most stooped ones, as a contrast.

These comparative outlines seemed to have a very strong impression upon the children's minds.

The report here below shows the per cent. of children whose back (and chest) were *within the physiological curve* last term:

Fall Term—1911.

Grades	R	B1	2	3	4	5	6	7	8	Average
Physiologically normal in percentage	56	65	71	73	75	72	69	66	68	68

Eminent physicians working along these lines have declared that the physique of a child changes to the worse from the moment the child commences school work.

The foregoing figures show the statement not true up to the fourth grades in our schools, but a fact in the grammar grades.

In order to follow up the work commenced, a second examination on postures was made this term in half of the schools. Following is the result:

Spring Term—1912.

Grades	R	1B	2	3	4	5	6	7	8	Average
Physiologically normal in percentage	74	83	86	82	81	71	74	72	78	78

These records show an average improvement of ten per cent. in one term.

Comparing the figures of both examinations, we notice that in a general way the number of physiologically normal children *increase from the first to the fourth grades*, and *decrease from the fifth to the eighth grades.*

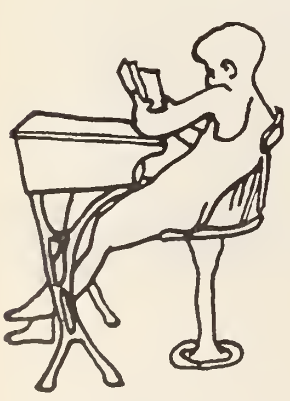

FIG. 5.—Showing unnecessary support above the hollow of the back; contributes to slouching.

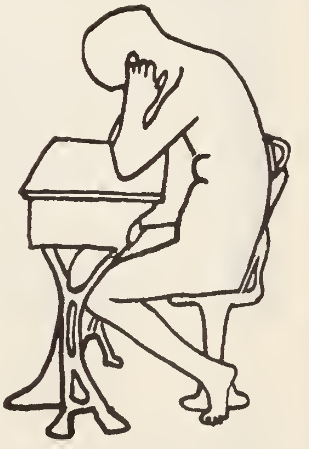

FIG. 6.—Showing a chair and desk too small for a large child, which condition allows nothing but a bad posture.

We may readily account for this decrease by comparing the amount of written work in the desks prescribed for the primary and grammar grades.

Again, these figures become interesting if we compare the grades where *no* written work is done on the desks, *with the ones where such work begins.*

Recommendations.

1. I believe we ought to insist upon *erect* and *correct* postures while doing written work.

2. I recommend that ten to fifteen minutes of physical culture be allowed on the daily programme of the grammar grades. As it *is*, this work is readily omitted in these grades. The result of the two examinations on postures will clearly prove this fact.

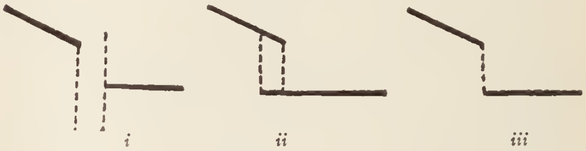

FIG. 7.—Showing arrangement of seat to desk; *i*, plus distance; *ii*, minus distance; *iii*, zero distance.

3. That open air gymnasiums be erected on all new and old school grounds.

4 That swimming tanks be constructed for the use of the schools, so that swimming instruction may be given.

In conclusion, I will report that by a general inquiry in the classes, I find that thirty-nine per cent. reported repeating at home exercises taken at school; sixteen per cent. reported taking a cold sponge-off in the morning; seventy-seven per cent. reported sleeping with open windows (this also included porch sleepers).

He also presents figures covering a period of four years' breathing exercises in an average of 6,000 grammar school pupils, showing a steady increase in chest expansion from the fifth to the eighth grades, which increase averages 2.28 inches, or an increase of ninety per cent. breathing power.

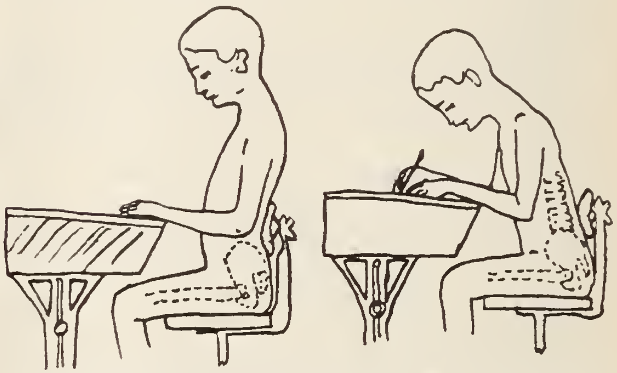

FIG. 8.—Boston School House Commission desk and chair, devised by Dr. F. J. Cotton. See *Report*, 1903-1904. (See Fig. 19.)

FREQUENCY OF THE OCCURRENCE OF SCOLIOSIS.

The frequency of scoliosis in school children increases with the age of the child and the class, but that constancy of progression is not always found; and their susceptibility to compound or structural curves increases also with their age. There is a rapid increase between the ages of eight and thirteen years, especially between the ages of eight and eleven,—a period usually of rapid growth: which period also corresponds to the highest percentage of school attendance for persons of school age. (See *United States Census Report*, 1910.)

Kirsch, of Magdeburg (3), examined 1,000 school children for evidences of lateral curvature; 500 children were examined at the time of entrance to school and also at the end of their school life. At the beginning, 21.9 per cent. of the girls had scoliosis; at the end, 41.1 per cent. of the girls had scoliosis. Of the boys, 19.0 per cent. at the beginning had scoliosis, and 21.4 per cent. showed evidences at the end. Seven and four tenths per cent. of the girls had fixed or structural scoliosis; and 7.2 per cent. of the boys showed a similar condition.

The influence of school life raises the proportion of scoliosis from twenty to thirty per cent. Whereas in the girls the proportion of rise in the cases of structural or fixed scoliosis was 5.5 per cent., there was no increase in the boys.

Gronberg, Germany (4), reported his observations on 8,053 school children. He found that 48.1 per cent. showed evidences of bad attitudes and deformities. This frequency is obviously very high.

Dukes (5) reports 445 cases of lateral curvature out of 1,000 boys examined, giving a percentage of 44.5, with 126 cases of acquired pigeon breast.

Scholder (6) examined 2,314 school children and found 571, or 24.67 per cent., scoliotic; frequency equally divided between the two sexes. The great majority of these 571 cases had a left curve. He believes this tendency to a left sided lateral curvature is alone a sufficient argument that school is a determining factor in the causation of scoliosis, for such a lateral curvature corresponds to the faulty attitude taken by the child when writing. He also shows by statistics that the children who have been the longest in school have the greatest percentage of postural deformity. He compares his figures with those of other observers in other places as follows:

	School children.	Scoliosis.	Percentage.
Guillamne, Neuchatel	731	218	29
Krug, Dresden	1418	357	25
Hagmann, Moscow	1664 (girls)		29
Kallbach, St. Petersburg ..	2333 (girls)		26
Scholder, Lausanne	2314	571	23.67

Average, about 27 per cent.

Silfverskjöld, of Stockholm (7), has had occasion to examine 3,234 girls in Gothenburg schools, and found scoliosis present in 416—that is, 12.8 per cent. He states that the largest proportion of cases occurred in apparently robust girls of fifteen and sixteen years of age. A great number of children showed asymmetry of growth, such as short legs, etc.

Tait McKenzie, in New York (8), states that out of 122 school children examined, 32 cases, or 19 per cent., had scoliosis; that out of 446 athletic college students, 19 per cent. had lateral curvature; and in another series of 200 college students, it was well marked in over eight per cent. and slight in an additional sixteen per cent. In a girls' high school, out of 160 examinations, it was found present in thirty-one cases, or nineteen per cent. The average of all observers shows about twenty-seven per cent. of occurrence, with the period of greatest frequency between the ages of seven and fourteen years. From an analysis of 9,485 school children examined by different and competent observers in different parts of Europe, there were twenty-five to thirty per cent. affected with lateral curvature.

It may be said that the frequency of scoliosis occurring in girls of the school age varies from ten to twenty-three per cent., and in boys from 16.4 to twenty-six per cent.

Hagland's (9) studies showed an increase with the school age as follows:

Age	7	8	9	10	11	12	13	14
Percentage of scoliosis........	11	13	18	16	18	24	22	22
Number of cases								1599
Cases of scoliosis								283

From this brief review of some of the statistics, you may note that lateral curvature is a real problem to be met in the school child. How this can be partially done by means of proper school furniture I will endeavor to show you, for there is no question of the real and practical need and value of the proper seating of school children.

SCHOOL FURNITURE.

The question of school furniture has been before the public for some seventy years, having originated with Barnard in 1842, and about 150 models of desks and chairs have been advocated. At present a great number of American school children are sitting in chairs which give no support or inadequate support to the back in any attitude they may assume, and at desks which are not adjusted either to the proper height or at a proper distance (plus or minus) in relation to the child's needs. To be sure, many cities are using adjustable furniture; and in one state, Indiana, twenty per cent. of all new installation is required by law to be adjustable. It is a fact, however, that in many schools, benches with and without backs, kitchen chairs, and single and double settee seats are found in common use, much to the detriment of the pupils' proper physical development.

Adjustable furniture is rarely used altogether in all schools, many departments being content (where any is used) to limit their equipment of this type to a percentage of twenty-five or even fifteen. Many schoolrooms have but one row of eight desks and chairs of the adjustable type.

It is also true that no matter how much adjustable furniture is installed, it is no better than the old chairs or benches unless it is adjusted. That is, each pupil should be fitted to the seat and desk in a proper relation.

The reasons for adjustable furniture, provided it is adjusted, may be seen from the following statements: Conditions have been noted where children differing seven years in age and twenty-two inches in height have been found sitting in similar seats and at similarly arranged desks. These conditions, I venture to say, could be duplicated in many schoolhouses in this country where no opportunity exists to adapt the individual pupil's size to the desk and chair in their proper relations: either the desk is too high and the chair too low, or vice versa. The desk may also be too far away from the seat,—a too great plus distance; or too near,—a too great minus distance; causing undue stretching of the back muscles in the first instance, and a cramped position in the second.

Thomas Wood (10) states that all seats and desks should be adjustable and adjusted. He gives figures on 25,000 boys and girls showing that the amount of variation in height at the same ages has been 11.35 inches.

PROPER RELATIONS OF SEAT AND DESK TO PUPIL.

School desks should leave room enough for the knees, and should be low enough so that the elbow and forearm may rest comfortably on it without bending the back. The slope of the desk theoretically should be about 30°; but as that is too steep an angle to allow books and papers to rest on it without sliding off, a compromise angle of from 12° to 15° has been selected. The seat should be no wider than the width of the hip, for wider seats predispose to slouchy attitudes. It should be about two thirds the length of the thigh. It may or may not slope very slightly backward, but this is of no great importance. Any great slope is distinctly bad. The height from the floor should be such as to allow the feet to rest equally and comfortably on the floor. A seat of too great breadth, as well as one of too great depth, compels bad postures. The seat should have a back which supports the lumbar spine when sitting, at work, as well as at rest.

For standard use, the front edge of the seat should be about one inch behind the front edge of the desk—a so called plus distance of one inch. The back of the chair should be either straight up and down or sloping very slightly backward, and should support the spine in the lumbar region. The lower edge of the support should come about one inch above the hip bones. Any support above the hollow of the back is superfluous, and often of distinct disadvantage in that it offers a support for the common slouching attitudes seen in children when sitting on the forward edge of the seat, the spine bowing backward between the lower end and the top of the shoulder blades. (See Figs. 5 and 6.)

The back should give plenty of clear room at its lower portion for the buttocks and clothes; otherwise, the child will be cramped and pushed forward in the chair.

The essential features in adjustable school furniture are as follows:

1. Adjustment for height, vertically, of chairs.
2. Adjustment for height, vertically, of desks.
3. A back rest of proper inclination, with adequate support for the lower back.
4. A proper depth of seat.
5. A proper slope of seat.
6. An adjustment of desk or chair for plus or minus distances. (See Fig. 7.)

Quoting from *Dr. F. J. Cotton's* (11) report to the Boston Board of School House Commissioners, he states the following salient points:

> "We have long known how undesirable long continued flexion of the back is in regard to producing scoliosis as well as kyphosis. Certainly one of the most important things to avoid in seating children is the tendency to flexed and twisted positions. For a considerable part of their time at least, we want them near the balanced sitting position. . . .
>
> "Now if we are to work against flexed positions, we must maintain the lumbar curve. This means support to the lower lumber spine. The straight chair back cannot give this; and considering the varying anatomical curves, and, even more, the variation in the size of the buttocks and the bulk of the clothes, no fixed long curve can be devised to give such support in all or even most individuals. We must have direct support applied where we most need it. With the lumbar curve supported, the chair back need go but little higher to give full comfort in the proper sitting position; and below this lumbar region, no support can be of any use. The top of the back need come no higher than the top of the desk edge.

Doctor Cotton devised an excellent adjustable seat and back (see Fig. 8), which is extensively used; but I have been told that on account of the slight increased expense in its manufacture, chair manufacturers are disinclined to bid on it or school departments to call for its installation.

(*To be concluded.*)

PROSTITUTION IN JAPAN.

By Douglas C. McMurtrie,
New York.

The beginnings and early development of the system of prostitution in Japan are very naturally shrouded in legend, like other phases of the history of this people. In primitive times it is likely that it did not exist, this being true of practically all peoples prior to the advent of a fairly extensive civilization. Marriage customs may have been lax and concubinage may have existed, but prostitution in its true sense, the promiscuous offering of female intimacy for valuable remuneration, was almost surely a development of later times.

The first mention of a prostitute in the literature of Japan which has come to my notice is in a collection of poems,[1] which was made while the court of the empire was still at Nara. One of the poems was mentioned as being the composition of a "woman who goes about for pleasure." One author holds that the sponsor of prostitution in the country was an eminent man, Komatsu Tenno, who sent out his eight daughters as courtesans, and that the later prostitutes of Japan were descendants of these women. Another author[2] says that in very ancient times, when nobles and merchants visited the seaports they were solicited by women who put out to their ships in small craft. Still another authority is responsible for the statement that the widows and daughters of the soldiers killed in a great battle at Dan-no-ura, were forced to offer themselves in the streets as prostitutes in order to gain their subsistence. These women were called *joro*. Another statement tallying closely with this is that during a revolution the emperor and his foster mother fled, taking with them as attendants a numerous band of temporary nuns. The two members of the royal family drowned themselves in order to avoid capture and the nuns, cut off from any other resource, adopted prostitution as a means of support.

Another story gives the origin of organized prostitution as due to a warlike commander or usurper who, in leading his troops from place to place, feared they would miss home comforts and ties and so be led to desert. He therefore established regular stations of prostitutes, to the nearest of which he led his soldiers after a battle.[3]

Detailed information is scant, but indications point to the fact that the various women in question were far from being members of a low class of society. In fact the very contrary might be inferred. In the *Kokonchomonshu*, mention is made of a courtesan, daughter of a nobleman, who danced and sang before the Emperor. Men of high rank, who would not associate with inferiors, considered it compatible with their dignity to visit the various resorts which were springing up. Children of prostitutes seemed to have a legal status, the son of one being referred to as of noble rank.

The morals of the upper classes of Japan, at a time of approximately the tenth century, are of great interest, and for the following description which I am enabled to give of them,[4] I am indebted to Captain Frank Brinckley, that eminent student of Japanese life who died but a few months ago.

> Many a citizen of Kyoto made the trip down the Yodo River merely for pleasure. Houses of entertainment abounded in the towns on the way, and before a ship dropped anchor she was surrounded by boats carrying courtesans, dancing girls, musicians, and other agents of amusement. It must not be supposed that the courtesan of those days descended to any depth of moral degradation when she espoused her abandoned calling. The esthetic enthusiasm and voluptuous delirium of the era created an atmosphere in which polite accomplishments could eclipse any environment, and ministers to pleasure had honor

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[2] Oye Tadafusa.
[1] Manyoshu Poems.
[3] Sanger, *History of Prostitution*, p. 438.
[4] See *Japan, its History, Arts, and Literature*, 1, 232.

irrespective of their methods. In this respect the morality of the era resembled that of Greece in the days when Praxiteles carved a statue of Phryne and Apelles painted Lais. There did not indeed exist a social vacancy which the *yujo* or "daughters of joy" could fill, such as was created at Athens by the seclusion and ignorance to which wives were condemned. The Japanese wife took her due place in society and owed as much to her literary attainments as to her beauty and tact. But the marital tie did not possess, even approximately, the value attached to it in Christian communities. A woman might occupy the leading place in a household and be the principal star in any social galaxy from that of the imperial court downward without having the status of a lawful spouse. Students of Japanese history when they observe the great part played by females in the politics and court life of the Heian epoch, cannot fail to observe that the ethical rule applied to women's conduct was almost as lax as that applied to men's. The beautiful Aki, with hair that exceeded her stature by ten feet, who bewitched the Emperor Ichijo; the fair *danseuse* Tamabuchi, whom the staid Emperor Uda loved; the female augurs who held the threads of the Fujiwara intrigues; the group of brilliant writers—Sei, Murasaki, Daini no Sammi, Izumi, and Udaisho—whose names are never to be forgotten so long as Japanese literature exists, not one of these celebrities can be said to have worn the white flower of a virtuous life. In the hands of the Fujiwara nobles women were an essential instrument, since it was by giving a daughter to be mistress of a sovereign if not his consort, that the political supremacy of the family was maintained in each generation. A woman might always be required to sacrifice her virtue in the interests of others, and naturally she did not shrink from sacrificing it voluntarily in her own interests.

If women could attain to distinction in spite of the taint of irregular sexual connections and often by their aid, virtue might well cease to be esteemed. It goes without saying that incontinence was not counted a disgraceful feature in the life of a good man. The Emperor Ichijo, who lived in the midst of most sensuous surroundings and was himself a slave to extramarital affection, nevertheless had sufficient nobility to pass a winter's night in an almost nude condition in order that he might be able to sympathize fully with the sufferings of the poor. There was indeed a much lower depth of immorality to which men had learned to descend in that epoch, unnatural love. To the everlasting disgrace of the Buddhist priesthood, that vice had the sanction of their practice, and no condemnations of it are found in the literature of the time. All these circumstances prepare the student to find that the frail sister of medieval Japan was in no sense a social outcast.

In the inland provinces there were prostitutes of probably inferior class, though several literary compositions of considerable merit which were credited to their authorship have survived. A later development, about the middle of the twelfth century, was the acquisition by innkeepers, for the convenience and pleasure of their guests, of a staff of harlots.

Some time later it is recorded that Yoshitaka, Lord of Shimizu, was appointed officer in charge of prostitutes. During the military disturbances of the Ashikaga dynasty no mention is found of systematic prostitution, and it is probable that it was reduced to a minimum. But when Japan was subdued by Hideyoshi, a special quarter in Kyoto was set apart for prostitutes and their direction was given into the hands of the Satomi family.

As the city of Yeddo became more prosperous, however, it attracted many of the prostitutes from Kyoto, and a special quarter was founded for them. They seemed to have scattered at a later period, a report classifying the houses in three districts and showing the surprising total of fifty brothels. The ground in one of these districts was taken over by the government during the course of improvements of the palace. The occasion seemed to the keepers of the houses an auspicious time for the establishment of a regular quarter for prostitutes, and a petition to the authorities embodied such a request. The arguments advanced in favor of such a plan show that similar special quarters already existed in Osaka and Sumpu, as well as at Kyoto. Other advantages urged for the scheme were that it would facilitate the apprehension of criminals and would prevent the kidnapping and seduction of young girls from their homes. Immediate action on this petition was not taken, but it seems to have been granted in 1618. Special regulations were promulgated at this time, as follows:

1. Prostitution is forbidden outside the special quarter, as is also the transfer of prostitutes from one house to another.
2. No guest may remain in a brothel more than twenty-four hours.
3. Prostitutes are forbidden to wear clothes with gold embroidery on them; these are to be dyed.
4. Brothels are not to be built of imposing appearance. The inhabitants are to be subject to regular municipal duties.
5. Notice is to be given if persons of suspicious appearance are seen about the quarter.

The ground allotted for this prostitute quarter was a region covered with weeds and rushes, whence the name *Yoshiwara,* moor of rushes. This was changed in later generations to "moor of good luck." Shoji Jinyemin was given the position of *nanushi,* or director of the quarter, though he was known among the officials of the town as *kimigatete,* prince of prostitutes, or as *oyaji,* parent. He set about clearing the land, and in less than two years it was open for business.

Prostitution was thus confined and legalized, but other regions were still infested with *jigoku,* or unlicensed prostitutes. These latter took away much of the business from the *Yoshiwara,* and the directors of the quarter petitioned the authorities for the suppression of their competitors. Measures were promptly taken and it was decided that all *jigoku* should, upon discovery, be transported to the *Yoshiwara* instead of being visited with fines or imprisonment. But this did not provide a complete remedy. Bath houses began to spring up in the quarter, and these were attended by shampooers, who were really *jigoku,* or harlots. One is led to remark that this is echoed in the "massage" advertisements of the present time.

In 1656 an order was issued by the government to the brothel keepers that they would have to transfer their quarter to another section of the city. This spread great consternation, and a petition was immediately filed that public funds be appropriated to assist in the required removal. Strange to say, this request was granted, as was also an extension of the time in which the moving should take place. During this delay it happened that the city of Yeddo was burned to the ground and the houses in the quarter were destroyed. A larger space was then allotted for the use of the prostitutes, and provision was made for the *jigoku.* All of these latter which were found outside the *Yoshiwara* were sent to it and were raffled for by the various houses.

The greatest precautions were taken to prevent disturbances within the enclosure, entrance to which was obtained by but one door. None but priests or doctors might ride within it, and the carrying of swords or spears was prohibited. Periodical examinations of the brothels were held, and it was required that all the resident women be registered.

In odd association, Christians and gamblers were prohibited from entering the *Yoshiwara*, and patrons were prohibited from staying more than twenty-four hours at a time. The practice of going out to a tea house at the end of this period and returning at once met with severe reprobation. Guests had to register at the houses, signing their names phonetically correctly, but, if they desired, ideographically incorrectly.

In early times there existed the *shirabyoshi*, who partook of the characters of both, the *geishas*, or dancing girls, and prostitutes. But the *joro* began to abandon their dancing and singing accomplishments and became prostitutes pure and simple. There came into existence, however, a class of dancing children who were used outside the brothels to lure in patrons. The only difference visible between these girls and the regular *joro* was that they tied their *obi*, or sashes, behind their backs. In 1769 this class was supplanted by singers called *geiko*, who were in turn replaced by the *geisha* girls.

The selling of women into the *Yoshiwara* was conducted through a registry office, called a *jogen*. These offices sent agents into the country to buy, beg, borrow, or steal women and girls, whom they brought back and locked up until the time of their actual transfer to the brothel masters. In order to prevent possible escape they nightly stripped the girls naked and secreted their clothes under their own *futons*, or mats. When girls were purchased an indenture was signed by the parents. The registry office charged a commission of ten per cent. The agents also lent money at usurious rates, and in the case of defaulted payments settled the account by taking another daughter.

The dress of the prostitutes had in early times been made very simple by law, but the regulations changed gradually, and in the early part of the nineteenth century it became quite sumptuous. That this was so is shown by the paintings of Utamaro, Eisan, Kunisada, and other Japanese artists.

The rooms hired by the average *joro* from the brothel keeper were two in number. One was the girl's living room, while the other, which she was at some pains to decorate attractively, was set apart for the reception of guests. Exceptionally popular *joro* sometimes had three rooms, but this was only the case in the best houses. The *joro* of the lower brothels lived all together in a common room, the private apartments being set aside for the entertainment of guests. It is even said that in the least expensive houses guests and *joro* all slept together in the same room.

In illness the ordinary *joro* was thrust into a small dark room, away from the guests. If dangerously ill or dying, her parents were called in and she was handed over to them free. The brothel masters had a great horror of dead bodies in their houses. If their efforts to get rid of the dying *joro*, however, were in vain and she expired within the house, her body was cast into a common pit.

At one time, the beginning of the eighteenth century *shinju*, or double suicides, of *joro* and guests became so common that it was necessary to expose their bodies in the streets in order to deter others from the same act. The burial was similar to that of dogs, owing to the superstition that animals have no ghosts and thus no spirits would haunt the house. The hands and feet were tied together, the bodies wrapped in matting and cast into a common grave.

The *joro* were supposed to leave the brothel at the age of twenty-five years, though this was more frequently twenty-seven. Occasionally a guest would fall in love with a *joro*, in the event of which by paying her debts and certain costs he could buy her out.

The *joro* were generally known by poetical or symbolical names, which are worthy of interest because of their beauty. I here append several: Evening Mist, Filmy Cloud, White Jewel, Cherry Tree, Golden Mountain, Garden of Flowers, Young Butterfly, The White Cloud, River of Song, The Face of Evening. Among the names of the brothels might be mentioned the following: House of the Eight Banners, House of the Three Sea Shores, House of the Myriad Flowers, House of the Dragon Cape, House of the Ten Thousand Plums.

I may thus conclude this historical sketch of the development of the *Yoshiwara* of Yeddo. In other regions of Japan the tale would be very similar, and the foregoing may, I believe, be taken as representative.

Present conditions in Japan are a development of the system already described. An important feature, however, is the place held by the *geisha*, or dancing girls. At the *geisha ya* little girls are taken sometimes by arrangement with their parents, sometimes by adoption by the proprietors of the establishment, and are trained in dancing, singing, and *samisen* playing, and other methods of serving and entertaining guests. They are an indispensable adjunct at every Japanese affair and entertainment, and well repay the time and labor spent in their training, as a good *geisha* girl has plentiful engagements open to her.

In the education of the *geisha*, however, manners are of more importance than morals, and many a girl willingly leaves the dancing in the tea houses to become the concubine of some wealthy man, be he Japanese or foreigner. Upon the expiration of her contract she goes back to her dancing again without compunction. Not all *geisha* girls are immoral, but there is so much influence for the bad in their life and so little for the good, that where one treads the straight and narrow path, many fall. Yet the *geisha* are fascinating and bright, and many Japanese of good standing have taken them as wives. With the general looseness of marital morals, the extent of the system of concubinage and the legal recognition of the children of concubines, the charm of the *geisha* presents a social problem of pri me importance.

Then there is the *joro*, or professed prostitute, whose history we have discussed. Every city in Japan has its tenderloin district where the licensed houses are situated. The governmental supervision is rigid and every effort is made to minimize the evils.

The keepers of the *joroya*, or houses of prostitution, do everything possible to make the quarter attractive, and to the uninitiated it might seem the most pleasant part of a city. The *joro,* however, can be distinguished from other women by a distinctive dress and by the fact of her wearing her *obi,* or sash, tied in front instead of behind.

The prostitute is not looked down upon, however, as is her sister in America, largely owing to the fact that most of the *joro* do not take up their occupation as a free choice, but are drawn into it as virtual slaves, being sold for the purpose in childhood. Some may have sacrificed themselves to support those whom they love, but experience in other countries would lead us to expect that this class is small. Many tales are current in Japan regarding the *joro* of this type, who is rewarded by finding, even in the brothel, a lover who will marry her and restore her to a life of respectability.

The houses of prostitution give employment to many thousands of women, but it may be stated on good authority that but few seek them from choice.

There have recently been made successful efforts to limit the power of the brothel keepers over the *joro.* Though the actual sale of girls was prohibited by imperial ordinance in 1872, the price was afterward called a loan to the parents of the girl, and further loans for clothing and board were charged against her so that it was impossible for her to get out of debt and out of the clutches of her master, except through death or purchase by a lover. The institution of prostitution was generally regarded as a necessity, and public opinion did little toward improving the lot of the *joro.* Over twenty years ago a movement for the betterment of conditions was started by some Japanese Christians, but failed for want of support. The young men of the empire decried it vehemently. Under a new code, however, it was provided that a *joro* might leave her situation by notifying the police, but this was nullified by a regulation requiring the endorsement of the *joroya* keeper to make such an application effective. In 1900, however, with the assistance of various citizens, one case was brought to court. The decision was made that the contract made was in conflict with public welfare and morals, and ordered the brothel keeper to affix his signature without regard to the indebtedness of the girl. The local police refused to act, however, but on appeal to the authorities at Tokyo, the order was enforced and the girl was freed. A religious body in Tokyo then took up the matter on a larger scale and distributed an issue of their paper containing an offer to assist any girls who wished to abandon their mode of living, and distributed copies of the paper throughout the prostitute quarter. Those who distributed the papers were soon driven out, but much damage had already been done. The cooperation of the police and the press was secured and considerable public opinion was aroused.

As a result of the crusade the patronage of the houses fell off and a new government regulation greatly improved the situation. Four months after the issuance of this order, 1,100 out of the 6,335 girls licensed as prostitutes in Tokyo had left the business.

In character, the situation as regards prostitution in Japan is unique. In practically no locality are the two features of segregation and detailed inspection and oversight combined; as there exists no law entirely forbidding an institution which has demonstrated the impossibility of its suppression, there is no opportunity for corruption in its protection. From a business standpoint, the management is carried on in the light of day, and the low and disgusting features engendered by an underground activity are absent.

In Yokohama the conditions are fairly typical. The main street of the *Yoshiwara* is over a mile long. On each side it is lined with houses of prostitution in front of each is a cagelike show window in which are seated some of the girls. In a great many there is a frame nearby in which are exhibited pictures of the various prostitutes and under each is the *fixed* price of her fee. It is therefore possible for the prospective patron to know in advance the charge he will incur. In comparison with the custom in this country, the fees are low, being very seldom over ten yen (five dollars), even in the most sumptuous houses, and they are generally much less.

All traces of vice are rigorously excluded from the other parts of the city. Houses of prostitution are practically impossible of existence, nor is there any street solicitation. The social evil does not, therefore, obtrude itself on the people. When any one wishes to avail himself of the facilities of the Yoshiwara, it is necessary for him to make a premeditated trip to a distinct and comparatively remote section of the city.

In any consideration of the moral situation in Japan, it is incumbent upon one to point out that the proportion of illegitimate births is very high. For instance, the vital statistics[5] of the city of Yokohama show the following figures:

Year.	Total births.	Illegitimate births.
1897	2,573	592
1898	2,557	907
1899	2,893	664
1900	3,109	725
1901	5,247	1,110

In both sets of birth figures, stillbirths are included. In the illegitimate confinements stillbirths form a larger proportion than in the legitimate ones.

In cannot be contended, however, that this condition is due entirely to the system of prostitution. Very probably the marriage customs and laws are responsible to an even greater extent. The proportion of illegitimacy, is, nevertheless, a feature of the Japanese social system which cannot be neglected.

In conclusion, I may point out that the principles upon which prostitution has been conducted in Japan have justified themselves empirically as far as local conditions are concerned. What development has occurred has been along strictly consistent lines and the salient features have been always retained. Whether the system would work well in another country is open to question, but an institution so carefully developed must certainly merit consideration and attention on the part of those interested in the morals and health of the community.

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PHYSICAL THERAPEUTICS FROM THE MODERN POINT OF VIEW.*

By William Benham Snow, M. D.,
New York.

There is probably no department of medical science that has been more neglected by most physicians than the use of electricity and other physical measures in therapeutics. At the same time, greater progress has been made by those who have been devoting their attention and time to research and development in the employment of these measures than is generally supposed. The differential consideration of electric currents and their indications as applied to therapeutics, has become more and more a matter of discrimination with the advance of electrical science.

Until recent years, electrotherapeutics has been practically limited to the uses of the constant and induced currents (then known as the galvanic and faradic), and a generally indiscriminate use of the static currents. Under the empiric régime of Erb and his followers in the employment of electricity it fell into disrepute, except with a few physicians who have employed it scientifically with a knowledge that enabled them rationally to meet indications. These men kept alive the science which, with the advance made with later discoveries and invention of devices and apparatus, together with the development of better methods of using the static and other currents of high voltage or potential, has developed electrotherapeutics into a science which already, in the hands of those who understand the indications and methods of employing it, rivals surgery or any other recognized medical procedure. It is a matter of regret that the medical profession has not everywhere kept pace with the progress that has been made; and a source of satisfaction that there is now evidence of a renewed interest in the subject.

There are so many physicians now doing good scientific work with these measures, that the profession and public is becoming rapidly enlightened to two facts: 1. Physical measures—electricity, the Röntgen ray, radium, radiant light and heat, convective heat and mechanical measures, are of great value in relieving human suffering; and, 2, as much depends upon the knowledge of the methods by the man who uses them as upon the agents in question.

Of electric currents, there are three specific effects, which meet distinctly different indications. They are: 1. *Mechanical;* 2, *thermic;* and, 3, *electrolytic effects*—the same well known actions of electricity which make it valuable commercially. For the therapeutic application of electricity, it is generally desirable that currents be employed which practically produce but one of these effects in order to meet definite indications. In the *static,* the *d'Arsonval high frequency,* and the *constant current,* we have three distinctly different classes of currents, which are respectively peculiarly well adapted to meet the different indications.

Electrical currents which produce mechanical effects, induce contraction of muscular tissue, alternating with release when the rate of interruption is less than 600 a minute, above which rate contractions become tonic. For these effects the static methods excel all others, and are also practically devoid of thermic and electrolytic effects. When applied to infiltrated tissue, such currents, by successive contractions induced for a requisite length of time, expel or force out through the lymphatic channels the products of inflammation retained in swollen and indurated tissue—the seat of a condition of local stasis.

A part or organ which may have suffered a local trauma or sprain, or has become the site of a local congestion as present in an enlarged prostate, uterus in subinvolution, congested liver, or enlarged spleen. is thus softened, and the swelling is reduced with a restored metabolism. Then circulation and restitution are resumed. In addition to these mechanical effects of the static currents, they also materially improve general metabolism and *relax local muscular spasm* by a selective action upon the muscular cells, and coincidently anticipate or prevent its recurrence by having removed the inflammatory or other reflex causes of the spasm.

The thermoelectric high frequency currents occupy quite a different field and from quite another point of view. All currents produce some heat when passed through resisting tissues, but no current is so free from objections when employed in therapeutics to produce heat as the direct d'Arsonval high frequency current, because its effects are purely thermic without mechanical or electrolytic action.

When the rate of interruption of a pulsatory current or the rate of oscillation of an alternating current exceeds 10,000 a second, all muscular contraction or other mechanical effect ceases, except that due to the rapid passage of the electrons through the tissues; hence, the absence of perceptible mechanical action from high frequency currents.

That there is no electrolytic action from high frequency currents is readily demonstrated by passing them through a solution of iodide of postassium, when electrical decomposition is not produced, even when the solution boils from the passage of the current. The effect therefore from the passage of the d'Arsonval current through the tissues is largely, if not entirely thermic, with a harmless but beneficial effect upon the cells, due to the passage of the electrons through the tissues. The value and significance of the thermic effect of the high frequency currents from the therapeutic point of view is of comparatively recent recognition.

When a tissue is irritated or heated it becomes promptly hyperemic, which in either case arises from reflex stimulation of the vasomotor centres. When heat is applied to living tissue the part heated becomes promptly hyperemic, the degree or intensity of which will vary as the temperature. The direct d'Arsonval current, as induced by suitable apparatus, is capable of producing a degree of heat up to and beyond the limit of toleration, under perfect regulation. The extent and degree of the hyperemia produced will depend upon the size of the electrodes, which are placed on opposite sides of the body or part treated, and the volume of the current passing. The current will pass through and heat all of the tissues which are in the interval immediately between the electrodes and nowhere else.

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The vasomotor mechanism, in an effort to maintain the normal body temperature in these tissues, reflexly causes the hyperemia to persist until the fixed tissue cells are cooled to normal, the difference in temperature being gradually adjusted by the heat being given off to the blood while passing rapidly through the dilated vessels within the heated tissues.

Electrolysis, with or without ionization, is the third property of electric currents which serves a distinctly different purpose from the others, and is preeminently the field of the *constant current.*

Electrolysis is a destructive process by which the tissues, when made the electrolyte or substance acted upon, are destroyed or disorganized. When metals, as silver, zinc, and copper, are used as electrodes at the positive pole, or the halogens and acid radicals at the negative pole, they are driven into the tissues as ions, and, at the same time, electrolysis is also taking place in the tissues. Salt solutions and organic bodies may also be acted upon and separated into their ultimate elements and ionized into the tissues, from one or the other of the poles when electrodes are saturated with them. These procedures are distinctly destructive or alterative according to the method and dose employed. The opposite poles are therefore distinctly different in their actions and indications, and a knowledge of these effects and an intimate familiarity with dose and technic is imperative; for no current in the hands of a novice is so dangerous as the constant current.

Radiant light and heat, as derived from the sun or incandescent or arc lamps, are important therapeutic agents, the value of which depends upon the effects of transformation of radiant energy into heat units and other vibratory effects when applied to the tissues. The penetration of these radiations varies with the wave length, increasing with the increase in the wave length from the upper limit of the ultraviolet to the lower border of the infrared. The effects are antiseptic or actinic of the higher frequencies, and stimulating or inhibitory from the lower frequencies including the infrared. The luminous effects undoubtedly increase the oxidizing powers of the blood with an increase in the hemoglobin, whereas the heat effects arising from the absorption or transformation of radiant energy into heat vibration, locally increase metabolism, nutrition, and phagocytosis by the induction of hyperemia. Radiant energy then, from luminous sources, is antiseptic from two points of view; the actinic action, which is relatively limited in the tissues because the highest frequencies penetrate but superficially, and by the induction of hyperemia, with the consequent increased number of phagocytes in the infected tissues, which latter is the most important effect of radiant energy.

The Röntgen ray, an ether vibration, of infinitely greater intensity and frequency than the luminous vibrations, penetrates all tissues to greater or less extent and produces either stimulating effects from very short exposures, or a marked inhibitory effect when the exposures are long.

The penetration of the x ray varies with the volume and intensity of the radiations, which depends upon the character of the x ray tube and the source of the current or apparatus by which the current is produced, the higher vacuum tubes, other things being equal, producing the rays of greatest penetration.

The inhibitory effects of the Röntgen ray, under judicious management, are capable of lessening the functional activity of all living cells, including the bacteria which inhabit the living tssues, and by such action produce tissue inertia and sterility in every form of animal or vegetable life. This has been well established in its effects upon the human species, much to the discomfiture of some of the younger operators. It has also been thoroughly demonstrated upon vegetables and germ life, both in the laboratory and by clinical experience. Employed from this point of view, the Röntgen ray becomes a therapeutic agent of great value in the treatment of many overactive and infected processes, and is entirely safe in the hands of a physician who understands its properties, the proper regulation of the dose, and the control of extreme conditions arising from its employment in therapeutics.

Convective heat is the heat conveyed by the heated blood stream away from a surface to which dry or moist heat is applied. The term, convective heat, is used in contradistinction to radiant heat as produced in the tissues by a transformation of energy. Convective heat is not capable of producing hyperemia beneath the skin. This was demonstrated by Dr. W. Gilman Thompson, with his experiments on a cat, and is contrary to the generally accepted notion. When employing high temperatures with the dry hot air apparatus, however, with the parts protected by Turkish toweling for the purpose of absorbing the perspiration, thereby preventing boiling of the perspiration which would blister the skin, it is capable of producing an intense hyperemia in the deeper structures as well. By means of the depressing effects of the heat upon the germs and hyperemia thus induced, this method is invaluable and uniformly successful in from two to four days in the treatment of pyogenic infections when present in an arm or leg.

Mechanical vibration and concussion are very important therapeutic measures when employed intelligently. They are methods which render the processes of massage much easier and more practical and, at the same time, are capable of producing deep penetrating vibration with stimulation or inhibition of the spinal centres, and of the various organs in the abdominal and thoracic cavities. Applied to the spinal and sympathetic nerves in the spaces between the vertebral process, it is possible to contract or relax tissues corresponding to the distribution of the various nerves, which arise at the site of the application. Thus vasomotor conditions may be affected, either raising or lowering arterial tension at the will of the operator; or a relaxed abnormal heart may be toned to a stronger and more vigorous condition. As shown by Abrams, dilated arterial trunks may be contracted and the stomach, kidneys, or other organs, relaxed or contracted at the will of the operator. These statements of Abrams have been verified by many of us, and, though to some they may seem improbable, they are now beyond denial.

When the methods enumerated are properly employed in conformity with the indications, they are often capable of producing effects which frequently restore to normal conditions which would not be otherwise so favorably affected.

If we divide disease into the two types of inflammation, infectious and noninfectious, conditions of muscular spasm, conditions of fibromata, hyperplasia, or scar tissue; hemorrhagic conditions, defective metabolism, and malignant disease, it will be possible in the time allotted to consider each briefly.

Wherever inflammation is present *without the presence of germs or malignancy* in the inflammatory zone, the static modalities—the static wave current, the static sparks, brush discharge, and all other static modalities which cause tissue contraction, are preeminently the most effective means now known to medical science for promptly restoring swollen and infiltrated tissues to normal. In all early conditions, except where fracture or rupture of bone ligament or muscle is present, the results are remarkable. Likewise in chronic inflammation of similar character the results are generally successful, but it requires a longer time to eliminate the products of the inflammatory process.

Those unfamiliar with the electromechanical treatment of noninfected inflammation, including the cases arising from toxemia, are certain to be favorably impressed, if they will investigate the methods and results obtained. It will also explain to them the occasion for the enthusiasm of the men who use their static machines intelligently.

Under the noninfected cases may be named a very large number of conditions, including accessible cases of neuritis—sciatic, brachial, facial, or herpes zoster. These cases of neuritis yield in the first days to a very few administrations, with immediate relief from pain. All cases of noninfected synovitis, before chronic structural changes take place, are relieved and restored to normal if the parts are intact. Other cases of synovitis, which are responsive to mechanical electric treatment, include cases of acute sprains, which are usually made normal in four or five days; and the toxemias affecting the joints including rheumatoid arthritis, Stills's disease, so called rheumatoid arthritis, typhoid spine, and gonorrheal arthritis.

Synovitis, arising from intestinal toxemia, demands, in conjunction with the electric treatment, removal of the source of toxemia.

Gonorrheal arthritis is promptly relieved in the male, in most cases, by the application of the static wave current preceded by the vacuum tube current, applied to the vesicles and prostate gland in the rectum, where the latent infection is usually found to be. This has already been verified by numerous observers and in many cases, and can be readily demonstrated.

Treatment of inflammation of the prostate gland with an electrode in contact with the gland in the rectum, employing the static wave current, has also already demonstrated its value. I have, to date, succeeded in relieving more than two hundred cases by this method. Subinvolution and dysmenorrhea also yield in ninety per cent. of cases to treatment with the static wave current applied with a metal electrode in the rectum, the current passing readily through the tissues when the electrode is held in position against the uterus.

Add to these the successful treatment of varicose ulcers, phlebitis, chronic eczema, and numerous other superficial skin conditions treated with the static brush discharge, and it is not necessary to enlarge upon the indications for the electromechanical application of the static modalities.

For efficiency in relieving these conditions, the static machine, which so many have unwittingly relegated to a remote corner of the consulting room or otherwise disposed of it, holds this field preeminent without peer or rival. The mechanical effects are feebly produced by currents from other apparatus, but do not compare in efficiency with the effects of the static current; and furthermore, no current is so free from electrolytic action, nor so moderate in the thermic effects produced.

The treatment of inflammation due to local infection by the combined effects of the x ray, radiant light and heat, and the high frequency currents, is one of the most satisfactory of modern therapeutic methods.

I. *The x ray* by inhibiting germ development in living tissue to the extent of arresting propagation or development, is invaluable when employed with the proper degree of energy, without otherwise injuring the host.

II. *Radiant light and heat* as radiated from incandescent or arc lamps of high candle power depress germ development, and coincidently produce heat far into the tissues, accelerating metabolism, and increasing nutrition and phagocytosis.

III. *The high frequency current* produces hyperemia which, by increasing phagocytosis as previously stated, is directed to clearing out the germs from the infected zone.

Used in varying combinations to conform to varying conditions there are no infections over which the phagocytes have dominion, that may not yield to a skillful technic with these measures.

Tuberculous infections, superficial and deep seated, may be effectively relieved in the first stage by these three potent agents, used in proper combination. In tuberculous adenitis, and the two types of lupus, they seem to be specifics. In pulmonary tuberculosis, together with the other usual hygienic measures they undoubtedly fill an important place. In tuberculous arthritis, in the early stage, they have given remarkable results. In tuberculous peritonitis, they comprise the rational treatment, and there are many records of success from their employment in these cases.

No less successful are these measures in the treatment of pyogenic infections. In the simpler cases, which include indurated acne, boils, whitlows, carbuncles, frontal sinus disease, and acute otitis media, and in the chronic purulent type of otitis media, when necrosis of ossicles is not present, the same measures are uniformly successful in abating or curing the conditions. In early and chronic appendicitis, they are eminently successful in many cases. In chronic appendicitis and gonorrheal vesiculitis and epididymitis they are remarkably effective. These statements, which may seem too optimistic to those who are unfamiliar with the methods employed, will bear critical investigation.

Another valuable use of the d'Arsonval current, over which I will pass hastily, is its effect upon *hypertension.* When I state that it is now possible to control the blood pressure in all except the most advanced cases of arteriosclerosis, and often prevent or defer apoplexy, and thus ward off nephritis, I am making a statement which I do not stand alone to prove. It is one of the most gratifying developments in modern therapeutics.

This result may also be accomplished in other cases by means of mechanical vibration applied over the vasomotor centres. In cases of hypertension these measures are properly employed in conjunction with a carefully regulated diet régime.

Wherever muscular contraction or tension is present associated with inflammation before muscular degeneration has taken place, the static current, mechanical vibration, or massage effects relaxation, affording temporary relief and in many cases aiding much in effecting a cure.

Fibromata, hyperplasia including scar tissue are not so favorably removed by any other agent as the Röntgen ray. It is so recognized in this country and abroad by all advanced scientific workers with the x ray.

In inflammatory processes with developing hyperplasia and adhesions it is always possible to arrest the process and promote the absorption of such low vitalized tissue.

In pelvic hemorrhages arising from fibroid tumors, and menorrhagia arising from relaxed and atonic conditions of the uterus, the x ray is remarkably effective in arresting the flow. So also in all cases of profuse menstruation. These results have been confirmed in many cases by numerous observers here and abroad.

For improving local and general metabolism—increasing elimination and absorption—there is nothing that equals the physical measures—light and body baths, dry hot air baths, the static wave current, and the autocondensation methods.

In all conditions of hypersecretion of the ductless or other glands the x ray effectively inhibits the secretion and, when employed systematically, permanently arrests the process. This is amply exemplified by the uniform success in the treatment of Graves's disease and hyperidrosis. Physical measures, including radium, also play a very important rôle in the treatment of *malignant disease.* The x ray has thousands of cases of epithelioma, numerous sarcomas, and a less number of carcinomas to its credit, and is an invaluable aid not to be ignored in connection with the treatment of most cases by surgery or other methods. Radium has clinically cured numerous cases of giant celled sarcoma and epithelioma.

Probably no method is better adapted to the treatment of epithelioma of the tongue than Massey's ionic method associated with the x ray. The hot fulguration spark of Rivière, the method of Doyen, and the desiccation method of Clark, each have succeeded in suited cases of epithelioma and papilloma.

The high potential Oudin spark, employed by the fulguration method of De Keating Hart following the surgical operation, which is inevitable in all extreme growths, is a method showing remarkable possibilities as evidenced in the investigations now being made at the New York Skin and Cancer Hospital.

In closing, I may add that the whole field of physical therapeutics, of which electrotherapeutics fills a very large place, in the judgment of those who are familiar with the methods and indications for employing the various modalities, is one of the most, if not the most fruitful and satisfactory in medical science. The physician who employs them scientifically, finds in their use a source of successful endeavor not so certainly rewarded by other methods.

329 West Fifty-seventh Street.

HIGH FREQUENCY CURRENTS IN MEDICINE.*

By Dr. Frederic de Kraft,
New York.

When using high frequency currents for medical purposes, either a static machine of large output, a coil with mechanical break, or a rotary converter may be the source of current supply. If we attach a Leyden jar to each of the two prime conductors of a static machine and have the sliding poles slightly apart, the machine running at fair speed, we note the rapid passage of sparks at the sliding rods. A pair of electrodes attached to the outer coatings and held the same length apart will also show a shower of sparks. Such an arrangement was described by Dr. William J. Morton, in April, 1881, under the name of "static induced current," which is the basic arrangement of all high frequency currents.

Sir Oliver Lodge described the same arrangement in 1888, and named the spark at the sliding rods (the exploders) the A spark, and called the spark from the external coating the B spark. The A spark is an oscillatory discharge with the plus in one direction in excess, and if applied to the tissues, would be destructive by reason of its electrolysing action. The B spark is harmless. The A spark can be easily stopped—short circuited—by bringing a wet blotting paper close to it. Not so the B spark. The wet blotting paper, instead of stopping it, helps it to pass with greater ease. It will even pass through water. Immerse a large metal plate in a basin of water in such a way that at least an inch of water intervenes between the bottom of the vessel and the plate. Then connect this metal plate with the outer coating of one Leyden jar and attach a metal electrode to the other Leyden jar. Now open the sliding poles so that an A spark of an inch or more will pass and place the electrode against the bottom of the vessel. A very noisy spark of extreme brightness will pass through the water, agitating it violently and shaking the vessel as though to break it. This experiment is the more successful and the display the more vivid when Leyden jars of large capacity are used. There is there an entire absence of bubbles and other electrolytic effect. We have a purely molecular disturbance, a mechanical agitation of water and the basin.

The B spark will pass readily through carbon or stout copper wire. D'Arsonval conceived the idea of using a copper spiral for the alternative path, the B spark in 1890. Sir Oliver Lodge showed that if he ground one end of what is now known as the "d'Arsonval spiral," and prolonged the other end by a wire (either straight or coiled) ending in a knob, and with the adjustment suited to the length of the wire—tuning—he had a brush discharge—his recoil kick. Oudin adapted this to medical purposes in 1894.

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The frequency of the oscillations depends entirely upon the capacity of the Leyden jars and the self induction of the discharging circuit. When the jars are small the discharges are quicker than from large ones. The larger the Leyden jars, the more room has the electricity and the slower will be the rate of discharge, but the faster and longer the oscillations.

In the older types of apparatus, but a single spark gap was employed. With the multiple spark gap which we now employ, we have succeeded in obtaining oscillations of infinitely greater frequencies; and, as a result, greater warming effect than ever before. This multiple spark gap is of the simplest possible type. There are nine gaps. The sparks are discharged, unmuffled, in the open air. Owing to the extreme shortness of the sparks and the multiplicity of the fine sparks, the noise is not unpleasant.

The result from this greater number of short, fine sparks, in increasing the rate of oscillations to be obtained from a d'Arsonval spiral, is truly amazing. When the bipolar method (diathermy or thermopenetration) is employed, there is at all times an entire absence of faradic effect. The heat effect is marvelous. We can obtain a gentle warmth; or a heat that will desiccate the tissues in the shortest conceivable time.

As a result of the extreme rapidity of the oscillations obtainable in the B circuit by reason of the enormous number of sparks in the A circuit, we increase the resistance in the solenoid to the passage of the current, on account of its property of self induction. Hence, more current passes in the derived circuit of which the patient's body is a part. Again, as a result of this greater self induction produced by these extremely rapid and multitudinous oscillations, there occurs another surprise in the "kick off" or Oudin spiral. The brush effect—the Oudin effluve—is more marked, many times longer, and of greater density.

The methods of using the d'Arsonval current are, *First:* The direct application. Here the patient is connected to the solenoid by two electrodes. Both of these may be of metal or one may be of glass. Their size should vary with the amount of current density we wish to employ, and the area we wish to subject to the action of the current. The patient's body is thus placed in shunt or derivation. The solenoid offering great resistance to the passage of the current, by reason of its property of self induction, it passes by preference in the derived circuit of which the patient's body is a part.

Second: We have the method where we use a large solenoid and place our patient in the interior in such a way that no part of his body touches the solenoid. The patient is thus placed in an intense oscillating magnetic field.

Third: We use the method of autocondensation. For this we need a couch or armchair, on which is a metal sheet long enough to cover the full length of couch or chair. This metal sheet should be covered by insulating material of sufficient thickness to prevent the passage of sparks. The insulating material may be of glass, fibre, or felt. On the couch or armchair so prepared, we place our patient and connect him to the other end of the solenoid, either by a pair of metal handles, one to each hand, or a large metal plate to the abdomen or chest. Our patient is thus one armature of a Leyden jar; the metal plate, on couch or chair, is the other armature; and the insulating material—the dielectric—the same as the glass of a Leyden jar.

A patient placed on the autocondensation couch, properly prepared, will experience a delightful sense of quiet restfulness. A gentle warmth, beginning at the wrist gradually extends up the arm to the axilla and over the entire body. This is attended with a slight flushing of the capillaries of the skin of hands and wrists, extending over the entire body, becoming noticeable in the face and neck in a very few minutes. This is accompanied by an inclination to drowsiness, so that patients frequently fall asleep while being treated.

The insensible perspiration of the skin is increased slightly and in certain constitutional disorders, such as gout and rheumatism, profuse sweating of the entire body will follow. Patients suffering gouty or rheumatic pains frequently experience complete relief from pain during treatment. This relief from pain lasts for hours, sometimes days, and cases have been observed by the writer where the pains disappeared after one treatment and never returned.

An individual, with normal pulse rate and blood pressure, will show no change in either; only a slight heating of the blood due to the flow of the current. This is true only of currents of moderate ampèrage. In other words, autocondensation helps to equalize the circulation where it is unbalanced. This is effected probably in the following manner: The great rapidity of the succeeding groups of oscillations first effect an intense heating of the surface of the body and of the blood. This in turn stimulates the great system of vasomotor nerves, resulting in peripheral dilatation of the bloodvessels, together with the stimulation of the sweat glands. It would seem that the sympathetic nervous system was stimulated most profoundly. A person who is slightly fatigued, either mentally or bodily, will be speedily refreshed and show a slight increase in cardiac force, and a slight fall in pulse rate. Persons weakened by reason of long continued illness will frequently respond by a rise in blood pressure, increased cardiac force, and a stronger, steadier pulse. When the blood pressure is high for the age of the person, there will be a reduction in the blood pressure and an improvement in the pulse rate. In cases of disease of the glandular organs of the body, a rise in blood pressure frequently occurs. This high blood pressure is compensatory. If too great efforts at reduction be made, disaster may result.

Currents of large ampèrage will heat the wrist quickly. In a few minutes this heat at the wrist becomes an ache, which speedily becomes unbearable. These currents may produce decided (even alarming) fall in pulse rate and blood pressure; accompanied by faintness, cold drenching sweat, and general nervousness, and following by sleeplessness during the night, and muscular soreness the next day, with fatigue and varying degrees of feverishness.

If we apply the d'Arsonval current by means of a pair of metallic electrodes, to opposite ends of a potato for three to five minutes, using about one ampère of current, we find (on cutting into the potato) that the interior is cooked and mealy, while some of the exterior is untouched. On closer inspection, we find decided evidence of the line of force in the very centre of the potato. The greatest amount of cooking is in a straight line between the electrodes. The mealiness is more pronounced in the very centre than at the periphery. Similar experiments on meat, liver, eggs in the shell, and egg albumen have shown that the high frequency current, applied by the bipolar method, passes in a perfectly straight line. This passage is attended with heat produced by a peculiar molecular disturbance, a mechanical agitation. As a result, we produce friction of one molecule upon another. Added to this is the friction of the electrons rushing in from opposite sides upon each other. We have thus a purely mechanical production of heat, with method similar to that which was employed by the Indian when he lighted his fire. He rubbed one stick upon another, till flames burst forth.

Without molecular disturbance of some kind, without electrons hurled through space upon the electrons contained in the earth's atmosphere, there can be no light, no warmth, and no life upon this planet. This heat can be utilized for raising the temperature of fluids. If we immerse a pair of electrodes, attached to opposite sides of a d'Arsonval spiral, into a basin of water, it is easily possible to bring it to the boiling point without any evidence of electrolytic decomposition, no evidence of gas or bubbles. A small quantity of galvanic current suffices to produce gas and bubbles.

A solution of potassum iodide and starch, added to the water previously warmed by the high frequency current, will turn blue if a very weak galvanic current is passed. The high frequency current has no effect on such a solution. The constant current is incapable of heating water, excepting when large volumes of current are used. Then it is attended with rapid electrolysis. A constant current applied to a patient speedily becomes painful. Even with large electrodes, it is not often possible to pass more than thirty milliampères. A current of great frequency can be passed through the tissues up to hundreds of milliampères. The patient will tell you that he feels nothing but warmth, and it is only with currents of great density and strength that the heat becomes unbearable. This is attended with no muscular contraction, no electrolysis.

Raw meat can be easily cooked by high frequency currents. If a pair of electrodes, of suitable size, are applied to a piece of raw meat on opposite sides and a current of great frequency is passed for a few seconds, we will notice (on cutting directly through the meat) that the action of the current has been in a perfectly straight line between the electrodes. This is a very important effect. It enables us to localize its action to any part of the body.

There are two kinds of effects to be noted when these currents are applied by the bipolar method. First, destruction and death of the tissues; second, increased function and vitality. To effect the first, we heat the tissues to the point of coagulation. Doyen states that cancer cells are destroyed at a temperature of 55° C. and lose their virulence at 50° to 55° C., while healthy cells are killed at 60° C. Burning of the second degree is produced at 70° C., and of the third degree at 75° C., if the heat is continued for some minutes. To gain increased function and vitality, we heat the tissues gently. By the use of large electrodes and long applications, it is possible to elevate the temperature of the body considerably—to 40° or 41° C. The laryngeal mirror will show reddening of the vocal cords and there will be hoarseness of the voice after thermal penetration has been practised for twenty minutes.

Patients find the increased warmth very agreeable. This warmth is introduced from without in immediately utilizable form, without the expenditure of any of the patient's stored energy. As the result of this warmth, we have increased activity of all gland secretions. The cutaneous glands secrete sweat and sebum freely. The liver secretes a larger amount of bile. We may even unwillingly precipitate an attack of gallstone colic in persons not previously suspected of having gallstones. If the stones are small, the greatly increased flow of bile may suffice to expel them.

The activity of the functions of the stomach, pancreas, genital organs, bladder, kidneys, may all be stimulated. In applications to the thorax, we observe deepening of the respiratory excursions. In asthma, for instance, the noisy respiration will cease, the expectoration become freer and less sticky, the sleep will become easier, the appetite will return, and the activity of the bowels become normal. The attacks become fewer and finally disappear.

In heart disease, where digitalis had previously failed to exert its physiological action, the heart responded and the dropsy was seen to disapear with profuse diuresis.

In gonorrheal arthritis, we heat the joint by the bipolar method to the limit of safety. Gonococci die at 41° C. While these are destroyed at this temperature, we observe not only marked relief from swelling and pain, but (as the result of the secondary hyperemia produced) we facilitate phagocytosis and enhance the strength of the normal defensive powers of the system. If we combine this method with an application of the current by means of a metal prostatic electrode in the rectum and a metal plate on the bladder, we will speedily cure our patient.

In gout, the bipolar method relaxes arterial spasm in the joint, produces an arterial hyperemia and enable the phagocytes to attack the urate of sodium needles which von Norden tells us are eaten with avidity by the phagocytes.

In acute alcoholism, autocondensation does much good by its calming influence on the nervous system, by reason of its power to relieve gastric disturbances. It accomplishes this through its vasodilating action on the peripheral bloodvessels, thus balancing the circulation, relieving cerebral and visceral congestion, through its action in increasing oxidation and elimination by way of the skin, kidneys, and bowels.

In the early stages of general arteriosclerosis, this vasodilating effect is a valuable aid in preventing the rapid progress of the trouble. The general increase in metabolism; the flushing of the superficial capillaries; the increased activity of the skin and other excretory organs; the augmentation of fermentative changes in the intestines; the greater depth of the respiratory excursions; all help in some measure in expelling some of the poisons formed in man's body and thus retard the progress of the arterial changes.

A most important result of the application of the direct d'Arsonval current is the production of an arterial hyperemia of long duration and relief of venous stasis. In other words, there occurs an intensification of the circulation in the parts acted upon. This can be utilized in many diseased conditions, as in the improving the nutrition and effecting the healing of old ulcers. Diabetic ulcers are often markedly improved and sometimes disappear.

In intestinal autotoxemia, this method is of great utility. However, to cite all the many conditions in which these currents would be of service would be impossible. High frequency currents are simply one of the many resources of the healing art. Used sensibly in conjunction with other remedies,—medicinal, dietetic, physical, psychic,—they will be a great help to the physician.

We can only briefly allude to the action of sparks and effluves by quoting from Dr. F. M. Law's report to the American Electrotherapeutic Association: "Bacteria, exposed to sparks or effluve, were killed; bacteria, exposed to the discharge from a vacuum electrode, were not affected. Bacteria, protected by animal tissue of the thickness usually found in diseased conditions, were not affected by the discharges. Culture material, exposed to sparks, effluve, or vacuum tube discharges, was sterilized."

The healing of abscesses may be hastened by applying the effluve, partly by sterilizing the surface, by introducing ozone into the tissue (thus preventing the further growth of the bacteria), and by producing hyperemia and, as a result of this, increasing phagocytosis.

When using the effluve, there will be noticed at first intense anemia and cutis anserina, combined with a sensation of smarting and burning. This is followed by a marked hyperemia, which will last from a few minutes to several hours and is attended with diminution of sensibility. Prolonged application may lead to the formation of blisters. A more or less general application of the effluve may raise the blood pressure several cm.

The action of sparks is an intensification of the spray discharge. Long sparks of low ampèrage have a stimulative or revulsant action. Prolonged application of the same, or short, hot sparks produce tissue destruction.

Fulguration, as the term has been too often employed, has given rise to much misconception. The fulguration of De Keating Hart is a very long spark of very high voltage and low ampèrage. The short, hot sparks, which have been used in destroying papilloma of the bladder, burn like a cautery and form an eschar similar to a burn from a hot iron. The short sparks of lower ampèrage (such as is used by Dr. William Clark, of Philadelphia, for removing small accessible neoplasms) fall short of producing an actual incineration of the tissues. They simply deprive the part of its moisture. Hence, the "desiccation." They cannot set paper on fire, which the hot sparks do.

The effluvation of Rivière embodies the employment of long fat sparks, whose action is attended with a sort of conflagration of the tissues.

In conclusion, we may say that a careless technic, unsuitable apparatus, improper conception of the actions of high frequency currents, and of the indications to be met, will surely result in failure to obtain the physiological effects described, and failure to relieve the patient of his suffering.

148 West Seventieth Street.

THE MOUTH FROM A DIAGNOSTIC STANDPOINT.*

By Morris Manges, M. D.,
New York,
Professor of Clinical Medicine, University and Bellevue Hospital Medical College; Visiting Physician, Mount Sinai Hospital.

It is a curious trait of human nature that the closer at hand and the more available anything may be, the less is it resorted to, preference being always shown for the less easily accessible and the more remote. This occurs very frequently in diagnosis, and nowhere does this apply more truly than in the use which physicians make of mouth symptoms.

The oral cavity contains the largest expanse of mucous membrane, and every part of this large area can be examined with less difficulty than in any other cavity of the body. Its mucous membrane is very richly supplied with blood, except around the articulation of the tooth sockets. Hence we are enabled, not alone to judge of the general circulation, but also,—and this is the more important—through this sluggish gingival circulation we are enabled to detect constitutional changes at a remote part of the circulation, where such constitutional changes manifest themselves at a much earlier period than in other portions of the circulation. The mucous membrane of the mouth, therefore, offers many diagnostic criteria which are readily detected, and are easily interpreted if one only takes the trouble to look for them. But they must be looked for as part of the routine of the physical examination. Patients rarely refer to them, since mouth symptoms do not attract their attention unless pain or discomfort is associated with them. The physician usually overlooks them, since the routine examination of the mouth as a rule is simply an inspection of the tip of the tongue.

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*Read before the Summit Medical Society, October 25, 1912.

The proper examination of the mouth should be made with a spatula or tongue depressor and with a good light. For the latter purpose the small pocket electric lamps are most admirably suited. The proper inspection of the mouth should include the tongue, the fauces, the tonsils, the inner surface of the cheeks, the lips, the gums, and the teeth.

The examination of the mouth should also include smelling the breath. The foul odor tells its own indication to all; but more significant in a diagnostic way is the sweet, champagnelike odor which is exhaled by all patients with acidosis. The presence of this acetone odor indicates acidosis, and an examination of the urine for acetone should at once be made whenever this characteristic odor is present, even when it is not very pronounced. Should the urine test be positive, the administration of sodium bicarbonate or sodium citrate in large doses, and a forced carbohydrate diet should at once be ordered.

Too many practitioners still believe that acidosis is only a symptom of advanced diabetes. This is a grave error, since it is much more frequently present in cases of vomiting. In every patient with attacks of vomiting, especially if accompanied by abdominal pains, acidosis should always be suspected; it will be found in a surprisingly large number of cases. Some of these patients are alarmingly ill, and erroneous diagnoses of appendicitis, biliary colic, etc., are made, and needless laparotomies have been performed. Cyclic vomiting in children is only acidosis in a vast majority of cases. I am sure that all of you have seen cases of this kind where laparotomies have been performed, and nothing pathological has been found either in the appendix or other parts of the abdominal cavity.

In acute infectious diseases the mouth manifestations often afford early diagnostic information; measles, scarlet fever, diphtheria, etc., require only mention; but variola, varicella, and rötheln may also have their local or even early manifestations in the mouth. In typhoid fever too one may obtain early diagnostic information in the mouth from the presence of the so called Bouveret ulcers, which appear as early as the seventh or tenth day of the disease. These ulcers are usually symmetrically placed on either side of the fauces just above and at the outer side of the tonsils. Rarely they are found on the uvula or at the junction of the hard and soft palate. They are kidney shaped, the concavity being toward the median line. They vary in size, but are usually about one half to three quarters of an inch in length and one third of an inch in breadth. They are usually covered with a grayish slough. They represent an infiltration of the lymphoid tissue in the fauces, which forms ulcers which are the homologues of the ulcers in the lymphoid tissue of the Peyer's patches in the intestine. Their duration is variable, being usually about a week. Their appearance is absolutely characteristic, and once seen they cannot fail to be recognized. Their occurrence is not so very infrequent (five to ten per cent. of all cases, Blum[1]). Novotny[2] has found them in a case of miliary tuberculosis and reports a case of typhoid fever complicated with paratyphoid fever in which they were present. Johanns and Devic[3] found them in relapses; they state that their reappearance during convalescence enabled them to predict relapses which subsequently occurred.

Herpes of the lips is a valuable diagnostic symptom, which is usually associated with a diplococcus, either of pneumonia or of cerebrospinal meningitis. Its presence in any severe illness should lead us to look for either of these two conditions. It rarely occurs in other acute infections; only once have I seen it in typhoid fever.

Concerning chronic infectious diseases, like tuberculosis, syphilis, leprosy, etc., little need be said, since the local symptoms in the mouth are always of such a nature that they cannot be overlooked either by patient or physician.

Skin diseases are often associated with lesions in the mouth, and hence require mention. According to von Mikulicz and Kümmel, we should divide skin diseases with mouth lesions into two classes: First, those in which the mouth lesions are only extensions of the process from the skin on to the mucous membrane; second, those in which isolated efflorescences appear in the mouth, sometimes before they develop in the skin, and even sometimes without any cutaneous involvement at all.

In the first group diagnostic difficulties rarely occur; eczema and lupus erythematosus may be cited as examples. In the second group, we may mention lichen ruber planus, pemphigus, erythema multiforme, erythema bullosum, and herpes iris.

Drug rashes may sometimes appear in the mouth and may cause great difficulty in diagnosis. These mouth lesions occur most frequently with antipyrine, quinine, phenacetin, and aspirin. As lesions may also occur about the genitals, they may be confounded with syphilitic eruptions. The lesions are vesicular or are erosions with sharply defined margins with an overhanging border. They are very painful. Even small doses of these various drugs may produce these lesions, which usually occur in patients who have idiosyncrasies toward these drugs. This may be a useful point in the differential diagnosis (von Milkulicz and Kümmel).

Angioneurotic edema is another condition which should be remembered, especially as such cases are sometimes fatal from sudden edema of the glottis. Finally, scleroderma with its characteristic mouth manifestations should also be mentioned among the skin diseases with mouth symptoms.

The occurrence of pigmentation in the mouth is usually associated with Addison's disease, and I have seen a number of cases in which erroneous diagnoses were made simply from the presence of pigment in the mouth. Such errors arise because the fact is overlooked that pigmented areas may occur on the lips, inner surface of the cheeks, hard palate, and even on the tongue in individuals who are perfectly normal. The lesions are simply congenital peculiarities. Such pigmented plaques are also not infrequently found in diabetics and patients suffering from gastrointestinal disorders. They have also been found in pernicious anemia. Hence one should be on one's guard in suspecting all patients with pigmented areas in the mouth as presenting possible cases of Addison's disease.

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[1] *Münchener medizinische Wochenschrift*, November 20, 1906, p. 2292.

[2] *Wiener klinische Wochenschrift*, 1909, No. 22.

[3] Quoted by Blum, *loco citato*.

To warrant the diagnosis of Addison's disease the other characteristic symptoms should be present; i. e., prfound asthenia, gastric symptoms, and severe pains in the back. In most cases a diagnosis of Addison's disease can be made very easily. An early diagnosis can also be made if the mouth is carefully examined, since these pigmented areas are always present, and not infrequently the mouth pigmentation precedes the appearance of the pigmentation of the face and the body.

The other conditions in which pigmented areas appear in the mouth are those due to metallic poisons such as mercury, lead, silver, and bismuth. Mercury can never be overlooked on account of the attendant stomatitis and salivation. Silver can usually be recognized on account of the accompanying argyric pigmentation. These cases, however, are now extremely rare since the use of silver salts in the treatment of chronic nervous diseases has been abandoned.

The lead line on the gums, however, is frequently overlooked. In all cases of obstinate abdominal colic with constipation, or cases of tremor, one should look for a lead line on the gums. One need not wait for a wrist drop to become aware of the possibility of lead poisoning.

Bismuth produces a characteristic pigmentation of the mouth which one should look out for in any case where large doses of bismuth have been used either for x ray purposes or in the cure of fistulæ by Beck's method. Symptoms develop about three weeks after its administration. They may be ushered in by a livid discoloration of the skin, which is soon followed by the appearance of small bluish ulcers of the gums, especially about the wisdom teeth. These gingival areas of pigmentation soon become longer and extend to the under surface of the tongue and the adjacent mucous membrane, which become intensely stained with a dark blue color which shines through the overlying normal mucous membrane. These areas may assume a very large size; their contours are very irregular. In advanced cases patches of diphtheritic membrane may be found on these pigmented plaques, and gangrene has also been reported in some patients. The constitutional symptoms have now become very severe, and include headache, vomiting, diarrhea, and other symptoms of colitis. Fever is always present in the later stages of the disease, and albuminuria is also common. Not infrequently these patients die from the progressive weakness and constantly increasing gastrointestinal symptoms.[4]

In the diagnosis of anemia the pallor of the mucous membrane of the mouth has always been noted. In pernicious anemia attention has already been drawn to the fact that pigmented areas may sometimes occur in the mouth; but one symptom, bleeding from the gums, and a scorbutic condition of the mouth, does not receive as much attention from physicians as this symptom deserves. If the patient is very young the diagnosis of Barlow's disease is made. If the patient is older, scurvy is the usual diagnosis. The latter disease, scurvy, however, is now extremely rare, but the diagnosis is nevertheless made. One very important, and by no means infrequent diease is thus overlooked in considering the differential diagnosis and prognosis of this symptom. I refer to acute leuchemia.

In acute leuchemia the condition of the gums and buccal mucous membrane very closely resembles that of scurvy, but in addition one finds marked changes in the tonsils and the lymphoid tissue of the mouth. The tonsils, the posterior pharyngeal wall and even the base of the tongue are covered with foul necrotic ulcers which bleed readily, and which cause the patient much pain and discomfort in swallowing. The adjacent glands of the neck are enlarged and tender. Petechiæ and ecchymoses are found in the mouth and in different parts of the body; the pains are very intense; there are high oscillating temperatures, and the patients look very ill and are very anemic.

As the prognosis of these cases is rapidly fatal one should be on one's guard not to consider them as cases of scurvy. The picture is so characteristic that the diagnosis could be readily made from the condition of the mouth alone. When such a mouth condition is seen, the blood should at once be examined for the differential cell count. To many physicians leuchemia necessarily means a large increase in the white blood cells; in acute leuchemia, however, the number of leucocytes may be absolutely normal, or even less than normal. The only way to establish the diagnosis is by the differential count; there is an enormous preponderance of the large mononuclear lymphocytes, the proportion of which is usually over ninety per cent. and may even reach as high as ninety-nine or even one hundred per cent.

In pseudoleuchemia, lymphosarcomatosis, and chloroma, we may find marked hypertrophy of the lymphoid tissue of the mouth, but there is never any marked stomatitis or ulceration. There is no special change in the blood picture, and the differential diagnosis can readily be made from the symptoms in other parts of the body.

Finally, pyorrhœa alveolaris must be mentioned. As the dentists are by no means agreed on many phases of this problem, which has been so extensively discussed by them, I will not enter into any special consideration of it.[5] We have, however, been singularly deaf to the pleas of the dentists to pay more attention to the subject, and we should heed their statements much more than has been the habit of most physicians. A skilled dentist can tell us much about the general condition of the patient from an examination of the gums, and a good differential diagnosis can be made by them of the incipient stages of diseases like nephritis, diabetes, tuberculosis, gout, etc. Each constitutional disturbance has certain peculiarities in the pyorrheal picture which enable the skilled stomatologist to differentiate them as to their etiology. Therefore, the routine examination of the gums should be included in one's inspection of the mouth, and the presence of a pyorrhea should warn us to look for the cause of it. Should we be unable to discover it, the case should be referred to a dentist who is skilled in stomatology, both for treatment and differential diagnosis.

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[4] Since this paper was read an excellent article on Bismuth Poisoning has been published by Warfield (*American Journal of the Medical Sciences*, November 1912) with full bibliography.

[5] See editorial article in our issue for January 11, 1913, page 88

In conclusion, it would not be amiss to say a few words about the value of mouth inspection in the treatment of patients. Of what avail is it to bombard the stomach with drugs and to diet patients, when the real cause of the symptoms lies in a foul mouth, missing teeth, filthy bridges and plates? Why prescribe sedative cough mixtures when a long uvula is the cause of an obstinate cough? Why fill a child with tonics when adenoids and enlarged tonsils are the cause of anemia? The tonsils are the cause of so much constitutional mischief that they should always be examined as a routine process. Especially important is this examination in all cases of articular rheumatism, chronic or even acute nephritis, and all cases of sepsis.

The care of the mouth would be attended to more carefully in all acute diseases if physicians now and then looked into the fauces of their acutely ill patients. It is surprising how often we can find foul conditions, the correction of which by very simple measures adds immeasurably to the comfort of the patients, and enables us to feed them more readily; while a dirty mouth destroys the appetite, and, moreover, infects every morsel of food which enters it. Recent researches have proved that in all acute illnesses the digestion and absorption of food are but little below that of health, and, moreover, that all infections can be fought better by patients if the waste of the body tissues is prevented. The patient should be properly fed, and a full supply of calories should be allowed to him. Keeping the mouth clean is the first and a very important stage in securing this end.

72 East Seventy-ninth Street.

OCULAR HEADACHE.*

By Aaron Brav, M. D.,
Philadelphia.

Headache is the most common ill that human flesh is heir to. Society at large is subject to its preying at some period of life. It is no respecter of person. Rich and poor alike, men and women, young and old, the learned and the ignorant, all are occasional sufferers; some more, some less. No occupation or walk of life is immune, although some vocations may be considered as predisposing factors. The man who guides the destiny of the nation, the man who controls the money market, the genius and the inventor, the professional as well as the business man, the artist and the musician, the capitalist as well as the laborer is found to suffer from it.

Headache is not a disease, but a symptom of some abnormal condition. There are different kinds of headaches; some are localized, while others are diffuse. Headaches may be perceived as a sharp pain, excruciating in character it may be, on the other hand only a dull aching pain. It may be of a throbbing character or of a pressure nature. As to locality, it may be frontal, temporal, occipital, or radiating from these points to other parts. The locality and type of the pain does not always indicate with sufficient accuracy the cause of the headache. Occasionally the headache is confined to one side of the head when we speak of it as hemicrania. Headache may be the only symptom, the only complaint of the patient; he may be otherwise in perfect good health. On the other hand, it may be one of a series of symptoms pointing to some diseased condition. The importance of this condition can be surmised when one can say with a degree of certainty that there is not a home in which this condition does not constitute a continuous source of misery to one or several members of the family.

Headache may be steady, continuous, a daily visitation to the patient, bringing misery unto him, or it may be periodical, although both may have one causal element. This variation in the degree and type, where one causal element is responsible for the phenomenon, can be explained only on the ground of differences in the resisting power of the individual, his mode of living, as well as his occupation. Women are common sufferers from headache.

Headaches may be due to various etiological factors. They may accompany the various acute infections, as well as various acute diseases of the eye. We shall, however, in this paper consider only the chronic form of headaches. The responsible cause for these headaches is in about eighty per cent. of the cases some error of refraction, or eye strain. In fact, it may be stated as an axiom that headache of whatever type occurring in an otherwise healthy individual, and not associated with any of the acute infectious diseases, may with rare exception be considered an ocular headache. By the term ocular headache is meant one that is caused by some error of refraction or muscular imbalance and therefore amenable to prompt cure. As stated above, headache may be the only symptom resulting from eye strain or it may be associated with other symptoms. These other symptoms may be the direct result of the error of refraction, or they may be the sequelæ of the primary symptoms, namely, the headache. Headache is only a symptom, but it may be ultimately responsible for many other symptoms of nervous irritability. In fact, the continuous sufferers from headaches manifest various nervous symptoms. Continuous headaches, even of the intermittent type, make a deleterious impression upon the entire body. Those who are unfortunate enough to suffer from headache for any length of time will best be able to testify to the baneful effect it has upon the general condition. One may even indulge in the supposition that nearly all of the symptoms observed in eye strain are merely secondary to the primary headache. Headache is the direct result in about eighty per cent. of cases of some ocular anomaly, refractive or muscular, and if neglected and permitted to grow into a habit it so saps the vitality of the patient that it soon gives rise to other symptoms.

Continuous headache brings misery into the home, deprives the patients of all pleasures, and ultimately makes nervous wrecks of them. It must be remembered after all that the pain is referred to the brain, which is the most important organ controlling all our emotions, and is the centre of our nerve force, that any continuous and prolonged pain in that part of our body will disturb our mental equilibrium and produce a chain of symptoms which may simulate some serious nervous disease. Thus the patient with habitual headaches becomes irritable, restless, may occasionally suffer from insomnia, disturbances of memory, lack of concentration, dizziness and vertigo, gastrointestinal disturbances; in fact, headache may give rise to a chain of symptoms simulating some very serious condition of the body. Patients with a weak bodily condition may, as a result of prolonged suffering from headaches, become confirmed neurasthenics, while as a matter of fact the underlying disturbing causal element was simply an error of refraction that was either not recognized or if recognized not well corrected.

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*Read before the Southeast Branch of the Philadelphia County Medical Society, January, 1912.

It may be laid down as an axiom that eye strain is the most prolific source of headache. Any error of refraction may give rise to eye strain and cause headaches, but it is found mostly in the astigmatic type, simple, compound, or mixed. It is interesting to note that in the majority of cases the eyes are free from pain and vision as tested by Snellen's card is normal. The reflex symptoms of eye strain seem to be in inverse ratio to the ocular symptoms. Normal vision does not mean a normal dioptric apparatus, for normal vision may be obtained with high degrees of error of refraction, such as hyperopia. But this vision is obtained by means of an extraordinary expenditure of nerve force exerted upon the ciliary muscles. The ciliary muscles, in response to this extra nerve stimulus, have to do an extra amount of work, and this overexertion causes reflexly the headache. We must remember that the eye is the most overworked organ in the body, beginning its work as soon as we awake in the morning and continuing until late in the night when we fall asleep. There is no rest even at the noon hour: so that the external and internal ocular muscles are continuously at work for about sixteen hours every day. When to this arduous labor is added the muscular and nervous effort necessary to overcome any anomaly of refraction and muscular imbalance, we can readily appreciate why such overwork should be followed by headaches.

TREATMENT.

It is our experience that patients suffering from frequent and prolonged headache soon learn how to treat themselves, although to their own detriment. They acquire a wonderful versatility in the various preparations on the market. All headache preparations in powder or tablet form have for their basic constituent some of the coaltar products, which if taken in sufficient quantity give temporary relief. The effect of the drug is soon transferred, however, to the heart and the nervous system, where it leaves an everlasting impression and only tends to make the patient more miserable. The chief danger in all the so called headache medicines is their temporary sedative effect, which lulls the patient into acquiring the drug habit, that will ultimately make a nervous wreck of him. The public press now and then reports a case of death which resulted directly from the prolonged use of such headache cure; this is, however, not very frequent. The majority of the headache powder patients suffer in their mental and psychophysical make up, reducing their intrinsic vitality, and weakening their cardiac musculature, which can only show itself when cardiac and nerve force is most necessary—to overcome some acute disease. Even the moral fibre of these drug habitués is dulled, blunting their power of reason as well as their creative faculty, impairing their intellect, so that they are useless in the performance of tasks that require a high degree of intelligence.

There is sufficient reason to think that the laity has learned this mode of treating headaches from the medical profession, and it is certainly a fact that most headache cures sold in the market behind the counter are merely copies of some prescription by some known or unknown physician. It is true that theoretically we classify headache into different categories, ascribing to each some definite causal element and advise to find the cause before any treatment is attempted, but in reality, when confronted with a patient suffering from headache, what is the usual mode of treatment adopted by the average physician? Are we in reality not doing the same thing that some of the patients do themselves? Do not we have recourse in ninety per cent. of cases to the dangerous coal tar products? Phenacetine, antipyrine, acetanilide, and others are the usual ingredients, probably in some combination with some other drug that is handed out to the patient. The only difference between the self doctored and the professional prescription is that while under profesional care the danger of overuse is somewhat lessened. Not very often does the doctor think of an error of refraction, of eye strain that requires correction, which is the offending cause, and at best he directs his patient to go to the hospital, or the patient of his own accord consults an optician. Optical adjustment, however, requires very careful attention, which the routine work of the hospital cannot supply, while the optician is absolutely deficient in his ability to cope with the situation. Not only is it essential to correct any existing error of refraction, but it is also of utmost importance that the equilibrium of the muscular apparatus be reestablished wherever any disturbance exists. It is my personal conviction, based upon the study of several thousand cases, that fully eighty per cent. of chronic sufferers from headache can attribute their trouble to some faulty optical condition that can be corrected by the man who is efficient in that work.

It is well here to mention that some of these cases need some medical aid even after the optical error has been corrected. It is true that the cause of the headache has been removed by the properly prescribed and adjusted lenses, but the sequelæ of a protracted headache are still present and must engage our attention. Hygienic and dietetic measures, as well as a tonic treatment, will usually in a short time readjust all the possible changes that resulted from the depressing effect of a prolonged and protracted headache. Often the muscular disturbance must be treated by prism exercises. I have seen many patients whose refractive error has carefully been adjusted by some prominent oculist, yet this has failed to give relief simply because some disturbance in the external muscles has been neglected. Children very often during school life suffer from headaches, and their suffering is continued merely because parents often object to their wearing glasses. Physicians should insist in these cases upon optical aid, and the parents may be assured that this optical aid will be necessary only while the child attends school. To permit a child suffering from headache to attend school without optical aid is nothing short of criminal, for soon these children become anemic and nervous, which prevents them from concentrating their minds upon the subjects they have to master, and usually they constitute a large number of the so called failures, not because of an inherent mental deficiency, but because of the ocular trouble which partly disables them.

A few words about the optician. A great deal of harm is done to this class of sufferers by the optician, who still has a hold upon the uneducated public, and constitutes a great number in any community. Most of these men are not only ignorant of the basic principles of physiological optics, but have not even received a common school education, and a considerable number of them are positively void of any sense of honor in their dealing with patients suffering from some ocular condition. To their ignorance must be added a dishonest desire to defraud the public. Knowing that there are no laws in this country sufficient to protect the public against all kinds of medical fakes, nor any law to prevent any one from calling himself doctor, they assume that title and ply their trade under the self assumed title in private offices with the sole intention of defrauding an innocent public. The public cannot differentiate them from the educated oculist. The public is under the impression that the title doctor can be used only by a man who had to go through a regular college course and had to qualify before a State board of examiners and legally register in the respective locality in which he resides. Therefore, they place confidence in these men, consult them for ocular troubles and eye strain. As a matter of fact, however, these men are mere charlatans using the title doctor to defraud the public. I charge them with dishonesty. If they had any sense of decency and attended to their business honestly, why would they use the title doctor, for which they neither toiled nor labored? Their pretension to the title convicts them of fraud and dishonesty. Some day I suppose the laws of the land will prevent these parasites from using the title doctor for selfish fraudulent purposes; until then we are helpless and the community at large must suffer the consequences.

I am aware that there are other causes for headache that the practitioner has to search for, but I am in this paper concerned only with headaches that are ocular in origin and of a chronic nature, and they afflict the largest class of sufferers and yet are most easily amenable to treatment. All patients suffering from headaches should be carefully "refracted," and in *eighty per cent. of cases* a proper pair of glasses will bring about a cure. After all, a properly prescribed pair of glasses is the best and least harmful therapeutic agent that we have in the treatment of headaches.

917 Spruce Street.

MEDICAL INSPECTION OF SCHOOLS.*

From the Point of View of the Health Officer.

By J. F. Edwards, A. M., M. D.,
Pittsburgh,
Superintendent, Bureau of Infectious Diseases, Department of Public Health.

Conspicuous among present day measures for the conservation of health are those directed toward infancy and childhood. Society is organizing to prevent waste at the threshold of life and its united effort has found expression in the American Association for the Study and Prevention of Infant Mortality, whose initiation took place under the auspices of this body.

Health boards recognize that the prevention of infant mortality is one of its most important fields of activity, and communities point with pride to their decreasing death rate at this period of life.

In medical inspection of schools and school children, the health officer recognizes the most favorable medium for continuing the work of conservation through the most important years of growth and development. Indeed, he looks farther than this and sees in the schools his hopes of ultimate success in the control of preventable diseases and the establishing of right conditions of living.

The health officer of to-day realizes that his work has a positive and constructive side, as well as a negative or repressive one. The enforcement of quarantine laws, the abatement of nuisances, and similar *ex post facto* activities, which not long ago were considered the chief functions of the health officer, though necessary when occasion arises, represent work that can, at best, be only of temporary value. Even when his machinery for the control of transmissible diseases is working smoothly, when his measures for the correction of environmental conditions which exert an unfavorable influence upon the health of the community, are carried out, when food, water, and milk are no longer a menace, when he has done what he can to save people in spite of themselves, the health officer realizes that further progress and real success depend upon the knowledge and consequent cooperation of those whom he serves. He seeks to make his department an educational force in the community, but he finds that the education of the present adult generation in matters relating to health is difficult. The mass of the people have their ideas and prejudices firmly fixed, and half truths, built upon custom and tradition, are held tenaciously. It is for this reason that he turns to the school children of to-day, hoping that they, under the proper guidance and instruction, may acquire knowledge of health matters that will insure intelligent cooperation in public health measures and in habits of right living. This, however, involves the positive side of health education and health supervision rather than the negative side of inspection alone.

Medical inspection as practised in the majority of instances to-day must be looked upon as an expedient, made necessary, however, by conditions existing to-day in our schools and among our school population, but one that will be substituted by medical supervision when the parents of to-morrow shall have been taught the principles of hygiene and right living as they should be taught in our schools and when schoolrooms, school curricula, and the home itself no longer act as predisposing causes of disease and physical inefficiency. While working toward this ideal, however, we must do what we can for the present generation by medical inspection and supervision. This is necessary to-day, and large expenditures of money by the State for this purpose are justified, because of the fact that a large proportion of school children suffer from preventable and remediable diseases or defects that have been unrecognized by their parents and for this reason have not received the necessary attention.

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*Read at the Conference on Conservation of School Children, Lehigh University, South Bethlehem, Pa., April 4, 1912.

Because of transmissible diseases, these children menace both the health and the school attendance of other children, and, because of these and the noncommunicable diseases or defects, their own physical development is retarded and they do not receive full value from their school course. Of no less importance is the medical inspection of the schoolrooms, the school environment, and school methods. Not only must the children be protected from infection and their physical defects be recognized and corrected as far as possible, but the influence of the school itself must be such as will conserve and promote their health.

It is apparent that many problems are involved and that upon their proper solution depends the health of the school child and the future physical vitality of the race. Both the health and the educational authorities are alike interested. They may look at the problem from different viewpoints, one emphasizing the improvement of health because this would lead to greater mental efficiency, the other emphasizing increased physical efficiency because of its bearing upon public health. The immediate object is the same—the health of the child. Whether the educational or the health authorities can best do the work has been the basis of much discussion. Either one can do it when full cooperation exists, while, where this is absent, no system can meet with complete success. There can be no division of responsibility. It would be both unsatisfactory and expensive to have two sets of officials engaged in inspection work. One or the other must control and furnish the machinery. It matters not to the taxpayers who are the controlling authorities. They must, in either case, foot the bill. It is ultimately a question of efficiency. In the United States the question of school medical inspection has, in most instances, been one of expediency governed by local conditions, depending upon the readiness or equipment of one or the other authority to do the work. The practice is nearly equally divided with a probable tendency toward control by the school authorities themselves. It is not the purpose of the writer to produce arguments in favor of control by one or the other authority.

The health authorities in every community have well defined duties to perform, but to many questions relating to public health they have somewhat the same relation as the modern charity organization society has to the various philanthropies of the community. They must see that health measures not necessary to be specifically under their control are organized properly, and they must act as a clearing house of information and guidance, the object being to see that health work is being done efficiently, without duplication, and in correlation with its own direct activities. In the majority of instances the initial activity of medical inspection has been directed toward the control of transmissible diseases. It has been frequently stated that the schools offer a favorable medium for the spread of infectious diseases, especially those commonly known as the contagious diseases of childhood. Some recent studies seem to indicate that the importance of the school sessions as a causative factor in the prevalence of these diseases has been overestimated. Be this as it may, this negative phase is of much less importance than the fact that the schools offer a vantage ground for the control of such diseases. Not only are cases among the school children themselves excluded, but other unreported cases in the family, or in families that have no school attendants, are detected and brought under supervision by the health authorities.

Through the school attendants, combined with home visitation, and by a well organized intelligence service, practically the whole child population is brought under a surveillance such as could not be established except by school inspection. A number of such unreported cases, especially of measles and whooping cough, occur, largely due to the fact that these diseases are not regarded as serious, especially among the poorer classes, and for this reason a physician is not consulted. The same is true of mild cases of diphtheria, which are thought to be cases of simple sore throat or tonsillitis. Where medical inspection exists, the presence of an epidemic does not necessitate the closure of the schools. Diphtheria offers the best example of the possibility of efficient preventive measures. The taking of cultures will serve to eliminate danger from school attendance where this disease prevails. Medical inspection, by preventing infection, not only conserves the health of the school children and of the whole child population, but also serves to prevent loss in school attendance. While it may be assumed that this is the chief function of inspection by boards of health, and it is generally conceded that this work can best be done by these bodies, on account of the legal power over transmissible diseases expressly vested in them, this phase of inspection is of even less importance than that for the detection and correction of noncontagious diseases and developmental defects, and of faulty school hygiene. This has, however, not appealed as strongly to the general public as inspection for contagious diseases. This has been very generally recognized to be a necessary measure of community protection. In many places, inspection for contagious diseases is the only form that has reached a considerable degree of completeness and, in some instances, forms practically the only activity. As judged by available reports, this phase occupies about seventy-five per cent. of the time and energy spent in inspection. Such inspection, though valuable as far as it goes, does not have as far reaching effects upon the health of the school children as the correction of defects and the placing of the child in the proper hygienic environment while at school, combined with the intelligent adjustment of the school studies to the capabilities of the child.

While the statistics relating to contagious diseases may be regarded as definite and reliable, there is a lack of uniformity in statistics of other diseases and defects.

With the progress in medical inspection that now obtains in the United States, there should be a greater uniformity. The time has come to have some standardization of scope and methods. There is a vast amount of literature on medical inspection, yet seldom are reports and statistics comparable. There is need for the correlation of statistics so that practical results that may serve as a basis for prevention and correction, may be deduced therefrom. It accomplishes but little good to pile up statistics unless these are combined in such a way as to throw light upon the causal conditions. If, for example, we have statistics of malnutrition, we need to know what are its causes, whether simply due to underfeeding, to home conditions, or to bad teeth. Neither are there definite standards of sanitary requirements for school buildings. Opinions differ greatly as to what constitutes physical defects, concerning which action is to be taken.

The greatest variations exist between the statistics of different localities. This variation is greater than could be accounted for by difference in physical development and is most probably due to difference in standards. While it is undoubtedly true that sufficient statistical data are available to emphasize the need of inspection, it would be difficult to form from them any satisfactory conclusion as to the physical condition of our child population as a whole. Hence, the keeping of records becomes a matter of the greatest importance. We are greatly in need of statistics which bear upon the physical status of our whole population. No such data are available for the United States as exist in some European countries, where registration of vital statistics has been fairly complete for a long period of years, and where, also, compulsory military service affords an opportunity to collect data relating to the physical development of a large part of the population. In the United States medical inspection by statute can, at best, be a concern of States as the largest unit, but at present, medical inspection in any comprehensive way is enjoined by but few States. In the majority of instances it is a matter of smaller units, of cities and towns. There is no reason, however, why these should not employ methods found by practice to be the best. While adopting the standards already reached, every department of medical inspection should also be a bureau of investigation and research in problems of health and development in their relation to the science of pedagogics.

The work of the trained physician, one who has become an expert in problems relating to the school child, is essential in our modern scheme of education. Something more adequate than ordinary routine inspection is necessary, however, in order to secure information upon which may be founded an effective system of education, which has for its basis the physical well being of the child. It has been well said that "mental development without a true physical equivalent is unstable and undesirable." The child whose brain is developed at the expense of his body is, from the point of view of society, an expensive luxury.

Medical inspection is necessary in order that the teacher may be advised as to what should be the daily demands from each pupil and in order that his studies may not overtax his capacity; and, on the other hand, that the idler may receive the necessary stimulus.

When children are excluded on account of transmissible diseases, much stress is laid upon the necessity for continuing exclusion until the danger period for others has passed, but it is also the province of the inspector to consider the children themselves, whether they can resume their studies without injury to their own health. Many parents lose sight of this consideration and send their children back to school, where, in their attempt to make up for lost time, their health becomes permanently impaired.

Scarcely secondary in importance to the medical inspection of school children themselves is that of the school environment. Much of the beneficial effect of inspection of the school children will have been lost if the sanitary and hygienic conditions in the schoolroom and on the school premises are such as impair their health. There is no class of public buildings in which sanitary requirements and hygienic fitness have been more disregarded than in some of our older school plants. The Committee on Medical Inspection of the American Medical Association quotes a writer as saying that the value of the public school buildings in America is $700,000,000, and states: "One half of them are so abominable that they should be torn down forthwith and a quarter more of them should be reconstructed."

The committee makes the following recommendations:

1. The endorsement of certain standards and requirements in the planning and maintenance of school buildings and grounds by State and national educational and medical organizations.
2. The enactment of legislation which will define these standards and insure the erection and maintenance of school buildings in accordance therewith.

The most common hygienic defects found in the school buildings themselves are inadequate ventilation, improper lighting, and faulty location and equipment of toilet conveniences. Schoolrooms are often overcrowded and when this is combined with insufficient provision for change of air, the result is disastrous to the health of the child and forms the chief cause of morbidity among our school population. The problem of ventilation of schoolrooms is extremely difficult and in its solution the educational authorities need the advice of the physician or the sanitary engineer. In warm weather the problem is simple, needing only the opened windows, but in cold weather it is more complex, the difficulty being largely a question of heating and humidity. To approach the proper standard, each child should have at least twenty square feet of floor space, 300 cubic feet of air space, with a change of air every eight minutes. During recess periods the windows should be opened so that there may be a complete change of air. Dust should be eliminated as far as possible by proper cleaning methods, both of blackboard and floors.

The necessity for open air schools for certain classes of children is recognized to-day and has become a matter for the attention of educational and health authorities. Midway between these and the ordinary schools are what may be termed coldroom schools where windows are kept widely open in all seasons. These are much less expensive to maintain and are available for every community. The supervision of school appliances is a necessary part of inspection. The desk should be suited to the child. Many instances of faulty development may be traced to improper positions assumed during school hours.

The physical characteristics of textbooks is a question of importance as affecting the vision of school children. The kind of type, the width of line and margins, and the finish of the paper are all questions that need the careful consideration of the student of school hygiene.

The common drinking cup is a prolific source of infection and must give away to bubbling fountains or the individual paper cup. Schoolbooks and pencils may be a source of infection; the latter at least should not be used interchangeably, and books used by a pupil excluded on account of one of the contagious diseases should be destroyed, for we yet lack a satisfactory method of disinfecting books.

The hygiene of the schoolroom needs constant supervision, for the children are compelled by the State to attend school and, therefore, should provide them with the most approved hygienic environment.

One of the most important phases of medical inspection and supervision of schools and school children is that which links it to the home itself. Medical inspection loses much of its efficiency unless its machinery is extended to securing the cooperation of the parents in giving the children the necessary attention for the diseases and defects found by inspection. The influence of the school should go further than this and be exerted toward the correction of living conditions that affect the children injuriously. For this work the school nurse is essential, and in every complete system of inspection, a force of nurses, trained as social workers, is necessary to carry out the work to ultimate completion. They, better than the educator or even the physician himself, can succeed in bringing home the responsibility to the parents.

Much of the objection to medical inspection has arisen because of the belief that it is too paternal in its scope, that it takes away the responsibility from the parents. In practice, however, the reverse is true. Instead of taking away parental responsibility, it develops it, because it increases their knowledge of their children's needs. In many homes the mere taking home of a slip, directing the parents to take the child to their family physician, is not enough. They do not see the necessity for such a procedure. Their child is able to be up and about, and they cannot see any need for taking it to a doctor and incurring extra expense. It is in such cases that the nurse can give the necessary explanation and if, in addition, the family is unable to pay for treatment, can make arrangement for it at some hospital, or outpatient clinic. This form of follow up treatment is most important. Without it the percentage of corrections is small.

In the securing of corrections, the cooperation of the physicians, the dispensaries, and hospitals is necessary, and here lies a most difficult problem. It is necessary to avoid increasing dependency and, therefore, medical service should not be placed on a purely charitable basis, except when this, after careful investigation, is found to be necessary. In addition to the work of the nurse in the home the school has a most important function as a centre of social work in the community. Much can be accomplished by small groups in mothers' classes and by lectures to the parents that will bring them into closer association with the work of the schools.

The chief need for health work in connection with the schools to-day is for central supervision of all work relating to the health of the school child. In each large city there should be a department of school hygiene under the supervision of a trained physician, who can give his time to the work, acting as adviser to the school authorities and as an executive in carrying out the different lines of work. Among other activities, in addition to supervision of medical inspection and supervision of the hygiene of the schoolroom, would be the physical examination of teachers and their instruction in practical hygiene; the outlining of a course of instruction in hygiene for the pupils themselves; the directing of work in psychoclinical problems relating to the child, including subnormal and supernormal children; supervision of playgrounds and playground schools; supervision of physical training and athletics; and, finally, this department should make use of all information gained in school for the improvement of community health. In rural districts this work could well be done by a medical officer, acting through the office of the county superintendent.

In any system the closest cooperation between the health and educational authorities is essential.

CHRONIC ULCERS OF THE LEG.

A Few Words as to Their Treatment.

By William Brady, M.D.,
Elmira, N. Y.

Pain or inflammation is the symptom which usually brings the patient with a chronic ulcer under the physician's charge. The first requisite is to gain the patient's confidence. If there is exquisite pain and sensitiveness it is well to be extremely gentle with the first dressing. Cleanse the ulcer with warm normal salt solution, dry carefully with wisps of cotton, and dust on a light application of an anesthetic antiseptic powder; then apply a sterile petrolatum gauze pad and a light packing of cotton and bandage from toes to knees. This will invariably give great relief from pain and inspire the patient's confidence.

If inflammation or eczematous erythema is pronounced in the skin about the ulcer, a large wet dressing is required, with perfect rest for a few days. This dressing had better be normal saline solution for the first few times, kept wet by pouring fresh warm solution through a window flap in the oiled silk over the gauze. Always dispense the solution, tinted, if you like; never instruct the patient to apply "salt water." The advantage of normal saline solution dressing is that it gives more comfort than any other wet dressing, it encourages drainage, and reduces the inflammation in the skin as rapidly as any antiseptic, without injuring the healing capacity of the ulcer.

Should one find the ulcer covered with an old slough, brewer's yeast, if obtainable fresh, every two or three days makes an excellent dressing. It causes some little smarting for a time, but it hastens the separation of slough and seems to feed or tone the granulation tissue underneath. It must be changed twice a day, covered with oiled silk or other impervious protective, and applied warm, without antiseptic contamination. Yeast must be kept cold.

In old, dry, scaly ulcers with little or no secretion, the suggestion of Wright should be followed: Apply a wet dressing of one tenth of one per cent. of citric acid and four per cent. sodium chloride solution, and administer citric acid in drachm doses every three or four hours for a day or two. This will start a serous drainage from the ulcer and institute the processes of repair. I have found this effective in many cases after much discouragement with other treatment.

For exuberant granulations there is but one cleanly remedy, the scissors. Pressure applied by means of adhesive straps, gauze pads, and proper bandaging will take care of moderately high granulations. Always bear in mind that skin will not grow up hill.

In varicose ulcers a very effective procedure is elevation of the limb. Urge the patient to keep the leg on a pillow on a chair. Prescribe regular elevation in this manner: Let the patient lie on a bed next the wall, or with the feet toward the headpiece; then elevate the feet or the foot to a vertical position, which is to be maintained for so many minutes so many times a day. This manœuvre should be insisted on in the morning, just previous to the application of the bias flannel, linen elastic, or rubber woven bandage which all ulcer patients must wear habitually.

Once the granulations assume something like a healthy, smooth, glistening, moist surface, at or near the level of the surrounding skin, the *less one does the better*. A simple sterile petrolatum dressing, merely to keep the gauze from sticking to the wound, is all that is ordinarily required. When the granulating surface contracts to an ulcer the size of a dollar, a neutral powder—sterile talcum, for instance—freely applied to the carefully cleansed and dried ulcer, covered with a few layers of gauze, and strapped in place with adhesive strips, is the best management. This should not be disturbed oftener than every fourth or fifth day—or even less frequently if there is no trouble from serous discharge.

Asepsis, not antisepsis, should be the physician's guide in the management of ulcers. I have seen physicians and nurses ruthlessly sponging off the almost invisible layer of embryonal epithelium at the edge of an ulcer, evidently thoughtless of the fact that bichloride or other germicide kills new epithelial cells as readily as it kills cocci. The patient often does great damage to his ulcer by the use of carbolic acid and similar so called "healing salves." Let the physician at least do no harm.

There is generally some constitutional state demanding attention. Digitalis or the nitrites are frequently indicated. Iron, best given as tincture of ferric chloride in small doses in lemonade after meals, renders good service in elderly patients. Bromides at night for the nervous ones, and advice about vegetarianism in its relation to autotoxemia by intestinal putrefaction of protein is to be given the plethoric ones.

Other than sterile petrolatum, salves have no place in the treatment of chronic ulcers, in my opinion. After several years of experimenting with various highly recommended ointments, in hospital and private practice, I feel that they are best omitted. The aim should be to direct Nature, and at the same time to protect the patient from that impulsive dame's exuberance. We must remember that while Nature is always inclined to excess of zeal and often requires restraint, still she can't be hurried in her work. No human power will make skin grow faster than an eighth of an inch a day—on a chronic leg ulcer.

Kneading massage of the tissues around and above the ulcer at each dressing is helpful to the venous return circulation. The best time for massage, however, is during the elevation of the leg.

GASTRIC SYMPTOMS IN INCIPIENT TUBERCULOSIS.*

Analyses of the Stomach Contents in Fifty Cases.

By M. M. Jacob, A. B., B. S., M. D.,
Philadelphia,
Instructor in Diseases of Stomach and Intestines, Polyclinic Hospital; Physician to the Phipps Institute.

Among the many symptoms known to be present in pulmonary tuberculosis, gastric disturbances play an important rôle in the early and later stages respectively. In the fifty cases which I have studied in the Phipps Institute since May, 1910, all of them strictly incipient, gastric symptoms were the first to attract the patient's attention, or at least were most prominent among their other symptoms in all but eight. While of frequent occurrence in the terminal stages of tuberculosis, gastric disturbances may appear at any time during the course of the disease. Indeed, a not uncommon onset is that which manifests itself by symptoms that are entirely referable to the stomach (Landis).

Nausea, loss of appetite, distress and fullness after eating, belching, and vomiting, which in women is similar to vomiting in pregnancy; all these symptoms may be the first signals of pulmonary tuberculosis. These symptoms alone or combined, associated with pain and tenderness in the epigastrium, may simulate real organic disease.

Errors in diagnosis are easily made if the examination is made in haste, and quite often the symptoms will be diagnosticated instead of the real disease. In the majority of cases, the patient has a slight cough, particularly in the morning, moderate or entire absence of expectoration, some loss of weight, slight elevation of temperature, and an accelerated pulse. The general appearance of the patient is commonly good.

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*Read at the Southeast Branch of the Philadelphia County Medical Society, December 8, 1911.

Associated with the foregoing symptoms, or absolutely independent of them, the patient complains of a poor appetite, fullness and distress, pain after meals, referred to the epigastrium and radiating to the side or even shoulder, vomiting, and constipation. Physical examination of the chest may reveal nothing more than a slight impairment of the percussion note and prolonged expiration at one apex.

Pathologically there are no changes in the stomach peculiar to incipient tuberculosis itself. Rarely we find a gastroptosis or enteroptosis or an ulcer, and if they do exist probably they have been present long before the patient had any pulmonary lesion. On the other hand, the more advanced cases frequently present chronic gastritis, gastroptosis, or enteroptosis.

The only lesion of the stomach which can be directly attributed to tuberculosis is the tuberculous ulcer. The reason that tuberculosis of the stomach is rare is probably the fact that this organ contains very little lymphatic tissue, and that it is very deeply seated. Furthermore, the tubercle bacilli are but a short time in contact with the gastric mucosa. Some authors assert that the gastric juices will destroy the tubercle bacilli, but experiments made by Falk, Strauss, and Wurtz, *in vitro* or *in vivo,* show that the tubercle bacilli retain their virulence and power of producing disease. Most observers agree that for a tuberculous ulcer to develop there must be a preexisting lesion of the gastric mucosa which enables the tubercle bacilli to gain a foothold (Landis). Simple ulceration is comparatively common, occurring in the same frequency as in the other diseases, namely, about two per cent. In 480 autopsies at the Phipps Institute nontuberculous ulceration of the stomach has been met with in six instances.

The stomach disturbances in incipient tuberculosis are hard to explain. They are due possibly to certain chemical compounds. Some believe that they are produced mechanically by direct compression of the vagus, by the swollen glands. Others believe that they are due to fever. It has been noted that individuals with long standing gastric disturbances are apt to have an increase of these symptoms if pulmonary trouble develops.

The consensus of those who have investigated this subject seems to be that in the early stages of pulmonary tuberculosis the total acidity is either normal or increased, but as the disease advances the efficiency of the gastric juice becomes impaired, the acid being either quantitatively or qualitatively reduced. So far as the early stages are concerned my results are in agreement with those previously published. In only one instance was the total acidity below normal; in this case the absence of acid was due to an achylia of long standing.

Here, briefly, are the cases I have studied, with their total acidity and free hydrochloric acid; also the stomach complaint of each individual case:

TABLE I.

STOMACH CONTENTS IN INCIPIENT TUBERCULOSIS.
DR. M. M. JACOB'S CASES.

J. S.	Total acidity 76, HCl. 39, T. 99.4° F., pyrosis, pepsin positive, no retention.
C. T.	Total acidity 55, HCl. positive, gastric dist. negative, T. 99° F.
H. L.	Total acidity 70, HCl. 32, T. 99° F.. appetite poor, pain in epigastrium, relieved by alkalies.
S. M.	Total acidity 64, HCl. 30, T. no record, appetite poor, vomiting one hour after meals, relieved by bismuth.
J. B.	Total acidity 76, HCl. 39, T. 101° F.. vomiting, pain in epigastrium, extended to right side of gallbladder.
M. S.	Total acidity 60, HCl. 30, T. 100° F., vomiting, morning on arising.
M. M.	Total acidity 72, HCl. 30, diarrhea, vomiting. pain.
M. B.	Total acidity 68, HCl. 31, pain right after meals.
Em. M.	Total acidity 93, HCl. 45, T. 101° F., appetite poor, nausea, constipated.
M. G.	Total acidity 58, HCl. 29, appetite poor, fullness and distress after meals.
C. D.	Total acidity 65, HCl. positive, vomiting, diarrhea, pain after eating.
J. D.	Total acidity 34, HCl. none, diarrhea, pain all over abdomen.
B. A.	Total acidity 65, HCl. 39, appetite poor, belching and fullness and distress after meals.
R. S.	Total acidity 64, HCl. 31, T. 100° F., appetite poor, fullness and distress after meals.
B. K.	Total acidity 60, HCl. 34, chief complaint, poor appetite; bad taste in mouth.
Y. C.	Total acidity 62, HCl. 30, T. 99° F., gastric disturbance negative.
R. G.	Total acidity 69, HCl. positive. poor appetite, pyrosis one hour after meals.
S.	Total acidity 70, HCl. positive, constipated, pain in epigastrium, associated with diarrhea.
L. C.	Total acidity 70, HCl. positive, pyrosis, appetite decreased, sour taste in mouth.
D. C.	Total acidity 71, HCl. 39, appetite poor, constipated, pain.
A. S.	Hypermotility, HCl. positive (only the wash water), T. 99° F., appetite poor, diarrhea.
A. F.	Total acidity 50, HCl. 21, constipated, pain lower abdomen.
Y. S.	Total acidity 45, HCl. 23, appetite poor, constipated, pain in epigastrium, localized xyphoid.
M. R.	Total acidity 60, HCl. positive, gastroptosis, appetite poor, constipated.
C. S.	Total acidity 69, HCl. positive, gastric disturbances, negative.
M. G.	Total acidity 69, HCl. 38, pain in epigastrium. 2 to 3 hours after meals localized in duodenum.
H. L.	Total acidity 72, HCl. positive, constipation, nausea, tenderness left iliac fossa.
B. T.	Total acidity 64-69, HCl. 30, appetite poor, vomiting, constipation.
J. S.	Total acidity 75, HCl. 31, appetite poor, diarrhea, pain after meal relieved by alkali.
C. S.	Total acidity 51, HCl. positive, vomiting, pain relieved by alkali.
A. W.	Total acidity 65, HCl. 31, T. 100° F., gastric disturbances negative.
B. M.	Total acidity 60, HCl. 31, T. 99° F., appetite poor, fullness and heaviness after meals.
D. W.	Total acidity 60, HCl. 35, gastric disturbances negative.
J. S.	Total acidity 75, HCl. 34, T. 100.8° F., pyrosis, vomiting at night.
M. G.	Total acidity 60, HCl. 28, T. 99.4° F., appetite poor, heaviness a few hours after meals.
A. G.	Total acidity 65, constipated 4 to 5 days.
E. F.	Total acidity 70, HCl. 38, T. 99°F., appetite poor, vomiting in the morning.
H. McH.	Total acidity 69, HCl. positive, T. 101° F. to 103° F., regurgitating of food after eating.
J. C.	Total acidity 70, HCl. 34, gastric disturbance negative.
H. R.	Total acidity 70, HCl. 39, appetite for 9 weeks, constipated.
S. G.	Total acidity 69, HCl. 34, T. 98.6° F., P. 80, R. 20, constipated, pain.
F. S.	Total acidity 59, HCl. 30, appetite poor, nausea.
S. C.	Total acidity 71, HCl. 28, T. 99° F., appetite poor, nausea. constipation.
F. B.	Total acidity 65, HCl. 32, appetite poor, nausea, pain epigastrium right after meals.
K. B.	Total acidity 60, HCl. 28, T. 98.6° F., appetite poor, fullness, belching great deal.
K. S.	Total acidity 60, HCl. positive, constipated, pain. pyrosis.
E. S.	Total acidity 60, HCl. 31, T. 100° F., gastric disturbance negative.
I. B.	Total acidity 55, HCl. 21, gastric disturbances negative.
P. R.	Total acidity 80, HCl. positive, T. 99° F., vomiting one hour after meals, relieved by hydrogen peroxide.
I. R.	Total acidity 73, HCl. 29, diarrhea, pain in epigastrium, no mucus, no retention.

TABLE II.

The following table shows the different gastric symptoms complained of:

No gastric disturbance	8
Poor appetite, fullness, and distress after meals	22
Vomiting, not associated with cough, the majority one hour after meal	11
Constipation, sometime associated with diarrhea	16
Pain in epigastrium, and hepatic region, sometimes pain in back	21
Nausea, belching, fullness after meals	4
Regurgitation, belching, fullness and distress after meals	1
Diarrhea	*4
Pyrosis	5

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*One patient had diarrhea with hypermotility I could not obtain anything, as the stomach was empty The wash water was positive with Congo.

As can be seen in the following table, the total acidity ranges from 34 to 93, the majority (40) being between 60 and 75.

TABLE III.

Total acidity	76	2
Total acidity	55	2
Total acidity	70	6
Total acidity	64	3
Total acidity	60	9
Total acidity	72	2
Total acidity	68	1
Total acidity	93	1
Total acidity	58	1
Total acidity	65	5
Total acidity	34	1
Total acidity	62	1
Total acidity	69	5
Total acidity	71	2
Total acidity	50	1
Total acidity	45	1
Total acidity	75	2
Total acidity	59	1
Total acidity	73	1
Total acidity	51	1
Total acidity	80	1

As the normal acidity after an Ewald meal is around 50 to 55 for forty-five minutes, we may consider as one of hyperacidity any case of 60 or above. Any case of 55 we may consider normally high.

All of these patients showed good digestive power for the Ewald's test breakfast. In no instance was there a retention or an excessive secretion of mucus.

In none of the cases was any difficulty encountered in using the stomach tube, nor were there any untoward effects following its introduction. In regard to the last statement, however, it must be borne in mind that all of these cases were in the incipient stage of the disease. Patients with advanced tuberculosis of the lungs, especially if cavitation is present, should, as a rule, not be subjected to this procedure, as there is some danger, through a paroxysm of coughing, of inciting a hemorrhage.

The majority of the patients had fever, ranging from 99° to 103° F. I had no opportunity of using the stomach pump in my patients more than once, as they refused to take it the second time, except on two occasions. They had elevation of temperature on both occasions with high acidity, contrary to Brieger's finding, who believes that the acidity is low with no temperature. Some of my patients had no fever and yet the average acidity was above the normal.

CONCLUSIONS.

1. Pulmonary tuberculosis in its incipient form may present gastric symptoms similar to typical organic or inorganic stomach lesions.
2. Gastric disorders may be considered as among the first symptoms of pulmonary tuberculosis.
3. Hyperacidity or normal acidity is the rule in incipient tuberculosis.
4. The secretion of hydrochloric acid is independent of fever.

1312 South Fifth Street.

Physicians in Europe.—The number of practising physicians is given for Europe as about 200,000, according to late statistics: England, 48,000 (London, 18,000); France, 32,000; Germany, 26,000; Italy, 24,000; Russia 20,000; Austria, 13,000; Belgium, 12,000; Spain, 8,000. The remainder of 18,000 is divided among the other European states.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXX.—How do you treat subacute and chronic laryngitis? (Closed January 15th.)

CXXXI.—How do you treat psoriasis, and with what success? (Answers due not later than February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXIX was awarded to Dr. Ben N. Wade, of Portland, Oregon, whose article appeared on page 244.

PRIZE QUESTION CXXIX.

THE MANAGEMENT OF CHRONIC ULCERS OF THE LEG.

(Continued from page 245.)

Dr. Peter C. Ten Eyck, of Syracuse, N. Y., observes:

Inasmuch as with any of the predisposing causes, each of itself would require a separate article, I will leave the general treatment to the physician's own methods, and discuss only the local treatment, meanwhile emphasizing the necessity for general treatment.

With chronic leg ulcers, there is one condition which I find is apt to be overlooked or neglected, and that is, the adhesion of the base of the ulcer to the underlying bone or muscle fascia. The tissues underlying the floor of the ulcer become edematous, fibrous, of low vitality, contain numerous bacteria and poisons absorbed from the ulcer, and the blood supply is poor. The older the ulcer, the more marked are these conditions, and the development of this infected core leading to the deeper structures prevents healing of an ulcer which appears superficial.

The most important part of the whole local treatment is the process of loosening the base of the ulcer from the underlying bone or fascia, and restoring vitality to this intervening "core." This is most satisfactorily done by proper local massage, particularly by a lifting of the ulcer, a stretching of the intervening tissues, and massaging the edema as far as possible out of the leg well above the level of the ulcer. This should be done at least once daily. The edema as a rule extends for some distance beyond the margins of the ulcer (as well as underneath it), and materially interferes with the nutrition of the tissues, so that they readily melt away even in the presence of weaker poisons.

As to antiseptics, I have discarded all ointments because they soften the skin, and prevent drainage. I have found nothing to compare with one half of one per cent. carbolic acid solution, applied to a thin dressing composed of oil silk next to the ulcer, with cotton overlying this, the whole kept moist only. Gauze I have found too coarse and apparently irritating. Of equal importance with this is the daily exposure of the bared ulcer to the antiseptic and drying influences of air and sunlight. Even a moist dressing constantly applied will devitalize the skin, though carbolic solution is mildly stimulating to the ulcer. I am convinced that if predisposing causes are eliminated or effectively treated, massage and the simple exposure of a chronic ulcer to the air and sunlight will cure in the absence of all other forms of treatment. I have found that strapping and other forms of treatment which do not provide for free drainage and for the vitality of the skin, are not effective. I have also found that it is advisable to keep the skin of the leg dry by the use of drying powders if necessary, and to so raise its vitality that the lodgment and growth of germs which so easily reach this part of the body are prevented.

If the patient finds it necessary to be up and about during the day, the edema of the leg from whatever cause should be prevented by a properly applied elastic mesh bandage (pure gum bandages sweat the leg and are therefore harmful), the bandage to be discarded during the night and the leg raised to a level higher than the body still further to reduce the edema.

In conclusion, with chronic leg ulcers the skin should be kept dry by using antiseptic drying powders; the ulcer dressed during the night with very mildly stimulating antiseptic packs, and during the day also when not exposing it to the air and sunlight; the whole leg from its distal extremity to a line well above the level of the ulcer massaged daily, particular care being taken to reduce the waterlogged condition of the tissues in the immediate neighborhood of the ulcer, and beneath it. General good health should be restored as far as possible, digestion perfected, constipation prevented, and any other unfavorable conditions treated in a most thorough manner.

The treatment of chronic leg ulcers, above outlined, will in every case produce uniform, encouraging, not to say brilliant, results.

Dr. Walter T. Dannreuther, of New York, maintains that—

The multiplicity of methods of treatment recommended for the cure of indolent ulcers is a fair indication that no single one will invariably prove satisfactory and efficient. While certain well defined rules may be formulated, the surgeon must exercise his judgment and common sense in each case to obtain universally gratifying results. Each step in the treatment should be carried out with a definite object in view, and progress can then be made by advancing upon the previous firm foundation. The following steps should be taken in order:

1. Improve the circulation of the region.
2. Cleanse the ulcer and surrounding skin.
3. Subdue existing inflammation.
4. Remove necrotic tissue from the surface of the ulcer.
5. Promote absorption of the induration.
6. Stimulate granulation.
7. Support the part with equalized pressure.
8. Encourage cicatrization.
9. Have the patient wear a permanent support.
10. Improve the constitutional condition.

Correct posture will greatly enhance the venous circulation, and the patient should therefore be confined to bed or a chair, with the leg elevated. Such position, maintained continuously, is ideal, and will materially hasten recovery. Unfortunately, however, these patients usually can ill afford to neglect their occupation and these instructions cannot be followed except when the patient is entirely under the physician's control.

The ulcer and surrounding skin should be vigorously scrubbed with a soft brush or gauze wipe. If all surgeons would use soap and water as regularly as they employ antiseptics, the latter could often be dispensed with and healing would occur much more rapidly. After drying thoroughly, the part should be rubbed with alcohol to loosen scales of dried discharge and devitalized skin.

If inflammation is present, it can be reduced by daily applications of large, wet dressings of Thiersch's solution or aluminum acetate, covered with a firm gauze bandage. Asepsis may be secured by painting the ulcer with tincture of iodine at each dressing. The gauze must be kept constantly wet until the inflammation is subdued. If, however, there is no evidence of inflammatory reaction and the ulcer is dirty and foul, it should be cleaned up by dressing with balsam of Peru for a few days. The constant warm bath by immersion in saline solution is another excellent method of treatment.

The necrotic layer often observed on the surface of an ulcer is most easily removed by dissecting off with thumb forceps and scissors, followed by delicate curettage.

Absorption of the indurated tissues at the base and margins of the ulcer is best promoted by making three or four crisscross incisions, carried well through the cicatricial tissues at the base and edges. Alternate hot and cold douches and massage are useful adjuncts to the incisions.

As soon as the inflammation is controlled and the ulcer looks clean, the leg should again be thoroughly cleansed and then shaved from ankle to knee. The ulcer should be sprinkled with a generous layer of powdered naphthalin crystals (to stimulate granulation), and then covered with a layer of lint covered with diachylon ointment.

This application should be left undisturbed for ten days, meanwhile exerting constant equalized pressure over the whole surface of the leg. This is best done by strapping from ankle to knee, from below upward, with zinc oxide adhesive plaster strips, three quarters of an inch wide and long enough to encircle the leg with overlapping of the ends. The edges of each strip should also overlap the one preceding. When complete, this dressing is covered with a firm bandage or elastic stocking. To remove, saturate with gasoline, cut from below upward, and strip off in one sheet. If the surface of the granulation tissue is still some distance from the skin surface, another similar dressing may be applied. As soon as the granulations approach the surface, however, the ulcer should be irrigated with saline solution and Thiersch's skin grafts spread upon its surface. These grafts must overlap each other and the skin margins, and should be covered with several layers of silver leaf. The leg can then be restrapped for two or three weeks, protecting the area of the ulcer by smearing the under surface of the superimposed strips with petrolatum. This dressing must be removed very carefully, and the ulcer will be found to be healed.

The patient should be instructed to wear a firm elastic stocking continuously, protecting the delicate skin by wearing a white silk or cotton one underneath.

Throughout the course of local treatment the patient's general condition should receive careful attention. The emunctories must be kept active and tonics supplied in the form of fresh air and nutritious food. Nux vomica, mercury, arsenic, and potassium iodide may be administered with benefit.

Dr. A. H. Powers, of Boston, remarks:

It is doubtless true that the veins are the vessels most frequently at fault, but at times the arteries may fail to carry an adequate supply of blood, hence there will be deficient nutrition and an ulcer once begun will heal slowly or not at all.

The simplest method of treating the veins is by supporting them by a bandage or elastic stocking. The best bandage everywhere available is of flannel cut on the bias. This must be applied in the morning before getting out of bed from the toes as high on the extremity as the veins are enlarged, but always to the knee. This bandage should be applied as snugly as can be borne with comfort and the ulcer should be dressed before it is applied.

The next and more radical treatment of these veins is the excision of the larger ones, the technic of the operation being given in good works on surgery. In a syphilitic patient specific treatment suited to the case should be given, but my personal preference is for mercuric iodide in not too heavy doses. With suitable treatment of these causes accomplished we are prepared to consider the local treatment.

First to be considered is the prophylactic. We must place the skin in a hygienic condition and maintain it thus. All eczema and dermatitis should be promptly treated and the skin made as nearly aseptic as possible and kept in that condition. One agent most valuable in the care of the skin is alcohol from sixty to seventy-five per cent. used frequently and possibly followed by a little carbolized oil or petroleum product. In this manner many if not all the chronic ulcers of the legs may be avoided.

When the ulcer is formed the first attempt should be to render it aseptic. Different means must be employed, varying according to the character of the ulcer. In some cases, swabbing the whole surface with ninety-five per cent. carbolic acid and after a minute's contact, neutralizing it with alcohol, is very successful, but a considerable layer of cells has been destroyed. Washing twice more a day with a bichloride or carbolic acid solution may prove of much benefit. A bichloride compress renewed at intervals is of service.

In the more nearly acute cases washing with a three to five volume solution of hydrogen dioxide or a normal salt solution hot as may be borne will prove beneficial.

After having cleansed the ulcer, some protective dressing should be applied. This may be a few layers of sterile gauze with a little boric acid cerate, or some other, equally bland, applied to the ulcer so that the gauze will not tear the granulations when removed. In the syphilitic ulcers the application of a mercurial ointment of from two to ten per cent. strength will have the double effect of sterilizing the wound and introducing the drug where the virus is active. In some cases, especially where a speedy cure is demanded, rest in bed with the leg elevated is a very helpful measure.

In those ulcers which have persisted for years or perhaps only for months the best method of treatment is with the patient under a general anesthetic carefully curette the ulcer, removing all the diseased tissue and then cover with grafts according to the method of Thiersch; in my experience in ten days the grafts will be adherent and the ulcer healed. Care must be taken to protect the tender grafts else they will break down and an ulcer again appear.

Dr. George B. Hickok, of Roselle Park, N. J., writes:

The treatment of chronic ulcers of the leg will resolve itself into the treatment of the constitutional, general, and local causes of the ulcer. These different causes must be sought after whether syphilis, gout, rheumatism, kidney, or heart disease, tuberculosis, pregnancy, results of phlebitis, or injury.

Medical treatment in each case will depend upon the character of the disease. In case of syphilis, the patient should be treated with mercury, potassium iodide, salvarsan, or neosalvarsan; in case of rheumatism and gout, with colchicum, salicylic acid, alkalies, and with sulphur baths; in case of tuberculosis, with open air, good food, and tuberculin.

The treatment of ulcers of the leg, in addition to the constitutional treatment, is in a great measure mechanical, and depends upon means to avoid congestion and stasis of the blood in the veins of the leg.

Avoid constipation, keep the bowels regular with calomel, cascara, rhubarb, podophyllin, sodium sulphate (Glauber's salts) alternated with Rochelle salts. Glauber's salts are perhaps one of the best stimulants of the liver which we possess, and are an ingredient of the best natural mineral waters. Incidentally I have found that syrup of buckthorn is one of the best laxatives in cases of children. Regulate the heart and kidneys with digitalis, aconite, sweet spirit of nitre.

Wash the ulcer with warm water and carbolic soap, juniper tar soap, or pure white imported Castile soap. Poultice to remove any hard crusts which may be on the surface or edges of the ulcer.

As direct treatment of the ulcer, after washing, destroy proud flesh, exuberant granulations, with solid stick of silver nitrate; keep the edges of the ulcer flat and depressed by burning with silver nitrate and bandaging, as no healing over of the ulcer will take place while the edges are elevated. Touch the bleeding points of the ulcer with the solid stick of silver nitrate, paint the entire surface of the ulcer with ten to thirty per cent. solution of silver nitrate. Stimulate the ulcer if sluggish by Bier's method, x ray, or radium emanations; scarification may also be resorted to; or long exposure to sun's rays with feet elevated.

After washing and stimulating applications, dry the surface of the ulcer thoroughly with charpie, lint, or absorbent cotton.

After drying, dust the surface of the ulcer with zinc oxide powder, with zinc stearate, with menthol (one of the best drying powders). If the ulcer is indolent, dress with balsam of Peru, ichthyol, and oakum which has tar as an ingredient.

After proper applications have been made to the ulcer, apply a bandage, two and a half inches wide, made from cheese cloth, commencing at the instep, bandage with figure of 8 bandage around the instep and ankle, leaving the heel bare, and using reverses in bandage until it reaches above the calf of the leg. The bandage will also serve to depress the elevated edges of the ulcer. In case of ulcer of the leg, always elevate the feet when sitting—the flow of venous blood will be assisted and pain in the back will be relieved. A rubber bandage may be used, but it is liable to create moisture and delay healing of the ulcer.

The American habit of elevating the feet when sitting has much to commend it in the comfort which is derived from relieving the strain on the muscles of the leg and the arch of the foot and the small of the back and preventing coldness and numbness of the feet. The Morris chair and the ordinary steamer chair are highly beneficial, both assisting in cure of the ulcers of the leg. Constant bathing of the legs with hot salt water when a bandage is not in use, will aid in cure of an ulcer of the leg.

After a bandage has been applied in case of an ulcer of the leg, an elastic stocking can be drawn over the bandage, but the same objection holds as in the case of the rubber bandage; it causes heat and moisture, especially in hot weather. If the cheesecloth bandage is kept in place by ordinary pins, worked in and out of the different layers of the bandage on each side of the leg, no other support will be necessary.

(*To be continued.*)

Therapeutical Notes.

Radical Treatment of Femoral Hernia.—Hermann, at a meeting of the Berlin Surgical Society (*Revue de chirurgie*, July, 1912) stated that the following operative procedure in femoral hernia had yielded satisfactory results in his hands in the last eight years: After removal of the hernial sac, Poupart's ligament is sutured to the periosteum of the horizontal ramus of the pubis. The pectineus muscle is then detached from the pectineal crest and fixed by a second series of sutures over the sutured portion of Poupart's ligament. Many of the patients operated upon were seen again, without recurrence, from two to five years after the intervention.

Treatment of Pruritus Ani.—J. P. Lockhart Mummery, in the *Clinical Journal* for June 26, 1912, states that he believes in the use of powders in preference to ointments for pruritus ani, as dampness of the skin is one of the chief factors in producing the condition. Starch and boric acid in equal parts form a useful powder, which should always be reapplied after exertion or anything else likely to cause reappearance of the dampness. Phenol, one part in 60 or one in 40, daubed on with a sponge or with cotton wool is often very effectual. The following paint was found quite satisfactory by the author:

℞ Coaltar, ...ʒi;
Benzene, ...℥ss;
Acetone, ...℥ii.

M. Sig.: To be painted on with a brush, in one or two coats, and allowed to dry.

In very severe cases ointments may be useful to tide over a bad period. One made by rubbing as much chloroform as possible in hydrated wool fat (to be kept tightly corked) may, in general, be depended upon to alleviate irritation temporarily. Another useful ointment is the following:

℞ Bismuth subnitrate, ...ʒii;
Cocaine, ...gr. x;
Calomel, ...gr. xv;
Petrolatum, ...℥i.

M. ft. unguentum.

For injection into the bowel, alkaline lotions, e. g., a mixture of sodium bicarbonate, glycerin, and water, are most efficacious. They are to be used at bedtime.

In cases of pruritus rebellious to all nonoperative methods, Mummery advises the performance of Ball's operation. Flaps are dissected up on each side of the anus to the middle line, and the whole of the skin undercut so that the area of irritation is rendered anesthetic. The flaps are then sewn down again. Safety in this procedure depends upon ability to render and keep the parts aseptic for forty-eight hours. Only very exceptionally—one case in the author's experience—does irritation return after the intervention.

Good results have been obtained with the x rays in cases with much thickening of the skin, though the author himself confesses disappointment with this measure.

Treatment of Adenomata of the Rectum.—E. H. Terrell, at the fourteenth annual meeting of the American Proctological Society, June 3 and 4, 1912, referred to some simple medicinal measures which he had found of value in a case of this kind. The patient was a man of forty-two years, suffering from frequent stools containing mucus and some blood, together with much tenesmus and considerable abdominal pain. Numerous small tumors were found scattered in the rectum and sigmoid; microscopical examination of these showed them to be adenomata. The bowel was intensely inflamed and contained many ulcers. Under irrigations with boric acid and the administration by mouth of castor oil and aromatic syrup of rhubarb in equal parts, almost immediate improvement took place. The ulcers gradually disappeared, and though the adenomata were of course still present—reduced in size—the patient was symptomatically cured. The chances of subsequent malignant transformation of the growths were also reduced through the relief of inflammation.

Treatment of Psoriasis.—Albert Bernheim, in *Monthly Cyclopedia and Medical Bulletin* for June, 1912, describes therapeutic measures employed by him with success in eleven cases of widespread psoriasis. After placing the patient in a warm bath, to which, if the skin is tender and irritated, chamomile or bran and washing soda are added, the skin is rubbed gently once or twice with soft soap and washed off, the scales removed and a washing then given with a one to 1,000 solution of mercury bichloride. The skin is next well tarred with a preparation of coaltar and beech oils in dilute alcohol, and the patient kept in the bath from twenty to thirty minutes longer. After this the tar is washed off and the affected parts are treated with the following paste:

℞ Sulphuris præcipitati, ...4 grammes;
Acidi salicylici, }
Zinci oxidi, ... } ....āā 1 gramme;
Amyli, ... }
Petrolati, ...25 grammes.
M. Fiat pasta. Sig.: Salicyl sulphur paste.

Talcum powder is then dusted thickly over the parts. Forty-eight hours later, the following ointment is used, followed by dusting with talcum powder:

℞ Pyrogallolis, ...3 grammes;
Adipis lanæ hydrosi, ...30 grammes.
M. Fiat unguentum.

After another two days' pause a 25 per cent. ointment of chrysarobin in hydrated wool fat is similarly applied. It may be necessary, by reason of the local irritation induced, not to use this ointment over all the affected parts at one time, but to cover them gradually.

In addition to the local treatment, two kinds of pills are prescribed, to be continued for some time:

℞ Phenolis, ...10 grammes;
Extracti et pulveris glycyrrhizæ, ...q. s.
Fiant pilulæ No. 100.
Sig.: Three to ten pills daily after meals.

And,

℞ Arseni trioxidi, ...0.5 gramme;
Pulveris piperis, ...6.0 grammes;
Acaciæ, ... }
Altheæ, ... } ....āā q. s
Aquæ destillatæ, }
Fiant pilulæ No. 100.
Sig.: Three to ten pills daily after meals.

To these measures should be added plenty of fresh air and rest. The diet should be bland; the use of meat and alcohol should be interdicted, at least for a time.

Pituitary Extract in Obstetrics.—Liepmann, in *Therapeutische Monatshefte* for August, 1912, states that where the uterine contractions become weak toward the termination of labor, pituitary extract has given excellent results in his hands. Thus in a case of twin pregnancy in which the pains had begun forty-eight hours before and finally completely subsided for a period of two hours, an injection of the extract caused them to reappear strongly within five minutes. Where the drug was employed in the first stage of labor, however, the results were much less constant.

In cases with malposition of the fetus, the powerful contractions induced by the extract tend to correct deviations of its longitudinal axis from the normal, thus facilitating labor and obviating the use of forceps under unfavorable circumstances. While the drug proved useless in induced abortion, the results in hemorrhage following parturition were very gratifying. In two cases of Cæsarean section, a preliminary injection of pituitary extract resulted in reduction of the bleeding at operation to an insignificant amount.

Treatment of Typhoid Fever.—Hirtz, in *Quinzaine thérapeutique* for August 10, 1912, states that in a not inconsiderable number of typhoid cases it is inadvisable to try to secure a lowering of the temperature by strenuous administration of cold baths or packs. Often the purposes of the Brand method are best attained where strict adherence to its formal regulations is not attempted. Thus, in typhoid fever, especially early in its course, insomnia is frequently present. Although a certain proportion of patients can secure enough sleep in the twenty-four hours both by day and night, notwithstanding the interruptions for bathing, other patients can sleep only at night, some in the earlier night hours, the remainder principally toward morning, and in these regular bathing at night is likely to do harm. While giving the baths in the daytime, Hirtz therefore omits all night baths when the patient is asleep. Effects on the temperature are thus obtained which the classic procedure fails to procure. Often in the day or two following a night in which one or two baths have been omitted, the temperature curve is found to descent of a degree or more, which shows that a definite, though sometimes but temporary, favorable influence has been exerted on the febrile process itself. Hirtz also modifies the Brand treatment by varying the temperature of the baths given according to the age and previous physical condition of the patient, as well as the apparent severity of the typhoid infection.

Treatment of Asthma.—Maragliano, in *Union médicale du Nord-est* for October 30, 1912, is credited with the following combination for use in bronchial asthma:

℞ Bromoformi, ...ʒss (2 grammes);
Alcoholis, ...ʒiiss (10 grammes);
Aquæ amygdalæ amaræ, ...ʒv (20 grammes):
Extracti opii, ...gr. ½ (0.03 gramme);
Syrupi ipecacuanhæ, ...ʒviiss (30 grammes);
Aquæ, ...℥v (150 grammes).
Fiat mistura secundum artem.
Sig.: One tablespoonful as required.

Treatment of Leuchemia.—Kiralyfi, in *Lyon médical* for September 8, 1912, is credited with statements emphasizing the value of benzol in the treatment of leuchemia. In collaboration with Koranyi he employed this agent, which, as is well known, is toxic to leucocytes, in a number of cases of the disease. In nearly all instances favorable results were obtained, the number of white corpuscles being reduced to normal in three weeks. The erythrocytic count remained practically unchanged. The benzol was given, mixed with an equal quantity of oil, in capsules. Some degree of digestive disturbance was produced, but no other untoward effects appeared.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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ANTINARCOTIC LEGISLATION.

One bill regulating the traffic in opium and coca and their derivatives has been introduced into Congress and two have been introduced into the New York Legislature this year. The Harrison bill, which is the successor of the Cullom and the Harrison bills introduced at previous sessions of Congress, is of particular interest to our friends in that it includes in the category of "retailers" all registered physicians, dentists, and veterinarians. Under this bill physicians would be required to pay an annual license fee of one dollar to the United States Bureau of Internal Revenue and keep a record of all opium, coca, and their derivatives dispensed or administered by them. It would, moreover, be illegal for the physician to send any of these drugs from one State to a patient in another State, though registered and licensed pharmacists may so send the product of a physician's prescription.

One of the laws introduced into the legislature of the State of New York, the Kerrigan bill, is so absurd and impracticable in its requirements that it need not be discussed, for it is most unlikely to become a law. Under this measure physicians would be required to write all their prescriptions for the drugs in question on official blanks, to limit the quantity prescribed to a three weeks' supply, and not to renew this supply except after consultation with another physician.

Another measure, however, introduced by Mr. Walker on January 30th, has the approval of the district attorney of the city of New York and seems likely to become a law. This bill provides an amendment to the penal code in relation to the sale or possession of cocaine and eucaine. The provisions of the amendment are quite elaborate, the principal features of interest to the physician being the following: The druggist is forbidden to dispense cocaine or eucaine except in solution or ointment of not more than four per cent. strength. If a prescription calls for more than one grain of cocaine in solution or two grains in ointment form he may renew it, but not otherwise. He must also furnish to the patient a certificate giving the amount of cocaine, the name and address of the physician, and the name of the seller. Wholesale dealers are required to keep a record of sales, which may be made only to registered pharmacists, physicians, dentists, and veterinarians, and the purchaser is required to sign the record of purchase in each case. The dispensing or prescribing of these drugs in any form other than solution or ointment not stronger than four per cent., constitutes a felony, and the mere possession of the drugs by unlicensed parties except when accompanied by the certificate of sale constitutes a misdemeanor. It will be unlawful for any physician to have in his possession more than 160 grains of either of these drugs. Each public hospital may have on hand as much as five ounces of the drug at one time, but this must be in the possession of, and recorded by one regular employee specifically designated by the board of trustees or manager.

Doubtless there are black sheep in the profession, but physicians are justified in resenting legislation of this kind, which practically classes them with all kinds of irresponsible, furtive dealers in narcotics, who, it is more than likely, will not find their nefarious trade greatly interfered with. On the other hand, specialists, rhinologists in particular, will be much hampered in their routine work which involves the regular use of cocaine, in such a manner, however, as not possibly to create a habit.

THYROID GLAND IN BRIGHT'S DISEASE.

The use of thyroid gland in the treatment of chronic nephritis was recently advocated by J. F. Percy (see our issue for November 23, 1912, page 1093) after he had used this agent in thirty-five cases. He had found that thyroid gland in full doses increased diuresis and caused the urinary solids to return to normal and the albumin and casts to disappear in from four to six weeks. The blood pressure, moreover, was reduced and the local and general symptoms of Bright's disease were caused to vanish. Such sweeping conclusions their author could hardly expect to pass unchallenged, and, indeed, he is taken to task by A. Gouget (*Presse médicale,* December 28, 1912) on the plea that but two cases are described; that the identity of one of these as a case of Bright's disease is not demonstrated, and that the result obtained could hardly be credited to the thyroid gland administered. Formulated as above, without reserve, Percy's conclusions are deemed too absolute.

The interesting feature in this controversy is the total absence in either of the articles, Percy's or Gouget's, of any reference to the possible mode of action of thyroid in bringing about the results recorded. Had either of these authors familiarized himself with established facts concerning this feature of the problem, so sound a foundation would have been afforded for the results obtained, that their real value would scarcely have been questioned. We refer to the antitoxic rôle of the thyroid gland, already emphasized in these columns (see our issue for November 11, 1911, p. 961), which clearly accounts for Percy's successful results.

The use of thyroid gland in Bright's disease is not new. It was recommended by Heinsheimer in 1895, to promote diuresis in this disease, also by Dieballa and von Illyes, in 1897, who had used it in three cases in which it caused general improvement, diminution of the edema, and normal urination, notwithstanding the continuation of ordinary diet. That these important results should have received no attention is not to be wondered at when the ignorant cynicism existing at the time concerning everything pertaining to the ductless glands is recalled. In Percy's thirty-five cases—provided their detailed description will stand close scrutiny—we have, therefore, the resumption of a line of medication which should not be ignored. To enhance, by means of thyroid gland, the catabolism of toxic wastes and other poisons capable of perpetuating the renal irritation to which chronic nephritis is due, not only appeals to reason, but is sustained by a multitude of experimental and clinical facts.

Our own experience has taught us that the thyroid treatment should not preclude the use of iron —preferably Basham's mixture—which facilitates the formation of hemoglobin and counteracts the anemia.

AN EXHIBIT ON MENTAL HYGIENE.

Recently 24,000 people visited an exhibit on mental hygiene at the College of the City of New York and attended a series of lectures on mental disorders and their prevention, held under the auspices of the Mental Hygiene Committee of the New York State Charities' Aid Association; the exhibit was prepared and loaned by the National Committee for Mental Hygiene. The object of the exhibit and conference was to give to the public information regarding the prevalence of insanity and mental defectiveness, the causes and nature of these conditions, some possible means of prevention, and modern methods of treatment. Physicians were in attendance to explain the exhibit and answer inquiries, and questions were invited at each of the public meetings.

It was apparent from the questions asked that one reason for the unexpected popular interest was a personal one. Insanity and feeble mindedness are so prevalent that there are few families which are not touched by the problem; and it is not surprising that a great many of those who attended the exhibit and conference were led by the fact that they had relatives or friends suffering from some form of mental disorder. A striking evidence of this is the fact that the few clinics for mental diseases in this city were overcrowded during the latter days of the week by patients and others seeking advice.

It is believed that, next in importance to this personal reason for the large attendance and the unusual interest manifested, is the fact that, so far as known, this was the first opportunity afforded the public to become informed about those suffering from disorders of the mind. The complicated legal requirements for their commitment, the need for care in special institutions, which are often remote from the centres of population, the apparently mysterious nature of their affliction, and the difficulty of associating it with familiar facts regarding health and illness—all tend to set disorders of the mind apart from other kinds of illness in the public estimation. This reflects itself in the remarkable scarcity of the literature which is available to the public regarding mental diseases. The only books are those written for the physician and the specialist. The statement was frequently heard at the mental hygiene exhibit that the information presented was entirely unfamiliar and that it upset many beliefs which had been held previously.

This general lack of information regarding the nature and causes of mental disease is responsible, as much as anything else, for the slow progress which has been made in the better care of the insane. It is a fact that one third of all the patients who are admitted to institutions for the insane have had their disease at least a year. If we come to inquire particularly into the cause of the disastrous delay in obtaining treatment for mental cases, it is apparent that the principal causes are distrust of institutions for the insane and lack of information regarding the means to be taken to secure treatment. The complicated legal requirements for commitment are responsible, too, for a vast amount of delay in the admission of patients; another reason is the unfortunate association between insanity and crime. It is a fact that, in a certain number of cases, disorders of the mind lead those afflicted to commit acts which, judged by the standards which we apply to the acts of normal persons, are breaches of the peace or of social conventions, but it is not generally appreciated how small a proportion of all insane people are guilty at any time during the course of their mental disease of any crime or misdemeanor. In the mental hygiene exhibit and conference special emphasis was laid upon this fact, and many persons who attended announced that they had gained a new conception of insanity and a kindlier attitude toward the insane. Even partial attainment of this end must be counted as a very great success, and if the mental hygiene exhibit accomplished no other result there can be no doubt that it would have been amply justified by this one. The lot of the insane has been greatly ameliorated and now, in every enlightened State, we do not tolerate conditions which were not even criticised a generation ago. Much remains to be done, however, and, aside from the great problem of prevention, there seems to be no more urgent need at the present time than the provision of hospitals to which acute cases of mental disease can be admitted with as little formality as to general hospitals and treated on the same general principles which are employed in the care of other classes of the sick. This point was very strongly emphasized in the exhibit. Plans and pictures of the Henry Phipps Psychiatric Clinic at Baltimore and the new Psychopathic Hospital at Boston had a prominent place, and it was emphasized that such institutions break down the last barriers between the treatment of the insane and that of other sick persons.

COCAINE HABITUES IN PARIS.

Marcel Briand and Vinchon presented at a recent meeting of the Société clinique de médecine mentale de Paris four "cocainomaniacs," and *Semaine médicale* for January 8, 1913, devotes much space to the discussion of the rapid growth of the cocaine habit in the French metropolis. The article begins with a description of the symptoms of the habit, among which is mentioned the little known perforation of the nasal septum which is becoming recognized as characteristic. It appears that some fifty per cent. of the women of the street snuff cocaine and they acquire the manners of the women here in their easy familiarity with the dispensers of the drug, for which they have a slang name *coco*, just as it is commonly known in the United States as "coke." Most of them begin by using the drug secretly, but soon become reckless and snuff it in more or less public places without shame. The ease with which the drug is taken makes victims much more speedily than alcohol, morphine, or the once popular ether, but there are many victims of various combinations of the narcotics. Cocaine takes such a hold on women that they sell their furniture, their furs, and jewels at ridiculously low prices to obtain it. The trade has given rise in Paris to the *chasseur*, who corresponds to the New York *lobby gow*, and acts as messenger between the law breaking pharmacist or other merchant and the victim. The Apache or gun man and the sexual invert are also cocainists as a rule. France has severe laws against the sale of narcotic drugs, but so far their effect has been, in Paris as well as nearer home, simply to raise the price, often at late hours of the night to four dollars a drachm.

REFORMING CRIMINALS BY OPERATION.

The reform of criminals by an operation on the skull, which is so attractive an idea *a priori*, has not worked out in practice. There does not seem to be any ascertainable relation between physical constitution and moral character, now that the theories of that most credulous of observers, Lombroso, have been generally discarded. Admitting that an operation done in early childhood might have a favorable influence on the future moral life of the patient, there is a factor in crime which has perhaps not received the attention it deserves. We refer to habit, which is a matter not only of a nerve centre, but of every fibre of nerve and muscle down to the finger tips. The successful criminal, from pickpocket to safe cracker, is an individual with an education resembling that of the musician or artist in that a technic has been carefully cultivated through years of assiduous practice. We could believe in an adult criminal reformed by surgery alone only if a trephining operation was supplemented by an amputation of his adroit fingers. The latter would stray toward crime by reflex action alone despite the weak inhibitory influence of a new surgical brain centre, which would obviously be just beginning its moral education.

THE TUBERCULOSIS QUESTION FROM A FRENCH REPORT.

The board of health of the city of Paris has published its report on the tuberculosis question (and also on the cancer question) for the year 1911; it contains very interesting material that should be studied by every member of the boards of health of the large cities of our country.

The Paris board of health has made observations on the tuberculosis question for eighteen years, during which time an attempt has been made to get at the root of the evil, that is, the elimination of such rooms and houses as from their position could be taken as breeding places of the disease. While the first twelve years did not show any improvements, as during this time the work was very much handicapped, there appeared in 1909 a change for the better. In January, 1905, 5,263 houses were designated as needing improvement, but of this number

1,090 were boarding houses which could not under the law be attacked, and of the rest, fifty have been torn down. Others have been improved, so that at present only about one third remain to be changed. The great disadvantage of the building laws of Paris is that for a dwelling house thirty metres high, a court of only six metres need be provided, and in a street of twelve metres width, houses may be built eighteen metres high. Thus, even comfortable apartment houses have a lack of court space. This drawback, by the way, is to be found not only in Paris, but also in London and Berlin, in which latter capital a room with very little air and light, generally used as a dining room, has received the name of *Berliner Zimmer,* as it is peculiar to houses found in the German capital. Our readers will be astonished at the statement coming from a Parisian source, that the French capital has the least space given for public places, gardens, and playgrounds of all the capitals of the world.

The report accepts the English statement, that there is one death from tuberculosis to about five patients. The number of deaths for 1911 is given as 9,371, seventy-eight less than in 1910, 343 less than in 1909, and 891 less than in 1908.

Obituary.

ORVILLE HORWITZ, M. D.,

of Philadelphia.

Dr. Orville Horwitz, the noted genitourinary surgeon, died at Philadelphia on January 28th, at the early age of fifty-four years. He was born in Philadelphia of distinguished parentage, his father, the late Dr. P. J. Horwitz, having been a medical director in the United States Navy. He received the degree of Bachelor of Science in 1881 at the University of Pennsylvania and that of M. D. from Jefferson Medical College in 1883. He rose rapidly in eminence in his chosen field and was for twenty-six years professor of genitourinary surgery at the latter institution, a position which declining health caused him to resign recently when, as a mark of appreciation, he was made professor emeritus. He was also consulting surgeon to the Jefferson Hospital, the Philadelphia General Hospital, the State Hospital for the Insane, St. Agnes Hospital, and the Jewish Hospital. Doctor Horwitz was unmarried.

JAMES P. TUTTLE, M. D.,

of New York.

Dr. James P. Tuttle died from the effects of prolonged diabetes at his residence, 42 West Fiftieth Street, New York, on January 31st, in his fifty-sixth year. He graduated in medicine at the University of Pennsylvania in 1881 and began practice in New York almost at once. Some years later he became professor of diseases of the rectum as well as surgeon at the New York Polyclinic School and Hospital, and acquired a remarkable reputation for his operations, particularly for the relief and cure of malignant disease. Doctor Tuttle was also surgeon to the New York Home for Aged and Infirm and St. Bartholomew's Clinic, consulting surgeon to the Manhattan State Hospital, and a frequent contributor to the NEW YORK MEDICAL JOURNAL. He is survived by a widow.

Medical Law.

X. THE PHYSICIAN AS WITNESS.

Expert testimony and an expert witness are defined by the Supreme Court of Missouri, in the case of McAnany vs. Henrici, 141 Southwestern Reports 633, as follows:

> Expert testimony is the opinion of a witness possessing peculiar knowledge, wisdom, skill, or information regarding a subject matter under consideration, acquired by study, investigation, observation, practice, or experience, and not likely to be possessed by the ordinary layman or an inexperienced person, and consequently who is incapable of understanding the subject under consideration, without aid of the opinion of some person who possesses such knowledge, wisdom, skill, practice, or experience; and a person who is competent to give expert testimony is denominated as "expert witness."

This definition was formulated and applied in a case involving testimony in no way relating to medical matters, and it was determined by the court that the character of testimony introduced as "expert testimony' did not measure up to this standard, as it related to a matter of a character that the jury was capable of understanding. The definition is, however, intended to include "expert testimony" of whatever character.

XI. PRIVILEGED COMMUNICATIONS.

In the case of Steketee vs. Newkirk, 138 Northwestern Reports 1034, a physician, upon the trial of the case, had been permitted to testify to the general health and mental condition of his deceased patient over the objection that such information was privileged. Mr. Justice Kuhn, of the Supreme Court of Michigan, in reviewing this ruling said:

> He was not examined as to any information gained from Mrs. Newkirk, or as to any communication with her. It does not appear that what he stated on the stand was information which "was necessary to enable him to prescribe for her." This is necessary, in order to bring it within the prohibition of section 10,181, Compiled Laws 1897, which provides: "No person duly authorized to practise physic or surgery shall be allowed to disclose any information which he may have acquired in attending any patient, in his professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." We think the testimony was properly admitted.

This decision is in accord with previous Michigan decisions on the subject, but is at variance with the decisions of a majority of the States. This decision represents a strict construction which regards only such information privileged as is imparted and received solely for the purpose of aiding in the treatment of the particular condition of the patient. A broader interpretation of the statute protects not only verbal communications and statements made for the purpose of enlightening the physician as to the conditions of which he should know, but also includes all information necessarily acquired by him through observation or otherwise which he necessarily acquired in treating the patient. Under this broader interpretation, if a patient in submitting an injured limb for surgical treatment discloses the marks of a hidden disease, the knowledge thus acquired by the doctor is regarded as privileged, not only so far as to the condition he is employed to treat, but as to all other conditions necessarily coming to his notice in rendering the professional services sought. This latter interpretation of the statutes is the one more generally applied by the courts. An interesting discussion of the two doctrines and their application in various cases will be found in Law in its Relation to Physicians, Ed. 1900, p. 497, Ed. 1903, p. 505.

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News Items.

The Edmonton Medical Society, of Edmonton, Alberta, Canada, has established a library and reading room and would be glad to receive medical literature of all kinds. Heber C. Jamieson, M. B., 501 Tegler Block, Edmonton, librarian.

Audubon Medical Society.—At the annual meeting of this society, held in New York on the evening of January 31st, the following officers were elected: Dr. Theodore K. Tuthill, president; Dr. R. Emmett Walsh, first vice-president; Dr. Goodrich T. Smith, second vice-president; Dr. Ten Eyck Elmendorf, treasurer; Dr. Sidney J. Furst, secretary.

Personal.—Dr. Arthur S. Unger, of New York, has been appointed attending radiologist to St. Joseph's Hospital, Far Rockaway, L. I.

Dr. S. R. Klein will give a public lecture on the prevention of tuberculosis, at Public School 87, Borough of Queens, on February 11th, illustrated by stereopticon views, explaining the use of tuberculins, antitoxines, vaccines, etc.

Dr. F. C. Warnshuls, of Grand Rapids, Mich., was recently elected secretary of the Michigan State Medical Society, to succeed Dr. W. H. Haughey, of Battle Creek, and Dr. D. Emmett Welsh, also of Grand Rapids, was elected treasurer.

The Jesup Lectures.—This series of eight lectures is being given in the Lecture Hall of the Museum of Natural History, by Thomas H. Morgan, Ph. D., professor of experimental zoology at Columbia University, his subject being Heredity and Sex. These lectures, which are open to the public, are given on Wednesday evenings at 8:15 o'clock, from February 5th to March 26th. The subject of the first lecture was the Evolution of Sex, and next week's talk will be on the Mechanism of Sex Determination.

Research Work in Diabetes Mellitus.—Dr. William E. Fitch, 355 West 145th Street, New York, is undertaking an exhaustive research into the pathology, etiology, and dietotherapy of diabetes mellitus, and is anxious to hear from every physician in the United States who has a case under treatment, or who has had any experience in the treatment of this malady. Von Noorden says: "The best treatment for the diabetic is the *food* containing the *greatest* amount of *starch* which the patient can bear without harm." If any physician who reads this has similar or contrary experience, and will take the trouble to write Doctor Fitch, the latter would esteem it a special privilege to hear from him if only to the extent of a postal card.

Society of Sanitary and Moral Prophylaxis.—A stated meeting of this society will be held at the New York Academy of Medicine on Thursday evening, February 13th, at 8:30 o'clock. The general topic for discussion will be the Matter and Methods of Sex Education Other than Instruction in Schools. Papers will be read as follows: Sex Instruction to Boys and Men, by Dr. Eugene La F. Swan; Sex Instruction to Young Women, by Miss Nellie W. Smith; Sex Instruction to Children, by Miss Laura B. Garrett; Sex Instruction for Parents, by Mrs. Mabel M. Irwin. A general discussion will follow, among those who will participate being Dr. Ira S. Wile, Dr. Thomas D. Wood, Dr. Rosalie Slaughter Morton, Dr. Mary Sutton Macy, and Miss Harriet D. McDaniel. A full attendance of members and all others who are interested in the subject under discussion is desired.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

December 5, 1912.

Urine Intoxication in Intraperitoneal Rupture of the Bladder.—Oehlecker relates two cases of traumatic and spontaneous intraperitoneal rupture of the bladder, and discusses the various diagnostic points. Particular significance is attached to the cryoscopic examination of the blood, which gives an index to the amount of resorption of the solid contents of the urine from the abdominal cavity, that have found their way into the blood. When a sterile bladder ruptures, the subsequent bedside picture is governed by the uremic components of the blood and not by the infectious components. In the former case the dangerous uremic symptoms disappear promptly after the operative removal of the urine from the free abdominal cavity and the repair of the tear in the bladder. Often the apparently hopeless cases can be saved by operation, and the latter is to be deferred only when the uremic symptoms can be assigned to a cause other than that of the urine in the free abdominal cavity.

Primary Diffuse Sarcoma in the Knee Capsule Simulating Inflammatory Fatty Hyperplasia.—Blumenthal describes a case of primary sarcoma in the kneejoint in a woman, twenty-nine years old, which clinically had marked resemblance to Hoffa's fatty hyperplasia. From a fungus it was differentiated by slight pain and slight functional disturbance. It is now two and a half years after simple capsular extirpation of what proved under microscopical examination to be a large celled sarcoma, and no recurrence has yet taken place.

Thiersch's Transplantation for Defect in the Urethra.—Muller obtained satisfactory results in one case of traumatic and four cases of gonorrheal strictures by extirpation, covering the defect by a Thiersch skin flap, and the formation of a new urethra by suturing the new edges over a thick Nelaton's catheter. In two cases a small fistula was formed; the lasting effects of this method of treating strictures are not discussed.

Adenom in Sexual Irritation.—Frank says that adenom, a new dibromester, has an excellent sedative action in all irritations of the genitourinary tract and has also been found valuable as an anaphrodisiac. The drug is tasteless and odorless, and is administered in three gramme doses one and a half hour before retiring.

Röntgen Therapy in Gynecology.—Wetterer believes that the rapid sterilization of women by intensive illumination with Röntgen rays is hazardous, not only because of the rapid and strong interruption, but also because of the serious direct effects of the rays on the alimentary tract. The symptoms of these are nausea, vomiting, bloody or mucous diarrhea, and colicky pains. The French authors, Regaud, Nogier, and Lacassagne have been able to show experimentally the harmful effects of the Röntgen rays on the intestines of dogs, which consist chiefly in the disappearance of the villi and the glands of Lieberkühn. When the ovaries are to be rayed they should first be accurately located and treated from one definite point.

December 12, 1912.

Treatment of the Fever of Tuberculosis with Hydropyrin Grifa.—W. Nieveling found this preparation, which is a watery solution of lithium salts of acetylsalicylic acid substituted for the sodium salicylate in the Hoedemaker pills, reduced the fever in tuberculous patients gradually within three weeks without harmful side actions. To obtain the desired effects, about 250 pills are necessary, given in doses of from three to four pills three times a day, one to one and a half hour after meals.

Simultaneous Occurrence of Ulcus rotundum and Myoma of Stomach.—K. Ungar reports a case of a woman, forty-nine years old, who for the past fifteen years had periodical attacks of gastric vomiting and pain and for the past five years showed a slowly growing tumor in the gastric region. At operation there was found on the larger curvature of the stomach, near the fundus, a so called outer myoma the size of a hen's egg, which ulcerated superficially on its mucous membrane surface. A corresponding round, funnel shaped ulcer with hard edges was discovered on the small curvature. Excision of both diseased portions brought about recovery. The author is of the opinion that the myoma developed upon a chronic ulcer.

Noviform in Otorrhinology.—Dornheim uses noviform as a substitute for iodoform. It is excellent in every respect, odorless, deodorizing, styptic, desiccating, and antisialogogue. It has not the slightest irritating or caustic action.

December 19, 1912.

Late Empyema of Mastoid.—C. Luders describes four cases in young adults in whom developed late empyemata of the mastoid process after infection of the middle ear. He urges, therefore, that every postoperative case of middle ear disease be kept under the physician's control for a long time after operation, and warns these patients to seek the doctor's advice whenever pain is experienced in or behind the ear.

Absorption of Sodium Salicylate in Different Methods of Application.—E. Levin, comparing the graphic curves of his experiments, found that the rapidity of absorption of sodium salicylate when given subcutaneously is about the same as in other methods of administration, but its maximum concentration in the blood does not attain to one half of that when it is given intramuscularly. Sodium salicylate disappears most rapidly from the blood when given subcutaneously; in ten hours there are no traces of it left in the blood, while if given *per os*, tests show it to be present in the blood after twenty-two hours.

Intramuscular Use of Fulmargin.—Engelen says that fulmargin, a colloidal silver obtained by the electric dissociation, has the following advantages over the chemically prepared colloidal silver preparations: It is absolutely pure, harmless, may be kept for a long time, and can be given intramuscularly. Its increased catalytic action, due to the greater degree of dispension, brings about a stronger destructive process of oxidation of the bacterial toxines.

Uzara, a New Antidiarrhea Remedy.—A. Eisenheimer administers uzara in case of simple intestinal catarrh, infectious diseases, such as typhoid and dysentery and in toxic intestinal disturbances. The new drug is a stimulant of the inhibitory fibres of the splanchnic nerves. It increases the tonus of the vessels similarly to digitalis. It is given chiefly in two per cent. solution as liquor uzara, every two hours, from twenty to thirty drops, or two tablets every hour. Children receive suppositories every three or four hours.

December 26, 1912.

Arsenic Idiosyncrasy.—C. Staeubli reports the case of two patients in whom the subcutaneous injection of 0.05 sodium cacodylate produced large inflammatory swellings, marked rise of temperature, general feeling of discomfort, headaches, diffuse pains in extremities, loss of appetite, and in one case dyspnea.

Diagnostic Significance of Döhle's Leucocytic Enclosures.—A. Belàk is of the opinion that the leucocytic enclosures described by Dohle in scarlet fever cases cannot be considered as pathognomonic, since they are found in many other conditions. Their absence is of diagnostic significance because they are found in the early stages of all scarlet fevers; a negative result therefore excludes scarlet fever, and the early diagnosis of the disease may be made by their presence.

Melubrin in Acute Articular Rheumatism.—Saar says that this new antirrheumatic acts promptly upon the joint swellings, pain, and fever in acute cases of articular rheumatism in the majority of cases. It has no appreciable influence on the heart or kidneys and does not affect the stomach. Cases of acute articular rheumatism and rheumatic skin conditions refractory to the salicylates are greatly aided by this preparation.

ZENTRALBLATT FÜR CHIRURGIE.

January 11, 1913.

Pyelotomy with Incision through the Anterior Wall of the Pelvis of the Kidney.—Von Illyes finds that the anterior wall of the pelvis of the kidney can be approached much more easily than the posterior, that after a suitable dissection the incision can be made more readily in it, and that the wound can be sutured with less trouble after the calculus has been removed. He finds it unnecessary to dissect out the entire kidney to do this, but only to free its lower part and the upper part of the ureter, so as to lay bare the pelvis and the bloodvessels over it. Then, while one assistant draws the abdominal wall forward and a second presses the lower end of the kidney outward, the anterior wall of the pelvis of the kidney is easily reached. He performs posterior pyelotomy only when the entire pelvis is small and is covered with bloodvessels.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

December 14, 1912.

Puerperal Bacteriemia Due to Colon Bacillus.—Köhler reports two such cases, one resulting fatally. As a rule the prognosis is more favorable than in a streptococcic infection. The lengthy duration is also characteristic, as the bacteriemia lasted a couple of months in both cases.

December 21, 1912.

The Possibility of Pregnancy after the Classical Cæsarean Section.—Von Hoeven calls attention to the fact that the majority of women become sterile after the usual abdominal Cæsarean section. This is probably due to the formation of adhesions between the uterus and the surrounding structures, also between the tubes and the ovaries, the former becoming enveloped. For these reasons the author suggests that, possibly in the future, the transperitoneal cervical Cæsarean section may supplant the older method.

December 28, 1912.

Pituitrin in Labor.—Gussew reports in general his results obtained in forty-six cases. The solution used came in one c. c. ampoules containing 0.2 c. c. of the twenty per cent. extract of the posterior lobe of the hypophysis. The amount injected was 0.75 c. c. except in three cases when one c. c. was used; the smaller amount seemed to work more satisfactorily. The labor pains began some ten minutes after the injection. The author believes that pituitrin is a very valuable and reliable agent particularly during the act of labor and afterward. Chloroform narcosis, however, and the subcutaneous injection of morphine will interfere with the action of the drug.

ZENTRALBLATT FÜR INNERE MEDIZIN.

January 4, 1913.

Diastase Content of Feces in Fermentative Dyspepsia.—J. Arnold studied this question in six patients and found a diminution in the diastase content only in one instance. He believes it unwarranted to assume, with Strassburger, that diminished diastase production is the cause of fermentative dyspepsia. The results would tend rather to confirm the findings of Lohrisch, which indicated that the primary disturbance in these cases is a partial loss in the power of the intestine to digest the cellulose covering of the starches. Little promise of benefit from the administration of plant diastase in these patients is afforded; dietetic measures constitute, as heretofore, the most important part of the treatment.

BEITRÄGE FÜR AUGENHEILKUNDE.

December, 1912.

Examination of the Eye with the Nernst Light.—Jean Staehl states that by oblique illumination with the Nernst light, the observer using at the same time a binocular loupe, extremely minute lesions on the cornea and iris can be recognized, which would escape observation if the examination were made in the ordinary way. One point of interest is that during the four and a half years that he has been using the Nernst light he has been able to find traces of the fetal pupillary membrane very much more often than formerly; he says that they seem to be present in more than sixty per cent. of the cases he has examined.

LYON MÉDICAL

January 5, 1913.

Typhoid Fever Prophylaxis.—H. Rondet is convinced, from prolonged epidemiological studies in rural districts, that the importance of bacillus "carriers" as a factor in the transmission of typhoid fever must constantly increase at the expense of that of transmission by water. Soon no cases except those occurring in widespread epidemics will be attributed to water transmission. The author lays stress on washing the hands after defecation as a prophylactic measure and recommends that the importance of this precaution be thoroughly impressed upon school children, hotel employees, and dairymen.

PRESSE MÉDICALE.

January 4, 1913.

Treatment of Ozena.—G. Mahu, discussing this subject at length, states his belief that paraffin injections do not yield benefit merely by diminishing the excessive air space in the nasal cavities, but by compressing the glands of the mucosa and thus preventing them from secreting the purulent and fetid fluid generally formed. Far from being an illogical combination, paraffin injections and forced aeration or respiratory reeducation are complementary measures, which when instituted simultaneously, give very encouraging results. After describing the technic of nasal lavage, which is to be followed by spraying with an antiseptic solution or lactic ferments, Mahu considers the subject of paraffin injections. These should be practised in all cases but those in which atrophy of the mucosa has reached its last stages, but should be limited to the inferior turbinates and the floor of the nasal cavities, as injections into the septum have been the cause of various unpleasant results. Any sinusitis or general infection present must be overcome before paraffin injections are undertaken. The chief points emphasized in the technic of the injections are: 1. One should avoid injecting into the head of the inferior turbinate at first, but begin farther back; 2, the injection should be controlled by visual observation of the mucosa, and stopped when the latter is seen to grow pale at any point; 3, the amounts injected should not exceed 0.5 c. c. and frequent treatments be given; and, 4, the paraffin used should be friable and the instrument heated before its introduction. Massage of the mucosæ with dry compressed air and respiratory exercises carried out by the patient himself, with the nostrils partially occluded by Foy's clamp, greatly improve the circulation in the diseased membranes, promote elimination of the stagnating secretions, and ameliorate the patient's general condition.

January 8, 1913.

Colloidal Silver in Pediatric Practice.—A. Netter states that he employs this agent with good results in all varieties of infection. In lobar and bronchopneumonia a fifteen per cent. ointment is efficacious, provided the skin at the seat of application is previously well rubbed with a brush. In the second condition mentioned subcutaneous injections of a relatively dilute preparation, e. g., 0.25 per cent. collargol, are often administered, while in the serious cases one, two, or even five per cent. preparations are given intravenously. Pneumonia could sometimes be arrested on the third day by this measure; in infectious or rheumatic endocarditis, in pyemia, and in grave diphtheria excellent results were also abtained. In infectious conditions with intestinal localization, the silver is given either by mouth, with coffee syrup or a flavored elixir, in daily doses of 0.2 to 0.4 gramme, or in enemas, from 0.4 to one gramme. Dysentery and paratyphoid fever sometimes yield rapidly to the enemas, while in typhoid the duration of the fever seems to be shortened. In children with repeated febrile movements due to inflamed adenoids the instillation into the nostrils of a one per cent. collargol solution frequently removed the trouble permanently, while in erysipelas occurring in infants an ointment of colloidal silver brought about recovery in a rather large proportion of cases. In tuberculosis with fever the agent, used by mouth or inunction, appeared to lower the temperature and diminish expectoration.

REVUE DE CHIRURGIE

December, 1912.

Primary Cholecystectomy in Acute Calculous Cholecystitis.—R. Leriche and G. Cotte urge immediate operative intervention wherever cholecystitis is initiated with high fever, chills, or signs of diffuse peritoneal irritation, as well as in cases where the symptoms, though milder, are progressive and the general condition does not soon improve. As to the nature of the intervention, they maintain the superiority of cholecystectomy over simple drainage, on the ground that there sometimes occur after the latter secondary perforation and peritonitis, suppuration in the liver or kidneys, death from more or less clearly marked secondary septichemia, or finally chronic gallbladder disease. Cholecystectomy is easily performed, not dangerous, and insures a good ultimate result just as early appendectomy does in appendicitis. Cholecystostomy is indicated where the general condition is too grave to permit of the radical procedure, or where the operative difficulties are too great, e. g., where the liver cannot be delivered through the wound or in the presence of pericholecystitis. By combining various statistics it is seen that among thirty-nine patients with acute cholecystitis alone, subjected to primary cholecystectomy from 1907 to 1910, only one died. Of fourteen patients with angiocholitis in addition, eleven recovered after cholecystectomy with drainage of the duct, while three out of four succumbed after cholecystostomy. Six cases operated in by the authors, including one with perforation, all ended in recovery after cholecystectomy.

Perihepatitis with Passage of Bile into Peritoneal Cavity in the Absence of Perforation of the Biliary Tract.—Sven Johansson reports the case of a woman, aged seventy-six years, with symptoms suggesting appendicitis, in whom upon opening the abdomen, the entire right side of the peritoneal cavity was found strongly stained with a fluid of the color of bile. No trace of a perforation in the gallbladder or ducts could be discovered, and this was confirmed by histological examination of the entire extract—the gallbladder after its removal by cholecystectomy and the ducts after patient's death six days later. The local findings were limited to a catarrhal cholecystitis with hemorrhages in the mucosa, together with acute inflammatory changes in the subserous tissues and marked enlargement of the lymphatic glands. The author gives the histories of four similar cases previously reported by other observers, and discusses the cause of the exudation of bile through the gallbladder wall, without reaching any definite conclusion.

Rôle of Veins in Collateral Arterial Circulation.—E. Ney presents clinical and experimental evidence emphasizing the importance of ascertaining and, if necessary, artificially modifying, the condition of the venous circulation when large arteries are ligated. If the venous channels are normal, the low blood pressure occurring in the arterial collateral vessels as a result of the ligation of a large artery may not be sufficient to overcome the suction exerted in the veins, with the result that in a limb, for example, the distal parts will receive little or no blood and become gangrenous even though the collateral arteries be enough developed to supply them adequately. Such a condition is easily remedied by ligating the vein or veins corresponding to the artery occluded. The pressure in the collateral arterial circulation is thereby increased and the distal parts supplied with enough blood to tide them over the early critical period. The indications for ligating the vein may be ascertained during the operation of arterial ligation itself. If, the extremity being pale and apparently lifeless, compression of the venous trunk causes at once a return of the normal color, its ligation may be considered indicated.

REVUE MEDICALE DE LA SUISSE ROMANDE.

December, 1912.

Treatment of Osteoarticular Tuberculous Cavities by Mosetig's Method.—Machard reports eighteen cases in which the cavities were filled with the Mosetig-Moorhof iodoform mixture. There were seventeen recoveries and the remaining case was improved. Primary union without elimination of the wax was obtained in five instances. The procedure will not replace conservative treatment, but should be employed where the latter has failed and may be of great service also where the patient's general condition or social situation demands rapid results. In certain cases of bone tuberculosis, growing worse without apparent reason, notwithstanding careful, persistent treatment, the method may likewise be useful. Residual suppurative processes may sometimes be attenuated or even overcome by it. Patients treated with the bone filling recover more rapidly than others, and sometimes exhibit a distinct improvement in their general condition. Resections need not be so radical when combined with Mosetig filling as without, and the sequelæ are better.

Spontaneous Complete Pneumothorax Tolerated for Fifteen Months.—R. Burnand reports a case of tuberculosis in which, because of dyspnea occasioned by an extensive serofibrinous exudate, occupying what had previously been a pneumothorax, three punctures were made, with removal of 500, 300, and 950 c. c. of fluid, respectively. Endothoracic conditions were thereby altered more than had been intended, rapid and almost complete resorption of the exudate taking place, with the result that irregular fever returned and the tuberculous process progressed. After subsequent temporary improvement the other (right) lung became involved and death took place. At autopsy the left lung was found reduced to a largely fibrous mass of the size of a hand. The functionally useful portion of the right lung, as auscultation had itself shown for two months before death, was limited to one-half of its inferior lobe, whence the author concludes that in the practice of artificial pneumothorax, too much stress need not be laid on the presence of a few quiescent lesions on the side opposite that compressed. The heart did not show any marked signs of insufficiency in the last weeks of life; this the author attributes to the fact that for a year injections of ten per cent. camphorated oil had been given almost daily and small doses of digitalis periodically.

LANCET

January 18, 1913.

Etiology of Endemic Goitre (*Lecture I*).—Robert McCarrison reviews the facts of distribution and prevalence of this disease, showing that it is found in all countries, regardless of geographical conformation or climatic conditions, where man tills the soil, and that it is by far most prevalent in the deep and narrow valleys among the mountain ranges of temperate or subtropical zones. All races suffer, there is a hereditary disposition, and the disease is much more common among those who handle the soil. The endemic prevails with different degrees of intensity in different countries and in different parts of the same country, or even of the same region. The disease has made its appearance in many regions in which it was previously unknown, and McCarrison describes the invasion of a village with the endemic. In general it is the young who are the most involved, particularly in regions in which the disease is relatively new. The disease may completely disappear from a region. The disease is at its height during and after the rainy season, it is known to occur in epidemic form, it is of slow development, requiring at least a month's exposure for its acquirement, and disappears if the patient leaves the infected region after a few months' residence. In some of the infected areas domestic animals are found suffering with the disease, and the relative rarity of such a finding has been shown to be due to a natural resistance to the disease on the part of these animals. There is a great mass of evidence, all of which combines to afford almost conclusive proof that certain waters contain some substance which is capable of causing the disease. This latter evidence is supported by animal experimentation.

Treatment of Pelvic Inflammation by Autoinoculation.—Harold Chapple induces local hyperemia of the pelvic region by means of a cradle of incandescent lamps, and finds that to complete the induction of congestion it is necessary to have the vaginal canal dilated and exposed to heat and light during the operation. The result of such local hyperemia is the same here as in any inflammatory process, that is, it induces a local reaction with the liberation of an excess of toxines into the blood and the stimulation of a secondary response with the development of immune substances. The dose should be carefully regulated by the extent of the reaction to the treatment, and should be so spaced as to avoid the development of the negative phase to too great an extent. The method is not alone applicable to those cases in which there is active bacterial infection, but is of value also in those in which the bacterial infection has died out, leaving a sterile collection of pus. In such cases the local hyperemia serves to hasten and render more complete the process of absorption.

Tetanus Successfully Treated by Intravenous Injections of Paraldehyde and Copious Injections of Normal Saline.—Oliver Atkey used repeated injections of from five to fifteen or more c. c. each of paraldehyde and ether by intravenous injection to control the tendency to spasm and convulsions. With each such infusion he also gave large amounts of saline solution by vein to hasten the elimination of the tetanus toxine. As intimated in the title, the patient made a good recovery under these measures. He found the action of the paraldehyde in bringing about muscular relaxation to be prompt in onset and lasting in point of time.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

January 25, 1913.

Relief of Pain Due to Metastases Pressing on Nerve Plexuses by Section of the Opposite Anterolateral Column of the Spinal Cord, above Entrance of Involved Nerves.—Edwin Beer concludes by observing that, surgically considered, the operation of section of the anterolateral column without doing serious damage to the rest of the spinal cord is not only feasible but easy. From a therapeutic standpoint the almost complete relief from pain following this surgical procedure met the indications present in the case reported, and will give relief to other sufferers similarly affected. Considered physiologically section (complete?) of the anterolateral column produces loss of pain sense on the opposite side of the body, a disturbance in the thermal sense (suggesting that the fibres for heat and cold are dissociated in the cord), and slight disturbance of deep pressure sense and slightest disturbance in touch sense (both being impaired without producing any disturbance of the sense of position).

Possible Factor in the Causation of Pellagra.—Allan H. Jennings and W. V. King conclude that if pellagra is caused by an infection, especially of protozoal origin, and is transmitted by an insect, the conditions existing in the region of pellagrous endemicity in South Carolina, the lice, fleas, mosquitoes, and bedbugs must be excluded from serious consideration. The gnat (*simulium*) is also excluded. The biting stable fly, *Stomoxys calcitrans*, however, is under strong suspicion. If the causative organism is a bacterium, invading the body through the mouth or skin, the house or typhoid fly (*Musca domestica*) and those whose habits resemble it would lie under strong suspicion.

Clinical Data on Malignant Renal Tumors.—W. F. Braasch emphasizes the importance of immediately finding out the source of every hematuria, for it is, particularly when sufficiently marked as to color the urine, always to be looked upon as an indication of some grave condition in the urinary tract. The writer would regard every case of hematuria as a result of a malignant process unless some other condition could be definitely proved. Renal tumor may grow insidiously or lie dormant over a period of years; if hematuria, tumor, or pain indicates its existence, surgical relief should at once be given.

MEDICAL RECORD.

January 25, 1913.

Action of Lactic Acid Bacilli on the Percentage of Glucose in the Urine in Diabetics.—Philip Horowitz observes that in cases of diabetes that have come to autopsy there is a general agreement that changes are found in the pancreas, especially in the islands of Langerhans, and that these changes are probably to be found in all cases of diabetes, with perhaps irritation and changes in the suprarenals, thyroid, nervous system, and hypophysis; nevertheless, these changes are also the result of an autointoxication. In cases unaccompanied by indicanuria and autointoxication definite causative factors producing the glycosuria are present as in thyroidectomy, ether narcosis with a probable parenchymatous degeneration of the liver, etc. In the larger number of cases there is a close relation between the indican output and that of the sugar. Correction and cure of the autointoxication removes the irritating influences on the sugar regulating apparatus. *Bacillus bulgaricus* overcomes autointoxication by destroying putrefaction, and changes the reaction of the intestinal tract from alkaline to acid. As a sequence to the inhibited or slower carbohydrate digestion in the presence of this lactic acid, the time of carbohydrate digestion is lengthened, and only small amounts of sugar are formed and absorbed; so that we gradually, in this way, increase the tolerance for carbohydrates until a normal tolerance appears.

Influence of Sodium Chloride on Hydrochloric Acid Secretion by the Stomach.—A. L. Benedict has almost invariably found that on a diet as nearly salt free as possible without special preparation of foods before they reach the cook, hyperchlorhydria lessens. It is not sufficient, however, merely to forbid the use of salt at the table, but it must not be used in the preparation of the patient's food, and salty meats, salt butter, etc., must be excluded. Hyperchlorhydrin abated in this manner returns if an ordinary salt rich diet is resumed. In some cases a superexcitability of the oxyntic cells exists so that they produce an excess of hydrochloric acid with the comparatively small amounts present in the body and assimilated, or rather appropriated, from ordinary foods. Although generally representing a mere functional tendency, hyperchlorhydria is usually caused by a definite disease, probably a numerical hyperplasia of oxyntic cells. We can absolutely control the functional tendency by diet and other means and treat recurrences as satisfactorily as in most diseases. Although normal acidity is brought about, the patient is no more free from the underlying disease than a diabetic is free from diabetes because the urine is sugar free under diet. Concerning hypochlorhydria, it has been shown that ingesta containing an excess of salt tend directly to diminish gastric secretion. We cannot, therefore, expect to benefit hypochlorhydria directly and immediately by giving salt. In many cases there is a definite atrophy of the gastric tubules; in others a failure of glandular functional activity or a failure of innervation. In occasional cases of hypochlorhydria, however, it is found that the moderate, rational increase of salt, combined with other appropriate dietetic and hygienic measures, will facilitate the reestablishment of an adequate acid secretion.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

December, 1912.

Effects of Medicinal Doses of Aconite upon the Pulse Rate.—R. D. Rudolph and C. E. C. Cole have found by experiment that small doses of aconite have no apparent effect upon the pulse rate, even when the drug is active. If dangerous effects have followed small medicinal doses of aconite, as has been occasionally reported, they have been due either to some mistake in the dispensing or administration of the drug, so that the patient has received far more than was intended, or an idiosyncrasy must have existed so that toxic effects followed a dose, which ordinarily has no effect. The writers observe that the present pharmacopeias contain many substances which might well be left out, and they believe that aconite, certainly in the doses recommended, is one of them. They allow, however, that aconite when given in massive doses is extremely powerful and may be of great value where it is desired to slow the pulse or obtain some of its other effects.

Lupus erythematosus and Raynaud's Disease.—M. B. Hartzell concludes that the nature of the relationship between these two maladies is largely a matter of conjecture, as our knowledge about their pathogenesis is too limited to explain their occasional coexistence. He advances the theory that both at times are due to a common cause, most probably some toxine circulating in the blood, which acts primarily upon the vessel walls, producing vasomotor and inflammatory changes in the skin and subcutaneous tissues. He is inclined to the opinion that erythematous lupus should be considered a toxic erythema.

Some Features of the Gross Anatomy of the Spinal Cord and Nerve Roots, and Their Bearing on the Symptomatology and Surgical Treatment of Spinal Disease.—Charles A. Elsberg recommends the following method for the exposure and division of posterior roots to the lower extremities: Remove the spinous processes and laminæ of the eleventh and twelfth dorsal vertebræ (and of the first lumbar if necessary) in the usual manner, expose the "fork" of the dentate ligament and identify the first lumbar posterior root, carefully elevate all of the posterior roots of the side to be operated on (which lie dorsal to the lateral fibrous band on the side of the lumbosacral cord) upon a bent probe passed underneath them, identify and isolate the desired posterior roots by counting from the first lumbar root, and divide the roots in the usual manner.

Complement Fixation Test in the Diagnosis of Gonococcus Infections of the Genitourinary Tract in Male and Female.—Hans J. Schwartz and Archibald McNeil conclude that a positive reaction denotes the presence or recent activity in the body of a focus of living gonococci. A negative reaction does not exclude gonococcus infection, but should be accorded considerable importance. A strong positive reaction may not be looked for earlier than the fourth week, and then only in very acute cases with some complication. If the disease is limited to the anterior urethra a positive reaction is not obtained. A positive reaction does not entirely disappear until seven or eight weeks after cure, and if then present the patient still harbors gonococci. Isolation of the gonococcus in culture is the only absolute, bacteriological proof of gonococcus infection. The technic of the latter is more difficult than that of the complement fixation test. A positive reaction is obtained in 31.4 per cent. of cases regarded clinically as postgonorrheal. In sixty-two cases of chronic prostatitis with history of gonococcus infection within three years, a positive reaction was obtained in 54.8 per cent. In 165 cases considered clinically cured for at least three months, 13.2 per cent. gave positive reaction. In women, unless there is some involvement of the cervix, positive reaction is not probable. Finally, the complement fixation test should be especially useful in gynecological diagnosis on account of the unreliability of the bacteriological diagnosis of gonococcus infection in women.

Indicanuria.—William G. Morgan remarks that the presence of excessive amounts of indican in the urine is a very frequent occurrence. Indican (indoxyl sulphate of potassium) is nontoxic, but the indol from which it is formed is slightly toxic and may produce frontal headache, mental irritability, insomnia, etc. It is possible that excessive indol absorption from the intestine over a considerable length of time may, by stimulating the adrenals to increased secretion, be a factor in producing arteriosclerosis and chronic nephritis. The writer uses the indican test because he believes that in most cases the products of bacterial decomposition, or digestion, of proteids in the intestines (indol, skatol, phenol, cresols, and toxalbumins) develop and are absorbed. As we have no means of determining the quantity of the more poisonous toxalbumins, we must estimate their amount by the degree of putrefaction, as measured by the amount of indican excreted in the urine. The writer uses the ordinary test. While all cases of intestinal putrefaction do not result in indicanuria, the writer believes that excessive indican in the urine always indicates abnormal functioning and that the causes should be found and removed.

AMERICAN MEDICINE.

December, 1912.

Disease as a Factor in the Evolution of the Human Family.—Lawrence Irwell divides diseases into two classes, those which medical science is able to deal with successfully, and those which prove fatal in spite of medical skill. The latter class maintains the nation's strength. The danger of degeneration appears when any disease of this class must be added to the former class, as national efficiency depends upon the survival of those best adapted to the environment. The cause of the danger lies not so much in the disease, as in the advance of scientific knowledge which frees the individual from the necessity of fighting the ills of life himself. Some congenital defects that formerly aided in the elimination of the unfit are becoming less potent as they are compelled to work without the assistance of disease producing microbes, since microbes are being rendered innocuous by the use of scientific methods and partly because the race is slowly rising superior to them. Since under these conditions greater defect (wider deviation from the normal) will be possible without reaching the fatal limit, a lower standard of health, especially of physique, will survive and procreate offspring inheriting their abnormalities, and there will be a general lowering of the physical strength of the people generally. There are, however, certain organs which in civilized man must be sound, although not necessarily so efficient as in his barbarian ancestors. On the soundness of the heart, liver, muscles, nerves, and intestines the general vigor of the individual depends, and these qualities, which are essential to general efficiency will die harder than those (soundness of teeth, keenness of sight) which in their perfection have become luxuries.

The Sluder Operation for the Removal of the Tonsils.—Charles J. Imperatori observes that when the faucial tonsil is removed either for hypertrophy or disease, it is essential that the removal be completed by enucleation. While advocating Sluder's operation, he observes that considerable practice is required before enucleation by this method can be successfully accomplished in every case, the difficulty usually being the removal of the right tonsil by right handed operators. When mastered the operation is a brilliant one, and the thorough enucleation of the gland, the shorter time and smaller number of instruments required, and most important the lessened trauma should make it the operation of choice, especially in children.

Intussusception in Infants; a Plea for Early Diagnosis and Operation.—L. Miller Kahn observes that this disease is a common affection in infants which has been marked by a high mortality. If unrecognized and untreated intussusception is almost uniformly fatal. The treatment of invagination of the bowel has now reached a high degree of efficiency. The operation in the early cases is extremely simple. A median abdominal incision, with the umbilicus as the middle point, is made. The mass is brought out, and beginning at the end nearest the rectum (aboral) is gently squeezed and "milked" toward the cecum and as the last portion is delivered gentle traction may be made on the invaginated portion, with great care. If reduction is impossible, an artificial anus is established or a resection done. The treatment of intussusception in infants is laparotomy. Delay in treatment is fatal in direct ratio to the delay. Palliative measures must not be considered. A good prognosis can be given with an early diagnosis and prompt operation.

The Exanthemata.—Wallace C. Abbott explains the action of arsenical compounds given by him during the acute febrile stage of the exanthemata, by saying that they tend to induce fatty degeneration of the newly formed and imperfectly organized products of morbid processes more effectively than the more resistant normal cells, favoring the speedy disintegration and absorption of the débris of disease, and affording, *pari passu,* a protective influence to the red blood cells that they may better resist the invading microorganisms. Sodium arsenate is given before meals if the stomach is weak; copper arsenite, if fermentation or gastrointestinal mycosis is present; quinine arsenate during the fever stage; caffeine arsenate, if we need a diuretic and cardiac tonic; iron arsenate, in convalescence. The standard vital incitant is strychnine arsenate.

ARCHIVES OF INTERNAL MEDICINE.

December, 1912.

Peptid Splitting Agent in Saliva.—F. Smithies reports investigations conducted upon 334 individuals to determine the nature of the proteolytic substance recently discovered by Warfield in human saliva. He concludes that while the agent in question has certain characteristics of an enzyme, it would seem that a not inconsiderable factor in the proteolytic effect is the action of oral microorganisms, or products of their growth.

Thrombophlebitis in Typhoid Fever.—L. A. Conner maintains that thrombophlebitis is a much more frequent complication of typhoid fever than is commonly supposed, and probably occurs in from ten to fifteen per cent. of all cases. It develops gradually, its course is often latent for many days, and its classical symptoms usually appear only late in the disease. The thrombotic process is apt to be much more widespread than the pronounced local symptoms would suggest. Most of the pulmonary and pleural complications appearing late in typhoid are due to embolism of branches of the pulmonary artery. Such emboli are usually small, seem to arise chiefly from fresh, friable thrombi in veins which are not yet occluded, and give rise to symptoms that are often mild and transient. The obscure, late, recurring chills of typhoid are regularly associated with venous thrombosis, although the latter is frequently latent at the time. The symptom of tender toes can be shown to be associated with thrombophlebitis in a majority of the cases; it may be due to a periphlebitis, which sets up irritation or inflammation of the plantar nerves. Many of the unaccountable rises of temperature seen during convalescence from typhoid and most of the protracted and irregular types of posttyphoid fever are due to thrombophlebitis. The author's study is based upon eighty-two cases.

Peptolytic Power of Gastric Juice and Saliva, with Special Reference to Diagnosis of Cancer.—J. L. Jacque and R. T. Woodyatt affirm as a result of their investigations relating to the Neubauer and Fischer glycyltryptophan test for cancer that saliva free from bacteria does not split either Witte peptone or glycyltryptophan. Similarly, normal gastric juice free from blood, bile, and bacteria, and that from cases of benign subacidity, has no peptolytic power. In about eighty-eight per cent. of developed cases of gastric carcinoma, on the other hand, the stomach contents show a peptolytic power two to ten times the maximum seen in benign conditions in general. Witte peptone may be advantageously substituted for "ferment diagnosticum" in the Neubauer and Fischer qualitative test, with results in malignant cases as good as any published for glycyltryptophan itself. In nonmalignant cases the test was positive but once in seventy-six normal and subacid cases.

Relation of Uricolysis to Suboxidation.—F. G. Goodridge and N. B. Foster showed that retardation of the processes of oxidation, either by deprivation of oxygen (carbon monoxide poisoning in human being) or by interference with cellular functions (potassium cyanide in dogs) is not followed by increased uric acid excretion. It appears improbable, therefore, that uric acid destruction in the body is a simple oxidizing process.

Erythremia, or Polycythemia, with Chronic Cyanosis and Splenomegaly.—W. S. Lucas points out that Vaquez's disease is by no means as uncommon as was at first supposed. He has collected reports on 179 cases of so called polycythemia, of which 149 appeared to be instances of true erythremia, the remainder being open to doubt as to their true classification. The condition must be differentiated from the relative increase in the red cell count accompanying acute diarrhea, dysentery, etc., in which the volume of the blood is decreased, as well as from erythrocytosis, or secondary absolute polycythemia, typically seen in congenital heart disease, particularly pulmonary stenosis, in chronic heart and lung diseases, and in certain individuals residing at great altitudes. The special characteristics of the polycythemia in Vaquez's disease are that it is marked, persistent, absolute, and of unknown origin.

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Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PEDIATRICS.

Stated Meeting, December 12, 1912.

Dr. William Shannon in the Chair.

The Double Function of Fats and Carbohydrates.—This paper, by Dr. Henry Dwight Chapin, appears on page 269.

Dr. Graham Lusk recalled that the nutrition of the body depended upon furnishing food for maintenance, repair, and growth. All these factors appeared in the infant. The baby at the breast took food containing calories sufficient for his maintenance and about fifteen per cent. in addition, which latter he added to his body for growth. His own instinct led him to take nourishment sufficient to accomplish this result. If he failed to take this additional fifteen per cent. of fuel value, he would receive only a maintenance ration and would not have material for his growth. This instinct as regards taking a sufficient quantity of food, belonged to the race. In the extended experiments performed under the auspices of the Remsen board, it was astonishing to find how the quantity of bread taken by each individual daily, was practically constant, not varying more than twenty grammes for the individual. Here, as in infancy, instinct furnished the guide for nutrition.

If, however, the baby was not nourished in this natural fashion, and the food was administered to him without scientific reasoning, it was a matter of luck whether he got sufficient support for his organism to cause him properly to grow. The foods which were administered to him were protein, fat, and carbohydrates. Protein was made up of a great many structural units called aminoacids. These aminoacids were in number as many as the letters of the alphabet, and their possible arrangements as manifold as there were words in the dictionary. The protein was broken in the intestinal tract into these several aminoacids and entered the blood in the form of aminoacids. These various aminoacids served to build up the varying portions of the machinery of the cells. Protein characteristic of the cytoplasm, proteins characteristic of the granules and of the nuclei of cells were laid down within the several organs of the body from these aminoacids, and these protein molecules became active portions of the machinery of cell life.

Even in babyhood, there was a wear and tear upon the protein constituents of the cells as was manifested by the waste of nitrogen in the urine of the infant when protein starvation occurred. It was therefore necessary to administer in the food, protein sufficient to repair the wear and tear quota which had been destroyed, and in addition to that to give enough to furnish new protein building stones for the constructive growth which was inherent in the protoplasm of the young of all species. Beside protein, however, material must be furnished to supply energy for the maintenance of the movements of life. This material was given in the form of carbohydrate or of fat. In experiments which were performed in Doctor Lusk's laboratory, young pigs were brought up on skimmed cow's milk to which was added three per cent. of sugar; the pigs grew normally upon this diet despite the fact that ordinary sow's milk contained eleven per cent. of fat and but little carbohydrate. There was no question that carbohydrate might supplant fat in the nutrition of children if that were deemed necessary. Fat, on the contrary, could not supplant carbohydrate entirely because under circumstances of an exclusive fat protein dietary acidosis appeared.

It was necessary to consider the calorific requirement of the infant when a proper dietary was made. This should contain during the first three months ninety calories, and during the period immediately following at least eighty calories to each kilogramme of body substance. In experiments which Dr. John Howland performed in his laboratory, they had seen an infant eliminate fifteen calories an hour, hour after hour, after taking a usual milk mixture. Food itself in ordinary quantities might somewhat increase metabolism. The addition of protein so that the protein content of the milk was doubled caused an increase in the heat production of the child from fifteen calories an hour to nineteen calories an hour. This increase of heat production was due to the specific dynamic action of protein. The speaker had recently shown that this was caused by the stimulation of the protoplasm through the action of certain aminoacids.

It had been stated that the heat value of foods was largely lost through the work expended in the digestion of the food. However, one should remember that the breaking down of protein into aminoacids, or of fat into fatty acid and glycerin in the intestine, was not accompanied by the evolution of heat. Furthermore, if agar agar was given, as had been shown by Benedict, there was no increase in metabolism, notwithstanding a great activity on the part of the intestinal tract. Again, Benedict had shown that cathartics which strongly stimulated the intestinal tract had no effect at all upon the heat production in the organism. So the *Darmarbeit* of Zuntz as a causative factor of the increased metabolism after food ingestion must be abandoned.

In Doctor Hoobler's chart two points might be brought out. In the first place, the addition of protein to the body not only depended upon the formula representing the composition of the milk ingested, but also upon the protein content of the organism. A large quantity of protein would be absorbed by cells whose protein supply had been depleted, whereas with the same diet a much smaller quantity of protein or perhaps none at all would be deposited by an organism whose protein content had reached a condition of optimum saturation. In the second place, Doctor Hoobler had stated that in one of the children there was marked protein retention during a period of undernutrition and this was accompanied by a gain in weight. This was not surprising because protein was added to the body for the upbuilding of cell tissue, and when this took place there was a deposition of 0.8 calorie for each gramme in such added tissue, whereas when fat was withdrawn from the tissues, there was a removal of 9.3 calories for each gramme of fat oxidized. Doctor Hoobler's results could easily be obtained if muscle tissue were added to the body, even though tissue fat was being used at the same time for the maintenance of the energy requirement of the organism.

Doctor Chapin had spoken with regard to the importance of metabolic water. He had estimated that if a man of seventy kilogrammes net weight should produce a hundred calories of heat an hour, and this hundred calories of heat were derived exclusively from carbohydrate, then in the oxidation of this carbohydrate 0.24 gramme of water would be produced each minute. That would mean the production of three milligrammes of water for each kilogramme of body weight or three parts of water for each million parts of body weight. Since the whole volume of blood (fifty c. c. for each kilogramme) circulated at least once per minute bearing perhaps water and foods from the intestine, it hardly seemed possible that metabolic water amounting to three milligrammes for each kilogramme could in any way be influential in the exchange of food between the blood and the tissues. It seemed as though the osmotic pressure of the food stuffs within the blood would be the determining factor in their passage from the blood stream to the cell.

Dr. **Samuel S. Adams**, of Washington, D. C., thought Doctor Wilcox was certainly to be congratulated on his pronounced success with protein milk, and particularly on the number of his patients. While 261 cases in a population of millions would not perhaps impress the general public as convincing, the results obtained in these cases were significant to physicians. They must remember that the class of cases treated was about the worst which they had to encounter. It was his custom for the past fifteen years to leave Washington during the warm season, and therefore he had not had the wide experience of many in these gastroenteric disorders of infants and young children. On account of the extreme heat and humidity Washington was like a deserted village in summer. Still, there were many people who had to remain in the city, and the infant mortality was generally frightful. Last year the physicians at the Children's Hospital made a trial of the Finkelstein method of feeding, but the results met with were not such as to afford much encouragement. The food was prepared in exact accordance with the directions of the authors of the method, but it was found very difficult to get the children to take it, and it was seldom that more than eight ounces of it could be given in the twenty-four hours when they had previously taken from eighteen to thirty ounces of a milk mixture. The cases were not selected. They were usually very bad ones, and the infants kept on dying, as under other plans of treatment; so that the mortality was very large. It seemed, therefore, that they were in just the same unsettled position regarding infant feeding as years ago. The speaker was much impressed, however, with Doctor Wilcox's emphatic statement that protein milk was to be looked upon as a temporary therapeutic measure, and not as a permanent diet. While the doctor spoke of the marked improvement in the cases treated by this means, he should like to hear how the mortality compared with that of previous years. As to the general mortality among children in institutions, at times they met with good results from almost any form of treatment Twelve or fourteen years ago it was the practice at the Children's Hospital to order cold baths for every case of typhoid fever as soon as the temperature rose to a certain degree. Then came the reaction from this method of treatment, and it was now five or six years since he had ordered a bath in typhoid. Yet the results have been better since the bathing was abandoned. In considering the results of treatment in diarrheal disease, as in many other affections, they should always take into account the atmospheric and seasonal conditions. For instance, the mortality at the Children's Hospital, Washington, was very much less last summer than during the previous one, and this was unquestionably due largely to the favorable meteorological conditions prevailing. Generally in Washington, from the latter part of June on, the thermometer remained day and night above 85° F. for days, and the people did not get any relief. Last summer, however, after the tenth of July the weather was comparatively cool, with the favorable effect on the infant mortality which has been mentioned. He would certainly urge a further trial of protein milk, and, regarding this as a strictly therapeutic agent, and adopting the modifications of Finkelstein's method which Doctor Wilcox had described, would hope to see better results in the diarrheal affections of infancy, even when the weather conditions were unfavorable.

Dr. **J. Lovett Morse** had been much entertained and interested by what he had heard. He had every reason to believe the exact truthfulness of the report, and must perforce accept the results which had been given; and yet he was unable to understand just how the same method and the same food were efficacious in conditions so varied as those met with in the diarrheal diseases of infants and young children.

Dr. Fritz Talbott, of the Harvard Medical School, too, had been very much interested by the papers of the evening, but also, like Doctor Morse, wondered how this new method could be effective in such different conditions as the fermentative and putrefactive.

Dr. L. E. La Fetra, for the past three years, had used protein milk in the treatment of infantile diarrhea, first at the Babies' Hospital and later at Bellevue Hospital. It was by far the best therapeutic agent we had, for nine out of ten babies showed marked improvement at once, the bloody stools ceasing usually after the first forty-eight hours. It was of great importance that the protein milk should be made from skimmed milk. The good results in putrefactive cases were to be attributed to the presence of living Bulgarian lactic bacilli. Protein milk increased the tolerance for other food and in certain cases where breast milk caused diarrhea, substitution of protein milk for some of the nursings enabled the infants to take the breast milk without this symptom. Other foods might be used along with the protein milk or substituted for it within a few days, and in this manner, a rapid transition could be made from the protein milk to simple milk modifications, beginning always with the use of skimmed milk.

Dr. Godfrey R. Pisek emphasized the point that the use of protein milk was a therapeutic measure. After employing it for three or four days they did get a change for the better in a great number of cases. At first he did not get such satisfactory results, because he did not fully understand the preparation and use of the protein milk. An important point in this method of treatment was the employment of only skim milk. Doctor Chapin was right in emphasizing the importance of the metabolic water.

Dr. Rowland G. Freeman, in regard to Doctor Chapin's paper, believed that the estimate of caloric values was most important, especially as a guide against underfeeding.

Dr. Charles Gilmore Kerley regretted that he had heard but a portion of the paper of Doctor Chapin. He had found protein milk a useful addition to the diet of children with diarrhea. It could be digested before skimmed milk could be tolerated, and was of much use as a means of supplying substantial nourishment at a time when it was needed very badly. He felt that sugar and milk fat were accountable for not a few of the disorders of older children, a condition brought about by the defective oxidation of the carbohydrates and fats. The disorders had a peculiar tendency to be cyclic in character, and were represented in cyclic vomiting, recurrent bronchitis, eczema, and periodic, so called bilious attacks.

Doctor Chapin in closing stated that he had written his paper because they had been accepting certain fallacies and he thought that they ought to have a clearer understanding of the combustion of foods, with the results effected in the system. There was need of such help, especially, it seemed to him, in the troubles they had had in regard to infant foods. He had long believed and taught that the biological method gave the true solution of the problems of infant feeding.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Seventh Annual Meeting, Held at Hot Springs, Arkansas, October 8, 9, 10, 1912.

The President, Dr A. L. Blesh, of Oklahoma City, in the Chair.

(*Concluded from page 264.*)

Etiology and Pathology of Infections of the Biliary Tract.—Dr. C. C. Nesselrode, of Kansas City, Kan., said that the intelligent treatment of cholelithiasis presupposed a clear conception of the pathology of the disease, of the means of treatment at command, and the objects obtainable by their use. To attempt by internal medication to dissolve a gallstone that was insoluble; to cause the passage through the biliary ducts of a gallstone when the ducts were impassable to a stone of its size; to attempt to cure supposed desperate symptoms by measures directed to the stomach when the cause of the symptoms was adhesions about the gallbladder or a condition within the biliary tract, was as futile as it was irrational.

Dr. Jabez N. Jackson, of Kansas City, Mo., said that all these cases of gallstones were infections to begin with, and these infections came through the radicles of the portal vein but not so often through systemic infection of the hepatic artery. It was a strange coincidence that surgeons had operated for appendicitis and likewise found gallstones, in which cases they might have made a diagnosis of both appendicitis and gallstones and found both, and there were many other instances in which surgeons had had humiliating experiences. Twice, he had made a diagnosis of appendicitis, removed the diseased appendix, and two or three days after the operation the patient had a typical gallstone attack.

Dr. A. L. Blesh, of Oklahoma City, said that every surgeon had found in the abdomen the frequent association of appendicitis with galltract infection, and ulcer of the stomach or duodenum. This association was too frequent to be accidental, and it was almost culpable to-day in removing the appendix, in the absence of suppuration, not to explore these other points inside at the same time. When this was done the operators would not find themselves in the predicament described by Doctor Jackson.

Dr. Merrill H. Lindsay, of Topeka, Kan., stated that infection almost never came from the general abdominal cavity. Doctor Simpson in experimenting on this subject, introduced aniline dyes into the abdominal cavities of dogs and recovered it from the gallbladder. This work would indicate that there was considerably more opportunity for infections arising from that experience.

Dr. John F. Binnie, of Kansas City, Mo., fully believed that the majority of cases of gallbladder disease, cholecystitis, of which gallstones were an accident, and ulcer of the stomach were due to the same cause, namely, the absorption of an unaccustomed quantity of poisonous material from the body, that was, through the portal circulation. Postoperative hemorrhages were due to a reverse embolism of the gastric vein. These hemorrhages were from lesions of the mucosa of the stomach which recovered just as promptly as acute ulcer of the stomach recovered if it did not kill the patient in the meantime.

Dr. David A. Myers, of Lawton, Oklahoma, said that the chemical formation of stones in the gallbladder and liver was a complicated process. Women were more subject to gallstones than men, especially women who had been pregnant. While infection was said to be the primary cause of all these troubles, to his mind there was always more or less the formation of bacteria in the ducts and gallbladders.

Dr. Howard Hill, of Kansas City, Mo., called attention to an anatomical point, namely, that in certain cases we should find a distended gallbladder with spaces, with absolutely no obstruction in the biliary tract, and bile would flow through in an hour or so. He had come to the conclusion that there was an abnormal disposition of the peritoneal fold which surrounded the so called pelvis, and whenever the gallbladder became distended beyond a certain point, it compressed the cystic duct, and the gallbladder was distended by its own secretion.

Doctor Nesselrode agreed with Doctor Binnie that the gallstones themselves were an incident in connection with cases of cholecystitis There were not as many gallbladders removed to-day as formerly. While the gallstones were removed when found to be present, the real condition was an infection, and drainage was a very important thing in this type of cases.

Treatment of Compound Fractures.—Dr. Charles Henry Blickensderfer, of Shawnee, Okla., said that the successful treatment of compound fractures depended upon three principles, and these were asepsis, drainage, and proper fixation or immobilization. The nature of these injuries was such that there was more or less destruction and laceration of the soft parts, and more or less extensive fragmentation and comminution of bone. The vascular supply was interfered with on account of laceration or tearing of bloodvessels, resulting in a large outpouring of blood and exuded serum. These wounds were therefore highly susceptible to infection. Primary drainage was required in these cases, supplemented by efficient counterdrains as soon as indicated. The resort to secondary drainage was many times imperatively demanded and must be ample for the reason that infection, which was now established, presented a condition urgently requiring the relief by the immediate and complete removal of all infectious matter and secretions resulting from bacterial activity and tissue destruction. Secondary drainage was quite often an indication that primary drainage was incomplete or insufficient, and if a wound of this character was to be drained at all, it should be done at the first dressing and provision made for free and extensive drainage. Compound fractures should receive early and free drainage. Operative intervention here, as in simple fractures, should be deferred for a week or longer until asepsis was assured and the bones were in the most active state of repair. Exceptions to this rule were to be found in instances when displacement and deformity were great and reduction otherwise impossible.

Cell Pathology of Alcoholism and Morphinism versus Short Cut Treatment.—Dr. S. Grover Burnett, of Kansas City, Mo., stated that no habitual user of alcohol and morphine could be cured by any method that did not take into account the repair of the damage done by the narcotic to the chemistry and structure of the brain cells, and thereby restored normal function. No physiological process was ever restored by further poisoning an alcoholized or morphinized brain with hyoscine and other deadly narcotics.

With the accumulated pathological evidence of cell damage by alcohol, it was evident in accentuating the absurdity of any few days' treatment of any kind being curative. This cell pathology pointed to the necessity of a delicate therapeusis in the acute exacerbations to avoid further damage to the already badly damaged cell. It pictured to us how delirium could arise from the disarrangement of the cell chemistry and how a continued chemical disarrangement could terminate in interior molecular cell change, disabling cell function, as shown in the vicious hallucinations and illusions of the so called toxic psychosis, and how the psychosis could progressively pass into the so called alcoholic insanity, and later into a true alcoholic dementia when the secondary cell atrophy followed.

Morphine overstimulation did two things, namely, first, it provoked perversion of metabolism and, second, a secondary exhaustion fatigue. Fatigued nerve cells meant catabolic insufficiency and formation of acid which further exhausted the ganglion cells by establishing a change of chemistry within the cells. Fatigue acid formation, for the time, made overdrafts on the cell energy and resulted in reactive morphine depression and exhaustion. In healthy fatigue acid formation there was chemical compensation and elimination without resulting molecular damage; but in the continued, permanent, residual fatigue of morphinism a more or less constant acid polarization of the cell took the place of the normal alkaline cellular chemistry. The energy generating in the cell and the maintenance of the energy became so dependent on the abnormal stimulus of the acid polarization that sudden stoppage of morphine produced profound energy depletion, cell exhaustion, reversal of the accustomed abnormal chemistry—an interior chemical storm—dissociation of the function, delusions, and insane delirium.

The Value of Tuberculin in Diagnosis.—Dr. L. G. Moorman, of Oklahoma City, stated that a failure to react to tuberculin might mean, first, that the patient was not tuberculous; in this case the tuberculin remained inert regardless of the size of dose employed and this was the explanation in the great majority of negative cases. Second, the patient might have an established tolerance through chronic autotoxic tuberculosis or through tuberculin treatment; in which case a sufficient increase in the dose would overcome the tolerance and give rise to a reaction. Third, the tissues were no longer sensitive to tuberculin on account of the failure to produce antibodies, and no reaction resulted even when large doses were given; this was often the case in advanced tuberculosis.

After a careful study of the case history and a thorough physical examination, the cutaneous test should be employed with a view of confirming further any conclusion arrived at from symptom and physical findings, or any suspicion aroused by history or general appearance which could not be confirmed by physical examination. In the first instance, a positive reaction substantiated the diagnosis. In the second instance, a positive reaction called for further observation and repeated examinations and possibly a subcutaneous test with a view of obtaining a local reaction. The subcutaneous test should be employed in suspicious cases where the cutaneous test was negative. The examination of the sputum and the use of the x ray often aided the diagnosis. The tuberculin reaction, so employed, was of great service in diagnosis and was extensively used in this way in most of the great clinics in this country and abroad.

Needless Traumatism in Rectal Surgery.—Dr. W. H. Stauffer, of St. Louis, stated that after operating in over five hundred cases of hemorrhoids without paralyzing the sphincter ani he had arrived at the following conclusions: First, dilatation exceeding one inch was unnecessary as a preparatory step in any operation on the rectum or anus; second, needless dilatation ruptured the muscle fibres, separated the nerve endings, invited infection, increased postoperative pain, frequently produced partial incontinence and prolonged convalescence. The so called nerve blocking method of local anesthesia, advocated and practised by Doctor Tuttle, of New York, and Doctor Hirschman, of Detroit, was not necessary unless one wished to mutilate the sphincter before he operated. Hemorrhoids could be easily everted by packing the anoscope with gauze, removing the instrument, and applying traction to the gauze. If the hemorrhoids were not ulcerated or badly congested they could readily be removed by the aid of the pressure anesthesia, the anesthetic being injected at the mucocutaneous line. The dressing and after treatment had been much simplified by the use of a finger cot filled with cotton instead of the rubber tube or gauze packing

Plea for the Earlier Recognition of Certain Nervous and Mental Conditions.—Dr. E. P. Bledsoe, of Little Rock, Ark., stated that the individual himself must be educated, and it was upon the physician that this burden necessarily fell. Many cases were mere individual problems, which might call for a detailed study of character and a process of reeducation along certain lines, while others might assume vast sociological and economic importance such as the question of defective children. Last and most important of all, the public must be educated to realize the fact that it was by the neglect of such problems as child labor, State care of epileptics, etc., that our asylums were filled with insane persons and our jails with criminals. Much of this might be prevented, for many cases had their incipiency in childhood, often under the eyes of the school teacher and the family physician. It was the physician on whom both the public and the individual must depend for the solution of these problems.

Possible Relationship of Infectious Eczematoid Dermatitis, Dermatitis repens, and Acrodermatitis perstans.—Dr Richard L. Sutton, of Kansas City, Mo., drew the following conclusions: Infectious eczematoid dermatitis was a well defined clinical and pathological entity, and should be separated from the group of pustular eczemas in which it had heretofore been included. It was very probably due to the yellow or white staphylococcus. Histologically, infectious eczematoid dermatitis differed from dermatitis repens (a term which also included the so called acrodermatitis perstans of Hallopeau) principally in the site of the inflammatory process, and the cutaneous structures involved. In the first named, the pathological changes were confined almost wholly to that portion of the corneous layer which overlay the stratum lucidum, while in the last, the infection was more deeply seated, and the prickle cell layer bore the brunt of the attack. The histological findings readily accounted for the difference with which the two diseases responded to treatment. Infectious eczematoid dermatitis was quickly and favorably influenced by the simpler and milder antiparasitic applications, and when properly treated, an attack seldom extended over a fortnight. In dermatitis repens, on the other hand, it was usually very difficult to bring about a cure, and the disease often persisted for months in spite of the most vigorous treatment. Vaccine therapy, properly employed, was of great value in combating both infectious eczematoid dermatitis and dermatitis repens.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. W. T. Wootton, of Hot Springs, Ark.; vice-presidents, Dr Walter B. Dorsett, of St. Louis; Dr. E. H. Carey, of Dallas, Tex.; Dr. J. H. Barnes, of Enid, Okla.; Dr C. C. Nesselrode, of Kansas City, Kan.; secretary-treasurer, Dr. Fred H. Clark, of El Reno, Okla.

Kansas City, Mo., was selected as the place for the next meeting.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Forensic Medicine and Toxicology. By C. O. HAWTHORNE, M. D. Third Edition. New York and London: Longmans, Green, & Co., 1912. Pp. vii-344. (Price, $1.70.)

This volume is a clear and succinct review of the more salient matters that should be thoroughly understood by medical men in courts of judicature. The work can hardly be called comprehensive, since the author, for some unexplained reason, has seen fit to omit from his pages a recital of individual cases, that so often act as a guide and serve to clarify the text. If the symptoms of poisons had been given more in detail, and their lethal doses shown more concisely according to accepted authorities, the volume would have been of more practical value to physicians and students. Nothing of a novel nature has been introduced; nevertheless, the book may be offered as a worthy compilation for student and practitioner. Almost one half of the volume is devoted to a study of toxicology, with a brief but intelligent appendix on poisons and their antidotes. The author's style is lucid, the index complete and easy of reference, and the whole appearance of the volume is a credit to the publishers.

Handbuch der Hygiene. Herausgegeben von Prof. Dr. M. RUBNER, Berlin, Prof. Dr. M. VON GRUBER, und Prof. Dr. M. FICKER, Berlin. IV. Band, 1, Abteilung. Leipzig: S. Hirzel, 1912. Pp. vi-483.

This volume contains some seven articles, dealing in considerable detail with the various subjects. The first, by Heubner, of Berlin, takes up the question of hygiene during childhood. Then follows a long article dealing with the arrangement and outfitting of hospitals. Abel contributes a paper dealing with the care and disposal of the dead body, discussing at some length the objections, and the dangers of burying. Kiskalt takes up the matter of the poor by dividing the subject into pathology, etiology, and prophylaxis. In considering the statistics of Munich he finds that the percentage of the insufficiently nourished has increased from 1.9 per cent. of the population in 1891 to 2.8 per cent. in 1906. In 49.3 per cent. the poverty was due to sickness and infirmity, and 32.6 per cent. to old age and inability to work. The same author writes also about the hygiene of prisoners, discussing the pathological conditions and their causes, also the prophylaxis. Süpfle contributes an article dealing with the care of those who are of school age. This takes up both the physical and the psychic aspects, the hygiene of the school house, the diseases prevalent in this period of life, and the proper oversight of the pupils. The volume closes with a paper on the organization for the public welfare. The topics treated are of interest and are well presented.

House Flies and How They Spread Disease. By C. G. HEWITT, Ottawa, Canada. Cambridge University Press; New York, G. P. Putnam's Sons, 1912. Pp. xii-122. (Price, 40 cents.)

This small book is a most excellent one. It takes up the natural history of the house fly and its relation to disease. Other species of flies sometimes found in the house are also described. Among these is the stable fly, *Stomoxys calcitrans*, but at the time of writing it was not known that this insect is considered to be the conveyor of infantile paralysis. This publication is interesting and valuable in that so much information has been rendered easy of access to both layman and physician.

The Mosquito. By ALVAH H. DOTY, New York. New York: D. Appleton & Co., 1912. Pp. 79.

Doctor Doty has succeeded very admirably in presenting in a form suitable to the lay public the general considerations concerning the habits of the mosquito and their bearing upon the health of humanity. The book contains the essential features of the life history such as method of propagation, breeding places, food, etc., also of the methods employed for the extermination of the mosquito. Doctor Doty emphasizes that "so far as possible, breeding places should *be destroyed and not treated*"; a most important point. The two mosquitoes chiefly dealt with are anopheles and the stegomyia. It seems somewhat of a mistake not to employ the newer nomenclature of calopus for the latter. This little publication, however, is of distinct value.

L'Avenir des prématurés; ses rapports avec la syphilis héréditaire. Par le Docteur GEORGES-RAOUL DÉTRÉ. Paris: G. Steinheil, 1912. Pp. 154.

This monograph is based on the observation of 205 prematurely born children seen during a number of years in the public dispensary of the schools of the seventh arrondissement of Paris. Syphilis was found to be the cause of the premature birth in 18.5 per cent. of the cases, against the two to three per cent. ascribed in the statistics of Vallais, Seropian, and others; a difference probably due to the employment of the Wassermann test to determine its presence, and the consequent cutting down of the number of cases ascribed to paludism or other indefinite or unknown causes by the older writers. The author's researches into the morbidity of these cases are of interest. In sixty-eight syphilitic prematurely born children strabismus was present twenty-seven times, epilepsy twenty times, sabre tibia seven times, deafness seven times, dental deformities four times, saddle nose four times, and keratitis four times. Finally, the mortality of the prematurely born is inquired into, with results quite in accord with those generally accepted.

BOOK AND MAGAZINE NOTES.

The winter 1812-1813 was not like this, its centenary. It was exceptionally cold and thus helped to contribute to the beginning of the downfall of Napoleon, who in May, 1812, sent forward his great army to conquer his only remaining foe on the continent of Europe, Russia. The history of this war is well known. It has been illustrated from all points of view, even from the medical, but the first medicohistorical sketch in English on *Napoleon's Campaign in Russia, Anno 1812*, has appeared only lately. The author and publisher is Dr. Achilles Rose, of New York, well known for his medical research, for his Greek studies, and as a purifier of medical nomenclature; he now appears in the rôle of historian. He does not write dry history, but gives in his book of 185 pages a very interesting account from the first crossing of the Niemen, May, 1812, to the return crossing of the same river, December, 1812. Beside the historical event the author gives a good review of its medical aspect: the treatment of the wounded and sick, the appearance of typhus fever, ophthalmia, and dysentery, the effect of cold and hunger, etc., are all well treated. Beside minor German surgeons whose accounts of the war are given, we find also quotations from Larrey, whose observations have become quite important, as "he was the only one who kept a record of the temperature," having a thermometer attached to his coat. How beloved was this surgeon is shown in a letter to his wife: "Ribes was right when he said that in the midst of the army, and especially of the imperial guard, I could not lose my life. Indeed, I owe my life to the soldiers. Some of them flew to my rescue when the Cossacks surrounded me and would have killed or taken me prisoner. Others hastened to lift me and help me on when I sank in the snow from physical exhaustion. Others, again, seeing me suffer from hunger, gave me such provision as they had; while as soon as I joined their bivouac they would all make room and cover me with straw or with their own clothes."

The book can be cordially recommended to our readers, as it is not only instructive but of fascinating interest, and will afford a pleasant hour or so after a hard day's work.

Meetings of Local Medical Societies.

MONDAY, *February 10th.*—Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *February 11th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Medical Society of the County of Schenectady; New York

Obstetrical Society; Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Rensselaer; Jamestown Medical Society; Rome Medical Society; Practitioners' Club of Jersey City, N. J.

Wednesday, *February 12th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Richmond County Medical Society; Dunkirk and Fredonia Medical Society.

Thursday, *February 13th.*—New York Academy of Medicine (Section in Pediatrics); West Side Clinical Society; Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers; Society of Sanitary and Moral Prophylaxis, New York; Auburn City Medical Society; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

Friday, *February 14th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Clinical Serology; Society of Alumni of St. Luke's Hospital; Saratoga Springs Medical Society; Society; Society of Ex-internes of the German Hospital in Brooklyn.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending January 29, 1913:

Anderson, J. F., Surgeon. Detailed to attend a meeting of the New York Milk Commission to be held in New York February 5 and 6, 1913. **Blount,** B. B., Acting Assistant Surgeon. Granted thirty days 'leave of absence from February 1, 1913. **Bryan,** William M., Passed Assistant Surgeon. Relieved from duty at Cape Fear Quarantine Station, Southport, N. C., and directed to report to the medical officer in command of the Marine Hospital, Stapleton, N. Y., for duty and assignment to quarters. **Duffy,** B. J., Assistant Surgeon. Relieved from duty at Honolulu Quarantine Station and directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty. **Fox,** Carroll, Passed Assistant Surgeon. Relieved from duty in Manila, P. I., and directed to proceed to San Francisco, Cal., and report his arrival to the Bureau. **Francis,** E., Passed Assistant Surgeon. Directed to proceed to Baltimore, Md., and New York, N. Y., for the inspection of laboratories. **Grubbs,** S. B., Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for temporary duty and instruction. **Horning,** H., Acting Assistant Surgeon. Relieved from duty at Philadelphia, Pa., and directed to report to Surgeon J. H. Oakley, Gloucester City, N. J., for duty in the medical examination of arriving aliens. **Korn,** W. A., Passed Assistant Surgeon. Relieved from duty at Stapleton, N. Y., and directed to proceed to Manila P. I., and report to the chief quarantine officer for duty. **Lumsden,** L. L., Surgeon. Detailed to attend the annual meeting of the Conference on Charities and Corrections to be held at Danville, Va., January 27, 1913. **McMullen,** John, Surgeon. Directed to report at the Bureau for Conference relative to prevalence of trachoma in Kentucky and the measures necessary for its control. **Roberts,** Norman, Passed Assistant Surgeon. Relieved from duty in the examination of arriving aliens at Gloucester City, N. J., and directed to report to Surgeon W. C. Stimpson, Philadelphia, Pa., for duty. **Von Ezdorf,** R. H., Surgeon. Directed to stop, en route to station, at Nashville, Tenn., and Montgomery, Ala., for the conference and for the collection of statistics regarding malaria.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the medical corps of the United States Army for the week ending February 1, 1913:

Hutton, P. C., Major, Medical Corps. Granted leave of absence for one month, about February 6th, with permission to go beyond the sea. **Kinard,** K. W., Lieutenant, Medical Corps. Relieved from duty with Field Hospital, No. 3, Fort Leavenworth, and ordered to Fort McIntosh. **McKellar,** H. R., Lieutenant, Medical Corps. Directed to proceed to the presidio of San Francisco, Cal., for temporary duty, from Vancouver Barracks. **Phillips,** H. A., Captain, Medical Corps. Upon arrival of Lieutenant Kinard at Fort McIntosh, will proceed to the Army and Navy General Hospital, Hot Springs, Ark., for observation and treatment. **Reasoner,** M. A., Captain, Medical Corps. Relieved from duty at Vancouver Barracks and will proceed to San Diego, Cal., for duty at the aviation school. **Shaw,** H. G., Major, Medical Corps. Granted leave of absence for one month and nineteen days, upon arrival in the United Staes. **Strong,** F. X., Lieutenant, Medical Corps. Granted leave of absence for two months about March 1, 1913; ordered to the Philippine Islands on May 5th. **Weston,** H. R., First Lieutenant, Medical Reserve Corps. Granted fifteen days' leave of absence before sailing for the Philippine Islands on March 5, 1913. **Whitham,** J. D., Lieutenant, Medical Corps. Ordered to Fort Howard about February 5th for temporary duty during the absence of Major Hutton.

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Births, Marriages, and Deaths.

Married.

Boeckmann—Hill.—In St. Paul, Minn., on Thursday, January 30th, Dr. Egil Boeckmann and Miss Rachel Hill. **Miller—Noell.**—In Danville, Va., on Thursday, January 23d, Dr. Edward Howe Miller and Miss Anne Elizabeth Noell.

Died.

Aldrich.—In Somerville, Mass., on Wednesday, January 29th, Dr. Albert Clinton Aldrich, aged fifty-six years. **Arter.**—In Chicago, on Wednesday, January 22d, Dr. Francis G. Arter, aged seventy-five years. **Balliet.**—In Allentown, Pa., on Tuesday, January 28th, Dr. Louis B. Balliet, aged eighty-one years. **Bassell.**—In Columbus, Ohio, on Thursday, January 23d, Dr. William Benedict Bassell, aged thirty-six years. **Biggers.**—In Temple Hill, Ky., on Tuesday, January 21st, Dr. C. W. Biggers, aged seventy-five years. **Booth.**—In Lake Providence, La., on Thursday, January 23d, Dr. James Fleet Booth. **Davis.**—In Pleasantville, Md., on Sunday, January 19th, Dr. George W. Davis, aged sixty-nine years. **Donaldson.**—In Kansas City, Mo., on Thursday, January 23d, Dr. George Harper Donaldson. **Edmondson.**—In Marion, Va., on Saturday, January 18th, Dr. H. B. Edmondson. **Follweiler.**—In Allentown, Pa., on Saturday, January 25th, Dr. Robert D. E. Follweiler, aged thirty-eight years. **Foust.**—In Salisbury, N. C., on Tuesday, January 21st, Dr. Isaac Henry Foust, aged sixty-four years. **Goodspeed.**—In Worcester, Mass., on Thursday, January 23d, Dr. Helen A. Goodspeed, aged sixty-eight years. **Horwitz.**—In Philadelphia, on Tuesday, January 28th, Dr. Orville Horwitz, aged fifty-two years. **McNally.**—In Central Falls, R. I., on Friday, January 24th, Dr. Thomas Henry McNally. **Massey.**—In Rock Hill, N. C., on Monday, January 20th, Dr. James Everard Massey, Sr., aged sixty-four years. **Morse.**—In Boston, on Thursday, January 30th, Dr. Alfred I. Morse, aged twenty-seven years. **Orme.**—In Atlanta, Ga., on Tuesday, January 28th, Dr. Francis Hodgson Orme, aged seventy-nine years. **Proctor.**—In Philadelphia, on Thursday, January 23d, Dr. Helen Paschall Proctor, aged forty-one years. **Snell.**—In Kalamo, Mich., on Sunday, January 26th, Dr. Franklin L. Snell. **Tuttle.**—In New York, on Friday, January 31st, Dr. Percival Tuttle, aged fifty-six years. **Van Pelt.**—In Nort Rose, N. Y., on Wednesday, January 22d, Dr. J. Van Pelt, aged sixty-five years. **Woodruff.**—In Elmer, N. J., on Saturday, January 18th. Dr. Alpheus B. Woodruff, aged sixty-two years.

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ASELLIUS AND THE DISCOVERY OF THE LYMPHATIC CIRCULATION.*

By Frederick P. Henry, A. M., M. D.,
Philadelphia,
Honorary Librarian, College of Physicians; Professor of Medicine, Woman's Medical College.

This is the third time I have had the honor of addressing a learned society in this city. In 1901 I read a paper before this club on the Life and Writings of Valescus de Tarenta[1] and, in 1904, before the Johns Hopkins Historical Club, I exhibited and reviewed four fifteenth century monographs.[2] The fact that I am here for the third time proves one of two things or, perhaps, proves them both, to wit, that my two previous attempts were not failures or that it is difficult to find individuals who are willing, I will not say able, to address you on the topics which are the objects of your study. I am sure there are many members of this club who know quite as much about rare medical books as I do; I am equally sure there are some who may know more about them; but my assurance is doubly sure that there is no one who is more interested in them or who loves them more. If I am not well versed in medical bibliography it is not for want of opportunity. For nearly twenty-five years, as honorary librarian of the College of Physicians of Philadelphia, I have seen and handled practically every book that has been added to the great collection of that institution. It is true that a similar statement might be made by an auctioneer who, necessarily, sees and handles the books which he sells. The cases are, however, somewhat different. The auctioneer wants to get rid of his books as rapidly as possible while I, in my official capacity, wish to keep them religiously—and "in keeping of them there is great reward." Take, for example, the book Asellius, *De Lactibus, etc.*, 1627, which I have brought with me this evening. It is not only rare and valuable, but is peculiarly interesting to the student of medical history. During the last few years I have, now and then, taken it out of its case, turned over its leaves, glanced at its quaint illustrations, the *first colored prints ever published,* and then gone my way and, as we say, dismissed it from my mind. But there it remained nevertheless, exerting an occult influence which has culminated in my presence here to-night. This is one of the rewards, and the chief among them, which has been bestowed upon me by this book.

Interest in the book naturally led to interest in its author. I read the scanty sketches of his life and satisfied myself that he was a man whose memory had not been sufficiently honored. I was quite indignant when I found that but five lines had been allotted to his biography in the last edition of the *Encyclopædia Britannica.* I constituted myself his champion, but it was the championship of a deaf mute. I did not speak of him because I encountered no one who either knew, or cared to know, anything about him. It is no wonder that my interest in Asellius became dormant and that it so continued until it was revived in the following interesting manner. In May, 1911, I read a paper on pseudochylous ascites before the Association of American Physicians, and cited the first recorded case of chylous ascites, which was reported by Poncy, in 1699. When I had concluded, Dr. Abraham Jacobi crossed the room and, seating himself beside me, said that he had not distinctly heard the date of Poncy's case. I repeated the statement that it was reported in 1699. "That is all right," he said, with an air of relief: "you know, of course, that the date of Aselli's book in which he announces the discovery of the chyliferous vessels is 1627." On my return to Philadelphia I got out Aselli's book, and verified the date and again my interest in him was revived. I was delighted with the discovery that there was some one else who, not only was interested in him, but probably knew much more about him than I. I determined to overcome this inferiority, but other and more pressing matters interposed to prevent the accomplishment of this resolution. The subject of Aselli was again relegated to the limbo of the subconscious and there remained until it was again brought to light by the invitation to read a paper before this club. I was given the choice of a subject, but I had no choice. Aselli immediately crossed the threshold of my consciousness and became conspicuously liminal. He demanded the hearing to which he was entitled and I welcomed the opportunity of granting it. I set to work to renew and increase what knowledge I had of him and, at the same time, to investigate the extension of his discovery by Pecquet and Rudbeck.

The records of Aselli's life are meagre in the extreme. He was born in Cremona in 1581 and, according to one of his biographers (Cerioli), of an ancient and patrician family. After a period of preliminary study he went to the University of Pavia and there became the laureate in medicine,

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*Read before the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland, November 19, 1912.

[1] *Maryland Medical Journal*, June, 1901.

[2] *Medical Library and Historical Journal*, January, 1905.

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surgery, and philosophy. He then settled in Milan, where he taught anatomy privately and practised surgery, and was doubly honored by election to citizenship and by appointment to the position of surgeon in chief (*protochirurgo*) to the royal army. It was in Milan that he discovered the chyliferous vessels or, as he called them, *venæ lacteæ*, on July 23, 1622. In consequence of this discovery, he was elected, in 1624, to the chair of anatomy and surgery in the University of Pavia. Two years later he died at the age of forty-five years. A tablet to his memory was erected in the church of San Pietro Celestino by his devoted friends, Tadino and Settala, who also brought out his book one year after his death.

Aselli's discovery of the lymphatic vessels affords additional proof, if such is wanting, of the value of vivisection to medical science. He was endeavoring to demonstrate the movements of the diaphragm in a dog, and while pushing aside the intestines to bring the muscular partition into view, he observed a number of fine milk white cords ramifying over the bowels and mesentery. At first he took them for nerves but, fortunately, conceived the idea of puncturing them. On seeing a milky fluid escape from the puncture he seems to have been immediately aware of the importance of his discovery, for he tells us, in his own account of it, that. like Archimedes, he triumphantly exclaimed *εὕρηκα*! This would seem to imply that it was not altogether the result of accident. That it was largely so there can be no doubt, but, to my mind, it is one of the best illustrations of the truth that he who seeks finds, although he does not always find that which he is seeking. As in Aselli's case, it may prove to be something much more valuable.

While Aselli and his pupils were examining the lacteals the animal died and the vessels were immediately emptied of their contents so that scarcely a trace of them could be found. On the following day, another dog was opened, but, to the intense disappointment of the experimenter, the milk white vessels were not visible. After two days of brooding over the subject during which, doubtless, both while asleep and awake, there revolved in his mind every circumstance attending the discovery, the cause of the failure of the second experiment occurred to him. The only difference between the conditions of the first and second experiments was that the first animal examined had been recently fed, while the second was opened while fasting. The experiment was repeated with the necessary correction. Another dog was examined during the process of digestion and the milk white lacteals were beautifully manifest. Aselli might well have shouted his view halloo of *εὕρηκα* a second time and with better reason than when he first gave voice to it.

During the brief remainder of his life Aselli devoted himself to the study of the chyliferous vessels, and to us of the present day it seems remarkable that their real destination should have escaped so keen an observer. The fact is that he was heavily handicapped, not by his knowledge, but by his learning which, as a matter of course, was derived from the teachings of the ancients, for whom his respect seems to have been unbounded. It was the belief in Aselli's time that all the nutritive material derived from the digestive processes passed through the liver. This was the teaching of Galen and the very fact that it was partly true rendered it more difficult to get at the whole truth. Aselli traced the chyliferous vessels to a group of glands at the root of the mesentery which are prominent in dogs and other carnivora and which, before his time, had received the name of pancreas. Since his time, they have been called *pancreas Aselli*. From these conglomerated glands he traced several large vessels to the gateway of the liver (*porta hepatis*), which having entered they lost themselves in the substance of that organ. These vessels were undoubtedly the lymphatics of the liver, for they contained a limpid, slightly pink fluid very different from the milky liquid of the lacteals. This fact is commented upon by Aselli himself. An examination of their valves, for Aselli was acquainted with the valvular structures of the lacteals, might have shown him the true direction of the fluid which they conveyed. The force which caused the current in the lacteals was believed by Aselli to be at least twofold, a *vis a tergo* and a *vis a fronte*, the former being supplied by the movements of the intestine, the latter by a hypothetical suction force of the liver. In addition, he believed that the vessels themselves assisted in the propulsion of their contents. It was to the suction force of the liver that he attributed the emptying of the vessels on the death of the animal.

Aselli's discovery met with a certain amount of opposition, both active and passive. Among his active opponents were the very men who refused to accept the teachings of Harvey concerning the circulation of the blood. Prominent among them were Riolan, Plempius, and Primrose. Strange to say, Harvey joined with them in opposition to the new doctrine, if his refusal to accept it may be so considered. In the last edition of the *Encyclopædia Britannica*, in his article on Harvey, Dr. Pye-Smith makes the following remarks upon this subject:

> It has been made a reproach to Harvey that he failed to appreciate the importance of the discoveries of the lacteal and lymphatic vessels by G. Aselli, J. Pecquet, and C. Bartholinus. In three letters on the subject, one to Doctor Morison, of Paris (1652), and two to Doctor Horst, of Darmstadt (1655), a correspondent of Bartholin's, he discussed these observations and shows himself unconvinced of their accuracy. He writes, however, with great moderation and reasonableness and excuses himself from investigating the subject further on the score of the infirmities of age—he was then above seventy-four. The following quotation shows the spirit of these letters: "Laudo equidem summopere Pequeti, aliorumque in indaganda veritate industriam singularem nec dubito quin multa adhuc in Democrite puteo abscondita sint a venturi seculi indefatigabili diligentia expromenda."

This statement of Dr. Pye-Smith is misleading. Harvey was certainly seventy-four years old when he wrote the first of these letters and seventy-seven when he wrote the last, but Aselli's discovery was made in 1622, when Harvey was forty-four years old. Dr. Pye-Smith's article would lead the cursory reader to the conclusion that Harvey was in the seventies at the time of Aselli's discovery. The difference between the ages of Harvey and Aselli was three years, Harvey being born in 1578 and Aselli in 1581. Harvey, far in advance of his time in all matters pertaining to the circulation of the blood.

was certainly behind it in all matters pertaining to the circulation of the chyle and lymph. In praising the industry of Pecquet and others in investigating the truth,—*in indaganda veritate*—Harvey evidently includes Aselli, the greatest of the investigators of the lymphatic system among the "others."

No one has ever disputed with Aselli the honor of his discovery except Aselli himself. He did his best to detract from it by endeavoring to prove that the lacteals were known to the ancients, especially to Herophilus and Erasistratus, the founders of the Alexandrine school of medicine. There are no extant writings of either of these men and we are indebted to Galen for what we know of them. Concerning Herophilus, he tells us that, in addition to the veins proceeding to the liver, he was acquainted with vessels which terminated in glandular bodies. These may have been lymphatic glands. Erasistratus, according to Galen, had described in the abdomen of young sucking kids, vessels which, at one time, contained milk; at another, air. Galen contemptuously dismisses these statements as gross delusions. They were certainly too vague to enable Aselli to acquit himself of the crime of discovering the lacteal vessels.

The lacteals were demonstrated in man in 1628, the subject being a criminal who was examined one hour and a half after his execution.[3] They were first depicted in Vesling's *Syntagma Anatomicum*. According to Haller, the first edition of this work is dated 1641; the earliest edition with which G. His was acquainted was dated 1647. The edition in the library of the College of Physicians, edited by Blasius, is dated 1666. It contains on pp. 317 and 349 excellent illustrations of the chyliferous vessels.

PECQUET AND THE DISCOVERY OF THE THORACIC DUCT.

The next important step in the history of the lymphatic circulation was the discovery of the thoracic duct by Johannes Pecquet of Dieppe in 1647, twenty-one years after Aselli's death. At the time of his discovery he was a student at Montpellier and was twenty-five years of age, having been born in 1622. It was also the result of accident, as he himself acknowledges, with the greatest modesty, in the following words: *Munus est fortunæ cum inscio ludentis*—it is the gift of fortune sporting with the ignorant. It occurred in the following manner: He had opened the thoracic cavity of a dog and removed the heart, when his attention was attracted by the outflow of a whitish fluid from the superior vena cava. At first, he supposed that he had ruptured an abscess, but a careful search excluded this possibility. He next found that pressure upon the abdomen increased the flow of the milky fluid. A second experiment led to the discovery of the thoracic duct, which Pecquet at first regarded as a nerve, but determined its true character by means of a ligature, below which the duct swelled from the upward pressure of the fluid within it, the swelling subsiding when the pressure was removed. He traced the duct downward to the receptaculum chyli—his own name for this reservoir—and upward to the subclavian vein. The animal in which Pecquet discovered the duct—a Molossian hound—had a double duct, such as is often found in man, with communicating branches, which accounts for the term *bivium* which he applies to it. I have consulted Pecquet's original article as printed in the *Messis Aurea* of Hemsterhuys. The treatise contains an illustration of this double duct, but pictures it as emptying by two branches into the right and left subclavian veins. In the course of my investigations of Pecquet's discovery I have found no comment upon this egregious mistake.

Pecquet unlike the brandy which he is said to have consumed in inordinate amount did not improve with age. He was an example of that species of *rara avis*, an intemperate Frenchman. Vigneul de Marville, a gossipy chronicler, relates that, after losing sight of him for several years, he met him in the country at the house of a friend and he intimates that his uncertainty as to Pecquet's identity was removed as soon as he came near enough to perceive the odor of brandy on his breath. Brandy, he says, was the cause of his death: *"l'eau de vie fut pour lui une eau de mort."*

THE GENERAL LYMPHATIC CIRCULATION.

The honor of discovering the lymphatic vessels has been contested by Jolyff, an Englishman, by Thomas Bartholin, of Denmark, and by Olaus Rudbeck, of Sweden. It would be more nearly correct to say that the title to this honor has been disputed by the adherents of these men, for Jolyff never published anything upon the subject and Bartholin never condescended to engage personally in an argument with Rudbeck, his young and comparatively obscure rival. The honor of discovering the lymphatic vessels undoubtedly belongs to Rudbeck. He first proved that the vessels which Aselli described as conveying the chyle from his so called pancreas to the liver, in reality conveyed fluid in the opposite direction. He acquired this knowledge by the simple process of ligaturing the vessels and watching them swell above the ligature and collapse below it. He was twenty-one years old when he made this observation. He named these ducts the watery ducts of the liver, *ductus hepatici aquosi*. He thought they removed superfluous fluid from the liver and conveyed it to the pancreas, from which it was discharged through the duct of Wirsung. In 1651, independently of Pecquet, he discovered the thoracic duct and the receptaculum chyli, which he called *vesiculum chyli*. It was not until 1652, when he was giving a public demonstration before Queen Christina, that he learned from the physicians in his audience of the previous discovery of the thoracic duct by Pecquet. He subsequently described the lymphatics, which he styles *vasa glandularum serosa*, in the intestines, the spermatic plexus, the lungs, and various other parts of the body. In fact, he practically proved their universal existence and their connection with the lymph glands. It would be futile and wearisome to discuss his contest for priority with Bartholin or, rather, with Bartholin's disciples. It is described in detail by G. His in his admirable dissertation. Suffice it to say that, in the words of Haller, it was a disgraceful quarrel on both sides: *"Iis utrinde inciviliter gesta est."*

I have mentioned Jolyff, an Englishman, as one for whom a claim to the discovery of the lymphatics has been made. His claim was made by his contemporaries, Wharton, Glisson, and Charleton. Wharton[4] in his *Adenographia,* London 1656, pp. 97 and 98, states that Jolyff discovered the lymphatics in 1650, and Glisson[5] declares that Jolyff had shown him these vessels in the liver in 1652, and at the same time informed him that he had found them in nearly every part of the body. If these statements are true and there is no reason to doubt them, Jolyff was acquainted with the lymphatics before the first publication of Rudbeck upon the subject in 1653. Nevertheless, the honor of the discovery will remain with Rudbeck, who gave it to the scientific world, while Jolyff virtually kept it to himself.

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[3] *Messis Aurea* of Hemsterhuys, Leyden, 1654.

In the foregoing pages I have given the main facts concerning the discoveries of the circulation of the chyle and lymph. In some instances, and those the most important, I have had access to the original sources of information. With regard to the controversy between Th. Bartholin and Rudbeck concerning the discovery of the lymphatics, I have accepted, after careful examination, the dicta of others who have had more time and more ability and, I may add, more inclination for such investigations as it demands.

"If a man die shall he live again?" This is the question which has been asked and variously answered from time immemorial. There is one answer to which no one can take exception. He lives, through his works, not only in the memory, but in the very lives of his successors. We, students of medicine, are every day unconsciously influenced by the discoveries of such men as Harvey and Asellius, and it is eminently proper that, now and then, we should become conscious of such influences and pay tribute to their authors.

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114 South Eighteenth Street.

FRIEDMANN'S NEW TUBERCULOSIS REMEDY.*

By H. J. Achard, M. D.,
Chicago.

The feature which has struck us most forcibly in regard to the new tuberculosis remedy, introduced by Dr. Franz Friedrich Friedmann, of Berlin, is the newspaper notoriety which it has received. The doctor's claim of having elaborated a positive remedy for the cure of tuberculosis was taken up and published far and near by the newspapers, and was discussed day by day, so that a collection of clippings already fills a fair sized scrap book. Contrary to their usual custom, the newspapers have, in the great majority of cases, discussed the new "cure" with a certain skepticism which was manifested by a great many "ifs." The press throughout the country warned the public against hoping for too much, but indirectly contradicted and counteracted this policy, which was of itself a wise one, by printing glowing accounts of the favorable results announced by Friedmann. It is true that the adverse or doubtful criticisms of the *Journal of the American Medical Association* and of other medical journals, also doubtful interviews with many physicians have received wide publicity. In some newspapers the doubts that are raised are commended, and in so far as this has been done the press might plead not guilty to the charge of supplying improper reports. Its principal harmful influence lies in the notoriety which it is giving to Friedmann's remedy long before its value has had an opportunity of being vindicated and established; and the harmful influence of the press reports is also manifest in the constant use of the term *cure,* which in English means far more than *Kur* in German. The latter term is used for a course of treatment, or for the means for a course of treatment, without necessarily implying a successful issue, as does our English word.

It need hardly be said that Doctor Friedmann's remedy is not a serum, but a bacterin or vaccine, since it is prepared from tubercle bacilli. If the newspapers insist on printing medical news, they should at least take the trouble to acquire and employ a correct nomenclature. Unfortunately, some of the alleged interviews with Doctor Friedmann are the most manifest and barefaced lies. The famous Mr. William S. Shepard makes him say that his treatment is very simple, that it is a serum, and that one injection usually drives all signs of tuberculosis germs from the system. From London a special cablegram to New York and thence to California, states that Doctor Friedmann said: "No matter what the stage of the illness may be, I will give any patient one or two injections of my serum and six weeks later he will qualify as a strenuous football player." If such balderdash, which the veriest tyro in immunology knows to be false, served up to confiding newspaper readers, is not an improper use of the power of the press, I am greatly mistaken.

All through the newspaper accounts of the remedy one gets the impression that Doctor Friedmann employs a clever press agent or is himself one. His attitude appears to be slightly quackish, and is certainly tinged largely with personal considerations. Being refused unqualified or even preponderating recognition in his own country, he turns a hopeful eye toward the land of dollars, "the land of unlimited possibilities," and is quite willing to have his remedy investigated here, trusting apparently that some kind fate may loosen up the ready dollars to throw into his pocket. On general principles he can hardly be blamed for this, since a man is entitled to the benefits accruing from his brain work, but we are not accustomed to such a procedure, and it is not considered proper among scientific men.

While Friedmann's first refusal to say anything on the nature of his remedy may have been dictated by wise considerations, and may have been justified, he should have known that he would barely get a hearing unless he gave some positive information. He admitted the origin of his tubercle bacilli (turtle) under pressure, but he refused and still refuses to communicate his method. Although he denies that his tubercle bacilli are originally human, he does not say how he obtained his turtle tubercle bacilli or how he infects the turtles. He denies that he uses the old strain of originally human turtle bacillus with which he worked in Piorkowsky's laboratory some years ago. In his repeated assertions that he will give his method to the government for investigation, a peculiar vacillation is manifest, and a holding back that gives a distinctly unpleasant impression.

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[4] I was unable to verify this quotation in the *Adenographia* of 1659 which is the only edition of that work in the library of the College of Physicians.

[5] *Anatomia hepatis,* London, 1654, p. 266.

*Address opening the discussion on the subject before the North Shore Branch of the Chicago Medical Society, February 4, 1913.

According to press dispatches, Friedmann sells the rights of his method in Russia and in the British Empire for one million dollars each, and enters into negotiations for a like sum to sell the rights in the United States. This barefaced commercialism, which I admit might be defended on certain grounds, nevertheless leaves a bad taste in the mouth. Friedmann might know that if his remedy were all he maintains for it, not only his own nation, but the entire civilized world would unite to do him honor and to enrich him beyond the most sanguine dreams of gain. His anxiety to sell the rights of his remedy before its value is actually established, implies a doubt on his own part of its efficiency.

In pronouncing this severe criticism on Friedmann's attitude, we must not lose sight of the fact that our information is derived entirely from newspaper accounts, which may or may not be correct. The newspapers themselves do not deny that what they are after is news first, without any particular insistence upon the truth. If the news happens to be true, so much the better; if not, it is news anyway. We may be doing Friedmann an injustice. If so, we shall be willing to apologize.

While it was to be foreseen that after the glowing accounts that came to our country from Berlin, many consumptives would go or send to Berlin for the much vaunted remedy, one might think that physicians would assume a more critical attitude, yet many of our colleagues have shown themselves to be quite as gullible as lay people, and are entirely premature in taking things for granted. We read of physicians selling their automobiles, mortgaging their homes to borrow money to go to Berlin (the pity of it!), either for their own benefit, or in order to get the remedy for their wives, for their dear ones. Others pledge themselves to give the benefit of this new "cure" free to suffering mankind. Verily, it seems as though the lessons of 1890 were forgotten.

Nor is the reaction long in coming. As early as January 25th, a little over two months after the first announcement, what amounts to a flat denial of the value of Friedmann's remedy is published in the papers, and the obverse of the medal is being shown. The newspapers have aroused extravagant hopes and expectations in the most gullible class of people—the consumptives. Now they destroy them ruthlessly and cause untold disappointment and mental suffering and anguish. The question seems pertinent whether this proceeding is not actually immoral, and we are tempted to ask whether the newspapers consider themselves beyond the restraint of moral precepts and are at liberty to play fast and loose with the happiness of the public.

If we now come to examine Friedmann's report, what do we find? In his original report, which was published in the *Berliner klinische Wochenschrift* for November 18, 1912,[1] he describes at length his clinical results in a great variety of tuberculous cases treated with his remedy, by intramuscular and intravenous injection, sometimes one or the other, sometimes both simultaneously. He asserts that patients show surprising improvement after one or two injections. He injects his bacterin into newborn infants, although it contains living tubercle bacilli, and says that somewhat over one year after this inoculation not the slightest trace of scrofula or tuberculosis is to be found in any of these children.

The account of animal experiments is extremely scant. Friedmann avers that his preparation is innocuous for guineapigs, and that even after years they remain quite healthy. Nevertheless, they are not entirely immune to severe artificial infection; while his untreated animals succumb to this after about 110 days, guineapigs immunized with one injection live an average of 363 days. He passes over this comparatively unfavorable result by declaring airily that, fortunately, conditions are much more favorable in man, since tuberculous infection in human beings is never as severe as artificial infection in guineapigs.

In the discussion before the Berliner medizinische Gesellschaft, which is one of the most searching, most severe, and most highly scientific tribunals before which a medical man can come, Friedmann's clinical results were confirmed by a number of clinicians, although Blaschko and also Heymann showed only indifferent results in cases of skin tuberculosis and lupus. Citron admits that for treatment and for prophylaxis the use of living germs is correct in principle and was adopted by Jenner and Pasteur, but he insists that great care must be exercised as long as the details of Friedmann's method are not known; he referred to Pasteur's experience with chicken cholera vaccine, in which the avirulent virus became virulent and caused destructive epidemics. He says: "As long as we do not know the nature of virulence, as long as we are not able to control virulence, but may be confronted at any time with the fact that an avirulent virus has become virulent for some unknown reason, so long we have all been afraid to employ this principle of living virus in man, however much we may agree in principle with Friedmann, that living virus should be employed."

Citron objects to the introduction of an unknown remedy which contains living virus into children who are not clinically tuberculous, but who give a positive von Pirquet reaction, although he can find an excuse for the administration of such a remedy as a last resort in severe tuberculous cases. He warns against the general use of the remedy until Friedmann has clearly stated of what his material consists. He refers to the relatively unfavorable animal experiments, which he calls failures.

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[1] See JOURNAL, January 18, 1913, p. 147.

Professor Orth reports that the animal experiments did not yield absolutely good results. The immunized animals did not live much longer than the control animals. They all acquired tuberculosis.

Felix Klemperer's discussion, which was largely historical and along general lines, is immensely interesting, but it would lead me too far to repeat it, even in abstract. He does not believe that *the* curative remedy against tuberculosis has been found, that tuberculosis has been practically eradicated, as was announced by one of the gentlemen in the discussion, but he insists that essential progress has been made. He shows the importance of the suppurative action of tuberculin, even of Friedmann's turtle tubercle bacilli, which had rendered earlier experiments at immunization futile. He asks how Friedmann's remedy has been deprived of this action of producing pus. Klemperer agrees with Citron that prophylactically, i. e., for the vaccination of children, the use of Friedmann's remedy is rather premature.

Goldscheider speaks from the point of view of the practitioner. He asserts that the purely clinical improvement which has been described in the cases treated is not sufficient, and demands documentary and far better proof than has yet been afforded of the actual benefit derived from the remedy.

In the further discussion, in which such men as Wolff-Eisner, Bier, and Goldberg took part, similar reasons were advanced for exercising great care and for waiting. Schwenk denied that a case of renal tuberculosis which Friedmann had declared to be cured had been improved; in fact he said that the disease was still progressive.

When we examine Friedmann's report in detail, we miss first of all the thoroughness and entering into essentials for which Koch's first account of the etiology of tuberculosis has given such a splendid example, and which was followed by other investigators, for instance by Ehrlich in the announcement of his salvarsan. Friedmann's account is not satisfactory and must be characterized as empirical far more than scientific. At the present day it no longer suffices to say that a remedy has cured or can cure tuberculosis. The cure must be established, first by a clinical improvement, which may be temporary only, and which as a matter of fact has been obtained by other remedies even better than could be done by Friedmann, and has been obtained in this country since 1897; then it must be shown that an actual immunity, demonstrable by laboratory tests, by the demonstration of specific antibodies, has been produced, and that this immunity persists for weeks, months, years. It does not appear that Friedmann has made even the simplest serum tests, those for agglutinins, although Koch had shown the way twelve years before and more, and although the behavior of the opsonic curve has been demonstrated conclusively to stand in positive relation to the clinical improvement and to the immunity acquired in the course of treatment.

Friedmann's *experimental* proof is pitifully insufficient to establish his contentions. The best he could show was that his experiment animals lived three or four times longer than the controls after virulent infection, while it has been shown with other remedies that experiment animals, notably guineapigs, absolutely resist a virulent infection to which the controls succumbed in the course of a few months, and that the immunized animals were healthy and free from tuberculosis more than one year after infection.

Although, as pointed out by Citron and other men, the use of living tubercle bacilli is correct in the treatment of tuberculosis in principle, I maintain that the prophylactic use of such material in children and infants is little short of criminal. Friedmann has advanced nothing but his bare assertion that these living tubercle bacilli cannot change in their virulence and become harmful to the children. He can afford no guarantee that he has not infected these children and that eventually they may not acquire a fatal tuberculosis.

In spite of all the objections that may be raised against Friedmann's remedy, or rather against his administration of it at present, and against his incomplete announcement, I am free to admit that there may be, and probably is, a great deal of good in it. We certainly have clinical improvement in a great many cases, which has been confirmed by clinicians and by the physicians in charge. We have the disappearance of physical signs, the gain in weight, the restoration of the working ability, the loss of tubercle bacilli in the sputum, even the loss of a positive tuberculin reaction. The only question is, whether equally good results cannot be obtained with a less questionable, because less potentially dangerous remedy. This has been done.

I have the impression that Friedmann's announcement was hastened somewhat by a report which went to Germany last summer, of some work done by an American physician who did not come before the world in such a theatrical manner and with such an array of clinical cures which demand the proof of time, but whose work showed painstaking scientific research, work that is being confirmed day by day, and that is sure to stand and to solve the problem which Friedmann asserts that he has solved. This work was reported first of all to the Chicago Medical Society last May. It was published in the *Journal of the American Medical Association,* May 18, 1912, in the *Medical Record,* August 31, 1912, and in *Report No. 1* of the von Ruck Research Laboratories. The principal difference between this work and that of Friedmann is that von Ruck does not use living tubercle bacilli, but what might be called *the active principles* of the tubercle bacilli, that is, the different extractives. Von Ruck's curative remedy, the watery extract of tubercle bacilli, has been before the profession since 1897 and has accomplished fully as good clinical results as Friedmann's remedy, although not in such short periods of time. His most recent remedy, the prophylactic preparation, has kept the experiment animals entirely free from tuberculosis; in fact animals which have been immunized and then infected considerably longer than a year ago, are still alive and in good health, and in a few that died from accidental causes, not a trace of tuberculosis could be found.

Doctor von Ruck has shown that it is not necessary to inject living tubercle bacilli for the purpose of successful immunization, but that a proper combination of the various extractives will accomplish this purpose with equal efficiency and certainly with far greater safety. He has even succeeded in removing the suppurative action of the tubercle bacilli by a proper balancing of the content in fats, or, perhaps better, by removing the excess of fats and waxes from the tubercle bacilli, which he had found to be responsible for abscess formation after hypodermic injection.

In children who are subjected to prophylactic inoculation with this remedy, which, *nota bene*, entails no risk, for it does not contain living tubercle bacilli, the most surprising clinical improvement was shown, especially a decided improvement in nutrition, a disappearance of all the clinical signs where they had existed, of lung signs, of enlarged lymph glands, of anemia, etc., and what is more significant, the sera of all these children showed a progressive increase in tuberculosis antibodies, agglutinins, amboceptor, opsonins. Further, they showed, and continue to show *lytic power*, the power to dissolve tubercle bacilli *in vitro*.

I wish to call your attention to the difference in the manner in which these two scientists, Doctor Friedmann and Doctor von Ruck, have presented their work, and I want to suggest that the work of the American investigator gives the impression of more thoroughness, of greater care, greater caution, greater conservatism; certainly it is free from all commercialism and evidences of desire for personal gain and advancement, also from all notoriety seeking.

I cannot help but deplore the fact that we pay far more attention to discoveries, assertions, and investigations that are made across the water than to the work done by American physicians. Our own investigators, who are doing just as careful, just as efficient work as is done in the European laboratories and clinics, surely may demand and are entitled to our first interest and commendation. And more, the work of American investigators is entitled to greater consideration abroad than it often receives. For instance, European physicians who investigated the prophylactic treatment of typhoid fever have paid hardly any attention to the work done by Major Russell and other workers in the field, although American physicians, especially army surgeons, have done more than has been done anywhere else in the world to solve this problem.

To come back once more to the newspaper publicity of Doctor Friedmann's remedy: The hope is often expressed that even if Friedmann's remedy does not prove to be a real "cure," the discovery of this will surely come soon. While such an idea may be excused in newspaper writings, physicians should understand that it is hardly possible for one definitely and absolutely curative remedy to heal all cases of tuberculosis. More than in any other disease, patients with tuberculosis present such a variety of differing and varying conditions and problems that it is entirely impossible to consider them alike, although they may be treated according to like principles. It will always be necessary to differentiate and to individualize, and even as now, some of the so called specific remedies for tuberculosis will be successfully employed in some cases and fail in others, while others which have sometimes failed will again have their field of success. The extermination of the great white plague is not to be hoped for by the discovery of one, or of *the* specific remedy for tuberculosis. It can be expected only after our entire social conditions, especially of the working classes, have been changed and regulated according to correct hygienic, sanitary, and economic principles. Even then the ultimate eradication of the disease will require centuries of time, because it will require many years to counteract the unfavorable influences of environment and heredity.

602 Reliance Building.

ACUTE GONOCOCCAL URETHRITIS IN THE MALE.*

By Victor Cox Pedersen, A. M., M. D.,

New York.

The medical profession has taken about a generation to correct the former complacent vagary as to the unimportance of the nature of gonococcal urethritis, wrongly called gonorrhea, because it is not, as the Greeks supposed, a loss of the sexual element in either sex. The disease is no longer regarded as a simple, severe catarrh of the mucous membrane, with an early mucopurulent and later purulent discharge, but as a vicious, persistent, treacherous, and, in both sexes, more or less invalidating and sterilizing disease. It is known to attack at all ages, both sexes, and persons in every civil condition, not excluding even the clergy.

In contradistinction from the easy going vagary just alluded to, the specialist and authority of to-day is almost in a state of nightmare and remorse as to the ravages of this disease. These ravages are primarily due to the seemingly fixed, lamentable indifference concerning gonococcal invasion by the average family practitioner, and secondarily due to the good natured ignorance and the jocular attitude toward all venereal infection by its various victims, and finally due to the imperfections, limitations, and inexperience in treatment by the very men who meet this disease in the sum total most commonly, namely, the average practitioners. This is obviously true. The general practitioner, who, in a year, sees a dozen or two new cases of gonococcal infection is by no means doing a small venereal practice. The number of such practitioners is so great that it seems likely that the grand total of this disease in their hands, rather than in the hands of the authority who limits his practice to this field, is vastly greater. It is neither unreasonable nor unfair to say that if the reverse was the fact the community would be better off and the disease much more fully controlled.

How deep a respect would the entire community, lay and professional alike, have for venereal infection if every form of it required confinement to bed, as do typhoid fever, pneumonia, and the exanthemata!

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A case in point came into the practice of a colleague, skilled in diseases of the eye. A patient finally reached his office with a simple ocular condition, after having been refused attention by five family physicians, successively, in a single morning. If this patient had been the victim of gonococcal urethritis, the following may safely be said concerning these five practitioners. All five would have accepted the case with the assurance of experts. Complete and far reaching physical examination would have been given by not more than two. Possibly only one of the five would have included examination of the prostate and seminal vesicles. A microscopical diagnosis with differential stain would have been satisfied by one or two at the most, while cultural diagnosis would have been omitted by all five. Last, and perhaps most important, treatment would have been stopped and the patient turned loose on the world with an examination worthy of the name by only one, and a cultural investigation by none, of the five. It is also likely that none would have, or use, a urethroscope or cystoscope in any period of the disease. The treatment of all venereal infection is legitimately the province of those who are working in no other field in medicine. One would expect such specialists to find their limitations greatly restricted in the treatment of pneumonia, for example. It is axiomatic that the converse proposition is true.

A parenthesis should here be added covering the matter of culture, which of the true gonococcus is extremely difficult. The medium must be fresh, selected, prepared and furnished by the laboratory, never chilled after inoculation, but carefully protected in the thermostat. Where clinical and laboratory findings disagree, I rarely hesitate to repeat the latter, and have, consequently, sent as many as five successive tubes before being satisfied. Ayres has recently pointed out that *Micrococcus catarrhalis* will grow at room temperatures, hence one or more control tubes may be advisedly held in the office for comparison. It is now known that this micrococcus is, in its early cultures, Gram positive and in its later cultures, Gram negative, hence only culture will distinguish it from the true gonococcus, whose morphology it duplicates.

Absence of final touches of correct diagnosis and of refined prognosis and of judgment of results is, perhaps, the main factor in the more or less widespread infection of the innocent in wedlock—chiefly wives, but by no means uncommonly, husbands.

I am asked to speak on the subject of acute gonococcal urethritis in the male, which to my mind includes at least the following subdivisions: Management, prevention, abortion, the acute anterior disease without and with complications, the acute posterior condition without and with complications, and finally, the serum and bacterin treatments.

Management is placed first because the instructions enumerated below should be given every patient who applies for advice, whether it is preventive or curative; in other words, whether he thinks he has the disease and wishes to abort it, or whether he appears during the florid symptoms. My own custom is to give instruction in the form of leaflet in public practice. There is in this nothing new, as most large clinics have, during the past five years, adopted the same policy. In my private work patients are given a reprint of the paper which appeared in *The Long Island Medical Journal,* ii, 511, 1907, under the title of Instruction to Those Having Gonorrhea. It seems self evident that such printed matter should cover explicitly the following points: The nature of the infection, the importance of the disease sociological and personal, the tendency toward penetration, complications and persistence, the treachery of the disease, even in the hands of the best authorities, with the outcome of diseased wives, husbands, and children after supposed cure of the original victim. Particular instruction should be included as to habits during the presence of the disease, especially as to diet, alcohol, tobacco, exercise, and coitus, and precautions also as to self infection by the patient of the eyes and rectum after dressings and washings, and as to the inoculation of the innocent through soiled dressings and surgical or toilet articles.

Many have seen cases of autoinfection of the eyes, but of the rectum much less commonly. I recall the case of a youth who prided himself on being unusually careful and clean in his attention during an acute gonococcal urethritis by using a sponge for frequent bathing of the genitals. Unfortunately and innocently he used the same sponge for bathing his buttocks and anus, which finally resulted in an infection of the anus and rectum. Proctoscopy revealed gonococcal warts, several inches up, numerous, various in size, and disseminated. Surgical removal and lavage cured the patient.

The advantages of such printed instructions in office and clinic scarcely need enumeration, as at least the following will be admitted, without comment: All patients receive orders on the same matters in identical terms, any of which may be explained upon request. This removes any likelihood of omission by the busy practitioner or clinician of important points from patient to patient. It also prevents the excuse that the patient did not remember or understand any particular element in his own care of himself. Thus the bulk of the responsibility is placed where it belongs after the first careful examination and explanation and prescription, namely, with the patient. The foregoing instructions might be regarded as the sociological part of the pamphlet, but the therapeutic side must not be omitted, therefore explanation must be given as to the kind, use, and adjustment of dressings, suspensory bandages, and the like. Most vital is the teaching of how hand injections should be taken. My own little pamphlet seems to cover this ground very well in the following terms:

> You must be absolutely sure to obey the following directions while taking the hand injection. If you do as you are herein told, only benefit will follow. If, on the other hand, you do as you please, or experiment on your own account, only you will be responsible.
>
> First, always urinate before taking the injection in order to wash as much pus from the urethra as possible.
>
> Second, never use force in taking the injections, but rather, on the contrary, be as gentle as possible.
>
> Third, never use a syringe that does not work smoothly, because a "kicking" syringe prevents gentleness.

Fourth, never use more than one syringeful at one injection, unless specially ordered by the doctor.

Fifth, fill the syringe, hold it tightly against the mouth of the penis, and gently fill the passage until it feels as full as when urine is passing through it. In other words, no pressure greater than Nature's own during the act of urination is either necessary or desirable.

Sixth, hold the injection in for five or ten minutes by the watch (time to be specified by the doctor).

Seventh, after cure never loan the syringe to any one else, but rather destroy it, in order to avoid poisoning anybody with it.

Prevention is our next topic, a term which obviously implies entire protection of the healthy from the virus of the diseased individual in either sex. In our title, the female is omitted. In general, it may be said that, sooner or later, infection occurs if normal intercourse is performed, in the medical sense of complete introduction of the male into the female organ, with ejaculation, and not in the legal sense of mere contact, with or without introduction. The importance of this point is illustrated by the following case: A business men's dinner for the consummation of an important project ended with general intoxication and the suggestion that the company visit a house of prostitution for the night. One of the gentlemen, a suburbanite, had brought his wife into town and left her at a hotel. His part of the sexual debauch consisted in intercourse with one of the inmates, after which he returned to the hotel, slept off part of his liquor, and the following morning had intercourse with his wife. A gonorrhea developed in both husband and wife in about nine days. Both were referred to me by Dr. Frank Terry Brooks, of Greenwich, Conn., at the very earliest moment possible, so that each received complete cure. The woman's case never extended beyond a urethritis and vaginitis, which was a lucky and narrow escape. The man was doubly guilty because his wife was a normal sexual individual, deeply devoted to her husband, and the mother of four children in five years and willing to have still others. More than this, she freely forgave her husband because the matter occurred while he was intoxicated.

On the other hand, infection may occur without complete intercourse, as is illustrated by the following example: A gentleman whose acute urethritis had been reduced to scanty discharge and comparative comfort yielded to the solicitations of his wife for intercourse, but thought he was protecting her by not performing the act except by mere external contact. All this was absolutely against my orders and outside my knowledge, until he confessed that his wife was infected and was showing florid symptoms. She was immediately referred to her physician, Dr. Edward B. Cragin, passed through a severe attack, with tubal involvement, but without operation.

The readiness of infection is well illustrated by the foregoing examples.

Prevention through abnormal intercourse, on the other hand, is quite another matter. Every one is familiar with the various mechanical devices which prevent infection and also so limit the normal enjoyment of the sexual tie as to render them obnoxious and unpopular. The theory, however, that permanent damage ensues upon their use is a mistake. They rather act as does the glove upon the finger of a woman endeavoring to distinguish the texture of fine goods. While the glove is on, refined tactile sense is decreased, but returns when the glove is removed.

Prevention through antiseptics is common in both sexes. The usual error is that undue strength of solution is used to the damage of the delicate mucous membrane of these parts. I recall the case of a prostitute who shed a complete cast of her vagina through having used a douche of bichloride of mercury of unknown, but excessive, strength. Apparently she argued that if one tablet in the douche bag did good a handful of tablets would do more good. Strange to say, her recovery was complete, without deformity or adhesions, so far as her condition, when last seen, indicated.

Obviously antiseptics must be employed not longer than twelve hours after a suspicious intercourse. In private practice no case of infection has been seen if the following plan was adhered to: Examination for smear and culture test, followed by gentle anterior irrigation twice daily until the laboratory report came in, which usually meant three days of treatment. Most of the armies and navies of the world supply the enlisted men with preventive packets containing an antiseptic injection against urethritis and an ointment against open lesions. The men are courtmartialed and degraded if they become infected, which, with the medical means, seems to stimulate care and success of the plan. In this connection it must be remembered that, formerly, in our navy, there were enough men ill of venereal conditions, at all times, to represent the crew of a second class battleship, hence the grave importance of these precautions.

The obstacles against the author's plan of preventing infection rest with the patients who cannot usually be brought to believe that they may well have a disease which they do not as yet perceive themselves. Also many will not believe that a woman with a pretty face, a beautiful body, and an affectionate manner may be a hotbed of virulent infection—until the disease is unmistakably present.

Abortion is the next topic, which, in this disease, as in pregnancy, means the cutting short of a condition already existent. Statistics as to the success of abortive treatment cannot be complete unless they rest on smear and culture diagnoses and distinguish the desquamative or prepurulent stage, when gonococci in epithelial cells, without pus, are present. Very few patients reach the specialist's office in this stage, for valid reasons. First, sexual and alcoholic debauches are usually combined, and, second, many patients are familiar with the fact that after an alcoholic debauch, without the sexual factor, there is a great deal of irritation, sometimes even a mucous disturbance of the urethra. Hence it follows that the mucous prepurulent irritation of the first twenty-four hours of a gonococcal urethritis is ignored by the vast majority of patients. From this fact it follows that hardly any patients seek advice at this, the ripe time for results of abortive measures. If experience was otherwise, a great deal of venereal infection would be saved from proceeding to the later stages, in both sexes.

The most remarkable case of abortive treatment gone wrong was an attempt by a patient, recently personally reported. The man went to a drugstore and asked for an antiseptic, flexible bougie for checking his gonorrhea, seemingly in its earliest possible stage. His impulse sprang from the fact that he was engaged to be married and desired to protect his future wife. The druggist gave him a stick of silver nitrate caustic which he introduced into his urethra, totally destroying about five inches of it, which came away as a complete cast. Syphilis, this accident, the resulting stricture and its deformity, and the breaking of his engagement to be married, all served to produce insanity.

The accepted methods of abortion are the swabbing out of the first inch of the urethra with three to five per cent. silver nitrate through a short urethroscopic tube. The reaction which follows is usually readily controlled by standard means. This plan corresponds with swabbing out the vagina of a woman with five to ten per cent. silver nitrate solution. Irrigation of the first three inches of the urethra with a small catheter and hand syringe with any recognized mild antiseptic is the second scheme. In each of these treatments I like to close the urethra with a penile clip or elastic band to prevent extension of the drugs beyond the desired point. Cocaine is a mercy for the caustic. I have also been successful by using the constriction of the urethra and, with a medicine dropper instilling any of the newer silver salts in strong solution, retaining it from ten to twenty minutes, and repeating the application twice or thrice daily for three days. The toilet of the foreskin and glans must be studiously observed to prevent autoinfection of the urethra; exourethral and endourethral abortion must be carried out together.

In this, as in all stages of acute gonococcal inflammation, preference is given to relatively weaker solutions and much longer application.

Treatment of acute anterior gonococcal urethritis without complications is our next subject. This is the stage marked by free, purulent discharge and other signs of well established, more or less severe inflammation. Bacteriologists inform us that there are at least twelve different strains of the gonococcus, naturally varying in virulence. This fact accounts for the wide divergence in the incubation, onset, establishment, course, complications, and prognosis of this disease. The treatment is divided into the expectant and irrigation methods. The first point is, which is the better? Obviously that which, in the long run, leads to least complications. Therefore, in the hands of the general practitioner, the expectant is by far the better, because it does not require premature interference with the inflamed and damaged, delicate mucous membrane. In fact, I am accustomed to limit the irrigation treatment solely to cases of true anterior disease, with no appreciable congestion of the prostate, as determined by at least daily rectal examination of the prostate. Naturally such a person must be a man of means who can afford treatment once or twice a day for two or three weeks. Chetwood's double current apparatus with a large irrigator never higher than the patient's ear, thus furnishing pressure equal to that of the urine during micturition and containing a hot, rather weak, solution, fulfils the requirement.

The armies and navies of the world put the enlisted men to bed during the first two weeks of this disease, with the double purpose of affording quiet and of maintaining absolute control over the individual. This would be ideal in private work also, but so many patients would be betrayed by going to bed without previous obvious sickness that one may very rarely resort to it. In children this treatment is very serviceable, as naturally the parents invariably know of the affliction which commonly arises from unnatural practices on the part of vicious adults. In this connection I recall the case of a nine year old boy who was intentionally infected by a merchant of considerable social and financial standing, but of essential perversion of sexual instinct. The only treatment I could possibly give was rest in bed, urinary diluents, and bacterins. The patient did extremely well, although he improved slowly. The parents became impatient because more was not being done locally for him and finally were unjust enough to take him from my care. It is certainly difficult to please some persons. This boy had not had a single complication or severe symptom.

The indications of the expectant treatment are to dilute and neutralize the urine so that it shall not irritate the inflamed mucous membrane and so that, through its increased quantity, it shall wash away the pus at frequent intervals, but only under natural pressure. It matters very little what alkali is used to neutralize the acidity, potash, soda, lithia, and the like. Caution through frequent uranalyses must be exercised to avoid precipitation of crystals, such as sodium urate, which may, by mechanical irritation, offend the mucosa as much or more than the acidity. The drinking of ordinary water is efficient in diluting and increasing the urine, but the patient had best cease forced water drinking about five hours before going to bed, otherwise the activity of the bladder will disturb rest and provoke chordee.

Chordee is the mark of severe infection and may be very troublesome. Cold applications reduce the congestion and the erection, urination then relieves the bladder whose distention is a basis of the symptom. The tendency toward chordee is avoided by emptying the bladder and bowels just before going to bed, sleeping on the side rather than the back, under light in preference to heavy bedclothing, and by taking the fluid extract of aconite in minimum doses every one or two hours through the day. Last, but not least, the patient must not associate with women, especially one of whom he is fond, in order to avoid the inevitable sexual stimulation incident thereto.

Complications of acute anterior gonococcal urethritis are the next topic and are, fortunately, rather trivial in character. They are avoided by as much general rest as possible, consonant with social and commercial duties, such as most patients must inevitably continue. Extreme edema of the foreskin is one of them, due to lymphostasis and inflammatory swelling. Heat to tolerance in penile or sitting baths, local dressings, and subpreputial irrigations are the indications. I use a silver female catheter mounted in a Valentine irrigator nozzle and reasonably high pressure of potassium permanganate solution to balloon out the foreskin. Spatter is prevented by throwing several thicknesses of gauze over the end of the penis and the catheter in place, which receive the return flow and guide it harmlessly into the sink.

Balanoposthitis is another simple complication, usually accompanied by edema and treated in the same manner. The mechanical removal of the pus, combined with heat, seems to be more important than the actual antisepsis, inasmuch as the continuous flow of pus from the urethra renders the latter at least momentarily futile.

Folliculitis with abscess is more important; if moderate and unobstructive they take care of themselves through the acute stage; if larger and obstructive, puncture and evacuation through the urethra are required. External operation is not advisable, as sinus formation of obstinate character usually follows.

Abscess of the sheath of the penis, usually through lymphangitis, is uncommon and calls for early surgical treatment. Organisms other than the gonococcus, but associated with it, are commonly at the basis of this complication.

Treatment of acute posterior gonococcal urethritis without complications is our next item. Practically all cases of this infection have a slight degree of posterior urethritis, from which the majority proceed to a severe stage. The indications of treatment are, first, a recognition of the anatomy of the part, and, second, of the physiology. The posterior urethra is anatomically the widest part, being bounded behind by the sphincter, and in front by the colliculus or verumontanum. The pouchlike passage between these two points is surrounded by the prostate gland with its innumerable delicate ducts pointing forward for the most part. In the colliculus are situated the vasa deferentia and the rudiments of the womb, the utriculus. From these facts it will be seen that the irrigation treatment under high pressure invites hydraulic damage to these delicate, essential structures and subsequent penetration of the infection, consequently, even in anterior urethritis, as soon as the prostate shows unmistakable congestion, I never use the irrigation treatment, but promptly go over to expectant means until the acute stage subsides. The second indication of treatment is the physiology of the deep urethra. It should be remembered that into this portion the essential sexual glands, the testicles, evacuate, and the auxiliary sexual glands, such as the prostate, likewise. Hence it follows that great respect must be had for the deep urethra, which, during an acute posterior urethritis of gonococcal origin, must be greatly swollen and edematous, exactly as is the anterior urethra in similar circumstances. Consequently one would ordinarily look for the same means to avail in each case. The expectant is, therefore, the method of choice in the management of acute posterior disease, embodying, as it should, studious avoidance of irritation by physical activity, faulty diet, alcoholic beverages, invasion with any means, instrumental or hydraulic (as fluids under pressure undoubtedly constitute one form of instrumental entrance), or by medicinal stimulation, or, finally, by direct and indirect sexual excitement and gratification. In treatment it must be remembered that there is a certain amount of physiological congestion due to the normal activity of the testicles in their secretion of semen and its storage in the seminal vesicles, followed by the congestion of a more or less regular evacuation in emissions or intercourse. Then the disease produces intense congestion. These sources of congestion should not be augmented by any error or violence of treatment, which again repeats in another form the argument in favor of the milder expectant management which leads to far fewer complications than any other method.

Acute posterior gonococcal urethritis occurs in mild, severe, and intense forms. The mild cases persist only a few days, show few symptoms and little inconvenience, except frequency and urgency of urination. Tenesmus, if present at all, is transitory and slight. The severe cases persist from one to two weeks and add greater frequency and urgency of micturition, with distinct tenesmus, day and night. Complications usually arise in many of these patients. Hemorrhage is not uncommon. The intense forms last from two to three weeks and include, with the foregoing symptoms, much pain and more or less hemorrhage. Complications are almost invariable. I recall the case of a young lawyer whose urethritis required three weeks instead of one to develop, but went on to severe hemorrhagic posterior urethritis with unilateral epididymoorchitis. He passed, not uncommonly, a half wineglassful of blood several times daily for nearly a week. He fully recovered under the methods hereinafter stated, combined with liberal injections of bacterin, married into one of the socially distinguished families of the country, and has since had a baby without infection of his wife, a very satisfactory, blessed outcome.

Mild cases are treated exactly like anterior urethritis; the usual habits of life, mild diet, simple alkalies and diluents, cessation of hand injections, and precautions against the congestion of constipation, sexual excitement, and undue water drinking.

The severe cases require rest in bed and in addition to the foregoing simple details, one may add, according to the patient's choice and comfort, hot or cold applications to the perineum, or irrigations of the rectum.

The intense cases require longer treatment on the same lines as the severe cases. Bacterins may be advisedly added, preferably autogenous in type.

Posterior urethritis which is not declining satisfactorily requires irrigation. The safest method suggests that a small catheter be passed into the bladder with great gentleness, always after urination, to flush away contained pus from the urethra. The bladder is then irrigated to prevent infection filled with a mild antiseptic solution, beginning with boric acid and ending with reasonable strengths of silver nitrate (one in 20,000 to one in 5,000), or potassium permanganate (one in 10,000 to one in 4,000). The patient then discharges the antiseptic, cleansing the infected region under Nature's own pressure of the urine. Before and during such manipulations, the patient should be taking some efficient urinary antiseptic as a preventive. Another good method of irrigating the deep urethra is with a small catheter and hand syringe, so that the pressure of the fluid may be regulated to a nicety, to agree with the pressure of the urine. Heat to tolerance is essential in all these steps. For extreme distress, if present, one may give an opium preparation, the choice being codeine, unless inefficient.

I do not believe now, and I have never believed in the essential wisdom of irrigations of the deep urethra under high pressure through the meatus. It is noteworthy that, at least as far as New York authorities are concerned, most of the devotees and enthusiasts of this form of management have abandoned it, for the sole reason that the number of complications was greater than without it. These statements are not to be regarded as assuming that this treatment is the cause of complications *per se*, because not uncommonly one sees complicated cases without any treatment at all. For example, I recall a hospital patient with double involvement of the testicles and incipient abscess of the prostate who had had the disease about two weeks as a first experience and without treatment of any kind.

The irrigation method of treatment appeals to some patients in the light that "the doctor is doing something," inasmuch as judicious observation of symptoms and gentle means of treatment do not similarly attract their attention. The same remark applies to premature application of hand injections, or of office treatment. If, therefore, the patient belongs to this nervous, exacting type, it is, in order to hold him, necessary either to institute the one or the other method of pleasing him; much like the use of a placebo, with the reservation that the disease will not be stirred up. I recently had a lesson in this line. Two brothers were referred to me, one with acute, the other with chronic gonococcal urethritis. After thorough examination of the latter, I instituted office instrumentation and instillations. In about two weeks the acute case was ready for hand injections and began to use them, whereupon his brother wanted to know why I was not doing anything for him by also giving him hand injections. I thought I convinced him that my judgment had best rule and that a hand injection would probably harm rather than benefit him. To my disgust, both brothers left me, doubtless because the patient with the chronic case, who possessed the stronger personality, induced the other to believe that I was trying to "work" them. If, upon his demand, I had given him a hand injection of normal salt solution, both patients would have remained in my care until cured. I shall never again be caught in this same way.

The complications of acute posterior gonococcal urethritis are next for attention, but cover so vast a field that a lengthy paper could be offered on this subject alone, and even on some of the complications by themselves. In order to complete the logical sequence of this paper, however, one should speak of the more prominent complications: Cystourethritis, cystitis, prostatitis, seminal vesiculitis, funiculitis, and epididymoorchitis.

Cystitis is an extension into the bladder of cystourethritis, which, in reality, is only a proximal extension of the urethritis into the direct zone of the sphincter muscle. Each demands about the same treatment as the intense posterior urethritides do, in broad aspect rather than minute details.

Prostatitis represents lateral extension of the infection into the prostate gland and may or may not go on to single or multiple abscesses or one generalized abscess, affecting the gland as a whole, or one lobe. Caution in diagnosis must be great, as it is surprising to see how readily a generalized prostatitis, without abscess, will simulate an abscess. When this point is settled, surgical evacuation is indicated. It was formerly taught that the evacuation should be always made through the urethra. It is now recognized as wiser to evacuate where the greatest prominence presents; thus the surgical rule of attacking an abscess where it seems about to point is followed, and also the danger of a urethroprostatic sinus is avoided. Prostatitis without abscess formation indicates anodynes, rectal irrigation, and the various methods assigned for severe posterior disease. Gentle, thorough massage, regularly done, as soon as decline appears, is of great value in many cases, and should be tried.

Seminal vesiculitis, funiculitis, and epididymoorchitis are so closely related that they should be regarded together. The infection travels from the colliculus at the ejaculatory duct proximally along the vas deferens into the vesicle, epididymis, and testicle. Bodily and local rest are urgently needed, hot or cold local applications, anodynes, and the other treatment of intense posterior disease are indicated. Open operation is rarely, if ever, necessary in the acute degrees of these three complications. It finds an application, if any, in severe phlegmon of the seminal vesicle. In chronic stages, however, the indication is otherwise, but we are not concerned with chronic conditions in this paper.

One drug should be called to attention which I have found of value in allaying congestion and irritation, namely, the fluid extract of aconite, prescribed for intelligent patients every one to two hours, for unintelligent patents every three to four hours, in doses of one minim. The interval is doubled as soon as the physiological signs appear, namely, tingling of the sensory nerve endings in the lips, tongue, throat, and digits, perspiration, and a feeling of relaxation. It is surprising to see how many intelligent patients will describe improvements in the symptoms after a half day of this treatment. I usually limit unintelligent patients to a total of six to eight minims in twenty-four hours.

The serum and bacterin treatments are the last element of this paper. Unfortunately bacteriologists have not been quite as successful in the preparation of these products as they have been with those related to other organisms. This seems to be due to the fact that there are at least twelve different strains of the gonococcus recognized, which renders slight likelihood of finding a stock bacterin which meets the given infection to the best advantage. Mixed bacterins, containing all the strains, may, with time, be found to have met this obstacle. On the other hand, the wisest plan seems to be a trial of autogenous bacterins, which, although often difficult to obtain, are usually prepared in most laboratories within a week or ten days.

The serum seems available in the acute stages, while the gonococci are numerous and active, but the bacterins appear to be indicated for combating the absorptive conditions of the disease, in the chronic and possibly subacute periods. When one preparation seems to have failed, the other should be tried, serum or bacterin, as the case may be. I have lately been using larger doses, especially of the bacterin, with apparently better results. If time bears out this observation, it will be analogous to that in the case of diphtheria, namely, that the larger doses of antitoxine succeed when the smaller ones fail.

In this connection I recall the case of a man with double, chronic, relapsing seminal vesiculitis, so severe as almost to constitute an acute attack during each relapse. He preferred to postpone Fuller's operation of double seminal vesiculotomy. I therefore began to give him gluteal, intramuscular injections of autogenous bacterin, 400 million organisms at a time, at first every other day, then twice a week, and latterly once a week. Up to the present time the man has received about forty injections. His prostate, vesicles and testicles have all returned virtually to normal and no relapse has been even suggested by symptoms. I purpose exploring his deep urethra with the urethroscope very shortly. For this reason I can make no note of findings now.

I have endeavored to touch upon the indications of acute urethritis in the matter of treatment from the standpoint of anatomical, physiological, pathological, and bacteriological data rather than from the data of mere lists of drugs or formulas available. This seems to have been the best plan of approaching an old subject because, if one carries in mind clearly what is going on in a definite part of the urethra and its annexa during acute gonococcal infection and its complications, the selection of the drugs or of the means of treatment is relatively easy. One rule, however, should be followed, that of observation, gentleness, and conservatism. "When in doubt do nothing," is a very safe axiom in gonococcal infection.

45 West Ninth Street.

MULTIPLE PROFESSIONAL CRAMPS IN A PSYCHASTHENIC.

Psychoanalysis and Treatment.

By Tom A. Williams, M. B., A. M., Edin.,
Washington, D. C.,
Neurologist, Epiphany Dispensary; Corresponding Member, Paris Neurological Society, etc.

The history which follows shows and explains the origin of writer's cramp, which, like that of all truly occupational dyscinesias, is psychological.

Although, on account of marked scrupulosity and anxiety, the patient was regarded as a psychasthenic and the cramps were interpreted as tics, yet she presented many symptoms distinctly hysterical in mechanism. The proneness to suggestions of medical source on the part of so many individuals is seen, and the inconveniences of such suggestions are strikingly revealed. Their tenacity in this case should furnish a warning to medical men against the danger of giving to patients false notions regarding disease, their bodies, and minds. Finally, the relative unimportance of the sexual factor in the genesis and cure of her disabilities is maintained in the analysis and supported by the success of the precedures employed in treatment.

The importance of an understanding of psychopathology for the treatment of such patients (shown by the previous failures of skilful physical therapy in this case) is not diminished by the need also for careful management of the bodily functions, in order to give the highest efficiency to the instrument, the brain, which carries out the trying psychomotor discipline required for the reeducation of such persons.

Case. F. S., single woman, aged twenty-nine years, was referred, April 10, 1910, by Dr. John Dunlop after the failure of orthopedics and massage to improve an incapacity to write, apparently due to a painful stiffness and cramp of the shoulder and wrist of two years' duration. Several months in the country had also failed to remedy the cramp, although she had gained ten pounds in weight and became much stronger.

Physical examination revealed no organic disease. She was left handed, as was her brother's daughter of two years. The muscles were strong and respiratory capacity was ample; and in spite of hypotonia, there was no impairment of movement, either in extent or force. Moreover, contractions could be maintained for thirty seconds without fatigue.

But in the act of writing, the wrist stiffened, the forefinger and thumb tightened up on the pen, the hand trembled, and she complained of severe pain in the wrist and between the first and second metacarpal bones. There was not the decided deformity of attitude so often seen in cases of professional cramp: indeed the hand was held in a fairly good writing position, except for a rather too great extension and radial adduction of the wrist. She declared that she was prevented from writing rather by the pain than by the tremor or stiffness.

She did not have the great difficulty of voluntarily relaxing the limbs which I have found in so many cases of professional cramp. It was only in the right shoulder and arm that there was some lack of perfect freedom when passive movements were imparted. There was, however, at first, some uncertainty in performing directed tensions and relaxations of the lower limbs. But I could not satisfy myself that this was not due to embarrassment and imperfect comprehension of what was desired.

The deep reflexes, especially in the lower limbs, were very active, and there was a false clonus. The muscular tonus, especially of the arms, was poor. She had cold and clammy extremities and there was a slight tremor. There was a dry eczema in the left axilla. Sensibility was normal.

She had always been much constipated, with a capricious appetite, which had latterly been ravenous. Every few weeks she had had a severe bilious attack, which pulled her down for a week. She overcame the disability by her will. At school she weighed 150 pounds, which weight fell to 110 pounds at the time of the singer's cramp (see later) until she was twenty-four years old. She was then about 130 pounds in weight.

Much of the previous history was ascertained only after psychoanalysis at various times. As a girl, she was solitary in tastes, and did not care for games. The neighbors' children did not appeal to her, and she stayed much with her mother, her sister being too young to be a playmate. When nine years old, she had scarlet fever, and since then had not had much vitality, always ailing, easily tired, and readily contracting infections. Both heat and cold tried her much, and she perspired readily, even when not heated. The hands often stung, burned, and ached, and seemed to swell, and the veins stood out when she was cold. When she was excited, the hands reddened. Edema of the eyelids came quickly during fatigue. But there was no history of epistaxis nor angioneurotic edema. There had been no pain in the body, back, or sides. This was remarkable in view of the neurastheniform aspect of the patient and her great fatigableness, along with the paresthesia in the hands. She menstruated normally at fifteen years. After a fall at the age of twelve she wore a plaster on the back for three years. In view of the later history, the significance of this procedure might be thought psychopathological, indicating an unusual suggestibility for the notion of bodily disease. At eighteen years the catamenia disappeared for six months, and were afterward scanty, when she was said to be anemic. Sexual desire did not appear till nineteen years; although when fifteen she had been properly enlightened by her mother. So sensitive was she to ridicule that a girl who laughed at her at the age of nine years on account of her belief that babies were brought by the doctor still incurred her hatred. She was disgusted with the girl's explanation, and refused to believe it, and when her mother confirmed her disillusionment, she felt that she had been deceived, and was very distressed, just as when she learned that there was really no Santa Claus.[1]

Among the characteristics discovered in anamnesis were the following: Her diffidence about her singing was increased by the fear that it would make people believe that she was "pushing," as she had seen many do. At one time, her loss of confidence was so great that even the making of her clothing would unnerve her, so that when any thought was required the task seemed like a mountain. She had told her mother that she felt different to others, as she never felt like acting as she saw others do. Analysis showed that this was because she was too self-conscious to speak, for fear of attracting the attention of others, especially strangers. Lately, she had ceased taking communion, because dissatisfied with herself, religion, and everything. It seemed wrong that her late fiancé, who was completely selfish, should be happily married and well, while she was poor and sick. She was ashamed of her apostacy and kept it to herself. She had never been spiritually minded, but always altruistic. A cousin attributed her misfortune to her having danced with men; but she herself rejected this notion, as she never did anything she was ashamed of with men. She had been brought up to be very particular and reliable;[2] so that she would become irritable and excited if things were not exactly right. Hence, she had always kept a good deal to herself or stayed with her mother. She was rather taciturn, not caring to talk while working. She was not fond of day dreaming. She thought she had not made what she should of life. What she meant was that she had had to curtail her musical ambitions.

Psychologically she was overconscientious and inclined to melancholy. She said that her torture of mind was hardly describable.[3] She was very diffident, and hardly felt like acting as she saw others do. This she could not particularize, except that she feared to speak when with others for fear of attracting attention. She was ambitious and desired to excel in music, but was handicapped by her poverty on account of her father's loss of work for several years. Thus she could not have a proper piano, and had great difficulty paying for her singing lessons. She felt that she must make good; for she believed herself worthy of a better environment than her poverty allowed.

THE PROFESSIONAL CRAMPS.

It was this state of mind which led to her first incapacity. She had sung in a choir for some time, and appeared at a concert, but had no trouble with her voice, although she was studying with a master who, she now believes, employed an injurious method. After a concert at which she made her first public appearance, she received an anonymous letter suggesting that she would have looked better had two inches been removed from the neck of her corsage. This might be thought indicative of a purely sexual complex; but it must be considered in conjunction with the long standing fear of appearing forward, and her general lack of confidence and fear of ridicule and touchiness of disposition, all of them due to the consciousness of her own inadequacy to what would be required for the fulfilment of her ambitions. She never found out the author, and it greatly added to her self consciousness, as she feared that any of her friends might know of the insult, and every time she sang she thought of it with a feeling of immodesty. In consequence, a painful contraction of the pharyngeal muscles occurred, especially when she sang a high note or a solo, as these drew attention to her. Then the tongue began to stiffen at the same time and a severe cramping pain would occur in the throat.

The cessation of menstruation she believed to be a sign of consumption, which she much dreaded, as she had been at the death bed from that disease of her only girl friend; and one of her cousins and three aunts had died from it. She knew that tuberculosis could affect the throat, and was indeed told that her trouble might be consumption brought on by the strain of singing while she was physically unfit. Eventually, the cramp would occur even upon talking, especially when several people were present and she was tired. This episode, like that of the plaster upon the back, illustrates the mechanism of a hysterical notion. Although I have spoken of the patient as a psychasthenic, I am not at all sure that the pathogenesis of her condition is not that typical of hysteria, as defined by Babinski, viz., "producible by suggestion" (NEW YORK MEDICAL JOURNAL, January 22, 1910. See also *Journal of the American Medical Association*, December 21, 1912.)

Five years ago, she ceased singing, as two years of treatment by a laryngologist failed to improve her; but some time later she recommenced singing in the choir, although she could not manage a solo. In the choir she met the leading tenor, whose voice she greatly admired. They became engaged; but although intensely fond of his person, her better judgment acquiesced in her parents' advice not to marry him, because of his careless habits, intemperance, and irresponsible behavior. After four years she gave him up, but the strain of doing so was very great. She had always suppressed her feelings with him, for she feared to succumb to his advances; and her feeling of right and wrong would not allow her to do so; and she is proud of succeeding, for she believes few girls could have withstood. This episode shows tremendous power of resisting suggestions of a moral order, and is typical of the scrupulousness of the psychasthenic character. He made her life miserable by trying to take advantage of her; though he had fine feelings otherwise. Her endeavor to appear indifferent after the rupture wore on her; but she eventually threw off what she calls an obsession of her life. Sexual desire was excited only when with him; it never occurred in his absence, even in dreams.

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[1] Sensitiveness of this kind is very common I find. Such cases illustrate the need of proper instruction at an early age in the hygiene of the reproductive organs to prevent the unhappiness caused by the deceptions contingent upon the prudery which is so common.

[2] Hyperconscientious training is very apt to produce a reticent solitariness in a child; for the little one is unable to reconcile the happy-go-lucky compromises of companions with the training of her elders. I find this the most frequent of all the sources of psychasthenia. Its effect in children is very clearly brought out in the cases I have recently published (*American Journal of the Medical Sciences*, December, 1912).

[3] Anxiety is the dominant feeling in states of this kind. It is often accompanied by many of the physiological reactions of fear, of which it is merely a variant. I find it always contingent upon the consciousness explicit or implicit of an insurmountable situation, that is to say, psychological; although I have carefully looked for the mechanism of direct physical transference from a state of "pleasure—desire" which certain psychopathologists term "libido." The relation of the emotion to the idea which caused it has been set forth by me in the *Journal of Abnormal Psychology*, June, 1910.

ONSET OF THE WRITING CRAMP.

During the grief of this rupture she had been working at book keeping in a railroad office, where great accuracy was needed, as one error would upset the work of a room full of clerks. Two years ago, she had a severe attack of grippe followed by insomnia, for which many drugs were given. The practice of giving narcotics of any kind for nervous disturbances without a proper psychological examination requires strong condemnation. Not only does it injure the patient and prevent recovery for a long time, but it casts discredit upon the whole profession for the want of understanding of the individual doctor, and gives food for the gibes of the devotees of Christian Science and other enemies of scientific medicine. She found half a trional powder would stupefy her for two days. On returning to work, she had great difficulty in finishing the day. She felt that this position must be kept, as she could no longer, by singing, earn the money she needed to support herself, now that her engagement was broken. Against the increasing difficulty of writing her daily quota, she struggled hard; but anxiety only added to the physical burden, and she finally succumbed after trying various methods of holding her pen in the effort to write. This process occupied about six months, and ended in a tremor so violent that she had to be fed. She attributed her incapacity to a broken muscle in the shoulder, and hoped that a month's rest would enable her to return to work. This belief is largely the fruit of medical opinion, again showing the need for psychopathological skill in a variety of conditions common in medical practice.

In the course of the investigation, the dreams were explored, but this line of inquiry was soon abandoned, as the analysis of the dreams which were recalled did not reveal additional complexes of significance germane to the psychogenesis of the writer's cramp.

It appeared that some little time before entering the railroad office, she had been subjected to a violent shock, through the suicide of a sister-in-law with whom she had been staying, and with whom she had not got on very well, believing herself somewhat unfairly treated by her. It is possible that this increased the predisposition to writer's cramp by exalting the nervous anxiety with which she entered the office.

PROGRESS OF THE CASE.

After a month's treatment by a succulent diet, constipation was greatly improved. This symptom, so common in "nervous" cases, I find almost invariably removed when a proper diet is persevered with. The essentials are an abundance of whole cereal and succulent fruits and vegetables and a diminution of the proteids, which have generally been given in excess in the belief that the patient's nervous system needs more pabulum, an incorrect procedure because starvation is less frequent than toxicosis as a cause of impaired neural function. (See Diet in Nervous Disorders, NEW YORK MEDICAL JOURNAL, October 7, 1911.) I absolutely forbid purgatives of any kind in these cases; but permit an enema on the third day if required. Of course, proper exercises greatly assist the proper diet. Writing was possible without constraint when made large and round, but an attempt to lessen the size failed. The next menstruation was very painful, and the girl became sleepless; also she became very nervous after sewing. She was advised to relax; and thyroid extract, one grain twice daily, was tried. For some days after this, she was in a torpid state; but could not sleep properly. This I interpret as one of her periodic bilious attacks, not yet compensated by the diet; these eventually disappeared. The animal extracts were prescribed in the belief that her internal secretions might be somewhat exhausted by the long standing emotional stresses. Epinephrine was added to the prescription. She blamed herself for being in this torpor by letting her disappointment prey on her mind; but she declared that she was now quite indifferent to her fiancé, and disgusted with herself for not having thrown it off.

The reflexes, which had diminished for a time, were now much increased. Great variability in the extent and rapidity of response of the deep reflexes was shown at different examinations. Exaggeration seemed to be in proportion to ill health. But the false clonus found in the early examination never returned; and on the whole there was a progressive diminution of excitability.

After this crisis, she made better progress, being able to relax her wrist and to write the alphabet firmly in letters about half an inch large; but her throat still ached sometimes when singing. The fact that she takes responsibility in the house weighs upon her; and her sister, who does not do so, is so much happier that she is inclined to blame her parents for encouraging her ambition. It is by such mechanisms that the beginnings of paranoia arise. The desire to blame others is then a psychological defense against chronic discontent at oneself. She has, however, been sleeping better, having walked much, and the constipation has greatly diminished, thanks to the fruit in the diet; but her mind is still preoccupied, because she is not working, and does not feel able to sit at a desk from eight to five o'clock.

Improvement continued in spite of the unpleasantness of a rupture in the choir where she sang. She showed much acerbity, blaming the director's bad management. Although she is much improved, she is very pessimistic, and thinks she may have a tapeworm, as she is so ravenous (another instance of a hysterical idea). But she had succeeded in sceptically rebutting the argument of certain of her friends who wished her to attempt to apply Christian Science to her disorder. This showed that her reeducation was really taking hold. Upon her insistence, I allowed her doctor to give male fern for the suspected tapeworm; this satisfied her of its absence. Her constipation was now cured; but, as she believes capacity to write is unattainable, she is very unhappy.

After the first eight weeks I did not see her so often, and she unfortunately relapsed on account of frequent discussions of her state by well meaning friends; so that toward the end of July she was firmly impressed with the idea that there was a deformity in the hand and shoulders. I disproved this to her with some difficulty, as her attitude was distinctly negativistic. But after this she fell back upon the notion that she needed something to make her food assimilate. A rediscussion of her digestive difficulties showed her that they were caused by her emotions. The reeducation in such cases often must be far reaching; as no point is too small to cause inquietude; and an understanding must be given. This is very different from the crude suggestion of reassurance, with false minimizing of the symptoms with which a great many doctors confound psychotherapy, the aim of which is not to hoodwink the patient into the belief that he is not ill, such as do the Christian Scientists by a metaphysical denial of symptoms. Psychotherapy aims, first, to teach the patient why he thinks himself ill, or how he has made himself ill by psychological mechanisms. These the physician explains. Secondly, psychotherapy educates away from the habits which are formed during the pathological phase, and provides a means of building up anew the normal actions which constitute healthy habits. It restores the useless to usefulness in a way which tends to prevent relapse. The patient's equipment is really increased; whereas the false psychotherapist gives to the patient only a crutch by which he can hobble along, but which does not afford means of intelligent adaptation to new difficulties. She had to admit that she had improved, for excitement and mental effort no longer caused dyspepsia, though it still induced constipation. She had gained in strength.

But in spite of all reasoning she would feel her hand contract sometimes, even when not writing. I decided, therefore, that she had not a real grasp of the principles I had been trying to inculcate. One is apt to fail to carry the patient along in understanding unless the temptation to go rapidly without sounding the patient all the way is not succumbed to. Accordingly, I recapitulated them systematically, with great care, and wrote out a summary for her to take home and study. After her next visit, I kept this, and asked her to write to me an account of the mechanism of her condition as she understood it. From this account (which follows) it can be seen that she had not even yet transcended the physical explanation, as she referred her condition to disease of the brain cells, failing entirely to appreciate that her disability was psychological; that is, a disharmony of acts arising in ideas. It was not that the machine was broken or worn, but that the wrong letters were brought into operation. It would be possible to overcome the abnormal acts derived from diseased brain cells by any amount of studied indifference or exercise of selfwill, which would serve in a psychological situation.

So the following letter was written to her, and she was asked to cease entirely the practice of writing while studying and trying to grasp the propositions contained in my letter. To do this the better, she was urged to leave home and be absent from habitual influences for a few weeks, during which she was to engage in abundant exercise in the open air. After a few days, she might begin to learn to write with the left hand. When she had clearly grasped the principles which I had explained, she might begin to practise with the right hand. Preceding this, I had seen one of her friends, who gave me the following account:

> F. S. is selfish, and perhaps ashamed of her mother, who has indulged and spoiled her sister. They forget that F. S. is ill and do not excuse her peevishness. The shame is due to her mother's ambition for her. She has always had to help her family; and her sister, a girl of nineteen or twenty, has not had to do so, and she considers this unfair.
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> She is snobbish, and her mother is worse. She does not want to have to depend upon relatives when her parents die. She does not practise writing much, nor exercise. (Why?) "I did not see much use." She does not grasp the psychological idea, and was disappointed not to find a tapeworm. People imply that she is a failure because she is not married at twenty-eight, and cast up her support to her.
>
> She wishes very much to be engaged or married; and if she is not engaged soon, she thinks there will be no hope for her.

To pursue the analysis, I gave her a paragraph in a newspaper to read about the cutting of his wife's throat by a man who thought it a disgrace for her to work. She said: "It is like my thoughts. and it pains me; such queer ideas."

It was then she was directed to dictate as accurately as she could my explanation of how and why her arm went astray in writing and other acts. She said she could not, making many excuses; and when asked to consult her friend with regard to suitable work, she made the excuse that she was going away down the river next month, and it was not worth while beginning. She was much exercised over what proved upon examination to be the long tendon of the left biceps slipping over its ridge. She kept always referring to the physical aspect of her case. On August 5th, she could not comprehend why her hand still contracted when no mental stress was apparent. I explained again that it was habit, just like the character of any one's walk, gestures, and so on.

She said: "Why do my hands tremble when I seem so well to-day?" So I made her hold them out, and a rapid oscillation of the right hand was shown. I made her count twenty while looking at me; it ceased. I made her look at my hand spread steadily before her; her trembling again ceased. Then I explained its mental nature, and that a tremor of organic origin could not be stopped like this. She at last was convinced.

The patient's own explanation of the mechanism of her affection was as follows: "An abnormal condition of the mind produces certain phenomenal results. Practically the same brain cells are in action when writing or sewing. Through certain physical conditions, these particular cells have become diseased, and instead of performing their functions properly, they create abnormal acts. When this condition has become chronic, it can only be overcome by exercising self will and by studied indifference to all matters." My reply to this was embodied in a psychotherapeutic letter, as follows:

> Your account shows, as I half expected, that you have by no means an adequate conception of your own condition. As you require that, in order to attain perfect recovery of health and usefulness, I try to place it before you now as simply and clearly as possible.
>
> First, it is an error to say that your "brain cells have become diseased." There is no disease of your cells:

> there is a disorder only of the harmony of action among them in writing, etc. This originated in the extraordinary efforts to accomplish much during a time of fatigue and mental distress. It was the difficulty of doing this which caused the unusual attitude of the hand, which arose from conscious effort to perform what was beyond your staying power. The tightening of the muscles was "mental." The habit of wrong writing was thus engendered and it is this which now persists as an automatism. That is to say, when you are not paying attention, the hand of itself is guided by the mind unconsciously into these perverted positions.
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> But even when attending, there is an inclination to fall into the very position you desire to avoid. This is partly due to its habitualness, and partly to the natural tendency of many persons to perform the very act they most wish to avoid; the familiar example is that of the cyclist to collide with the obstruction he sees in the road. By practice, this tendency is soon overcome.
>
> So you see that the abnormal acts are not the result of disease of the cells; but are merely bad habits to be overcome in the same way as those of the learning of the piano or of any act needing mechanical dexterity.

It was only after this that rapid improvement occurred; and the writing, though a little large, became perfectly normal. Perfect ease, however, was not attained, although she did a good deal of clerical work intermittently, and was ready to take a position demanding it continuously, knowing that if the right hand failed the left hand could take its place.

After this almost complete recovery, the patient ceased attendance; but she saw me from time to time, and maintained the hygienic life that she had been taught. As a result, she was, one year ago, in better physical condition than she had been in for years, and was able to walk long distances and to do hard housework without fatigue; whereas formerly she was tired out by walking a few squares or by any hard work. But that the restoration of her physical health was not the cause of her partial recovery from writing cramp is proved by the relapse of the latter, in spite of continued improvement of her physique. This relapse is due to circumstances which have compelled the cessation of the reeducative training. She writes so much worse than she did six months ago that she has quite given up practising for the present; but when circumstances permit, the lessons will be resumed, and I believe that the capacity will be restored.

The patient has now learned dactylography and is in a position of trust, which she much enjoys. Her health gives her no trouble, although she does no actual writing with the right hand. We have recommended psychomotor discipline. Her morbid fear is not altogether gone, however, for she fears that in the future her arm may refuse to work the typewriter. But her success has hitherto reassured her.

INTERPRETATION OF THIS CASE.

Both the incapacity to sing and to write are alike explicable as tic. (For the mechanism see *Journal of Abnormal Psychology*, June, 1912.) F. S. could not sing because the relaxation of the pharyngeal muscles needed for good tone production was interfered with by the emotional contraction of them, which resulted from dwelling upon the shame created by the anonymous letter. The struggle between her shame in singing and her desire and need to sing accentuated the difficulty still more.

The fact that cramp occurred later, quite apart from professional use of the voice, is paralleled by the case of E. L. and by her own eventual incapacity to feed herself as a result of a professional cramp and tremor of the right arm. This shows that the mechanism of these cramps is not strictly occupational at all. The mechanism of the writing cramp consisted in the desperate effort to perform work while she was in an unfit state of health. The act of writing became impossible because no muscles relaxed to allow of the necessary interplay. The intense contraction, at first purposive, became associated with the attitude of writing. Its mechanism was almost automatic; so that when the cortex was stimulated by the need to write, the innervation inevitable was that which caused a cramp instead of the coordinate act of attempted writing.

The pain, both in the throat and the upper limb, was due to the intensity and prolongation of muscular contractions; it is that of cramp, and is familiar enough. In one of my cases of occupational dyskinesia, correction of a bad posture quickly relieved a pain which had been called hysterical by several physicians without proper analysis. It again is paralleled by the pain in the shoulder of E. L.[4] The residual and almost constant pain is partly of the kind described as stiffness experienced after severe and prolonged exercise. It may be partly psychological; but this was not determined, as I wished to withdraw the patient's attention from the pain as much as possible, for the reason which follows:

A PRELIMINARY TO TREATMENT.

The greatest difficulty in the treatment of these cases is the patient's firm belief that the part incriminated is itself diseased. So long as this is believed, rational cure is impossible; but the belief is very difficult to dislodge, for so many medical men have acted in conformity therewith, and the true explanation involves a line of thought so unfamiliar that it requires time for assimilation. This subjects it to the danger of interference by meddling friends or other advisers. Thus it is essential that the patient should visit the doctor frequently at the beginning of the treatment, and if possible the more intelligent friends should be interviewed and their cooperation invoked.

TREATMENT.

The treatment is described in detail in the memoirs cited, and also in the *Journal of Abnormal Psychology* for July, 1912.

1705 N Street, N. W.

THE RELATION OF SCOLIOSIS TO SCHOOL SEATING.

By James Warren Sever, M. D.,
Boston,
Junior Assistant Surgeon, Children's Hospital.

(Concluded from page 278.)

In order to learn what types of school furniture were being used in the cities of the United States,

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[4] See *Journal für Psychologie und Neurologie* (Tübingen, 1912), where are considered in detail several other cases as regards pathogenesis or treatment, also New York Medical Journal, October 7, 1911, and *American Medicine*, July, 1912.

I addressed an inquiry to the school departments of all cities over 25,000 inhabitants as shown by the United States Census of 1910, asking for information as to their school furniture and the total enrollment of pupils. Some gave me the information I wanted; some sent me much information I did not want and none that I did: and from many I had no replies. In all, I had replies from about thirty-eight per cent. of the 230 odd school departments I addressed. This information I have tabulated and it may be studied in the following table:

TABLE.

	Total population 1910	School children	Types of desks
Altoona, Pa.	52,127	9,000	¼ single, ¾ double. No note
Aurora, Ill.	29,807	6,200	No uniformity: all kinds. "All that have been put in in last 15 years have been adjustable."
Albany, N. Y.	100.253	17.583	No note. No information supplied.
Allentown, Pa.	51,913	7,500	American automatic. See cut Fig. 12.
Brockton, Mass.	56,878	8,063	Adjustable. No information as to type.
Brookline, Mass.	27.792	4,298	⅓ adjustable. No other information supplied.
Baltimore, Md.	558,485	66,659	Some double and some single. "Adjustable desks no longer purchased."
Bayonne, N. J.	55,545		No information supplied.
Berkeley, Cal.	40,434	6.500	Solid single desk, 5 sizes; adjustable and nonadjustable. 18 adjustable and 27 nonadjustable in each room.
Bridgeport, Conn.	102,054	14,559	Am. Seating Co. Stationary desks. See cut, Figs 13 and 14.
Binghamton, N. Y.	48,443	7,600	Am. Seating Co. Stationary. See cut. Figs. 13 and 14.
Cincinnati, Ohio	364,463	?	Adjustable desk and seat. Seat detached from desk. Seat of settee form, not chair. Various styles.
Council Bluffs, Ia.	29.292	?	"Regular Standard." "Probably Chandler or Haywood type."
Colorado Springs, Col.	29,078	5.4[illegible]	Am. Seating Co.'s Nos. 1, 2, 3, 4, and 5. No other information supplied. See cut. Probably "Chandler adjustable."
Chicago, Ill.	2.185.283	343.354	Am. Seating Co. "Most of our school furniture made by our repair department."
Columbia, S. C.	26.319	4,000	Two or three sizes to a room. "Have never used adjustable desks in our schools."
Cleveland, Ohio	560.663	72.233	Installing adjustable seats and desks of own pattern since 1906. See cut, Nos. 10 and 11.
Columbus, Ohio	181,548	25.207	25% adjustable sufficient. Last two rows in each room so arranged.
Danville, Ill.	27.871	3,004	Single open desks with hinge seats. Graded to suit size of child. Evidently nonadjustable.
Decatur, Ill.	31,140	6,5[illegible]	Columbia-American Seat. Co. 1/6 adjustable in each room. Probably similar to usual settee desk as used in Columbus and Bridgeport.
Davenport, Ia.	43,028	8,000	Ordinary school desks. 2 or 3 sizes. High Schools. Columbia chair, Am. Seating Co. 1 school, sanitary steel pedestal desk, Am. Seating Co. See cut, Fig. 15.
Des Moines, Ia.	86,368	16.000+	No adjustable seats.
Detroit, Mich.	465,766	81.927	"Rubber tipped tables with chairs to suit each individual will soon replace desks and chairs."—A prophecy. No other information supplied.
Denver, Col.	213.381	?	"No uniform seating plan. Many of rooms have one row of adjustable seats, feeling that eight adjustable seats will accommodate all the 'unusual children.'"
Elizabeth, N. J.	73,409	10,329	Single adjustable desks largely New Jersey School-Church Furniture Co.
East Orange, N. J.	34.371	6,000	Regular stock school furniture, adjustable. Different manufacturers: Am. School Seating, Haywood Bros., Kenney Bros. & Wolkins. See cuts
Elgin, Ill.	25.976		No information supplied.
East St. Louis, Ill.	58,547	8,090	Ordinary school desk. Some adjustable and some nonadjustable.
Fitchburg, Mass.	37.826	6,77[illegible]	"Chandler or similar desk and seat." See cut No. 17
Flint, Mich.	38.550	?	Cleveland Seating Co. Superior Seating Co. See cut No. 11.
Jamestown, N. Y.	[illegible]		Solid desk and seat. Regulation. Some adjustable.
Jersey City, N. J.	267.779	34,006	"Dividing line desks," each room one row of adjustable desks. High School, adjustable desks and lecture chairs.
Johnstown, Pa.	55,482	7.936	No definite information supplied.
Kansas City, Mo.	248.381	73,75[illegible]	No further information supplied.
Kalamazoo, Mich.	39.437	6.352	Most of desks and chairs of old rigid type; few adjustable. See cut No. 1[illegible].
Louisville, Ky.	223.928	?	"Rapidly displacing old fashioned double desk with modern type of single desk."
Lynn, Mass.	89.336	11,50	Equipping all new buildings with adjustable desks and chairs. Kenney Bros. & Wolkins. See cut No. 17.
Lawrence, Mass.	85.892	11,500	About 2,500 seats and desks in public schools adjustable. Chandler desks and chairs See cut No. 17.
Lowell, Mass.	106.294	[illegible]	"Seats are half dozen kinds. furniture obtained in recent years is adjustable. Old is not. Adjustable is better, but not so greatly superior as has been claimed."
Muskogee, Okla.	25.278	?	Adjustable from the Am. Seating Co. Probably similar to Chandler type.
Madison, Wis.	25.531	3,993	Ideal Desk. Am. Seating Co. Probably like Chandler type. Purchase nothing now but adjustable desks and chairs. In some schools still use old single stationary desk and chair.
Malden, Mass.	44,404	7,000	Am. Seating Co. "Boston type." Adjustable. See cut No. 19.
Manchester, N. H.	70,063	5,966	All adjustable. Am. Seating Co. and Kenney Bros. & Wolkins. Chandler type best. See cut No. 17.
Meriden, Conn.	27,265	4.377	"Non-adjustable being replaced by adjustable. Kenney Bros. & Wolkins." See cut No. 16.
Montgomery, Ala.	38.136	4.500	Schools to a great extent furnished with individual adjustable desks and seats. Types: Chandler, Ideal, and Automatic Triumph Single Desk. See cuts.
McKeesport, Pa.	42,694	?	No information supplied.
Nashua, N. H.	26.005	?	Haywood adjustable. See cut No. 17.
Niagara Falls, N. Y.	30,445	4.502	Many adjustable every room. Paragon Desk, Am. Seating Co.
New Bedford, Mass.	96,652	11.820	Chandler and Kenney Bros. & Wolkins, adjustable.
Nashville, Tenn.	110,364	?	Am. Seating Co. Probably adjustable. No other information supplied.
New Britain, Conn.	43.916	7,000	Adjustable. Chandler and Haywood.
Newton, Mass.	39.806	6.906	"All modern buildings and nearly all the older buildings equipped with Chandler adjustable desks and chairs."
Newark, N. J.	347.469	?	Some stationary desks and chairs. Standard single combination desk and seat. Some adjustable made by Am. Seating Co. and New Jersey School-Church Furniture Co. 1/6 of quantity of desks to a schoolroom are adjustable.
New Rochelle, N. Y.	28,867	?	Adjustable desks and chairs Kenney Bros. & Wolkins. See cut No. 17.
New Haven, Conn.	133,605	23.152	School houses furnished mainly with combination seat and desk by Buffalo School Furniture Co. (Am. Seating Co.) See cut No. 12. "In nearly every room there is one row of adjustable seats and desks."
Oakland, Cal.	150.174	22.500	Am. Seating Co. Triumph type. Chandler regular and Boston School Desk. All adjustable See cuts 12 and 17.

	Total population 1910	School children	Types of desks
Perth Amboy, N. J.	32,121	6,000	Adjustable and non-adjustable. State that they "desire the non-adjustable."
Passaic, N. J....	54,773	12,000	Most of the desks in use are the New Jersey School-Church Co.'s. In each room about ⅓ are adjustable; one new building, all adjustable. Kenney Bros. & Wolkins.
Pasadena, Cal....	30,291	5,722	Few adjustable, but most rooms furnished with ordinary desks and chairs. Tables and chairs (kitchen) in special study rooms.
Pueblo, Col......	44,395	9,000	Only Grand Rapids desks in entire city. (Probably like Triumph type.) See Fig. Nos. 13 and 14.
Portland, Ore....	207,214	30,000	Triumph desks. Each schoolroom is furnished partly with nonadjustable and partly with adjustable desks. See cut 13 and 14.
Philadelphia, Pa.,	1,549,008	192,000	In all elementary schools conventional type of desk. One or two rows of adjustable desks are placed in each room, and one or two rows of fixed but different sized desks in each room.
Providence, R. I..	224,326	30,000	Most schoolrooms are seated with adjustable desks or have a number of rows of adjustable desks; gradually replacing stationary with adjustable types.
Rochester, N. Y..	218,149	?	No information obtained.
Roanoke, Va.....	34,874	?	Have a large number of double desks. Believes that flat topped tables with ordinary chairs more restful and sanitary than the patent desk. Tried them for a year.
Rockford, Ill.....	45,401	7,885	Just begun to use adjustable desks. Am. Seating Co.'s Steel Pedestal and Steel Automatic. (See cut 12 and 15.) Have about 500.
Richmond, Va....	127,628	18,741	Schools with exception of two rooms are equipped with regular school desks and chairs. Have some double desks. Newer buildings are equipped with adjustable desks and chairs.
Somerville, Mass..	77,236	11,871	Adjustable desks in nearly all the buildings.
Syracuse, N. Y...	137,249	?	Chairs and desks purchased from State Prison Commission. "Most unsatisfactory.
Schenectady, N. Y.	72,826	?	Ninety per cent. of elementary schools equipped with adjustable furniture. Three types: 1. Bench seat with up and down adjustment; 2. bench seat with plus and minus adjustment; 3. the chair seat with four adjustments. (Boston Seat.)
South Bend, Ind..	53,684	8,070	Regular desks by Am. Seating and Grand Rapid Furniture Co. Very few adjustabl seats in graded schools.
So. Omaha, Neb..	26,259	5,000	Ordinary school desks. Convinced of need of adjustable desks and seats, but have none.
St. Paul, Minn...	214.744	38,905	Attempt to adjust chair and desk to pupil. Only one ro of adjustable desks to a room; remainder are stationary, furnished by Cleveland Seating Co.
San Antonio, Tex.	96,614	19,769	Desks of various patterns and makes. Replacing some with steel desks with straight backs and seats.
Seattle, Wash....	237,194	30,000+	One third seats adjustable to a room. Use Triumph Desk. See cut Nos. 13 and 14.
San Francisco, Cal.	416,912	43,979	No other information obtained.
Spokane, Wash...	104,402	17,022	Triumph Desk.
St. Louis, Mo....	687,029	84,073	15,000 using adjustable seat and desk as shown in blueprint cut supplied. Similar to desk and chair shown in cuts 13 and 14.
Terre Haute, Ind.	58,157	?	State law requires twenty per cent. of all new installations shall be adjustable. Use ordinary rigid, one pupil desk and same in adjustable. No chairs except in kindergarten.
Tacoma, Wash...	83.743	13,984	Use "Wabash," "Triumph," "Automatic," Andrews.
Topeka, Kan.....	43,684	7.677	Adjustable desk and chair. Similar to Triumph. See cut Nos. 13 and 14.
Waltham, Mass...	27,834	5,000	Ordinary chair and desk. Kenney Bros. & Wolkins. Am. Seating Co. Not all adjustable.
Waterhury, Conn.	73,141	12,895	For past fifteen years purchased nothing but adjustable furniture. Still have some nonadjustable. Chandler desks and Kenney Bros. & Wolkins' furniture.
Worcester, Mass..	145.986	23,070	Am. Seating Co. Several types. No information relative to percentage of adjustable and nonadjustable.
Washington, D. C..	331,069	60,384	Only adjustable desks and chairs; single. Bobrick schoolroom furniture by Am. Seating Co., New Jersey School-Church Co., Kenney Bros. & Wolkins.
Watertown, N. Y.	26,730	5,000	Chandler adjustable for past ten years. Some nonadjustable. See cut No. 17.
York, Pa........	44,750	7,000	Single adjustable in High School. No adjustable desks in grade schools. Some single and some double.

This table shows the following points of interest:

1. The almost total uniformity of the cities toward the installation of adjustable furniture.

2. The use of the single desk and chair, and the abolition of the old double desks with settees and benches.

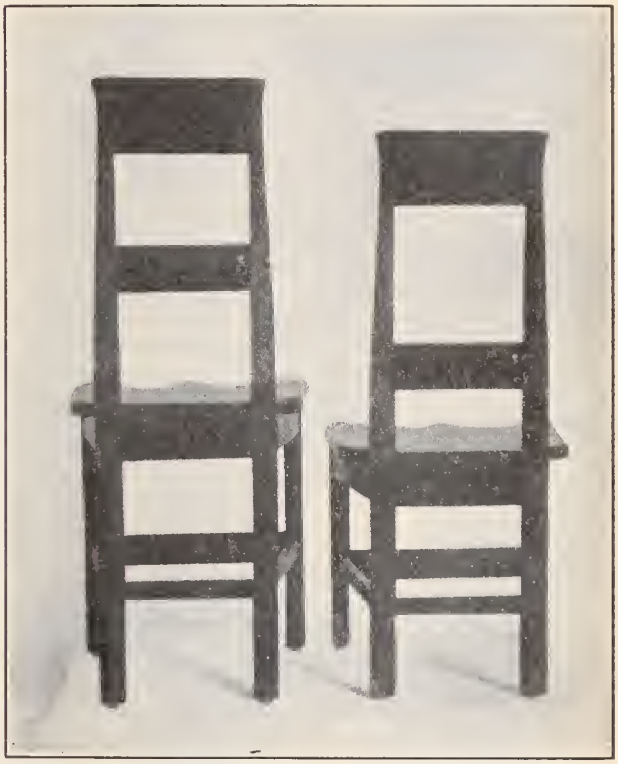

FIG. 9.—Miss Emma G. Sebring's school chair with adjustable lumbosacral support, favoring correct posture.

3. The large number of cities and schools content with but a small percentage of their total equipment adjustable.

4. The uniformity of the two types of adjustable furniture, namely: (A) The separate chair and desk; (B) the automatic with settee seat.

5. The inadequacy of the first type [No. 4 (A)]

of chair back, and the absolutely faulty design of [No. 4 (B)], which cannot but cause bad attitudes and which must be anything but comfortable. The seats slope too deeply backward, and the backs very considerably beside giving support in the wrong places.

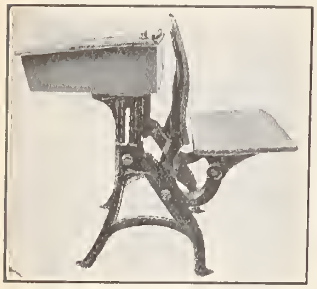

Fig. 10.—Cleveland chair and desk.

Fig. 11.—Chair and desk used in Flint, Mich.

In order that the reader may become familiar with some of the common types of school furniture in use, I will show the cuts of the different types and give their names and good and bad characteristics.

Fig. 12.—Stationary desk. Adjustable desks have an up and down adjustment of about four inches; used in Columbus, Ohio.

Fig. 13.—Automatic deep box desk with lifting lid. Type A, nonadjustable.

The Sebring Chair. (Fig. 9.) A chair recently devised by Miss Emma G. Sebring, principal of St. Agatha's School, New York city. Designed for the purpose of at least inviting or encouraging, if not compelling, a correct sitting posture. It is maintained that the only comfortable position in this chair is the correct sitting position, and that when this position is taken the chair is perfectly comfortable.

Fig. 14.—New adjustable desk, Type B, used in Oakland, Cal.; Spokane, Wash.; Seattle, Wash.; Binghamton, N. Y.; Bridgeport, Conn.; Montgomery, Ala.; Newark, N. J.; New Rochelle, N. Y., and New Haven, Conn.

Fig. 15.—Steel pedestal desk, used in Davenport, Iowa; Rockford, Ill., and St. Louis, Mo.

Comment: This is not a bad chair. There are several things about it, however, that could be improved, namely: The seat appears to be too wide; the lack of a fixed distance from the desk; it would be better to have it fixed to the floor on a single standard at the proper relations to the pupil and desk, for any movable chair, no matter how good in itself, predisposes to faulty attitudes, due to its movability; the narrowness of the back and the straight lower cross piece, which should be curved forward.

Adjustable seats and desks. There are practically two types of adjustable seats and desks on the market to-day, which are generally used. These are:

1. The so called automatic desk and chair on a single frame or pedestal, with both chair and desk adjustable, or only the chair adjustable.
2. The separate single desk and chair, both adjustable to height, but not to distance.

Of Type 1, the desk and chair as used by the Cleveland, Ohio, schools is about the best. Of Type 2, the so called Chandler seat and desk is the most commonly used. Neither, however, is satisfactory or perfect. (See Figs. 10 and 11.) The desk is adjustable for height only. The chair is adjustable for height and distance, but seat and back are too big. There is no room for hips or clothes. The curves of back are constant. They are generally too big and clumsy and likely to fit a child poorly.

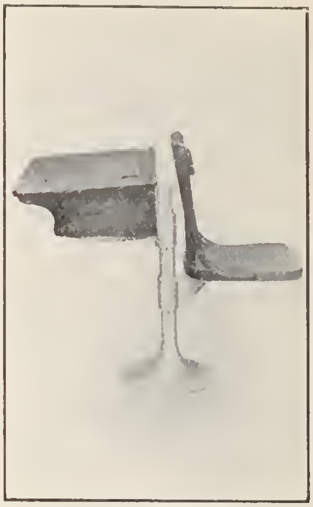

Fig. 16.—Type of pedestal desk used in Meriden, Conn.

Fig. 12 is the type used in Columbus, Richmond, Kalamazoo, Topeka, St. Louis, Allentown, and Rockford, Illinois. The objections generally are the same as to the desks shown in Figs. 10 and 11, a too great backward slope to seat and chair back. In St. Louis the chair back is flat and slopes backward slightly with a good chair seat, all however fixed on a single pedestal, and nonadjustable except in various sizes.

Figs. 13 and 14 show another style of Type 1, with the same general objections. The list of cities where it is used is appended.

There is one other class which is not used to any great extent, namely, the single pedestal desk, as used in St. Louis and developed or invented there by the school department. It resembles strongly the other desks and chairs except that in the St. Louis type the chair back is solid and flat. It is, however, not altogether satisfactory in view of the fact that no part of it is adjustable and so has to be installed in various sizes (Fig. 15).

Fig. 17.—So called Chandler desk and chair.

Another type of the single pedestal desk may be seen in Fig. 16.

One of the most popular and common styles of Type 2 is the so called Chandler desk and chair (Fig. 17), both adjustable to height but not distance. The desk is a good one, as is also the chair seat. The chair back, however, is bad in that it is too high and offers no support to the back where it is needed; neither is there room enough left for the buttocks. If the chair were adjusted to the proper height for the pupil, and set at a uniform plus distance of about one inch, the combination would not be a bad one except for the chair back.

Other desks and chairs of very similar styles are used in many cities, as follows: Colorado Springs, Col.; Fitchburg, Mass.; Lawrence, Mass.; Manchester, N. H.; Montgomery, Ala.; New Britain, Conn.; Newton, Mass.; Watertown, N. Y.; Nashua, N. H.; Lynn, Mass., and New Rochelle, N. Y.

There is a recording gauge supplied by some manufacturers, so that the teacher or janitor may measure the pupils as they sit at the desks and so acquire data by which the desk and chair may subsequently be properly adjusted to each child. It is simple and readily used.

Fig. 18 represents a school chair, the seat of which is all right, but the back is bad beyond all conception. Why backs are made to slope and curve so, only the manufacturers can tell. It cannot be from any adequate knowledge of the normal curves of the spine nor the pupils' needs (Fig. 18).

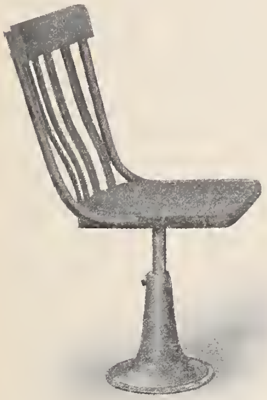

Fig. 18.—A very bad type of chair.

Fig. 19 represents the so called Boston chair devised by Dr. F. J. Cotton, with an ordinary adjustable desk. For position of child at desk, see Fig. 8. This chair is used almost wholly in the Boston schools, but for various reasons previously mentioned has not been installed to any great extent elsewhere. It is by all odds the best chair on the market to-day for all school needs.

Fig. 20 represents a good desk and chair, except that the chair back could easily be modified in two ways to make it an admirable outfit: First, the back should be cut down to make it lower; and, second, the middle or lower cross bar should be convex forward instead of backward but still maintaining its concavity from side to side, and adjustable in a vertical direction. It should also be made considerably wider, say at least six inches. The outfit then would offer a good practical desk and chair with few, if any, harmful points and many good ones about it. It need not necessarily be made of steel, which is noisy; but steel affords durability and reasonable cleanliness, both of which are desirable. The uprights of the back are wide, leaving ample room for clothes and buttocks; the seat is good; and with the minor changes in the back, it would be a good chair.

This about covers the ground of school seating to-day in the larger American cities of which I have had information. That similar conditions exist in other like communities from which I have not heard is to be supposed. To say that conditions are ideal would be wrong; but apparently school departments are alive to the needs of the pupils, but so far are dependent on the school furniture companies for their supplies. That these supplies are not yet perfect must be admitted, but time, study, and experience will tend to the working out of better models than are now in use, provided the expense of the installation is not prohibitive. School departments generally take the bid of the lowest bidder, provided the patterns of the furniture are about alike. The chair shown in Fig. 20, with a few simple changes, would be most satisfactory, and the changes would involve slight, if any, additional expense to the manufacturer. Desks and chairs adjustable in all directions are not necessary, involve considerable care, and are used only to advantage in schools for cripples.

CONCLUSIONS.

1. All chairs and desks should be adjustable to height.
2. Chairs and desks adjustable in other directions are not necessary.
3. A slight plus distance of about one inch is a good standard to go by in the relation of the desk to the chair seat.
4. The desk top should slope twelve to fifteen degrees, and should be wide enough to allow the whole arm to rest on it in writing.
5. The chair seat should be flat with rounded corners and edges; or slightly concave to fit the buttocks.
6. The chair back should be wide with but two outside uprights; no higher than the lower part of the shoulder blades, with an adjustable cross bar,

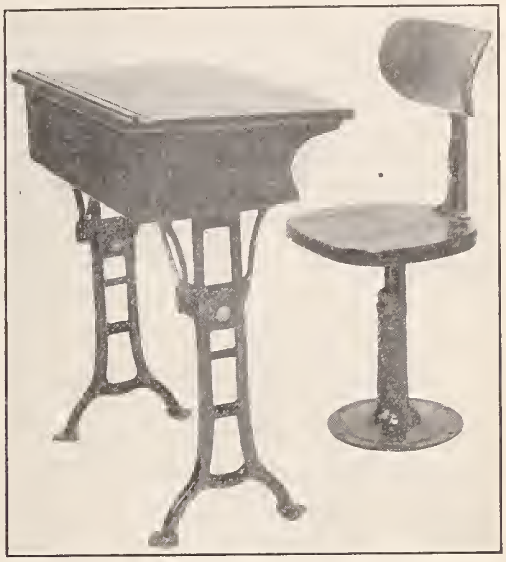

Fig. 19.—Chandler adjustable desk with the Boston chair.

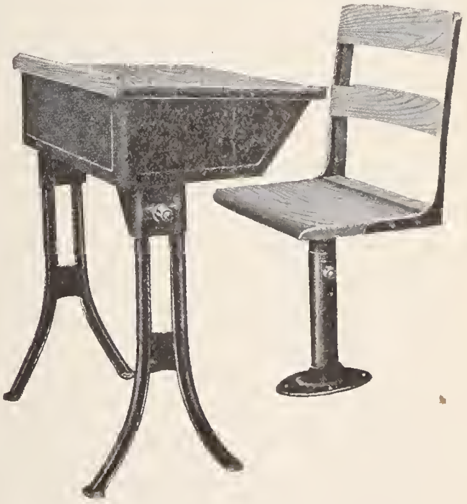

Fig. 20.—Adjustable desk and chair of steel.

convex forward and concave from side to side, to fit the lumbar curve.

7. From a sanitary point of view, single standard desks and chairs are good, provided the other qualifications are not lacking.

8. Benches, chairs of the kitchen backed type, movable chairs, and settee chairs are distinctly bad.

9. Physical education departments are essential in connection with all school departments.

10. Pupils should have frequent rest and exercise periods.

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234 MARLBOROUGH STREET.

THE ROUTINE DISINFECTION OF SCHOOLS.*

By J. T. AINSLIE WALKER, F. R. S. M., F. C. S.,
New York.

Among the numerous problems confronting educationists, none perhaps is more insistent or more difficult of solution than that of the prevention of infectious disease. Viewed from any standpoint—hygienic, educational, or financial—school epidemics are deplorable; yet, as is evidenced by reports from all parts of the country of the closure of schools owing to infectious outbreaks among the scholars, all the remedies and all the palliatives hitherto brought to bear against them have done little more than touch the fringe of the evil.

The most common school diseases are measles, diphtheria, scarlet fever, and whooping cough, while the available data tend to show that tuberculosis may exist among school children to a much greater extent than is commonly believed. The facts that the first four of these diseases are generally infectious before they can be diagnosticated, and that both scarlet fever and diphtheria remain so after the patient has apparently recovered, greatly increase the difficulty of preventing outbreaks among school children and of confining within moderate limits such outbreaks when they have occurred. Pathologists are agreed that each of these diseases is caused by a specific germ. The diphtheria bacillus and the tubercle bacillus have been isolated, studied, and definitely referred to their respective diseases. Although the bacteriology of scarlet fever, measles, and whooping cough has not yet disclosed the complete life history of their specific organisms, the analogies between the various stages of these maladies and the corresponding stages of those in which the specific organism has been identified, are so complete that we are justified in assuming that the causal agent in each case is a microorganism. This being so, it will be admitted on all hands that the one intelligent method of preventing these diseases is the timely destruction of the causal agent. I would go even further and say that in all cases in which the specific germ has not yet been isolated, but in which various pus cocci appear as the causes of purulent affections of throat, nose and ear, in sequelæ of measles, scarlet fever, etc., the destruction of these germs should be carefully secured.

In the course of his evidence before the consultative committee upon the school attendance of children below the age of five, Doctor Newsholme, medical officer to the English Local Government Board, said: "Infectious diseases are caught in the streets only with great difficulty, and this may be described as retail infection, as against the wholesale infection of the schools."[1] Sir Shirley Murphy, medical officer to the London County Council, in a paper communicated to the second International Congress on School Hygiene, points out that school attendance concerns the general health, for it means an increase of infectious disease.[2] Dr. Henry Kenwood, Chadwick professor of hygiene in the University of London, in a paper on The Disinfection of School Premises,[3] says: "The statistical evidence in support of school attendance being responsible for the spread of infection is overwhelming. The incidence of most of the infectious diseases is upon those of school age; school children, therefore, represent the most inflammable material in the community upon which the spark of infection may alight. If, then, we collect and concentrate that material day by day within the narrow compass of school premises, the risks of the spread of infection must be at a maximum on such premises. It must also be admitted that the condition of overcrowding, which demonstrably favors the spread of disease in the general community, comes into operation in an exaggerated form in our classrooms. The foregoing circumstances *must* combine to make such school classrooms exceptionally favorable centres for the transmission of disease."

In this connection the following extracts from a paper entitled The Control of Certain Infectious Diseases Among School Children, by Dr. Leslie Kingsford, school medical officer of Liverpool, published in the *Medical Officer* for May 25, 1912, will be read with interest:

> Inquiries made during the years 1909 and 1910 elicited the somewhat surprising information that in only 1.5 per cent. of the school cases was there a history of a recent previous case in the house. Consequently, where there is a susceptible school child in the family, it is found in practically every instance that this child is the first to contract the disease and is the one chiefly responsible for handing it on to the younger members of the family who do not attend school. . . . The investigation into the cases of whooping cough occurring during 1910 showed that previous cases at the homes were discovered in only twenty-

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*Read at the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., September 24, 1912.

[1] *Report of Committee*, p. 78.

[2] *Lancet*, August 10, 1907, p. 406.

[3] *School World*, September, 1908.

seven instances, or 0.8 per cent. of all cases, so that in this disease also home infection is of little account with respect to the infection of school children.

The case for routine disinfection is clearly and succinctly stated by Professor Kenwood in the paper referred to above:

> No one who is conversant with all the facts will dispute the contention that the periodical disinfection of school premises is an important branch of school hygiene which is often culpably neglected. A systematic disinfection of school premises is, with rare exceptions, performed only as a consequence of the epidemic prevalence of infectious disease among the scholars, and even then the methods adopted are not always those which the more recent scientific work has demonstrated to be the most effective. Yet the facts which indicate the necessity for this precaution, as a routine practice, are of a very striking and convincing nature. . . . Missed, early, or mild cases spread much infection in school classrooms; and frequent disinfection is an easily practicable means of reducing their potency for evil. In addition to these mild cases of infection, there may be "carrier cases," namely, children who are passive carriers of infection while not themselves affected in any way by the germs they harbor in their throats or in their noses, etc. In some school outbreaks of diphtheria, the "carrier cases" in a class from which several sufferers have previously been removed have been found to be far more numerous than the actual sufferers; but while in good health and fully capable of benefiting from schooling, they may disseminate virulent germs upon the other scholars and the desks, floors, books, etc., of the classroom, when they cough, sneeze, recite, or sing. Flügge and others have demonstrated that the germs may thus be sprayed into the atmosphere for several feet from the individual. The infection of scarlet fever, diphtheria, measles, and whooping cough from such insidious sources, remaining unrecognized in periods when the class attendance is good, may light up a considerable measure of school infection. But the plea for routine disinfection of school premises does not end with the case in reference to common infectious diseases; there are cogent grounds for adopting the practice as a serviceable precaution against the spread of consumption and certain disease producing organisms on skin, hair, and clothes, which are known sometimes to constitute a part of classroom dirt and dust. . . . It is indeed surprising that so little should be done in the face of the recognized frequency of classroom infection and the consequent epidemic prevalence of disease, and in the face of the evidence that is gradually accumulating of the valuable results accruing from the daily disinfection of school premises.

The Scotch Education Department, in a memorandum entitled *The Cleansing and Disinfecting of Schools*, has expressed its views as follows: "The 'close smell' so familiar in the schoolroom is due partly to the subtle organic impurities of the air breathed out by the children, partly to the decomposition of organic dirt on the children's bodies or in the room. Such decomposition is normally caused by microbes. Hence, to cleanse a schoolroom properly, it is necessary to destroy the germ life, as well as to remove the visible dirt. This is why periodic disinfection is advisable, *even when no known infectious disease has been present.*"

To multiply opinions in support of systematic disinfection of schoolroom floors, would be an easy matter, but it is unnecessary.

We are probably all agreed as to the presence in most schools of a certain proportion of children in the infectious stages of one or other of the diseases already mentioned. Such children cannot fail to diffuse infectious material, and that that material, if allowed to accumulate on the floors, to become mingled with the dust, and to be inhaled by the children, must give rise to fresh cases of the disease is a proposition which should be evident to all unbiased minds.

Let it be granted that the major part of school infection is due to direct contact; there still remains that proportion which is due to the inhalation of bacilliferous dust. Under existing conditions it is impossible to avoid infection by the former means; it is, however, quite possible to avoid infection by the latter. This is why the routine disinfection of schoolroom floors should be regarded as an important item in every system of school hygiene.

Acceptance of this argument leads naturally to consideration of the method of disinfection to be employed. This, I am strongly of opinion, should take the form of the liquid spray, which is preferable to gaseous disinfection for two reasons: 1. Because the liquid disinfectant insures actual contact with the infected matter; and, 2, because the liquid disinfectant tends to prevent dust—the common vehicle of infection—from rising into the air. In the words of Dr. Leslie Mackenzie, medical officer to the Local Government Board for Scotland, "formerly when infectious disease broke out in a school, a pound or two of sulphur was burnt in a basin standing in water, the windows, chimneys, and other crevices having been first stuffed up. The place remained closed for a day or two and was then supposed to be disinfected. This primitive method is still followed in many places and probably it still satisfies many people. I prefer the simpler, quicker, and more effective method of spraying the walls, floors, desks, and furnishings with a spray pump. This is the quickest method of allaying the dust; and I know of no better preliminary to effective cleansing."

It is unnecessary to point out that unless the disinfectant employed be efficient, routine disinfection can be nothing more than a waste of time and money. Aerial disinfection or fumigation is still used in some places in this country in spite of the fact that it has been repeatedly condemned by international congresses and scientific workers generally. Modern research has demonstrated that a better control can be obtained by more direct measures against the organisms of disease and the envelope of dirt by which they are habitually surrounded and conveyed, and this is why the liquid spray is now most generally employed.

To avoid the objectionable odor inseparable from the use of certain disinfectants of low efficiency (necessitating proportionately low dilutions), I would advocate the use of one of the modern high testing disinfectants in a dilution equivalent to one part pure carbolic acid in twenty-five parts of water—say one with a Rideal-Walker coefficient of 20, the dilution of which, equivalent to 1 : 25 carbolic acid would be 1 : 500. Taking the cost of such a preparation at $1.50 a gallon, a superficial area of 10,000 square feet could be disinfected daily for a week at a cost of approximately forty cents.

When school is over for the day, the floor of each classroom should be moistened with this solution by means of the ordinary sprinkling can with a fine rose, and swept in the usual manner while still damp. The desks and seats should be dusted with a cloth sprinkled with the same solution. Dry dusting and sweeping should on no account be permitted; they merely displace the bacilliferous dust, which after floating in the air for a time, settles again on the floors and desks. Once a week the walls to a height of six or seven feet from the ground should be moistened with the same preparation by means of a spraying machine; seats, desks, hat and clothes pegs should be treated in the same manner, particular attention being paid to the last named, while care should also be taken that the tops of the cupboards and other inaccessible places where dust may collect, are thoroughly wetted with the solution. Every quarter the spraying operations should be extended to include all parts of the walls and ceiling.

The routine disinfection of schools as a systematic preventive measure was first seriously considered in Great Britain in 1907. In his presidential address at that year's Congress of the British Medical Association, Dr. Henry Davey said, in reference to tuberculosis, "the only way actually to prevent the disease is by a perfect system of school hygiene, physical and mental, and by a careful system of disinfection and sanitation." But what probably did more than anything else to secure adherents to the process was the issue by the Scotch Education Department of the memorandum to which allusion has already been made. During the four and a half years which have elapsed since that time, routine disinfection has been adopted by hundreds of education authorities.

If further argument in favor of routine school disinfection be required, it may be found in the fact that *the evil effects of breathing bacilliferous dust cannot be gauged solely by actual absence through illness.* Many of the minor ailments so contracted may be too mild to warrant absence from school or to call for immediate treatment, while being serious enough to lower the vitality of the child to such an extent as to affect its receptive capacity during school hours. Children are legally enforced to attend school and it surely follows that they should be allowed to do so without encountering any danger which is avoidable by ordinary measures of human precaution.

The position may be summarized as follows: The presence of a certain proportion of infectious children is admittedly unavoidable. These infectious children must diffuse a certain amount of infective material, the removal of which by means of frequent and thorough washing of classrooms and cloakrooms is, on the ground of expense, impossible, or is at least so regarded by the education authorities; the daily sprinkling of the floors with a disinfectant solution offers an inexpensive and easy method of minimizing the harmful effects of that material during the intervals between cleansing. Viewed in this light—*not as a panacea or as a substitute for cleansing*—it is difficult to understand why the benefits to be derived from this process should not appeal more generally to those responsible for the management of our public schools.

WHITEHALL BUILDING.

ETHER, HOT OR COLD?

By CLIFFORD R. HERVEY, M. D.,
Oswego, N. Y.

The possibility or impossibility of administering inhalant anesthetics warm is a question capable of simple solution. Certainly, final judgment should not rest upon experiments with instruments not adapted to produce the desired result, nor should the merits of the principle, if established as practicable, fail of recognition because of conclusions based upon such researches.

The end result of efforts to transmit these gases heated depends upon a number of factors. Let us confine ourselves to ether as typical of them all. In common with all gases it diffuses with great rapidity, and with consequent rapid loss of heat. Distance of transmission and rapidity of flow therefore influence fundamentally the temperature of delivery. For this reason it would be impossible to retain the heat of ether vapor if it is passed through a rebreathing bag, or slowly through a long tube, and it would be quite difficult to retain heat in an ether and air mixture obtained by passing a current of air through the ether. On the other hand, proximity of the heating appliance to the delivery tube, this tube of restricted length and calibre, an impervious mask, and the ether evaporated by heat seem to be essential to the success of this method.

By means of a device[1] conforming to these conditions it is possible to administer this anesthetic vapor warmed to any desirable temperature, and, by evaporation faster than desirable in anesthesia, to record some temperatures surprisingly high.

Experiment 1. Length of delivery tube twenty-two inches, diameter one half inch, Esmarch mask covered with gutta percha tissue, closed by placing it upon woolen cloth, temperature of water in wash bottle 212° F., ether boiled vigorously. Maximum temperature recorded in mask 146° F., temperature of room 78° F.

Experiment 2. Conditions same as in experiment 1. Temperatures taken from end of tube without mask, in open air. Ether allowed to travel toward thermometer bulb along woolen cloth to give it direction, and limit diffusion. Temperature at end of tube 126° F., one inch distant 122° F., three inches distant 110° F.

In actual practice the temperature range obtained by introducing the thermometer bulb through a small opening in the gutta percha mask, with mask applied to face, has been repeatedly recorded as follows: By slow evaporation for moderate delivery, 99° F., to 100° F.; by more rapid evaporation in early stages of anesthesia, 102° F., to 107° F.

These results unquestionably establish the practicability of administering to the patient anesthetic vapor modified by warmth. The question, however, of the advantage of so doing has become somewhat blurred by reasoning regarding its intrinsic and its comparative merits, and, on the other hand, by doubts of its actual possibility.

From a series of one hundred patients anesthetized by warmed ether vapor, I desire to present two which illustrate, I believe, its superiority over the algid method of application.

CASE I. Female, aged thirty-one years. Victim of frequent sick headaches, was anesthetized by drop method three years previously, after which vomited for the rest of the day and frequently during the subsequent night. Operation: Removal of ovarian tumor; duration, one and one quarter hour; amount of ether used, 125 grammes. Results, little perceptible shock, slight vomiting in early stage of etherization, vomited twice before return to consciousness, vomited once six hours later after taking water, no further distress, vomited matter entirely bile and mucus. Temperature of room 84° F., of ether in mask 98° F. to 107° F.

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[1] Some Considerations of General Anesthesia, NEW YORK MEDICAL JOURNAL, November 9, 1912.

Case II. Male, aged twenty years. Gunshot wound, with disruption of bone and muscles of arm below right shoulder. Operation, amputation at shoulder. Condition of respiratory passages: Partial stenosis of nares, enlarged tonsils, excess of postnasal secretion, mouth breather. Time of ether administration, one hour; amount used, ninety grammes; temperature of room 82° F., of interior of mask during etherization 99° F. to 106° F. After effects: No increase of pharyngeal secretions; no nausea, vomiting, or subsequent complaint of dryness in throat; considerable surgical shock apparently not aggravated by anesthetic reactions.

These cases are cited from a series, including the extremes of age and all grades of severity of operation, because they possess the conditions which are usually attended with difficulty during anesthesia, or distress afterward.

In Case I comparisons are possible because we had already had experience with the drop method. It is, I believe, to be expected that those prone to sick headache will vomit often severely during and after any form of general anesthesia. In this case, however, vomiting was limited to the necessary function of unloading a bile flooded stomach. And, I believe that it usually works out in practice that throat irritations, as illustrated in Case II, whether due to adenoids, enlarged tonsils, or membrane congestions from any cause, especially alcohol, contribute largely, when aggravated by cold inhalations, to anesthetic complications. It cannot always be definitely stated regarding medicines or anesthetics, that a procedure in a given case is better or worse than another would have been, nor is it possible to estimate how much of a given shock condition is due to injury at operation, and how much to the stress of anesthesia. Many cases, however, similar in results to these, both as regards local and general conditions, lead to a positive belief in the mitigating influence of the warmed vapor. In fact, since the use of the anesthetic vapor, by the method referred to, I have yet to see a departure from normal placid breathing, sufficient for the use of tongue forceps or throat swab.

The practice of medicine is replete with problems which depend for solution, not upon exact experiment, but upon the judgment of experience, and the formulation of conclusions from factors as variable as are individual reactions is especially difficult. On the other hand, satisfaction with a result rests largely with an observer's conception of what is adequate and what is ideal. It is, therefore, sometimes difficult to proclaim the merits of one method over another without encountering differences of interpretation, of standards, of expectation, and of conclusion, oftentimes regarding the same experience.

It is not the contention of the writer that it has been proved that a distinct advantage accrues with the increasing warmth of the vapor, though it is a reasonable conception that such addition favors rapid absorption and quick results, and clinical experience seems to warrant such a conclusion. But it requires no expert observer favorably to contrast the natural and placid breathing of a patient anesthetized by warm vapor with that of one whose membranes are swollen and awash from the irritation of algid inhalations.

It is futile to cite many cases to prove a contention of this sort, for cases may be multiplied in any series which will apparently prove its equality or superiority to other methods, and certain factors in many cases are difficult of description, and the description of refinements especially is apt to resolve itself into hair splitting distinctions. But it is possible, I believe, to assume with confidence, from experience in hand, that the administration of ether vaporized at a distance from the patient, the so called closed method, is a distinct advance, whether warmed or not; that the vapor will act with an increased rapidity proportional to its warmth; that placid breathing resembling natural sleep during anesthesia is often an index of nerve competence, and this efficiency is weakened and disturbed by algid anesthetic irritations. With more confidence it may be asserted that ether amounts will average less than by other methods, this shown not especially by cases cited, but by statistics of hospital expense; that dryness of throat is never complained of unless oxygen has been added; that patients awaken with less distress, and with a marked and favorable difference in appearance; that it is suitable for extreme infancy and old age; that cold produces the so called irritation of ether, contributing to nausea, vomiting, and shock, delays the return to nutrition, disturbing the stomach by ingestion of ether laden secretions, and annoys the patient by leaving a lingering after taste on the breath, due to impairment of the eliminative functions of the mucous membranes. And in general it may be stated that the vapor, warmed, in some way loses a portion of its odoriferous strength and persistence, to the relief alike of anesthetist, surgeon, patient, and that frequent individual of the laity in whom it seems to generate a feeling of repugnance approaching the personal.

RELATION OF EUSTACHIAN TUBE TO CHRONIC CATARRHAL OTITIS MEDIA.

Experiences in Treatment.

By Harold Hays, A. M., M. D.,
New York,
Assistant Surgeon in Otology, New York Eye and Ear Infirmary.

The majority of otologists are turning more from empyric to rational therapy, particularly so in the treatment of catarrhal conditions of the middle ear. Unfortunately in our study of the subject of catarrhal deafness we are greatly handicapped; for it is impossible to dissociate the delicate mechanism of the sound conducting apparatus from its surrounding parts and study it under the microscope in any thorough manner. Microscopic findings after death differ widely from the true condition of affairs during life. However, there is one factor in our favor. We know positively that the phenomenon of sound conduction can be explained on a mechanical basis and we are also able to ascertain by means of suitable tuning forks whether the mechanical parts of the middle ear are doing their duty in conveying sounds to the inner ear, auditory nerve, and brain.

In the treatment of chronic catarrh of the middle ear we are not in a position, oftentimes, to treat the middle ear directly. It must most often be done by treating the cause of the condition, such as a catarrh of the nose and throat or by attempting to get at the middle ear through that most difficult of all channels—the Eustachian tube. Any instrumentation applied to the drum or to the small ossicles, will often result in a further impairment of hearing or an infection which is worse than the original condition.

During the past few years I have attempted to study the relation of the Eustachian tube to catarrhal deafness, and I am of the opinion that the closing of this little tube is accountable for more trouble in this direction than anything else.

The pathological alterations which give rise to a catarrhal deafness are readily explained, and the end result can be most readily seen. In my study of a considerable number of cases, the Eustachian tube was obstructed in at least ninety-five per cent. In the other five per cent. the tube had opened as a result of atrophic changes which had taken place, and in these cases the hearing was worst.

The middle ear depends for its function on equal atmospheric pressure on both sides of the membrana tympani. When a rarefaction of air takes place within the middle ear cavity, which can occur only as a result of a blocking of the Eustachian tube, the diminution of pressure allows of an increased concavity of the drum head. If the normal pressure is restored within a short time no harm may be done. But if the middle ear cavity continues to be closed off, a negative pressure results which in many instances is hard to overcome. If no air enters this cavity over a period of weeks, months, or years, the ossicles and the joints between them refuse to send their proper impulses into the cochlea. As is inevitable with any other joint in the body which long remains inactive, ankylosis takes place until no restoration of hearing can occur unless radical treatment is employed. In some of these cases, particularly those of long standing, even establishing the patency of the Eustachian tube will be of little effect; for by that time connective tissue changes have taken place, which are just as permanent as the formation of scar tissue elsewhere.

It is impossible to say what the cause of the stricture or stenosis is in every instance. I hardly think that a true stricture ever occurs. But there is no question that thickening and infiltration of the connective tissue and mucosa of the tube take place in almost every case of chronic catarrh of the ears. This change is almost always secondary to changes in the nasopharynx, nose, or throat. It has become a common custom of otologists to confine the greater part of their treatment to the nose and throat, using as adjuvants such aids as massage of the ear by catheterization or Politzerization. The relief of bony obstructions in the nose, the enucleation of tonsils, the removal of adenoids, the breaking down of adhesions in the fossa of Rosenmuller, are measures which are absolutely necessary in order to insure any permanent relief. Yet the alleviation of these conditions, by themselves, will only be a step in the right direction and will not effect a cure. It is seldom that the Eustachian tube will open and remain open when treatment is stopped at this point. One must use such further means as will show a tendency to a restoration of the patency of the tube.

In the treatment of a stenosis of the Eustachian tube, a rational treatment consists in using such measures as will allow the patient to massage his own middle ear during the interim of treatment. And this is best done by the employment of suitable bougies which can be left in place for a sufficient length of time to insure this result. Within the past few years such bougies and sounds (thanks to the ingenuity of Doctor Yankauer) have been placed upon the market. The degree of patency of the tube is first ascertained, and then it is cocainized up to the drum membrane by means of suitable applicators. A small bougie or sound is first introduced, and when one is sure that it is beyond the isthmus and in the middle ear, it is allowed to remain in place for a half to one hour. This is followed by gradual dilatation at each sitting until one finds that the tube remains permanently open and that massage is effective with the Politzer bag. Obviously, a treatment of this kind must extend over a period of weeks or months and sometimes taxes the patience of the physician and patient. I make no promises as to the ultimate outcome of such treatment, and usually the patient is the best judge as to whether the treatment is doing any good or not. After the first month of treatment, these patients as a rule are very much encouraged, and the best evidence as to the benefit that arises is founded on their continued attendance for further treatment.

There are a certain number of long standing cases in which this treatment accomplishes little; the ear drum and middle ear appear to be dead. In these cases I have attempted to reactivate the part by the employment of injections of various medicaments into the middle ear. After proper cocainization I insert a fine catheter (about the size of a ureteral catheter), into the middle ear. By means of a hypodermic syringe attached to the distal end of the catheter, I inject five or ten minims of some slightly irritating but antiseptic (?) solution. A ten per cent. argyrol solution works well in these cases At the end of a few hours an inflammatory reaction takes place, until in most cases a transudation of serum occurs through the drum. This inflammation is very painful, but seldom lasts more than forty-eight hours. In the few cases where I have employed this treatment, the hearing has been markedly improved.

The employment of any instrumentation to the Eustachian tube which has a tendency to irritate the mucous membrane in any way, will eventually do a great deal of harm. The forcible passage of whalebone bougies, the use of the galvanic current, although causing improvement in some cases, has given rise to a great deal of suffering and permanent injury. After the use of such methods, I have known true strictures to occur. With the use of the softer and more pliable bougies and catheters, injury is not likely to occur, but unfortunate accidents may arise which are a source of a great deal of worry, the chief among them being emphysema.

In the attempt to pass an applicator made of a strand of cotton wound over fine piano wire, into the Eustachian tube, the applicator often finds its way easily into the mouth of the tube and then meets an obstruction. Often this obstruction is due to a fold in the lax mucous membrane and sometimes it is almost impossible to get beyond this point. Unconsciously a little extra pressure may be used and, in the subsequent inflation (for the obstruction may have been passed), a small amount of air enters the little wound that has been made. Such a small amount of air may enter at the time that it is not noticed by the patient until a few hours later when the neck begins to swell; and I have seen cases where the swelling has been so great as to extend down to the clavicle and upward until it has closed the eye. The patient naturally becomes very much alarmed. But I have never seen a case where the air could not be absorbed or driven from the tissues by gentle massage and the application of warm compresses to the cheek and neck.

The passing of a Eustachian catheter is a simple matter; and oftentimes when the tip enters somewhere into the Eustachian orifice, air may be forced into the middle ear sufficiently to massage the drum membrane. Yet if one wishes to employ direct instrumentation to the middle ear, the Eustachian catheter must fit accurately into the mouth of the tube. There is a great deal of difference in the distance of the Eustachian orifice from the nostril in various patients and by actual measurements I have found the difference to vary as much as two centimetres. The distance may vary on the opposite sides of the same nose. Then again, the conformity of the Eustachian eminence and mouth of the tube varies greatly. In some cases the eminence is so slight that it cannot be felt by the catheter at all; in some cases it is higher up in the nasopharynx than it should be, in other instances lower. I have frequently found it necessary to insert the pharyngscope into the mouth while manipulating the catheter in the nose before I was able to get the proper bend to it and insert it in the proper position. Oftentimes the catheter had the wrong bend, or for one reason or another it did not fit snugly into the tube. One must exercise all his ingenuity at times to get a successful result in difficult cases. I have come across no case up to the present time in which I was not able to get into the middle ear, although in some cases I had to persist for weeks.

The most discouraging part of these treatments of catarrh is that patients become restless and discouraged and will not continue their treatments as long as necessary. A condition such as this, which has been developing for years, cannot be overcome in a few weeks. Men suffering from deafness, as a rule, are better patients than women, for they recognize the economic importance of losing their hearing and the slightest sign of any change for the better will keep them coming to you for years if necessary.

11 West Eighty-first Street.

EPIDEMIC MENINGITIS.*

An Analysis of 210 Cases, with Symptoms, Diagnosis, and Prognosis.

By F. J. Slataper, M. D.,
Houston, Texas,
Pathologist to the City Health Department.

The forms of meningitis can be described as acute and chronic, with subdivisions of the acute.

ACUTE CASES.

1. *Ordinary meningitis.* Since meningitis is an unusual complication of a rhinitis, due to the diplococcus of Weichselbaum, the period of incubation is as indefinite as the length of this infection in the upper air passages. In almost all (ninety-seven per cent.) cases a history of coryza can be elicited, varying in duration from a few days to several months. The prodromal symptoms are most often aching of the limbs, backache, pain in the orbits, restlessness, and anorexia which precede the onset by a few hours to several days.

The onset is sudden with a violent headache (100 per cent.), combined with vomiting (eighty-seven per cent.), dilated pupils (percentage not taken), chill (sixty-eight per cent.), and rash (seventy-eight per cent.). The headache is never absent, and is usually present with at least two of the foregoing symptoms. The headache at first is frontal and usually supraorbital. In a few hours after the onset, it extends over the whole head, including the occipital area, which becomes the spot of most pronounced pain. The vomiting starts usually without previous nausea, and is often apparently caused by the taking of some food or drug, to which the patient attributes many of his symptoms. This vomiting is often projectile, and at times is distressing. A petechial eruption is often present, which persists throughout the disease. An early symptom in some cases (ten per cent.) is a subcuticular mottling, that quickly appears over the entire body, and after a few hours, leaves as suddenly as it formed. The disease sets in occasionally (eight per cent.) with signs and symptoms of a lobar pneumonia. When the meningitis symptoms become developed the pneumonic condition vanishes. In nonpregnant women, during the childbearing period, the onset is usually (eighty-five per cent.) at the time of the menses.

The fastigium of meningitis presents a patient restless from an agonizing headache, and begging for relief. The restlessness is continuous and at times very exhausting. The head is retracted, the muscles of the neck are stiff and painful. In most cases during the first few days, the head is drawn further back each twenty-four hours and continues usually in spite of any general improvement. The same type of tonic spasm may hold other groups of muscles. The knees and elbows are often held flexed. The thumb may be flexed upon the palm of the hand. Herpes labialis is more often present (fifty-eight per cent.) than absent. The eruption (seventy-eight per cent.) of spotted fever is a petechial rash, most prominent upon the back and shoulders. In the case of blonds it is colored a cherry red, in that of brunettes raw ham colored, and in negroes it is slightly darker than the skin. The papules in the colored race are best detected by palpation. A bullous eruption is rarely (two cases) present. The mental condition in meningitis depends upon the severity of the disease and the treatment. Consciousness is nearly always retained when the specific serum is given early. Without prompt treatment a stupor comes on that dulls the sensory symptoms, and this condition soon changes into coma. The average time from onset to unconsciousness is twenty-two hours. Coma vigil is often seen. A delirium frequently alternates with the coma. Mania may be present in the more serious cases. Convulsions are rare even in children. Strabismus, nystagmus, and pupils of unequal size are diagnostic symptoms that should be looked for in all cases, especially in children. The room, in a case of meningitis, is apt to be kept dark and quiet on account of photophobia and the increased sensitiveness to noises. Tinnitus aurium sometimes occurs. A cutaneous hyperesthesia is present in most cases. In different cases the pulse rate varies from fifty to 160, the respirations from twelve to eighty a minute, and the temperature from 96° to 106° F. This irregularity of pulse, respiration, and temperature, is due to the combination of the toxemia and the involvement of the nervous centres. These symptoms, however, are so variable as to be of no diagnostic value. Hyperpyrexia may occur just prior to death. The blood pressure is usually increased. Leucocytosis is always marked throughout the disease. The vomiting disappears usually with the onset, but in some cases may persist and be distressing. There is usually constipation, but rarely diarrhea. In many cases there is incontinence of the bowels and bladder. Some patients have retention of urine and often albuminuria. The urine rarely contains sugar. Hematuria (two per cent.) and hemoglobinuria (one per cent.) are seen at times, and when present may disappear. The so called hydrocephalic cry is often seen in young children and closely resembles the whine of a cat. The increased tension or bulging of a baby's fontanelle is almost pathognomonic of a meningitis. The length of the fastigium is variable. Usually it lasts from one to seven days. The average time from the first dose of serum to the first sign of convalescence being four (3.8) days. A quiet natural sleep in the acme of the disease is usually the first symptom to point to a recovery. The relief of pain and return of appetite are good omens. During convalescence the patient is usually nervous, and often complains of extreme weakness of the lower limbs, especially in the knees.

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*The data in this communication form a résumé of an epidemic of meningitis that was prevalent in Houston during the winter and spring of 1912. The first case included in these notes occurred on January 1st and the last on June 28th. Read before the Harris County Medical Society, Houston, Texas, October 18, 1912.

2. *"Volcanic" meningitis.* This malignant form of meningitis in onset is like the "ordinary" except that it is much more explosive. The patient is usually unconscious and often near death before the physician arrives. The fastigium has more violent symptoms. There is a greater disturbance in the blood pressure, pulse rate, respiration, and temperature. The bowels and bladder are usually incontinent. The petechiæ often cover the body, and sometimes the eruption is purpuric. One patient was dead twelve hours after the initial headache, and two died within twenty-four hours.

3. *Abortive meningitis* (twelve cases) has the usual prodromal and onset symptoms associated with a stiff neck and Kernig's sign, which disappear suddenly without treatment. There are to be seen in times of an epidemic many cases of "meningophobia" in which the patient has the subjective symptoms of meningitis and the objective signs wanting.

CHRONIC CASES.

Chronic meningitis is (six per cent.) occasionally seen. The peculiar muscular contractures and the extreme marasmus characterize the condition. The temperature and headache are often intermittent. The symptoms of chronic hydrocephalus in these cases are described by von Ziemssen as "paroxysms of severe headache, pains in the neck and extremities, vomiting, loss of consciousness, convulsions, and involuntary discharges of feces and urine." The patient may lie for months in a typhoid state.

COMPLICATIONS.

Single and multiple arthritis (fourteen per cent.) are the most frequent complications of the disease. Pericarditis is rare. Bronchopneumonia is usually (fifty-eight per cent.) the terminal infection in patients past forty years. Cystitis may occur. Pyelitis is rare. The most common eye complication is conjunctivitis. A purulent conjunctivitis may be seen (three per cent.) in other members of the same household not sick. A serious complication of this organ is an iridocyclitis (two cases) that is secondary to the conjunctivitis. An optic neuritis sometimes extends from the meninges that may involve the whole orbit. Chronic suppurative diseases of the middle ear seem (seven per cent.) to predispose to epidemic meningitis. In these cases deafness is made worse during the meningitis. A nerve deafness is present in rare cases. Ordinarily, deafness in meningitis is a symptom due to the stupor.

RELAPSES.

Relapses are frequent (seventeen per cent.). The symptoms of a relapse are those of the onset and should be recognized at once. Remember that the headache becomes occipital. The increased stiff neck and exaggerated Kernig's sign are quick to manifest themselves.

DIAGNOSIS.

The physical signs of meningitis are:

Stiff neck. By a stiff neck is meant the condition where the neck cannot be flexed so that the chin touches the chest. Any attempt at passive flexion is attended with violent pain.

Kernig's sign is the inability to extend the leg when the thigh is held flexed at right angles to the abdomen. Acute pain and muscular spasms are always present in a typical Kernig. When the patient cannot extend his own leg the sign is said to be "active"; and "passive" when some one else cannot extend the leg, while the thigh is held at right angles to the abdomen. The active Kernig's sign is of value as it cannot be feigned by a patient with meningitis, on account of the spasm and pain. Kernig's sign may be reinforced by holding the chin flexed toward the chest and at the same time test for the sign in the usual manner. This procedure often makes, in the early part of the disease, a doubtful sign positive. A Kernig's sign may be present in one leg and absent in the other. A typical Kernig's sign may be present in the cerebrospinal irritation of typhoid fever and pneumonia.

Brudzendski's sign. "Flexing the head on the chest causes flexion of the legs at the hip and knee joints, and flexing one leg on the trunk produces the same movement in the other leg." (Osler.)

MacEwen's sign is of value as indicating the increased pressure of the fluid in the ventricles. It consists of the "increased resonance on combined percussion and auscultation of the skull," and is heard best by tapping over the squamous portion of the temporal bone while a stethoscope is held against the forehead or the opposite temporal bone.

OTHER SUGGESTIVE SYMPTOMS.

Herpes labialis, in a case of acute meningitis, is strong evidence that the disease is of the epidemic type. The presence of a second case of meningitis in the same house, often makes an early diagnosis possible. A gradual onset with abdominal tenderness is suggestive of typhoid fever. All symptoms of lobar pneumonia, in times of a meningitis epidemic, should be watched for the onset of meningitis. The onset of variola may be misleading, but the eruption on the face, with a general improvement and a negative Kernig's sign, soon point to the correct diagnosis.

LUMBAR PUNCTURE.

All doubtful cases of epidemic meningitis should be decided by an examination of the cerebrospinal fluid. The operation is only slightly painful, though seemingly greatly so on account of the hypersensitiveness of the patient. With the sudden change of pressure in the fluid of the spinal canal there is often a "bursting" headache due to the uneven pressure between the subarachnoid space and the ventricles. When the mind is clear, the puncture can be made painless with the use of a weak solution of cocaine. The action of a freezing mixture is too transient. Although recommended by some, a general anesthetic is depressing, and seems to lower the vitality. All patients not perfectly rational should be held by tying a twisted sheet over the back of the neck and under both knees, bringing the chin as close to the knees as possible. This widens the intervertebral spaces and prevents the struggling from breaking the needle. The third lumbar interspace is the one of election. The fourth and second may be used if difficulty is met on entering the canal. If these interspaces are closed by the extreme opisthotonus the lumbosacral space will be found wide open by the same muscular action. In young babies, when the spinal canal cannot be reached, the anterior fontanelle may be used (two cases with recovery). With the patient on his right side, near the edge of a table, firmly press the left thumb against the selected interspace as a guide, while the right hand passes the needle forward and slightly upward. If a vein should be opened, avoid the middle line and direct the needle slightly inward at the same time. In epidemic meningitis the fluid is under an increased pressure; is turbid; and on microscopical examination shows many polymorphonuclear lymphocytes in excess of the mononuclear. The meningococci are both extracellular and intracellular. Often when the puncture is made early in the course of the disease, the fluid will be clear and the centrifugated sediment contains no microorganisms, while in less than twelve hours the fluid from a second puncture will be turbid and show the meningococci. A negative puncture early in a disease with meningeal symptoms, should be repeated after sufficient time has been allowed for the pus to form. Symptoms of a fully developed case of meningitis with a clear fluid is not of the epidemic type, and if the polymorphonuclear lymphocytes are less than the mononuclear, it is probably tuberculous.

PROGNOSIS.

The prognosis depends upon the virulence of the infection, the age of the patient, and the early specific treatment. In those past forty years of age, over eighty-five per cent. die independently of the character of treatment. Otherwise, adults, children, and babies seem to have an equal chance. The prospects are four times better when the first dose of serum is given before the patient has lost consciousness (eight per cent. vs. thirty per cent. mortality). The use of specific serum gives a general mortality rate of twenty-one per cent. against eighty per cent. in patients (including abortive cases) not so treated. Over ninety-five per cent. of the recoveries are attended with no serious sequelæ. Last, but of not least importance remains the fact that in the recovered cases, which received the first dose of serum during consciousness, there exists not a single serious sequela.

THE WORSTED TRUSS.

By Walter B. Jennings, Ph. B., M. D.,
New York.

The fact that hernia is a common condition often seen by the physician or surgeon cannot be gainsaid. The fact that strangulated hernia is frequently seen and could have been prevented is indisputable. The term hernia as used in this paper refers exclusively to congenital inguinal hernia.

During ten or twelve years of service in the outdoor poor department of St. Mary's Free Hospital for Children, it was not an unusual thing to see one or two cases a week of hernia in infants ranging in age from three weeks to five or six years. All the patients treated averaged about 2,000 a year, and a proportion of fifty cases out of 2,000 is not a large one. Many of the older children were successfully operated upon, but when one considers that over half of the patients with hernia seen were under one year of age, something had to be done to control the condition, i. e., to try to prevent the hernia growing larger as well as to prevent strangulation.

The proportion in regard to sex, the writer's records show to be the following: Twelve male to two female, and, in regard to position, five on the right side to seven on the left. These figures correspond to those of Kingdon and others in authority, but the writer is not interested or concerned in statistics, except in passing, but he would like to make a plea, and a strong one, for the worsted truss.

There is nothing new in the use of worsted as a truss in infants, but after talking with students as well as practitioners, it seems that many of the younger generation in medicine are not familiar with its use. The writer first learned of it through the late Dr. Robert Watts, Jr., but the second edition of the *American Textbook of Surgery* (page 788) has an account which is excellent.

CONSTRUCTION OF THE TRUSS.

Take eight or ten strands of a skein of white Germantown knitting wool, make a loop, and place around the child's body below the navel, tighten, and bring the knot over the external ring, cut the free end, and bring it down on the inside of the thigh near the perineum and back up over the gluteal fold; then tie the cut free end to the band of worsted already around the pelvis.

REMARKS.

The writer does not wish to be misunderstood in regard to the radical cure of hernia, but he strongly recommends the worsted truss for the newborn and infants a few weeks or months old, to be used until the hernia is cured (the muscles having become stronger) or until such time as the child is old enough to stand the shock of an operation.

It is simple; it is effective; it is easy for the mother to learn to put on. Any woman with sufficient intelligence to read the morning paper, after a few trials with the aid of her family physician, can adjust the worsted truss. It does not irritate or chafe, is easily washed, and is not expensive.

140 WADSWORTH AVENUE.

CARCINOMA OF THE LUNG.

Report of a Case.

By MAURICE FREIMAN, M. D.,
New York.

Carcinoma of the lung is a rare condition, especially if primary in origin. The case I am about to publish is primary as far as my observation has gone. I will give the post mortem findings as far as we were able to proceed.

CASE. W. L., aged forty years, born in the United States, occupation driver.

Family history: Father died of tuberculosis, mother of carcinoma of uterus. Two brothers and one sister alive and well. Personal history: Did not recollect ever having any of the diseases of childhood but said that his stomach was always "bad." Since childhood had never been sick except that his stomach still troubled him and a diagnosis of ulcer of the stomach was made at one of the hospitals. Did not recollect ever having been hurt. Close questioning did not reveal any history of pneumonia, tuberculosis, or any trumatism of the thoracic region. Venereal history: Denied syphilis, but pleaded guilty to two attacks of gonorrhea. Had never used whiskey but had drunk beer to excess. Smoked and chewed.

Present illness: Could not recollect when he first felt sick but said he had not felt well a month or more before seeking attention. The patient was first seen by me about June 2 1912, complaining at that time of shortness of breath. Examination at this time showed nothing pathological, except numerous sonorous and sibilant râles over both lungs, anteriorly and posteriorly. A tentative diagnosis of asthma was made and the patient given suitable medication. This seemed to relieve him a great deal and he was able to carry on his business.

He returned in about a week with the same complaint, but in greatly aggravated form. His face was now ashy white, and he complained of some pain in the region of the right apex.

Inspection at this time showed the necessity for systematic examination, which was at once made and showed as follows: Physical examination: Patient was well formed and developed. Skin of lemon tint and cool to the touch. In the axilla and groin and the axilla the skin hung in folds, showing rapid loss of flesh. Eyes and ears normal. Heart, normal with a weak first sound. Lungs negative to inspection. Palpation showed increased vocal fremitus over the right apex down to the fourth rib anteriorly. Percussion gave dullness to the fourth rib anteriorly. Auscultation disclosed vocal fremitus to be diminished over the same area. Breath sounds were lost over part of this area and diminished over another part. No other abnormality could be detected in any other part of the body. There was no history of any cough, nevertheless a small amount of sputum was obtained only to be reported negative as to tubercle bacilli. The patient was now so weak that he willingly took to his bed. There was no rise of temperature at any time.

June 15th. Patient was much weaker. Still had a fair appetite, but the dyspnea was now much more pronounced and the pain in the right thorax was very much worse. Examination at this time showed that the dullness had extended down to the eighth rib. The loss of flesh was very marked, and a diagnosis of carcinoma of the lung with mediastinal involvement was made, with a possibility of an empyema. To confirm this last suspicion the needle was introduced but a dry tap was obtained. This was tried again the following day, with the same negative results.

Blood examination showed red cells, 3,500,000; white cells, 10,000; the differential count gave polynuclears, seventy-four per cent.; mononuclear and lymphocytes, twenty-one per cent.; eosinophiles, three per cent.; mast cells, one per cent. This was the ratio practically maintained in five examinations. Urine examination was negative, except toward the end when a little albumin was found.

June 26th. Patient was practically in the same condition, but a great deal weaker, and the dyspnea was very marked. He could no longer get out of bed. Examination showed the involvement of the entire right lung, but the left lung was still unaffected, but there were râles over the latter, bronchial in character.

June 29th. No marked change.

July 1st. Patient could no longer eat, and had to be fed chiefly on milk and soups. He retained however all nourishment; mind often wandered; was in great pain.

July 3rd. Pain was the prominent symptom and the patient had to be constantly under the influence of an opiate. Heart action was very weak and the peripheral circulation very poor. Physical examination showed no marked change, except the liver slightly enlarged, probably from venous stasis. Patient died at 10 p. m.

At autopsy only the thoracic organs were examined and a large colloid carcinoma affecting the right lung and all the mediastinal glands was found.

This case is interesting in that it illustrates the insidious onset as well as the rapid termination of these cases. The great pain is in marked contradiction to the usual teaching in these cases.

71 EAST 118TH STREET.

Abstracts and Reviews.

THE PREVENTION OF TYPHOID FEVER.*

By Major F. F. Russell,
Medical Corps, United States Army.

The basis upon which rest the original studies which led up to the perfection of antityphoid inoculation, was the observed production of practically complete and permanent immunity as the result of an attack of typhoid fever. Pfeiffer and Kolle, in Germany, and Sir A. E. Wright, in England, in 1896 and 1897, showed the practicability and scientific soundness of prophylactic immunization by means of bacterial vaccines. As a direct result of the studies of these observers small numbers of volunteers were vaccinated, which demonstrated the harmlessness of the procedure. Soon rather extensive immunization was carried out in the British army in India and on the troops in the Boer war and, by the Germans, on some of the troops in the African campaign against the Hereros. These early inoculations were productive of very promising results, the Germans reporting a reduction in morbidity of about one half, as well as a reduction in the proportion of fatal cases among the vaccinated compared to that among the uninoculated. In the light of our present experience we can attribute the partial failure of the early methods and the severity of the reactions then encountered to two essential errors. The first was that the Germans used doses which were excessively large and hence caused the severe reactions. The second, both Germans and British killed their cultures at 60° C., a temperature which we now know almost completely destroys the value of the vaccine. Nevertheless, even in the face of these defects, the results of immunization were very promising.

It was not until 1907, after Wright's visit to the United States and the reporting by Leishman of his remarkable results in India with an improved vaccine, that the United States Army medical authorities became interested in the subject. I was soon sent to England and Germany, where I became familiar with the work that had already been done. My time was spent particularly in the laboratory of Leishman, and from him I obtained the old avirulent strain of organisms which he then used, and which has since supplied the vaccine used in our own army. It might be noted that many other strains have been tested on animals, but none has yet been found which has an equal power of producing agglutinins. The vaccine used in our army differs somewhat from those employed elsewhere, and as it has given results not equalled by any other preparation, I will state the general principles of its preparation.

The organism is planted in broth and grown for eighteen hours. From this culture large flat agar plates are sowed and incubated for forty-eight hours. The growth is then washed off with saline and killed by heating for one hour to 53° C. Tests of sterility of this suspension are then made, using relatively large amounts for the sake of certainty. The number of bacilli to the c. c. is then determined and saline solution is added to make each c. c. contain one billion organisms. One quarter of one per cent. of trikresol is added to insure sterility and to increase the keeping power of the vaccine. During the course of the preparation morphological tests of the purity of the cultures are made at frequent intervals. After the vaccine is completed it is again tested by aerobic and anaerobic culture and animal injection. It is then placed in ampoules and sealed hermetically. The vaccine, therefore, consists essentially of the whole body of the bacillus changed as little as possible.

The use of the vaccine in the United States Army was begun in 1909 and met with such success that in September, 1911, its administration in the army was made compulsory for all men under forty-five years of age. The United States Army is the only one at the present time in which its use is compulsory, thus conferring an advantage over all others, for the best that can be done under voluntary administration is to protect some eighty to eighty-five per cent. of the troops. Further, in our army alone is the three dose inoculation employed, hence we cannot fairly compare our results with those obtained by only one or two doses. It may be said, however, that the three dose method confers a greater degree of immunity and one which is more lasting than do the other methods.

Perhaps the most serious obstacle to the early use of the vaccine, and one which still sways many civil physicians, was the bugbear of the so called negative phase of Wright, in which the patient was supposed to be rendered more susceptible to infection than is normally the case. This idea of the negative phase is wholly fallacious, and the injection may be made in the face of an epidemic of typhoid without the least danger of increasing the liability to infection.

Before speaking of the results which have been obtained by the use of this method of immunization, it should be mentioned that Reed, Vaughan, and Shakespeare showed how far sanitation alone might be expected, under the best of conditions, to reduce the typhoid morbidity and mortality. They came to the conclusion that the best that could be expected was three cases of typhoid in 1,000, and that if troops in perfect health were brought together into camp typhoid would appear, even in the absence of an epidemic, in less than eight weeks. Their studies, further, showed that water was of relatively minor importance in the spread of the disease, and that while flies contributed to a certain extent, the most important mode of transmission was by contact, that is that typhoid is strictly a contagious disease. The corollary to this is the necessary limitation of efficacy of general measures of hygiene and the need for some other additional means by which the disease can be controlled.

This other means is supplied by the immunization of the individual through the use of the vaccine. This is shown by the comparison of the typhoid statistics for Jacksonville, in 1898, and Texas, in 1911. In the former there were more than 1,000 cases among 10,000 troops and the mortality was very high, eighty-seven per cent. of the total deaths being due to typhoid. In 1911, in

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*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, February 8, 1913.

Texas there were only two cases and no fatalities. It is interesting to note that in Texas there was endemic typhoid in Galveston where the men were free to go on leave.

After the order for compulsory vaccination went into effect in September, 1911, some time was required to complete the protection of the entire army so that it was not until at the beginning of 1912 that every man had been inoculated with his three doses. The standing army for 1912 numbered more than 58,000 mean strength, and during the year there were only fifteen cases of undoubted typhoid fever among the whole number, with a total of but two deaths. Of these cases there was only one occurring in a man who had received all three injections. The lowest obtainable admission rate for typhoid fever in the army under the best hygienic conditions was reached in 1908 when there were 2.94 to 1,000 mean strength with 0.23 in 1,000 mortality. Against this stands the 1912 record of 0.26 admissions and 0.03 mortality a thousand. These figures are unequalled elsewhere in the world.

Vaccination against smallpox has been uniformly conceded to be the greatest protective yet obtained in the prevention of a contagious disease. In a period of four years there have been sixty-five cases of smallpox with four deaths in the vaccinated in our army. In the same period there have been only twenty-seven cases of typhoid fever with one death among the vaccinated. It is obvious that there is no such thing as conferring absolute immunity against a contagious disease, but it is equally obvious that the protective inoculation against typhoid fever is as successful as that against smallpox.

The question of the duration of the immunity which is produced so efficiently by this method of vaccination must remain unsettled as yet. The British conclusions are that it is effective for two and a half years, but it is to be remembered that they do not use three doses and hence do not obtain so high a grade of immunity as we. Our own observations have shown no diminution in the immunity after four years. Revaccination every four years against both typhoid and smallpox have, however, been made compulsory in our army.

The essentials for prophylactic vaccination may be enumerated:

1. It must be harmless.
2. It must not cause unpleasant effects.
3. The immunity must last a considerable length of time.
4. The vaccine must be reasonably stable and must be capable of ready preparation at short notice.

The prophylactic vaccination now in use in this country fulfills all of these requirements. We have seen that it confers fairly lasting immunity. It has been shown conclusively that it is harmless. That it is not unpleasant is attested by the observation that in ninety-seven per cent. of the inoculations the general reaction was absent or very mild. The vaccine is very readily prepared, practically as fast as it can be administered, and it keeps perfectly for at least four months, probably longer.

A word may be said about other vaccines than those already mentioned. Vincent has suggested the advisability of preparing the vaccine from the strain peculiar to the locality in which it is to be used. He reports excellent results by this means, but the results obtained by the method in use in our army are so good that his suggestions seem superfluous. Metchnikoff and Besredka advocate the use of living sensitized organisms instead of killed cultures. It is not necessary to discuss this suggestion farther than to ask whether any one thinks that such a method could justifiably be made a compulsory measure with our present knowledge.

One point in regard to the duration of the immunity conferred by vaccination deserves mention, that is the significance of the results of tests of agglutinating and phagocytic powers of the blood of the inoculated. It has been found that these last as long after the artificial immunization as they do after the disease itself, which is known to confer permanent immunity. They are not to be taken as indications of the duration of the immunity produced, disappearing in both classes after a year or so.

Besides the use of antityphoid vaccination in armies it has a wide field in civic life. By it the personnel of hospitals and institutions, the members of mining and lumber camps, schools, etc., may be protected. It is the only method by which the individual can be protected against the ever present residual typhoid seen in all large cities, and which is due to occasional milk or food contamination, or to contact. It should be employed in the case of each member of a family or household in which a case of typhoid arises. It is of inestimable value in the prevention of the spread of an epidemic through a community, as has been shown recently.

By this method alone can the individual protect himself against infection, for, while legislation in some States and communities affords practically satisfactory protection through the virtual elimination of the disease, such legislation is not uniform in different States and communities, and there is no national control over the health of the civic body, so that in travel one is almost certain to become exposed at some time to the infection.

I may close with the remark that the immunity which three injections of the antityphoid vaccine now in use confer is equal to and identical with that conferred by an attack of the disease, and that it can be obtained without danger and practically without the likelihood of distressing symptoms of reaction.

Treatment of Pulmonary Tuberculosis.—C. Berthelon, at a meeting of the French Society for the Scientific Study of Tuberculosis (*Presse médicale,* October 9, 1912), advocated the administration by endotracheal injection of full doses of antituberculous sera—five c. c. of Maragliano's serum or ten c. c. of Marmorek's serum. Although subcutaneous use of sera had given rise to severe toxic phenomena in his experience, the intratracheal method proved entirely safe. The administration of sera by rectum, likewise recommended for the purpose of avoiding intoxication, is less effective from the therapeutic standpoint in lung tuberculosis than the endotracheal procedure, which gives results as good, if not better, than a subcutaneous injection.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXX.—How do you treat subacute and chronic laryngitis? (Closed January 15th.)

CXXXI.—How do you treat psoriasis, and with what success? (Closed February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXIX was awarded to Dr. Ben N. Wade. of Portland, Oregon, whose article appeared on page 244.

PRIZE QUESTION CXXIX.

THE MANAGEMENT OF CHRONIC ULCERS OF THE LEG.

(Continued from page 302.)

Dr. E. P. Regan, of Stillwater, Minn., writes:

Like many other conditions confronting the medical man, this is but a symptom, due to a multiplicity of causes and should be treated as such. Realizing the importance of alcohol, syphilis, autotoxemia, and faulty hygiene, we accept these as predisposing factors. We also must consider the abnormal action of the various organs and glands, the kidneys, liver, and pancreas. The effect of uterine displacement, or engorgement, of enteroptosis, prolapsed kidney, etc., in the female are predisposing causes.

The exciting cause is usually traumatism. In general the treatment should begin with a careful inquiry as to the existence of any of these elements. Alcohol should be prohibited as far as possible, as its effect on the liver is to make for engorgement, at least primarily, with its tendency secondarily to venous stasis below. Syphilis must be combated by appropriate specific treatment; autointoxication by revised diet, elimination, and intestinal asepsis. The daily use of sulphate of magnesia with lemon juice will in appropriate doses prove an admirable eliminant. The same remedy in the proportion of one ounce to the pint of hot water applied as a bath will aid the skin to renewed activity.

As this is essentially a trophic nerve disorder, the entire nervous system should be looked after. Appropriate tonics as strychnine, arsenic, quinine, etc., are called for. Hypernutrition should be met with by a restricted diet, and the poorly nourished fed to the limit of nutrition.

Locally, in the overfed plethoric individual, the ulcers are likely to present exuberant granulations with copious secretion of pus. In such instances, we curette the ulcer thoroughly under ten per cent. cocaine and irrigate with normal salt solution twice daily. When the granulations are reduced, the application of moist dressings of one to 500 potassium permanganate will usually produce marked action toward healing. Following this, the application of a powder of

Iodoform,	1.00 parts;
Bismuth subgallate,	10.00 parts;
Methylanimooxybenzoate,	4.00 parts;
Zinc oxide,	15.00 parts;

will soon form a crust under which the newly formed skin begins to spread from the edge of the ulcer. The crust, if formed, should not be removed, but allowed to remain as a roof for the new skin.

Asthenic patients require also a stimulating application. Silver nitrate, five per cent., once daily is efficient. The powder as stated will usually benefit this type very quickly.

The Bier hyperemic treatment applies to this class, especially as a larger supply of blood locally is required for nutrition. The high frequency current is very useful in both types.

I have had very little trouble in healing these cases with the treatment outlined. Relapses are usually traced to new traumatism or to the impossibility of controlling the predisposing factors. These applications must be followed by the orthodox pressure dressing, *not* the rubber bandage, but the elastic wool or cotton roller, carefully applied. Beginning at the foot it must be carried to the knee in order to support enlarged veins. At times the blood pressure must be considered; results are certain.

The permanence of the improvement depends largely on the personal equation. Too often these cases prove to be the *bête noire* of the medical attendant.

Dr. R. H. Carr, of Water Valley, Miss., directs:

1. *Simple ulcer.* Cleanse thoroughly with soap and water. Apply silver nitrate stick, wash off with normal saline solution, wipe dry, and apply balsam of Peru and castor oil, equal parts. I employ this treatment every day until the ulcer presents a healthy appearance. If this does not prove beneficial in a few days I apply scarlet red ointment to the edge of the ulcer and allow to remain twenty-four hours, when I apply balsam of Peru and castor oil for twenty-four hours. I continue this treatment until I get a healthy granulating surface. All treatment is now discontinued with the exception of tincture of iodine, two per cent., which is applied once daily to prevent reinfection.

2. *Varicose ulcer.* The treatment mentioned for simple ulcer usually proves beneficial in that it causes it to heal, only to break down in a few days or weeks unless the vein that is feeding the ulcer is removed surgically. When this cannot be done a tight fitting bandage should be worn constantly to support the veins.

3. *Tuberculous ulcer.* I usually administer tuberculin B. E. (concentrated), the initial injection being 1/20,000 mgm., which dose is increased

by ten per cent. every seven to ten days. The patient is watched carefully for a reaction. In connection with this tincture of iodine is used locally, alternating with scarlet red ointment, five per cent. Ulcers that do not yield to this treatment are thoroughly curetted under quinine and urea anesthesia, all cicatricial tissue having been removed, and then cauterized with pure carbolic acid. The wound is washed with absolute alcohol.

If the ulcer is the mouth of a sinus leading down to a tuberculous osteomyelitis I inject bismuth paste every four or five days till six injections are given. After these injections have been given and the lesion continues to discharge pus, I make an incision down to the focus of infection and remove the necrosed bone, under ether anesthesia.

4. *Syphilitic ulcer.* I prefer mixed treatment of mercury bichloride, gr. 1/16; potassium iodide, grs. v; compound syrup of sarsaparilla, two drachms in water three times a day after meals. I cauterize the ulcer every other day with silver nitrate in water and apply twenty per cent. calomel ointment daily. If the patient is not benefited by internal treatment I usually give the following:

Mercury salicylate,	grs. xlviii;
Liquid petrolatum, sterilized,	℥i.

Ten minims of this solution is injected deep into the gluteus muscle every two weeks for the first year. I have also had good success with salvarsan 0.4 gramme intravenously, the injections being repeated at intervals of six or eight weeks.

5. *Typhoid ulcer.* Cauterize with carbolic acid, wash with alcohol, and apply balsam of Peru and castor oil, equal parts, to stimulate granulations. I use this about one week, then apply scarlet red ointment as in the treatment of simple ulcer. If no improvement is noticed at the end of two weeks I thoroughly curette under quinine and urea anesthesia and remove all cicatricial tissue, then reapply scarlet red ointment.

Dr. Richard Leiman, of Detroit, observes:

In treating chronic ulcers of the leg, my first efforts are to subdue any inflammation which may be present, remove all causes of sepsis, improve the circulation, promote absorption of the induration, stimulate granulation, and encourage cicatrization. The parts are rendered aseptic by thorough washing and sterilization with chemicals, as usual; and nothing is so essential to my success in treatment as the complete maintenance of aseptic conditions.

The circulation is improved by rest in bed, by elevation of the part, and by pressure of bandages when there is venous congestion. Sometimes the elastic pressure of a pure rubber bandage, properly applied and worn while the patient is up, is all that is necessary to obtain a cure. Some need no further treatment than echinacea, applied on gauze, and given internally in half drachm doses, three times daily.

In other cases it is necessary to stimulate granulations by a very light application of silver nitrate, ten grains to the ounce of water; or, better still, and what I mostly use, is a twenty-five per cent. balsam of Peru ointment, applied freely. Sometimes I alternate every other week with a twenty per cent. ichthyol ointment. Ointments of zinc oxide and boric acid are merely protective and suited to cases in which the granulations are healthy.

Internal remedies are chosen according to the condition of patient. I rarely omit echinacea, as I get good results, both in specific as well as other cases. Sometimes it is necessary to give the iodides and the protoiodide or some form of mercury. Cacodylate of sodium is useful, and, in anemic cases, I use a hypodermic medication of iron citrate and sodium arsenate. Sometimes strychnine is added for its stimulating properties.

For aiding digestion and encouraging appetite, I give

Tincture nux vomica,	ʒii;
Tincture cinchona compound, Tincture gentian compound,	āā ℥iii.

Sig.: One drachm before meals.

Peristalsis is also promoted by this mixture, but I always give calomel, followed by saline, every ten days.

In plethoric people I do not give iron, nor the nux gentian mixture; but prefer the magnesium sulphate treatment.

The foregoing treatment I have used with good success in ordinary cases. Occasionally, however, when there are deep induration, extensive infiltration, a high degree of inflammation, offensive odor, and a persistence against all treatment, extreme measures are taken, viz.: Curette and cut away all diseased tissue; sometimes resect the distended veins, dust on a little cupric sulphate or drop saturated solution of magnesium sulphate on the ulcer at about 110° F. Continue for six hours and rest four hours. I sometimes use pure balsam of Peru or ichthyol during interval of irrigation and following. Skin grafting may be done when the area is large.

A mildly antiseptic dusting powder every three or four days will certainly add to the patient's comfort, and possibly aid the process of repair. Tincture of iodine painted on occasionally will hasten granulations. Rest in bed, plently of fresh air, and good food must not be overlooked. Wet dressings of a weak sodium bicarbonate solution are useful in mild cases.

(To be concluded.)

Therapeutical Notes.

Epidural Injections during Labor.—M. de Kervily, in *Presse médicale* for September 25, 1912, states that he has obtained gratifying results, both in normal labor and for dilatation and curettement of the uterus, with anesthetizing epidural injections of cocaine hydrochloride in one per cent. solution. He employs either an ordinary hypodermic needle, 2.5 cm. in length or, for stouter patients, a needle 5 cm. long. After cleansing the skin over the sacral region with alcohol, the needle is introduced into the sacral canal obliquely from below upward and forward, and an injection of 0.5 c. c. of the cocaine solution (0.005 gramme of cocaine) is made. The pain attending labor is so reduced that little or no complaint is made by the patient. The dose above mentioned acts as well as one three times as large, and as the effect wears off in fifty minutes, repeated injections are given, at the patient's own request. No unpleasant effects, either during or after the injections, were noted. Labor seemed to be accelerated rather than delayed and excessive voluntary "bearing down" efforts on the part of the woman, due to the pain, are quieted. The physical and nervous fatigue attending labor is reduced to a minimum. De Kervily considers the procedure well suited for current use in practice.

Rectal Feeding by the Drop Method.—H. M. Eberhard, in the *American Journal of Gastro-Enterology* for July, 1912, calls attention to the drop method in rectal feeding as an advantageous substitute for the ordinary procedure. Obstacles to the usual method, such as early expulsion of the enema and complaints of soreness due to the frequent passage of the tube, are thereby largely avoided. He has used the "drop" procedure in over 150 cases, and found that some patients can retain as much as three litres of milk and from eight to ten eggs a day. Few object to this method of feeding.

The following combinations are mentioned by the author as having given the best results:

I.

Peptonized milk,	9 ounces;	264 calories.
Whites of three eggs;		
Table salt, q. s.		

II.

Warm milk,	9 ounces;	310 calories.
Yolks of two eggs;		
Grape sugar,	one drachm;	
Table salt,	0.5 drachm.	

III.

Warm milk,	9 ounces;	314 calories.
Two raw eggs;		
Table salt, q. s.;		
Essence of pepsin,	one drachm.	

The last named combination is best prepared by first heating the milk to about 98° or 100° F., then beating the eggs, salt, and pepsin together, and lastly adding the milk and beating again until the mixture drops readily. Two raw eggs in one pint of normal saline solution, yielding 140 calories, also constitute a good enema.

Since the mixtures containing both milk and eggs tend to become gummy unless kept continuously warm, it is necessary to use a double can during the process of feeding. The inner receptacle, for the milk mixture, has a small tube projecting from its bottom and passing through the outer tank, in which water at 110° to 115° F. is placed. The remainder of the apparatus is the same as is used for saline enteroclysis, and the flow is regulated to a drop a second.

In order to keep the bowel tolerant, it should be cleansed daily with warm saline solution.

The drop method was found very useful either as the sole source of nutriment or as an auxiliary in acute gastric inflammations with persistent vomiting, after gastric hemorrhage, in gastric hyperesthesia, in esophageal or pyloric stenosis, in the vomiting of pregnancy, in advanced gastric carcinoma, etc. In pulmonary tuberculosis, or chronic renal or cardiac disease, with pronounced wasting, the procedure is an advantageous supplement to mouth feeding. In cases with bleeding hemorrhoids it is also useful.

Treatment of Acute Coryza.—Garel, in *Archives générales de médecine* for July, 1912, is credited with the statement that for the "abortion" of a cold, the inhalation for five minutes, three or four times daily of a boiling solution of hydrogen peroxide, preceded by the application of two or three drops of a one to 1,000 epinephrine solution to the mucous membranes, constitutes an effective measure. Atropine sulphate in the dose of 0.25 milligramme, morning and evening, will antagonize the excessive flow of secretions.

Hayem has advised that a few drops of the following mixture be placed on blotting paper and the fumes inhaled for a few seconds:

℞ Phenol,
Ammonia water, } ....of each 5 grammes;
Alcohol, ...10 grammes;
Distilled water, ...15 grammes.
M. ft. solutio.

Some caution should, perhaps, be exercised in the use of the foregoing preparation, as Moldenhauer has shown that caustic inhalations favor ear complications.

In overcoming nasal obstruction, the following snuff gives good results:

℞ Cocaine hydrochloride,
Menthol, } .....of each 0.3 gramme;
Roasted and powdered coffee beans...1.0 gramme;
Boric acid, ...10.0 grammes.
M. fiat pulvis.

In this preparation the menthol prolongs the effects of the cocaine, while the coffee is introduced to make the powder more palpable and more easily inhaled.

Another useful combination is:

℞ Menthol, ...0.5 gramme;
Ammonium chloride or phenyl salicylate, ...2.0 grammes;
Boric acid, ...8.0 grammes.
M. fiat pulvis.

Since the swelling of the mucous membranes renders the snuffing up of the powder difficult, the patient will find it advantageous to use a piece of rubber tubing about twenty cm. long; the powder is placed in it at one end, and air blown through from the other end by the mouth.

Spraying the membranes for a very short period with a one or two per cent. cocaine solution gives good results, but the toxicity of the drug is to be remembered. A better procedure is to apply two or three drops of a one to 2,000 or 3,000 solution of epinephrine with a camel's hair brush. Unna has recommended the following combination for brief spraying into the nose:

℞ Ichthyol, ...0.5 gramme;
Ether,
Alcohol, } ....of each 50.0 grammes.
M. fiat solutio.

It is probably safer, and equally effective, to use a one to thirty solution of menthol in liquid petrolatum. A spray of 0.2 or 0.4 per cent. antipyrine may also be used, preferably preceded by cocaine.

Where the lips or nostrils become irritated and inflamed, the following ointment is advised:

℞ Cocaine hydrochloride, ...0.5 gramme;
Tannic acid, ...5.0 grammes;
Rose water ointment, ...20.0 grammes.
M. ft. unguentum.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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PREVENTABLE NOISE IN HOSPITALS.

In his interesting address delivered before the congress of clinical surgeons in New York, Dr. George W. Crile (New York Medical Journal for November 16, 1912, p. 1032) set forth the advantages to the patient by "blocking off" the sensory nerves which, even under general anesthesia, convey a certain amount of shock to the brain cells. But the injection of local anesthetics along the nerve routes leading to the brain centres from the seat of operation is only one detail of the whole method of what Doctor Crile termed anoci association. Not only does he protect his patients from harmful impressions on the operating table, but does so by giving them better, more thoughtful, and more considerate attention both before and after the operation. Doctor Crile takes the ground that even the whims of the patient are not to be disregarded, as his comfort and mental status have a strong bearing on the physical well being. It costs more for nurses to give this detailed attention which takes into account the individual wishes of the patient, but the hospital statistics indicate that the result amply justifies the expenditure by lowering the mortality after operations.

All must agree with Doctor Crile in believing that the comfort of the patient is an important factor in his welfare, and it is undoubtedly one which has hitherto received too little consideration. On the matter of noises particularly, the average hospital management is woefully at fault. There is much unnecessary ringing of gongs and bells, much avoidable loud talking, much useless clatter of dishes, and tramping of feet. In one institution the arrival of each particular visiting surgeon is announced to the staff by the shrill blasts of a steam whistle, each surgeon receiving a specified number of blasts to the extreme annoyance of all the patients whose rooms open toward the steam plant. The same steam whistle also calls the ambulance surgeon. The serving pantries on each floor are generally perfect bedlams of noise and clatter. All this is objectionable and even harmful.

The patient recovering from the effect of an anesthetic not infrequently suffers from hyperacusia, so that the clatter of dishes in a nearby pantry sounds like the rattle of small arms and the tramp of heavy boots across the floor to the affrighted ears of the patient struggling back to consciousness seems like the fateful rumble of heavy artillery. When the steam whistle shrills forth, just outside of his window, the patient at this stage receives a shock which is entitled to a more serious name than mere discomfort. In the matter of light also many patients suffer exceedingly from excessive glare, and would welcome a dark bandage or darkened room to relieve their tired eyes.

Here is a field in which much can be done without great outlay of either time or money. The barbarous steam whistle should be banished, not only from the hospitals, but from the city altogether, along with the useless ringing of bells. Electric flashes, such as are used on telephone switchboards, could be substituted in most cases for the electric call bell. Doctors, nurses, and attendants should be required to wear rubber heeled shoes. Loud conversation should be interdicted at all times within the limits of the hospital, and the clatter of dishes relegated to subterranean regions, out of possible hearing of the patient. All these factors in anoci association are within the reach of every hospital management and in many hospitals they urgently require attention.

THE BATTLE OF MEDICINE.

Many a time we have used the word "fight" in speaking of efforts being made for the health of individuals and of communities. The consumptive makes a fight for his life and in these days often wins a victory; so, too, the victim of cardiac or of renal disease. Not yet, however, is the same success attained in the struggle against cancer. Epidemic diseases quickly pass beyond the power of the individual attacked and the physician becomes the contestant. That he enters the field at the risk of his life and voluntarily is not always recognized. True, like every soldier, he is paid in money. Otherwise physical powers, in these days of the high cost of living cannot be maintained. But who shall say that any soldier, be he medical or martial, is ever fully paid for the sacrifice of life or limb or health, in the cause of a great principle or the preservation of the lives of his fellows? . . . It was a pleasure therefore to note in the Chicago *Tribune* a recognition of the valor of some of our American heroes.

In the United States Public Health Service Corps there are 135 medical men. Note those who have contracted disease in the daily discharge of their duties in studying and combating disease. Murray and Bratton were killed by accidents while on quarantine duty during the yellow fever outbreaks, accidents directly incident to their work. Seventeen have contracted yellow fever on quarantine duty, Carter, Cobb, Wasdin, Fricks, Berry, Rucker, von Eszdorf, Goldberger, Richardson, Parker, Guthrie, McKeon, Glozier, Waldo, Groenvelt, McAdam, Weightman; of these the last five died. Eleven contracted tuberculosis and three of them have died of it, Prochazka, Decker, and Devan. Four have caught amebic dysentery while on duty in the Philippines and one of them is permanently disabled. From direct exposure on the field or in the laboratory, five contracted typhoid fever and two of them have died, Richardson and Miller. Two caught smallpox, one typhus fever, and one cholera, while one died not long ago of the Rocky Mountain fever, which he was studying.

It is a pleasure for us to be able to record our appreciation of their devotion to duty. Other nations have their medical corps, England, France, Germany, Japan, and many another, who are fighting just as bravely. It means much to the world that smallpox is everywhere hemmed in within the closest limits; that yellow fever can never again be so powerful that only a "shotgun quarantine" can avail to check its progress; that typhoid fever can never repeat the ravages of the Spanish-American and Boer wars; that tuberculosis must eventually yield to the health measures adopted against it.

While we give due praise to these men who are so bravely fighting in the front of scientific advance, let us not forget the more humble general practitioner, who often risks his life and not rarely loses it. How many a man treating an infection infects his own hand. How often a physician wearied by his day's work falls before the onslaughts of his patients' pneumonia germs. Many a busy man, thoughtful only of his duty to his suffering patients, strains heart muscle or urinary tubules and falls a victim to his devotion; rarely is the danger thought of at the time.

Many a lesson might be drawn from the parallel between physician and soldier. The soldier's success depends on physical health, clear brain, keen eye, steady hand, trained muscles, ability to act promptly in emergencies; in these and in many other characteristics it is easy to trace the similarity. It may be useful for us physicians to note these points and make them our own.

FRIEDMANN AND HIS REMEDY.

Friedmann's first announcement of his discovery of a new remedy for tuberculosis in the *Berliner medizinische Wochenschrift* for November 18, 1912, was duly noted and abstracted in our issue for January 18, 1913. Since then we have not adverted to the remedy despite the space devoted to it in the newspapers, for evidence *pro* and *contra* of any scientific value has been lacking. The analysis of Friedmann's assertions, which we present in this issue of the JOURNAL, will place our readers *au courant* of the dispute; the original statements were modest enough, and it is difficult to understand the extraordinary excitement they have caused. We hope that eventually Doctor Friedmann will emerge from the discussion with an unsullied record, as becomes a physician and a man of science whom no thought of gain could persuade to exaggerate the importance of his discovery.

THE PROGRAMME OF DOCTOR WILEY'S SUCCESSOR.

The first public address of the new chief of the Bureau of Chemistry of the United States Department of Agriculture, Dr. Carl L. Alsberg, was made, appropriately enough, at the annual meeting of the Association of Manufacturers of Medicinal Products, held during the week in New York. In view of the fact that Doctor Alsberg is a graduate in medicine and has specialized in physiological chemistry it is quite natural that in announcing his programme of action he should lay special emphasis upon that aspect of his duties which has to do with the supervision of the quality of drugs and medicines. The medical profession will be glad to learn that the bureau will take energetic action under the Sherley amendment, giving authority to suppress the traffic in those nostrums which make exaggerated claims of curative qualities. Already, so we learn, a great quantity of foreign nostrums have been excluded from our markets through the application of this act. Nostrums making false statements as to curative value on the wrapper or label will, we are assured, be excluded from interstate commerce, but there seems to be no way, except possibly through the postal authorities, to prevent the making of these assertions through newspaper and other advertisements. The new chief accentuates the importance of the Harrison bill governing interstate commerce in narcotic drugs which was referred to in these columns for February 8th. Under this law, it will be remembered, the physician as well as the pharmacist would be required to register annually with the United States Bureau of Internal Revenue.

ANTITYPHOID INOCULATION.

Consideration of the statements of Major F. F. Russell, which we present on page 351 of this issue of the JOURNAL, leads us to the conclusion that antityphoid inoculations should at once be applied to one source of residual typhoid, namely, in the control of milkborne infections. Time and again it has been found that large outbreaks of typhoid fever were due to infected milk consumed raw. Arrangements might therefore be made with the Department of Health to practise antityphoid inoculations on the dairymen and all others handling raw milk, or rather milk which is to be sold raw. In this city, with its admirable control of the milk situation, all those handling raw milk of grades A and B should be required to undergo antityphoid inoculation, which would involve neither hardship nor expense. There is little doubt that this procedure would materially reduce milkborne typhoid infections. The antityphoid vaccine supplied by the Department of Health, is made according to the method employed in the army.

CANCER AND THE COCKROACH.

The *Lancet* for February 1, 1913, draws attention to the fact that two investigators have come to the conclusion that there is some connection between cockroaches and cancer. In March, 1911, the *Lancet* received a communication from Dr. W. Melville-Davison, in which the latter maintained that cancer is caused by the introduction into the body in various ways of a certain species of alga, filaments of which are found in large numbers in the bowel of several varieties of cockroach, and that infection is caused by linen or food soiled by the insect. Recently newspapers have reported that Professor Fibiger, of Copenhagen, is of the opinion that a worm in the rat passes its larval stage in the intestine of the cockroach; the rat eats the cockroach and cancerous swellings develop. The *Lancet* notes the coincidence of two observers, independently and in different countries, thus incriminating the cockroach as a cancer spreader, but states that before a verdict of guilty can be brought in against the insect, a good deal more evidence will have to be adduced.

HEMORRHAGE FROM USE OF AN ESMARCH BANDAGE.

According to *Presse médicale* for January 25, 1913, Canaguier reported recently to the Société de médecine of Le Mans that in operating for acute osteomyelitis on the femur of a girl of twelve years—not a "bleeder"—a curious accident occurred. Twice, immediately on placing the Esmarch bandage about the root of the thigh, severe hemorrhage ensued, to cease suddenly with the removal of the bandage.

Canaguier, searching for an explanation, believes that although the femoral artery may have in Scarpa's triangle its normal situation and volume, there might possibly be a high bifurcation into a superficial and a deep branch, with considerable development of the latter, while the former remained relatively insignificant. Hence the bandage, acting with insufficient pressure on this exaggerated deep branch, permitted the hemorrhage. The surgeon is careful, however, to state that this is merely theory.

In connection with this unexpected hemorrhage it is interesting to learn that it was immediately controlled by the injection of artificial serum. There was considerable delay in procuring the serum, and before it was injected, twenty minutes had elapsed since the pulse had been no longer tangible at wrist or ear, and the heartbeat had become likewise imperceptible.

AN APPENDICULAR AND A DENTAL ABSCESS.

Badolle presented recently to the Société des sciences médicales of Lyons, according to *Presse médicale* for January 11, 1913, a young man who had been operated upon for a huge appendicular abscess, and in whom developed a few days later another large abscess in the angle of the left maxilla. X rays disclosed that a wisdom tooth was the cause of this second manifestation and extraction quickly resulted in a cure. Three hypotheses have been submitted concerning these phenomena: 1. The appendicitis and the infection of the wisdom tooth began in the same week by mere coincidence and without interrelation; 2, the appendicitis was the direct cause of the tooth infection, which represented a true metastasis of the former; 3, the dental infection resulted from a buccal infection which was in no way related to the appendicitis. Durand, in whose service the young man in question was treated, inclines strongly to the metastatic hypothesis because the follicle of the wisdom tooth remained closed and did not communicate with the oral cavity; if he is correct the case is of a very rare variety, for metastasis from an appendicular abscess has been seldom reported.

News Items.

The Harvey Lectures.—The seventh lecture in the course will be delivered this evening at the Academy of Medicine by Dr. Theodore C Janeway, professor of the practice of medicine, Columbia University, his subject being Nephritic Hypertension, Clinical and Experimental Studies.

Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons.—Professor Ludwig Aschoff's lectures in this series will be given at the Academy of Medicine (New York) on March 12th and 15th. The subject of the first lecture will be Thrombosis and of the second Contract Kidney.

Chicago Academy ot Sciences.—At the recent annual meeting of this organization the following officers were elected to serve for the coming year: Dr. T. C. Chamberlin, president; Dr. George S. Isham, first vice-president; Dr. Henry C. Cowles, second vice-president; Dr. Wallace W. Atwood, secretary. Dr. N. S. Davis was appointed a member of the board of scientific governors.

Upper Mississippi Valley Medical Society.—At the semiannual meeting of this society, held in Wadena, Minn., recently, under the presidency of Dr. C. F. Coulter, the following officers were elected: President, Dr. William Reid, of Deerwood; vice-president, Dr. W. A. Desmond, of Akeley; secretary, Dr. A. W. Ide, of Brainerd; treasurer, Dr. P. E. Kenyon, of Wadena.

Women Physicians of Cincinnati Organize.—At a meeting of the women physicians of Cincinnati, held on January 28th, the Cincinnati Medical Women's Society was organized, with the following officers to serve for the first year: Dr. Nora Crotty, president; Dr. Ella G. Hunt, vice-president; Dr. Margaret H. Rockhill, secretary; Dr. Edith Smith, treasurer; Dr. Bertha Lietze, Dr. Ruth Bernheim, and Dr. Mary Tracey, members of executive committee.

Public Lectures on Medical Subjects at Harvard University.—The faculty of Harvard Medical School is giving a series of free public lectures on Sunday afternoons at four o'clock, from January 5th to May 18th, inclusive. Last Sunday's lecture was given by Dr. Hugh Cabot on the Responsibility of the Community for the Prevalence of Venereal Diseases, and on the 16th Dr. David L. Edsall will speak of the dangerous effects of patent medicines.

Plague Prevention in Manchuria.—The North Manchurian Plague Prevention Service has been established in Manchuria, with headquarters at Harbin. A hospital constructed according to plans recommended at the International Plague Conference in 1911, has been established at Lahasu, where ordinary cases of illness have been treated since October 16, 1912. The isolation hospital at Harbin, which was also constructed according to the recommendations of the International Plague Conference, has been completed and is now ready for patients.

Proposed Alliance of Economic Societies.—At a meeting of delegates from the various medical economic societies of greater New York held in the Borough of Manhattan, February 7, 1913, it was decided to present to the following societies a plan of consolidation: Physicians' Protective League of Downtown New York; Medical Alliance of New York: Physicians' Protective League of New York; Yorkville Economic League of New York; Physicians League of the Bronx; Physicians Economic League of Brooklyn. These societies now have a combined membership of two thousand physicians.

New York Physicians' Association.—A stated meeting of this society will be held at Tuxedo Hall, Fifty-ninth Street and Madison Avenue, on Thursday evening, February 27th, at 8:30 o'clock. The topic for discussion will be The Treatment of Tuberculosis. Papers will be read as follows: The Work Treatment, by Dr. E. S. McSweeney; Specific Therapy, by Dr. James A. Miller; The Care and the After Care of the Consumptive with Special Reference to New York, by Dr. Bruno Horowicz; The Sunlight Treatment of Surgical Tuberculosis, by Dr. John W. Brannan. These papers will be discussed by Dr. Hermann M. Biggs, Dr. John H. Huddleston, Dr. Alfred Meyer, Dr. Adolphus Knopf, Dr. Robert Abrahams, Dr. Edwin Riesenfeld, and Dr. George Mannheimer. All those who are interested are invited to attend.

Personal.—Dr. Leonard Hill, F. R. S., and Dr. Henry S. Kenwood, of London, have been appointed members of the army medical advisory board, the former as civilian physiologist and the latter as civilian sanitary expert.

Professor Paul Ehrlich, of Frankfort, and Dr. Emil Warburg, of Charlottenburg, have received the Royal Bavarian Maximilian Order for Art and Science.

A dinner was given to Dr. J. G. Mumford, of Clifton Springs, N. Y., by the Rochester Academy of Medicine, on Wednesday evening, February 12th. At a meeting of the academy after the dinner Doctor Mumford read a paper entitled An Adventure in Practice.

New York Physicians' Aid Association.—At the forty-first annual meeting of this association, held on January 21st, the following officers were elected: President, Dr. W. F. Mittendorf; first vice-president, Dr. W. C. Phillips; second vice-president, Dr. Joseph W. Ingalls; recording secretaries, Dr. A. Edward Davis and Dr. Edward S. Peck; corresponding secretary, Dr. W. B. Jennings; treasurer, Dr. Daniel Lewis; trustees for three years, Dr. David P. Austin, Dr. Ward B. Hoag, and Dr. Heinrich Stern. The society has between 2,200 and 2,300 members and a capital fund of over $83,000, not including the reserve fund of $4,000 required by the insurance department at Albany. During the year 1912 there were 37 deaths among the members, against 39 in 1911.

A Banquet to Ex-Presidents of the Chicago Medical Society.—A banquet in honor of its ex-presidents was given by the Chicago Medical Society on the evening of February 12th, at the Hotel Sherman. Dr. Jacob Frank acted as toastmaster, and the speakers were ex-presidents of the society, as follows: Dr. William E. Quine, Dr. David W. Graham, Dr. Daniel A. K. Steele, Dr. Edmund J. Doering, Dr. William T. Belfield, Dr. Frank Billings, Dr. L. L. McArthur, Dr. Harold N. Moyer, Dr. Arthur Dean Bevan, Dr. Junius C. Hoag, Dr. James H. Stowell, Dr. William A. Evans, Dr. Robert B. Preble, Dr. John B. Murphy, Dr. Charles S. Bacon, Dr. George W. Webster, Dr. Henry B. Favill, Dr. Alfred C. Cotton, Dr. John A. Robinson, and Dr. Joseph M. Patton.

Cholera.—The cholera situation throughout the world seems to be subsiding into the quiescent stage in which it usually remains during the first four or five months of the calendar year. The outbreaks which have been in progress in Japan, China, and southern Asiatic ports have for the most part disappeared. This does not include, however, those areas in southern Asia in which the disease is endemic and is present to a greater or less extent at all times. The disease has been present in various parts of Turkey in Asia, especially in Jidda and Meka. In Europe the outbreak which began in Constantinople during the early part of November continues. It has, however, not spread to any great extent so far as known. During the week ended January 6th, there were reported in Constantinople 117 cases of cholera with 62 deaths, and from the beginning of the outbreak to January 6th there had been officially reported a total of 2,459 cases with 1,208 deaths.

A Society for the Advancement of Clinical Study has recently been organized in New York, the purpose of which is to maintain a bureau of information to furnish to resident and visiting physicians definite information regarding the clinical facilities of the hospitals and laboratories of the greater city. For this purpose a bulletin board has been installed at the Academy of Medicine, 19 West Forty-third Street, in charge of a special clerk who will be on duty between the hours of nine and six to answer all telephone inquiries (telephone 974 Bryant). The bulletin board will consist of two sections, on one of which will be posted month by month, the regular clinics, medical and surgical, also laboratory demonstrations, all of which are held at stated hours. The second section will include full announcements of daily operations and demonstrations of cases both medical and surgical, which as far as possible will be announced on the day preceding their performance. It is believed that these facilities will afford physicians who are interested in observing particular operations and operators or clinicians, an opportunity to obtain the desired end with the least trouble. It is hoped that by this means the large and unexcelled clinical facilities of New York will be made more accessible to those who may desire to make use of them.

Pith of Progressive Literature.

WIENER KLINISCHE WOCHENSCHRIFT.

December 5, 1912.

Nucleic Acid for Progressive Paralysis.—Tsiminakis reports a few cases of progressive paralysis treated by nucleic acid; from the good effects obtained this method is to be recommended, since the majority of the patients showed lasting remissions. The method, which consists of the use of a definite and quantitative chemical, has advantages over the tuberculin treatment where a most potent bacillus poison of unknown strength is used which may possibly light up a latent tuberculosis.

Benzol Treatment for Leuchemia.—B. Stein was successful in a refractory case of myelogenous leuchemia by giving benzol for forty-two days (amount and method are not mentioned), which had resisted treatment by Röntgen rays. The leucocyte count became normal and all subjective symptoms disappeared completely. This marked improvement persisted after the patient was taken out of bed and placed on arsenic.

December 12, 1912.

Repaired Gunshot Wound of the Heart.—Tedesco describes a case and shows that a gunshot wound of the heart can be successfully repaired, even in the face of defective technic and asepsis.

New Possibility of Tying Bloodvessels.—H. Bardach tried tying the bloodvessels of dogs with elastic ligatures of the finest rubber tubing. The advantage is that, notwithstanding absolutely safe cutting off of the blood supply, this ligature injures the wall of the bloodvessel only very slightly. When the ligature is removed, even after twenty-four hours, an undisturbed and immediate return of the circulation takes place.

December 19, 1912.

Bacterial Prophylaxis in Surgery.—Jaklin explains why wound infection is so rare in some clinics and common in others. The germs usually found in the outer world are as a rule very virulent and therefore are not dangerous to wounds. By the passage of these germs through a septic wound or septic organism they become virulent and capable in small numbers of infecting wounds. The wound can be protected from infection by prophylaxis. The means used up to the present time have not been altogether successful because it is difficult or impossible to remove each infective medium. The most radical and at the same time simplest bacterial prophylaxis consists in a complete abstinence from septic surgery. By this means it is possible in a simple and positive manner to effect primary union and to avoid wound infection.

Scaphoid Shoulder Blade and Its Clinical Significance as to Duration of Life.—Von Kollert illustrates his article with five drawings of the different types of shoulder blades. The scaphoid type, characterized by a concave middle border and an inferior angle lying vertically below the middle point of the spine of the scapula, is an abnormality arising in intrauterine life, the circumstances which modify its development not yet being fully understood. The congenital form remains, as a whole, the same throughout extrauterine life. The scaphoid shoulder blade is a sign of a congenitally inferior individual. Its possessors usually die early, therefore this abnormality is found only rarely at an advanced age. The mortality in these individuals from tuberculosis is high, the acute form of the disease predominating. There are gradation forms between the normal types with a convex median border and the abnormal form which may lead to false judgment of the case. Both typical fundamental forms are never found in the same individual in extrauterine life.

December 26, 1912.

Chronic Hypertrophic Catarrh of the Lingual Tonsil.—Z. Zografides explains the attacks of coughing similar in almost every respect to pertussis to which patients with hypertrophic lingual tonsils are subject. The stimulation of the internal branch of the vagus by pressure or internal secretion of the tonsil produces the characteristic attack. He describes ten cases and shows how very similar the clinical picture is to the attack in pertussis. He draws the conclusion that the Bordet-Gengous pertussis bacilli or their toxines enter the glands of the tongue, produce an inflammation which stimulates the coughing centre along reflex centripetal paths, and a coughing spell results. This hypothesis rests upon the observations of many authors who were able to precipitate a coughing spell in those suffering from pertussis by irritation and pressure on the back of the tongue, further upon hyperemic conditions of the upper air passages, especially the larynx and back of the tongue.

MONATSSCHRIFT FÜR KINDERHEILKUNDE.

December, 1912.

Sunshine in the Treatment of Tuberculosis.—Rollier reports excellent results with this treatment. The patients are exposed to the rays of the sun and are out of doors in the coldest weather with hardly any covering. Numerous photographs are shown of patients before and after treatment which are convincing. Bone, gland, skin, and joint tuberculosis are said to heal in a short time.

So Called Salt Fever.—B. Bendix and J. Bergmann have again taken up the subject whether or not there is such a thing as salt fever. In 1911, Wechselmann showed that the fever which appeared after the intravenous injection of salvarsan could be avoided if a salt solution was used, aseptic and free from bacterial toxines. The authors believed that the fever which resulted in infants after saline injections could be avoided if a solution was used free from these toxines. A solution was used of water recently distilled and in no case were the authors able to observe a rise in temperature after injection. If the water was not freshly distilled (within a few hours), frequent rise in temperature was seen. Every infants' ward should therefore have its own distillation apparatus for saline infusions.

LYON MÉDICAL.

January 12, 1913.

Hot Air Inhalations in Treatment of Diphtheria.—R. Rendu compared the efficacy of this measure with that of antitoxine by treating one half of a series of sixty-six cases with hot air—omitting antitoxine—and the other half, consisting of exactly comparable cases, with the specific serum. The apparatus used was a small electrical drying instrument, similar to that employed by barbers and consisting essentially of a vane which drives air over a redhot wire. This heated air was conveyed to the mouth by a flexible metallic tube, to the extremity of which could be attached brass tubes of varying diameter, covered by a cork cylinder in order to avoid burning the lips. The highest temperature reached by the air supplied in the apparatus was 150° C., but 110° C. was about the highest point attained in treating the patients. The method followed was either to raise the temperature until there was evidence of discomfort, then at once turn in cold air, and a little later resume the heated air, or more frequently, to withdraw the tube from the mouth when the uncomfortable degree of heat was reached, reintroduce it one half minute later, and so on four or five times, the temperature constantly increasing and the duration of each application decreasing. In adults and adolescents the tongue depressor was used, and the jet of hot air carried directly over the various areas covered with false membrane. The procedure is not painful, is well borne by children, and never produced a burn or other complication. The average number of applications was only four or five, distributed in a period of three or four days. As for the results, the mortality due to diphtheria in the air treated cases was the same as in those receiving antitoxine, i. e., fifteen per cent. The membranes disapeared and the temperature fell with equal rapidity and the incidence of paralyses was the same, viz., nine per cent. While this seems to show the air method and antitoxine to be of equal value, the author advises substitution of the former for the latter only under certain circumstances—diphtheria in a tuberculous patient, or in one who has previously had injections of horse serum, and believes that in all ordinary cases the methods should be combined, since they are complementary, the hot air being chiefly a bactericidal agency, while the serum is chiefly antitoxic.

PRESSE MÉDICALE.

January 11, 1913.

Congenital Stenosis of Rectum.—P. Reclus asserts that rectal stenoses are of congenital nature more frequently than is usually thought. The characteristic lesion is a crescentic fold of mucous membrane presenting a sharp margin and forming a diaphragm across the rectum, usually about three, but occasionally five, six, and even seven cm. above the anal orifice. In many instances there are associated with it dry, often multiple fistulæ, the external openings of which are sometimes hidden under the bases of condylomata; these fistulæ are likewise congenital, and are lined with heavy stratified epithelium. The functional disturbances arising from this condition appear, as a rule, only relatively late in life—in the author's six cases at ages ranging from thirty to fifty-two, respectively. The diagnosis is often made difficult by a coexisting proctitis, the resulting infiltration of the mucous membrane rendering obscure the sharp margin of the valvelike fold. The treatment advised by the author consists of anesthetizing the parts through a narrow rubber tube with novocaine-epinephrine solution, of gently and very gradually dilating the stenotic fold with the fingers, and finally with Hegar's sounds, in several sittings, and also of loosening the valve margin by means of small incisions with a bistoury passed in along the finger. In the two cases thus treated which the author has been able to follow up the cure has been of long standing.

SEMAINE MÉDICALE.

January 15, 1913.

Malignant Growths in Workers in Synthetic Dyes.—S. G. Leuenberger, comparing the incidence of cancer of the bladder in workers in dyestuffs at Basel, Switzerland, since 1861, with that of the citizens in general, found the condition thirty times more frequent in the former than in the latter. The first symptom noted was usually vesical tenesmus, which came on at a stage when lesions were hardly visible microscopically. This would suggest irritation of the mucous membrane as the primary etiological factor. The growths later observed were either papillomas or solid cancerous neoplasms, rarely sarcomas, and were always of a high degree of malignancy. In most instances the condition developed only after many years had been spent in the factories, and sometimes it occurred when the individuals were no longer exposed—a point of resemblance to x ray cancer. These two forms of malignancy, considered in conjunction with those of chimney sweepers and of workers in paraffin, tend to show that cancer may actually result from chemical or physical irritation, and that even if the truth of the parasitic theory of cancer should be demonstrated in the case of certain tumors, it cannot apply to all. Notwithstanding the stringent enforcement of prophylactic measures in the Basel factories, vesical cancer has not yet ceased to occur. Early diagnosis by cystoscopy, and operation in the initial stage, constitute the best means of control now available.

BRITISH MEDICAL JOURNAL.

January 25, 1913.

Report of the Work of the Radium Institute.—A. E. H. Pinch summarizes the results of the radium treatment of 578 cases. Epithelioma if flat, superficial, and accompanied by little or no ulceration yields satisfactory results. The results are also quite good in the ulcerating forms, but require much longer treatment and leave considerable scar formation. Treatment of epithelioma of the mucous surfaces, on the other hand, is usually disappointing, though some temporary relief may follow. In inoperable carcinoma of the uterus radium will often bring about results which cannot be obtained by any other mode of treatment, checking the rate of growth, or arresting it, and in some cases even converting the case into an operable one. In cancer of the rectum radium relieves the symptoms and usually retards the rate of progress. In carcinoma of the breast also there are encouraging results, especially in the sclerotic forms of growth. Of all forms of malignant disease rodent ulcer is by far the most amenable to the action of radium. Superficial nævi are usually quite successfully treated by radium, as is also the case with the cavernous forms. Keloid responds with most admirable results. Parotid tumors are also particularly amenable to treatment, even when malignant. Lichenification of the skin and some forms of pruritus are quickly cured, while psoriasis is also cured, but shows a tendency to later return. Lupus vulgaris does not respond to radium as well as it does to Finsen light. Lastly, the drinking of solutions of radium emanation is frequently very beneficial in arthritis deformans.

LANCET.

January 25, 1913.

Etiology of Endemic Goitre (*Lecture II*).—Robert McCarrison deduces two main facts from the study of the geological relations of the soil to goitre: 1. The disease appears to show a preference for certain soils; 2. it may, nevertheless, prevail on soils of any geological formation. Experiments on healthy human beings yielded the following results: 1. Of thirty-six individuals who consumed the untreated suspended matter obtained from a notoriously goitre producing water, there was no clinically demonstrable change in the size of the thyroid gland in twenty-one cases, in ten developed noticeable enlargement of the gland, five showed transitory enlargement; 2, of thirty-one who consumed similar suspended matter which had been previously boiled, none showed any enlargement of the thyroid. From this series of experiments and from the analysis of all of the known facts with regard to the etiology of endemic goitre, McCarrison concludes that the disease must be due to some living excitant which exists in greatest abundance in the deposit at the bottom and sides of water channels, tanks, wells, and other receptacles of goitre producing water. Bircher's experiments on rats also show the presence in suspension in goitre producing waters of a living agent, which is the direct or indirect cause of the disease. Further experiments show that soil is also a vehicle of the *contagium vivum* of goitre. In addition to the conclusion that water and soil provide the general source of contagion in endemic goitre, McCarrison feels that we should recognize the probability of other sources of infection and not adhere slavishly to the water theory only.

Hypertrophic Stenosis of the Pylorus in Adults.—H. G. Barling reports two cases of simple hypertrophic stenosis in adults in whom there was total absence of other gastric abnormality. He raises the question as to what becomes of the hypertrophic condition which is occasionally encountered in children. On the theory that the condition found in his two adults was possibly an exaggeration of the earlier condition, he investigated their past histories, but without finding any evidence to suggest the previous existence of any similar trouble in childhood or infancy.

Pathogenicity and Virulence of Bacteria.—F. H. Thiele and D. Embleton draw the following conclusions as a result of work of their own and a study of previously observed facts: 1. Ferments form an important normal mechanism of defense against bacterial invasion. The ferments which perform this important function are the normal panenzyme, the slightly differentiated specific enzyme, the thermolabile specific coenzyme or amboceptor, and the thermostable specific coenzyme or amboceptor. The last two increase and accelerate the action of the ordinary enzyme. The action of the ferment is to bring about proteolytic digestion of the bacteria. 2. Exotoxines and endotoxines are bacterial protoplasm and are not primarily toxic *per se,* but only become so when acted upon by the ferments. 3. The action of the ferments on the bacterial protoplasm is to produce toxic early proteolytic digestion bodies. These bodies, beside being toxic to the animal, are also aggressive in the sense of Bail, that is, they are antiphagocytic. 4. The action of this toxic substance, beside being aggressive, is to produce, in large amounts, death; in lesser amounts, fall of temperature; in small amounts, fever. This substance is the cause of death in all bacterial infections. 5. The virulence of a bacterium is dependent upon the power of exuding around itself a zone of its cytoplasm, which remains in position and acts as a protective shield. The production of a zone of ferment equilibrium in this shield protects the bacterium itself from the penetration of the ferment. The shield thus acted upon is also aggressive to phagocytosis. 6. Pathogenicity is due to (a) the virulence of the bacterium, and (b) the relative activity of the ferment to the bacterium. Thus we should say that immunity is due to ferment action and phagocytosis—that is, it is cellulohumoral.

The Jugular Pulse.—H. W. Verdon explains the *c* wave as resulting from recoil of the ascending limb of the arch of the aorta at the termination of the sphygmic period, this recoil producing a wave in the adjacent superior vena cava. The *y* depression in the jugular wave is due to a momentary fall in endocardiac pressure secondary to the relaxation of the wall of the right ventricle. The *x* depression is the mark of the fraction of time at the close of ventricular systole and when another period is beginning, that of ventricular diastole. The *v, a,* and *c* waves represent processes in the cardiac cycle which are not essential factors in the maintenance of the circulation, but the solitary jugular wave, upon which these are engrafted, is due to processes which constitute the essential forces of the circulation. The positive curve of the venous pulse is coincident with the negative one in the arterial and is due to the neutralization of the diastolic endocardiac negative pressure by the inrush of blood and the transition to an endocardiac positive pressure. Similarly the descending jugular wave is synchronous with the ascending arterial wave, and is due to a sudden creation of negative pressure in the superior vena cava by the cardiac systole.

BOSTON MEDICAL AND SURGICAL JOURNAL.

January 30, 1913.

Seventy-six Operations in which Lane Bone Plates were Used.—Willard Bartlett reports that he has used the Lane method of treating fractures on seventy-six patients, most of whom left the hospital alive and in better shape than when they entered. Many walked out in full health, without dressing, splint, or crutch, but some were removed in the original cast and dressing at the end of one week or longer. He has been able to trace thirty-eight of these patients so as to determine the final result. Among the thirty-eight that were traced, there were twenty-two simple and sixteen compound fractures. Of the latter, twelve were fresh or granulating when the plate was introduced, while four were suppurating. The plates had to be removed in four of the cases of simple fracture, and in nine of the compound. Seven of the thirty-eight results he considers to be failures; three of these patients died, and in two the limb had to be amputated later for reasons that were apparently not connected with the operation. The remaining thirty-one cases were pronounced successes. A brief description is given of each case, with particular attention to detail in those in which the result was unsatisfactory. The average time between the operation and the final report in these cases is ten months; the longest interval twenty-nine months; the shortest, two months. The only indication for this operation that stands out prominently above all others, in his opinion, is *a functional defect,* either proved in an old case or predicted with reasonable certainty in a recent one. The patient's occupation must influence the choice of a therapeutic procedure. In addition, an open operation may be thought desirable when a leg patient must be got out of bed early; in old cases of nonunion or extreme malunion; in all fresh, widely open fractures if shock is past; in chronically infected cases in which the bones lie bare. No open operation is justified in the treatment of recent fractures unless ideal approximation is to be obtained; this means that all the fragments must dovetail perfectly. Finally the writer is inclined to believe that extreme discrimination should be the rule in choosing subjects for the open fracture operations.

Unilateral Hematuria in Chronic Nephritis.—P. E. Truesdale reports two cases of this nature. The first patient was a woman, aged seventy years, in whom the onset of the hematuria was insidious, without assignable cause, unilateral, persisted for seven months, and was not controlled by medical treatment. Nephrectomy was finally performed. The kidney was found to be in a condition of chronic interstitial nephritis with fatty degeneration and arteriosclerosis. The second patient was a man, aged fifty-two years, in whom the onset of hemorrhage from the right kidney led to the discovery of a condition of chronic nephritis. After persisting for several months the hematuria ceased for six months, during which time the general condition of the patient improved. Then there was a recurrence for seven months, which stopped spontaneously. On the cessation of the hematuria the amount of albumin and the number of casts diminished. This patient is still under observation. The hematuria of chronic interstitial nephritis is not easily differentiated from that due to a beginning neoplasm, especially when the kidney is normal to palpation and the urine negative except for the presence of blood. The ureters should be catheterized to determine which kidney is affected, as well as the efficiency of the other. A careful examination should be made for tumor cells and tubercle bacilli, and a guineapig test should be made if no great risk is involved in waiting. An x ray examination should be made for calculus. After these have been excluded the nephritides of infectious origin can be eliminated by the absence of the products of infection, except such cases of chronic nephritis as were of infectious origin, but had become noninfectious at the time of the hemorrhage. Varices of the papilla may be difficult if not impossible to recognize. The final step to clear up the diagnosis is an exploratory operation. The author thinks that hematuria is more common as an early sign of unilateral chronic nephritis than is generally supposed, and that the removal of the kidney under these circumstances affords an opportunity for the study of this disease in the period of its earliest manifestation.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 1, 1913.

Melanotic Sarcomas Resulting from the Irritation of Pigmented Nævi.—Henry Kennedy Gaskill reports a case which shows that too much stress cannot be laid upon the necessity of extensive surgical intervention in radical cases. The knife must go deep and far and wide, as palliative treatment is worse than useless. This does not mean the removal of every nevus, but if of the distinct melanotic type it should be watched and any tendency toward change in structure or toward extension should indicate prompt and thorough surgical intervention. To save life, action must be taken early.

Antityphoid Vaccination in Children.—Frederick F. Russell calls attention to the fact that the use of antityphoid vaccine among children, although rarely noticed in medical literature, has been to him a subject of especial interest. He furnishes statistics based upon the records of the inoculation of 359 children, between the ages of two and sixteen years, who have been vaccinated by fifty different physicians in many parts of the United States. The dose in these cases is based on body weight and not on age, the child being given that portion of the adult dose which his weight bears to the average adult weight of 150 pounds. In case of a fraction, a little more, rather than less, is administered. The best time for inoculation is 4 o'clock, or later, in the afternoon, as any reaction will then appear after bedtime. No harmful effects have been reported, and none have contracted typhoid fever. Revaccination in children should be made earlier and oftener than in adults, because children are immunized on a basis of body weight, and therefore should receive a second course of two or three doses when the weight shows a material increase; since the duration of the immunity is unknown, revaccination is done after about three years; longer intervals may be permissible if warranted by further experience.

Edema and Nephritis.—A. R. Moore's further experiments apparently prove the invalidity of the colloid chemical theory of Fischer. The latter's conclusions as to edema are based on experiments with dead muscle which does not behave like living tissue. Moreover, Fischer assumes that when muscles are placed in distilled water they behave normally, which has been proved by the writer to be untrue. The presence of acid in artificial edemas of frogs' legs is assumed by Fischer, but he offers no proof, while Moore has shown that a muscle in isotonic Ringer's solution may contain an appreciable amount of acid without swelling. Volhard has proved that the artificial edema in Fischer's experiments on the frog's leg is induced by ligating the lymphatic system, and not, as Fischer contends, by ligation of the arteries. It has been proved, moreover, that there is no demonstrable acid in the kidneys of albuminuric rabbits, and also that relatively large quantities of acid added to the kidneys do not bring about a solution of the renal proteins. Finally, the use of Fischer's treatment of edema and nephritis by unbiased physicians gives negative results or worse.

Sign Indicative of Chronic Appendicitis.—Charles D. Aaron has been able, in many cases of chronic appendicitis with digestive symptoms, to induce a referred pain or distress in the epigastrium, left hypochrondrium, umbilical, left inguinal, or precordial region by a continuous, firm pressure over the appendix, which he also regards as an indication for appendectomy. The digestive symptoms are caused by pressure on the nerves which reflexly induced a perversion in the secretion of the gastric juice. The writer admits that the diagnosis of chronic appendicitis is difficult, unless there is a history of recurrent acute attacks.

Arteriovenous Anastomosis.—Bertram M. Bernheim takes issue with Coenen and Wiewiorowski as to the impossibility of complete reversal of the circulation in a limb. The writer has collected all the cases of reversal of the circulation to be found in literature, including six of his own, or fifty-two in all. Fifteen of the operations were successful, a percentage which, though small, apparently controverts Coenen's statements as to the impossibility of the procedure on physiological grounds. As a conclusive point in proof of the writer's contention that this operation can be successfully performed, he submits the latest report of one of his cases in which successful reversal of the circulation was accomplished in all four extremities of the same individual, and which he believes to be the first case to be reported when this has been done; it goes a long way toward proving that reversal of the blood current in the extremities is not a physiological impossibility.

MEDICAL RECORD.

February 1, 1913.

Newer Problems and Phases of the Antituberculosis Warfare in the United States.—S. Adolphus Knopf calls attention to a feature of the dissemination of tuberculosis that has been generally overlooked. He refers to the tuberculosis germ carrier who is not under medical care and supervision, and whose number is greater than we think. There is the patient who, although known to be tuberculous, believes that he is free from tuberculous germs because one or two examinations of the sputum were negative. In this they resemble some physicians who consider the presence of the bacillus in one or two specimens of sputum the only positive evidence of tuberculosis. To another class belong the vast number of patients who suffer little functional disturbance or attain even an old age because an early attack has conferred upon them a relative immunity. Another group of carriers on examination show an almost normal chest and still their sputum is positive. The greatest danger arises from the bacilli carriers who are homeless. There are, again, a vast number of tuberculous patients, among all classes of society, who, knowing they are bacilli carriers, are careless in the disposal of their sputum, or become so from lack of sputum receptacles. To lessen the source of infection from these knowing and unknowing bacilli carriers the writer advises examination and reexamination for tuberculosis, including repeated sputum examinations, of every individual seeking employment, a careful physical examination of all school children and students, of the inmates of prisons and reformatories, and of all municipal and federal employees and officers, especially those of the postal service. The bearing of the high cost of living is mentioned as a causative agent, for lack of sufficient nutritious food predisposes to tuberculosis.

The Gastric Motor Functions.—Charles Sumner Fischer admits that there is a large number of gastric cases which cannot be reached by chemical reaction or mechanical device. The routine chemical and physical tests are made, and the results are bewildering. These cases which defy the test tube and the stomach tube are the *bêtes noires* of the gastrologist, and more harm than good may result from too assiduous gastrological applications. The local reactions are merely accidental manifestations exhibited in this region through remote and predisposing tendencies. These cases shatter our ideals of technic and insist for their proper understanding on the broadest possible conception of the subject of gastrology in its scientific, psychological, and sociological aspects, and command the best efforts not only of the gastrologist, but also the psychologist and the educator. Treatment consists of readjustment and reeducation and call for patience, perseverance, and sympathy, qualities foreign to those who are wedded to strict laboratory methods with whom strict material causal relationship is demanded. There must be a division of labor, if we look for the best result in gastrology, a purely mechanical side for those interested in concise, local organic conditions, and the broader philosophical side which, while not underestimating the advantages of a knowledge of local conditions, uses these latter only to obtain a proper perspective of the whole.

Hygiene for the Normal Child.—Ira S. Wile says that the purpose of teaching hygiene should be considered in dealing with methods and in making up a carefully adjusted curriculum. His plan is to consider the evolution of hygiene in an elementary school upon the basis of the evolution of society, and to arrange the information for the children so that it is adapted to their age, grade, and experience, while the course is, *pari passu*, naturally developed from a single viewpoint instead of being introduced into the curriculum without plan or thought and too frequently left to the teacher's discretion. Correlation of all the topics in hygiene to natural history, geography, civics, and economics is of paramount importance and should not be underestimated.

INTERSTATE MEDICAL JOURNAL.

December, 1912.

Treatment of Human Cancer with Intravenous Injections of Colloidal Copper.—Leo Loeb, C. B. McClurg, and W. O. Swiek have been using a colloidal solution of copper prepared according to Bredig's formula. An average of 300 to 400 c. c. of the solution, warmed to about body heat, and slowly injected into a vein, is given daily. Usually six, sometimes seven, injections are given each week. The writers maintain that by this method a gradual retrogression of human cancer of all kinds is caused, some of the cases operated in being apparently nearly cured. When the growth of metastases is very rapid and extensive and cachexia is very pronounced this method holds out no hope. They have found that many cases of human cancer are more amenable to this mode of treatment than are rapidly growing mouse cancers. They conclude that their experiments prove that there is no essential difference between human cancer and the cancer of rodents.

JOURNAL OF EXPERIMENTAL MEDICINE.

December, 1912.

The Chemistry of Blood Serum.—A. A. Epstein finds that the most striking feature is the extensive variation of the serum in relation to its proteins. It was found that in certain diseases the globulin fraction is markedly increased, whereas the total protein of the serum may be normal or may fall far below normal in amount. These diseases are: 1. Cardiac diseases associated with decompensation and serous effusion; 2, pulmonary or respiratory affections of inflammatory or noninflammatory origin; 3, diabetes mellitus; and, 4, parenchymatous nephritis. In the serum of chronic parenchymatous nephritis the increase in the globulin content is most pronounced and may constitute nearly all the protein, or as much as ninety-five per cent.

Effects of Stimulation of Two Vagus Nerves.—A. E. Cohn finds that there is usually a great qualitative difference in the action of the two vagus nerves on the heart of the dog. Stimulation of the right vagus nerve in the dog usually causes arrest of all the chambers of the heart. Stimulation of the left vagus nerve exerts a moderate, negative, chronotropic effect on the auricles (variation in the rate of contraction).

Blood Destruction and Regeneration.—H. T. Kaisner and R. M. Pearce find that the erythrocytes show increased resistance to the action of hypotonic salt solutions and to specific hemolytic immune serum. They conclude that the resistance of the red cells is a concomitant of the regeneration of the blood which follows the anemia caused by the removal of the spleen.

The Pathology of Primary Splenomegaly (Gaucher Type).—E. S. Mandlebaum gives a brief review of cases previously reported, followed by an interesting account of an autopsy on a male child, four and one half years of age, suffering from primary splenomegaly. He states that primary splenomegaly of the Gaucher type is a distinct disease, related in all probability to the blood diseases. It begins usually at an early age, frequently affects several members of a family, and runs a chronic course. The clinical manifestations are pronounced hypertrophy of the spleen, subsequent enlargement of the liver, absence of palpable lymph nodes, absence of jaundice and ascites, absence of characteristic blood changes, discoloration or pigmentation of the skin, and a tendency to epistaxis or other hemorrhages. The lesions are found in the spleen, lymph nodes, bone marrow, and liver. These organs show the presence of iron containing pigment, and large multinuclear cells with a characteristic cytoplasm. In the early cases peculiar, large, phagocytic cells arising from atypical large lymphocytes are found in the follicles of the hemapoietic system. The diseases is eminently a chronic one, without any of the manifestations of malignancy. The etiology is unknown, probably some toxic agent, possibly some protozoan infection.

Insect Transmission of the Virus of Poliomyelitis.—C. W. Howard and P. F. Clark found the domestic fly to be able to carry the virus of poliomyelitis in an active state for several days upon the surface of the body and for several hours within the gastrointestinal tract. Mosquitoes (culex) and lice gave negative results. In one instance a bedbug took up the virus with the blood from infected monkeys and maintained it in a living state within the body for a period of seven days.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

December, 1912.

Treatment of Somatic Death. — W. Wayne Babcock maintains that the evidences of somatic death—cessation of respiration, circulation, and cerebration—should no longer be accepted by physicians, and especially surgeons, as indicating a hopeless condition of individuals coming under their observation. Crile has shown the possibility of resuscitating dogs after they have been somatically dead for seven and one half minutes, and the author has witnessed a case in a human being in which certain cord reflexes were regained about twenty-five minutes after complete cessation of heart action. Before every serious operation the author has prepared a sterilized six ounce glass funnel, connected by soft rubber tubing with a hollow needle. If the patient later shows alarming symptoms, the apparatus is filled with warm physiological saline solution and the needle introduced into one of the veins near the elbow. After the flow has started, two or three drops of a one to 1,000 solution of epinephrine are dropped into the funnel, unless the condition is unusually urgent, when a larger number of drops is used. As the heart action improves the tube is pinched, to prevent excessive stimulation, and if later the pulsations weaken the injection is renewed as required. Where there has been complete cardiac arrest, regular, violent blows with the ulnar side of the fist over the precordium, are tried, and if this fails, cardiac massage is practised, either with the hand in the abdominal cavity, or by a finger quickly introduced through a simple stab puncture through the fifth cortal interspace, 1.5 inch to the left of the sternum. Other measures resorted to are oxygenation of the intravenously injected fluid and artificial respiration by rhythmic compression of the thorax or subtracheal insufflation of oxygen. The author reports cases illustrating the efficiency of these procedures, including one in which after complete circulatory arrest for about twenty-five minutes and of respiration for about thirty-five minutes resumption of these functions took place and the patient lived forty-three hours longer.

Primary Cancer and Sarcoma of the Lung.—Roland G. Curtin emphasizes the value of the following features of malignant lung disease in the diagnosis thereof: 1. Early emaciation. Loss of flesh may begin two or three or even six months before local manifestations appear, especially in carcinoma. 2. Dyspnea, which may occur early and is often more marked than would seem warranted on comparison with the apparent involvement in the chest. 3. The fact that little if any relief is obtained by tapping, probably, at least in some cases, because the fluid is contained in cysts or sacculations. 4. A characteristic type of hemoptysis, which the author has noticed three times in seven cases of primary lung disease, and several times in pulmonary metastases, but never in any other affection. It consists in the expectoration of a dark purple or red globule of blood encased in a transparent glazed coating or capsule and about the size of the end of the little finger. It is sometimes lobulated. The author believes it to be pathognomonic.

General Treatment of High Blood Pressure.—See the JOURNAL for July 20, 1912, page 150.

Psychic Effects of Accidents.—T. A. Williams points out that in the treatment of cases of traumatic neurosis the litigious element prevents the psychotherapist from directly replacing the causative morbid idea by another, for the patient is suspicious of every one who does not accede at once to his fixed idea that he is incapacitated. It is therefore necessary to secure the patient's active consent and create in his mind a desire for the disappearance of the hurtful idea emotion complex before enlightenment as to his condition can procure any relief.

PENNSYLVANIA MEDICAL JOURNAL.

December, 1912.

Phlyctenular Conjunctivitis.—H. F. Pyfer found a positive tuberculous skin reaction in each of twenty-seven cases of true phlyctenular conjunctivitis in hospital patients. In private patients a positive result was obtained in seventy-three per cent. of a series of twenty-two. Many of the hospital patients had other stigmata of tuberculosis. Other observers have reported the finding of similar results in this condition, but, all together, very little notice has been given to this phase of the question. Pyfer suggests the necessity for careful treatment of these cases along the general lines employed for the care of the tuberculous, including the proper use of tuberculin.

Proctoclysis in Nephritis.—H. Lowenburg uses large amounts of saline solution introduced continuously and very slowly into the rectum in the treatment and prophylaxis of acute nephritis. He reports excellent results and agrees with the theories of Fischer to the effect that acute nephritis is due to the action of acids, in excess, upon the colloidal albuminous structures of the kidneys, causing their solution. Fischer further showed that the presence of neutral salts would prevent this solvent action of the acids, and with this view Lowenburg, as the result of his clinical experiences, is also in full accord. Contrary to the views most commonly held, he finds that the introduction of large amounts of sodium chloride does not tend to the production of edema and fluid retention, but quite the opposite effect is observed; that is, there is a diminution of edema, if present, and a marked diuresis is established.

Tuberculin in Cervical Adenitis.—A. R. Allen believes that the use of tuberculin has a decided curative effect in all cases of tuberculous cervical adenitis. He holds that as soon as tuberculin is used there is a decided increase in the weight, and improvement in the general health, of the patients. Where discharging sinuses are present they close promptly, and wounds remaining from broken down glands heal kindly and rapidly. He deprecates operative removal of tuberculous glands, as the tuberculin treatment is efficacious and much more beneficial.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

December, 1912.

Controlling Post Partum Hemorrhage by Manual Compression of the Abdominal Aorta.—Edward P. Davis says that in dealing with desperate cases of post partum hemorrhage, direct compression of the abdominal aorta by intrauterine pressure, has proved promptly efficient and has given opportunity to apply stimulating methods of treatment and permanently arrest bleeding. The hand with the closed fist is carried within the uterus just above the pelvic brim at the bifurcation of the aorta, and the aorta compressed by forcing the knuckles backward toward the spinal column. In central placenta prævia surgical treatment of abdominal Cæsarean section is indicated in cases which have not been infected by vaginal packing or manipulation, and where mother and child are in fairly good condition.

Hypernephroma of the Kidney.—I. S. Stone, in reviewing the symptoms, remarks that although hypernephromata are nearly always malignant in character, it is exceptional that blood is seen in the urine. Pain is usually experienced in or near the kidney, though at times it may be referred. The tumors are rarely palpable, anemia usually marked, signs of mild infection with fever and leucocytosis are usually present, metastases are common, and the skin, in contrast with tuberculosis of the suprarenals, is rarely pigmented.

Myoma of Cervix Uteri.—M. Rabinovitz analyzes the literature on the subject and draws the following clinical deductions: 1. The etiology of cervical as well as corporeal myoma is, in all probability, a perverted ovarian secretion. 2. The period of life most propitious for the growth of myomata is between the ages of thirty and forty-five years. 3. The posterior lip is more frequently affected than the anterior. 4. Cervical myomata are more frequently the cause of sterility than corporeal myomata. 5. Abortion occurs less frequently in cervical myoma than in myoma of the body of the uterus. 6. Dystocia is much graver in cervical myoma. 7. Bladder and rectal disturbances and neuralgic pains from pressure upon the sacral plexus, manifest themselves at an earlier period in cases of cervical myoma than in uterine. 8. The diagnosis of cervical myoma offers greater difficulties than are presented by uterine myoma. 9. The treatment of cervical myoma is radical removal, choosing the vaginal route for the intravaginal variety and the abdominal approach for the supravaginal growths.

Sterility in the Female without Marked Gross Pathology.—Charles C. Norris reports thirteen conceptions out of thirty-five cases of which the chief anatomical defects were in the cervix or uterus and all the patients have been sterile for periods varying from two to twenty-eight years; he draws the following conclusions: 1. One in every seven or eight marriages is sterile. About fifty to seventy-five per cent. of these are due to sterility of the woman. 2. Sterility may be the result of a variety of causes, both local and general. 3. Excluding gonorrhea, the three most frequent local causes productive of sterility are hypoplasia of the uterus, constriction of the cervical canal, or a mild grade of cervicitis. 4. The routine practice of subjecting all cases of sterility to some form of dilatation operation, often without even ascertaining if the woman is the partner in fault, cannot be too severely condemned. 5. When hypoplasia of the uterus, a constriction of the cervical canal, or anteflexion is present, the stem pessary offers an excellent means of treatment. It produces permanent dilatation, proved by the fact that it cures more than eighty-six per cent. of cases of expulsive dysmenorrhea. The stem pessary tends to produce development in those cases of hypoplasia of the uterus and by the drainage secured often cures, and in all cases facilitates, the treatment of endocervicitis of nongonorrheal origin. It also straightens out flexions. In this form of treatment success follows thirty-seven per cent. of the cases of sterility. 6. No ill effects have followed this form of treatment in any of the cases operated in for either sterility or dysmenorrhea. It is essential that gonorrhea and the various forms of pelvic inflammatory disease be excluded.

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18, and 19, 1912.

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

Intestinal Obstruction.—Dr. Alexius McClannan, of Baltimore, stated that the form of operation required in any given case must depend on the nature of the obstruction and on the presence or absence of complications. Thus we grouped the operations performed into three classes, namely, relief of the obstruction, excision of intestine, and enterostomy. In order to judge the efficiency of any of these operations it was necessary that the procedures be compared with regard to the stage of the disease at which the operation was performed. This was the only logical basis for study of the treatment of obstruction and avoided the confusion of many classes as to causation, differences in position of the obstruction, and variations in the completeness of the occlusion. Each of these factors altered the rapidity of development and the duration of the three stages of the disease, consequently a study of intestinal obstruction from the point of view of the symptomatology and treatment of these stages balanced the relation of the various factors and made the comparison of operative statistics possible.

Of thirty-four patients treated in the first stage, all recovered. Of these twelve were relieved of their symptoms by enemas and purgatives. The other twenty-two were operated upon; in fifteen the obstruction was relieved; resection was performed in three cases; enterostomy with short circuiting and enterostomy with relief of obstruction once each. Simple enterostomy was done twice. Relief of the obstruction, therefore, was the best operative procedure in cases treated during the first stage. When provision had been made for a delayed enterostomy, this was the best procedure in postoperative obstruction, probably because opening the previously brought up loop gave no operative shock. Sixty-five patients were operated upon in the second stage, fifty-five recovered, eleven of these died as a result of a second operation or some complication developing later than one week after the original operation. The operations performed were as follows: Relief of obstruction, forty-four, six fatal; short circuiting, two; excision, fourteen; enterostomy, four; enterostomy with other operations, fifteen. One patient was relieved by an enema. Gangrene was present in ten cases; two were treated by anastomosis and excision; eight patients recovered; six were resected. Relief of the obstruction seemed the best operation in the second stage, provided gangrene had not developed. In the presence of gangrene resection was the best operation, provided the constitutional symptoms were not pronounced. In the latter event, enterostomy should be added to the resection, or if the condition of the patient was grave, the loops might be brought out of the abdomen packed off with gauze, with an enterostomy above the obstruction.

Eighty-two patients were operated upon in the third stage; fifty-two died. Relief of the obstruction was done in twenty-two per cent. of the cured, thirty-four per cent. of the fatal cases, with enterostomy and relief in twenty-two per cent. of the cured, eight and a half per cent. of the fatal; simple enterostomy in forty-five per cent. of the cured, thirty-two per cent. of the fatal cases; enterostomy with other operations in the remaining cases, three cured, and nine fatal. Resection was done in one fatal case, and extrusion in two others. One patient was relieved by an enema and five died without operation. Gangrene was present in fifteen cases, two cured and thirteen fatal. In both the cured cases enterostomy and excision were done.

In the third stage, enterostomy should be done, either alone or in connection with the other procedures. In the nongangrenous cases enterostomy was done in seventy-seven per cent. of the cured and in but forty-one per cent. of the fatal cases.

Dr. Joseph C. Bloodgood, of Baltimore, stated that the essayist was the first to publish a large number of cases showing the importance of the effect of washing out the stomach and of giving enemas to aid in the early diagnosis of intestinal obstruction, a thing always neglected outside of the hospital, and often neglected in the hospital, namely, the importance of the stomach tube and enema in the differential diagnosis. In going over his cases years ago he was surprised at the difference between the mortality in cases of intestinal obstruction taking place in the hospital and those outside of the hospital. Those in the hospital had just been subjected to operation, and, therefore, were not considered good operative risks, yet the mortality from postoperative obstruction was much less than it was outside, due to the early recognition of the obstruction, and in the majority of cases early diagnosis had been made by the use of the stomach tube and enema.

Dr. Henry T. Byford, of Chicago, stated that one point in the treatment which it was necessary to consider and one which involved early diagnosis, was whether the obstructed gut was going to result in gangrene or some permanent injury, or whether the patient could be carried along for a while without any resulting injury. In postoperative cases, in which there was a kink in the intestine or adhesions sufficient to cause paralysis, if we were in doubt as to whether there was really an obstruction or adhesions sufficient to cause paralysis, if we could introduce two or three quarts of fluid into the system, we might be able to carry the patient over a week or more, so that there would not be any gangrene, as in a case of volvulus, intussusception, or hernia, and this explained why cases got along better in a hospital than outside of such an institution.

Dr. John Young Brown, of St. Louis, pointed out that the importance of draining the distended loop of bowel above the obstruction could not be too strongly accentuated. A number of years ago, in a paper he read before the Mississippi Valley Medical Association, he reported a series of cases in which he resected the gangrenous gut and described a method of draining the loop of intestine above the obstruction, namely, to cut across the bowel, introduce a tube into the bowel, and while an assistant was handling the bowel above, the resection was made without losing any time. The use of the stomach tube and rectal tube, both before and after operation, was of exceeding importance.

Dr. Ernst Jonas, of St. Louis, believed that early operation in cases of intestinal obstruction by a poor operator was preferable to a late operation by the most experienced surgeon. The doctor should be warned about giving cathartics by mouth if there was any doubt as to intestinal obstruction. Cathartics in these cases aggravated the condition. If enema and lavage did not relieve the patient, preparations for operation should be made.

Dr. I. S. Stone, of Washington, D. C., thought that purgatives not only did harm, but they were rarely indicated. With the use of eserine and enemas, properly given, he had never seen a purgative necessary. Since he had been using that combination, he had never found a secondary operation necessary where the conditions were not most formidable and where that simple method of treatment was properly tried.

Dr. Samuel J. Mixter, of Boston, said that in looking back on the fatal cases of intestinal obstruction, it would be found death occurred in those cases where the intestine had not been emptied, or where an anastomosis had been done immediately and the septic contents of the occluded intestine had been poured into the lower intestine. Abbe pointed out that the intestine below was starved and ready to take up the material poured down from above, and in that way a rapid and fatal sepsis ensued.

Dr. Charles H. Mayo, of Rochester, Minnesota, said that in the last year, in cases of intestinal obstruction, they had in four cases through the appendicostomy incision been able by drainage to overcome the immediate obstruction.

Dr. Joseph Ransohoff, of Cincinnati, called attention to the use of the x ray in locating the obstruction in acute cases. Outside of hospitals this was out of the question, but when a patient was brought into the hospital it took but a short time to get an x ray picture, and in three recent cases the obstruction was located by this means.

Dr. Robert T. Morris, of New York, stated that for a year or more he had been using injections by rectum of bismuth solution, also using it by the stomach as far as possible, and then employing the fluoroscope, and in this way determining definitely the seat of the obstruction.

Dr. H. A. Royster, of Raleigh, N. C., said if there was retention of scybalous masses and the bowel was gripped on something and could not release itself, if the gut was much distended, and the patient was vomiting, with very little or no pain, we could give a few doses of eserine, say one fourth of a grain of the salicylate, every two or three hours, until two or three doses were given, to be followed by an alum enema. If the patient was in great pain, we could give one hundredth of a grain of hyoscine, to be followed two hours later by an enema. With this treatment he had found some patients did not need operation at that time, and operation could be safely done later, while other patients did not need operation.

Dr. J. M. T. Finney, of Baltimore, said he had used the appendix after the method mentioned by Doctor Mayo in eight or ten cases of intestinal obstruction, and in his experience it did all that Dr. Mayo said it did, and it was a very valuable aid in those cases where the obstruction was low down. The indiscriminate use of eserine was followed by disastrous results. His attention had been called to the fact by Doctor Abel of the pharmacological department of the Johns Hopkins Hospital, that eserine under ordinary circumstances had a marked depressing effect. In one case it apparently had a very alarming effect. In one or two others it was followed by marked symptoms of depression, but its withdrawal was followed by decided improvement.

Dr. Rufus B. Hall, of Cincinnati, emphasized the point made by Doctor Brown in reference to draining the intestine above the seat of obstruction in those cases where it was thought best at the time of the operation to resect the gut. He had used the method advocated by Doctor Brown in a number of cases with satisfactory results. As to the use of eserine, he had seen a number of cases in which there was depression following its administration, and he usually gave it in no larger doses than one fortieth of a grain.

Dr. J. Wesley Bovee, of Washington, D. C., had been using eserine as a routine in every case after operation ever since Doctor Craig, of Boston, brought it to the attention of the profession. It never failed to produce a bowel movement in a case in which there was no intestinal obstruction.

Dr. W. W. Crawford, of Hattiesburg, Miss., had personal knowledge of a patient who was given one fiftieth of a grain of eserine by mistake, and who was greatly prostrated by it, so that for two or three hours death seemed imminent. However, the patient did not die. Another patient, a clergyman, to whom he administered one fortieth of a grain of eserine on the second or third day after the operation, told him he felt as though a stick of dynamite had exploded within him.

Dr. Robert Milne, of London, England, said it was very fashionable in the London hospitals to give eserine, but now it was only the extreme cases of distention that responded to the use of eserine. They did not give more than one hundredth of a grain at a dose, and they did not give more than three such doses. He could not say that in any of the cases they had noticed any particular collapse from the use of the drug.

Pancreatic Cysts.—Dr. Lomax Gwathmey, of Norfolk, Virginia, reported a case of cyst of the pancreas, and said the fluid content from the large cyst showed considerable detritus, few degenerated epithelial cells and leucocytes, but no cholesterin crystals. The small cyst showed a few degenerated epithelial cells. Attempts to cultivate the organism from the cyst contents were futile. The cyst presented one or two interesting features. The fluid in the large cyst was entirely different from that in the smaller cysts, the difference being due to a hemorrhage or hemorrhages that took place in the large cyst. The smaller cysts were lined by epithelium, while in the large cysts not a vestige of epithelium could be found. The large cyst was evidently lined by epithelium, but this epithelium must have suffered autodigestion. The cyst was at one time uniformly colloid. A hemorrhage or hemorrhages took place in the large cyst which caused the difference in the cyst contents, and which produced some trauma to the epithelium of the cyst wall, thereby allowing the ferments in the cyst contents to digest the epithelial lining. So lax was the abdominal wall after the removal of the tumor that the appendix was removed without difficulty through the same incision. It contained an extremely large appendicular stone in the tip and was actively inflamed. Old and fresh adhesions in the pelvis were broken up, adherent coils of small intestine removed from the cul-de-sac, and sigmoid properly placed in the pelvis. The kidneys, liver, gallbladder and ducts, the pancreatic head, and other abdominal organs were found normal. The wound was closed without drainage. The convalescence was easy and uneventful, and the patient left the hospital in nineteen days to go to her home in Chicago. A recent letter, six months since her operation, reported her to be in excellent health, much better than she had ever before experienced.

Dr. Rufus B. Hall, of Cincinnati, said that several years ago he reported to the association an operation for pancreatic cyst. In that case the cyst evidently arose from trauma. The man was lifting and injured himself. He came to operation five or six months after injury with an enormous tumor in his abdomen, which held more than two and a half gallons of fluid. He simply drained the cyst and stitched it to the abdominal wall. The man died from inanition the seventeenth day after the operation.

Increase of Newer Abdominal Surgery Due to Increase in Toxic Disturbances.—Dr. Robert T. Morris, of New York, pointed out that cobweb adhesions in the attic of the abdomen belonged to the toxic group of manifestations, and said we were learning a great deal concerning how these toxic impressions led to the formation of adhesions in cases without an acute inflammatory onset. In some instances bacteria penetrated the wall of the bowel. The endothelium was shed as a result of their presence and the lymph which exuded became disorganized and formed permanent adhesions that were common in the region of the cecum, largely in the region of the sigmoid, and largely in the region of the pylorus and the bile tract. Why were we having more abdominal surgery relating to Lane's kink, to Jackson's membrane, to cobwebs in the attic of the abdomen, than we ever had before? For the answer, we should turn to the statistics which were being collected by an insurance company of New York. This company found a rapid increase in insanity, and a rapid increase in the number of cases of arteriosclerosis, also in the number of cases which belonged to the stage of decadence. When there was arrested development as a result of the decadent change that was now taking place in all the civilized nations, in our present cultural period, physical defects or stigmata, as classified by psychiatrists, were increasingly in evidence.

What were we going to do? Surgery had a place in a number of this group of cases and could afford much help, but the other part of the question related to a better development of individuals in the race. It was a question which was not under the control of the surgeon, but belonged to the physiologist and to the eugenist, and surgery was very important in that it would require a higher degree of skill on the part of the surgeon decade after decade, and it would require him to be more alert and better able to analyze cases than he had been able to do before. There would be more Jackson membranes, more Lane's kinks, and more adhesions than before, due to the increasing toxic conditions which belonged to the decadent stage of our cultural period.

Fractures into and about Joints.—Dr. Charles E. Caldwell, of Cincinnati, said the subject of fractures was too perfunctorily taught. A clearer understanding of their nature and complications would bring about better results and obviate many lawsuits. Fractures into and about joints required more discriminating diagnosis and treatment than the average fracture of the shafts of long bones. Crepitus was valuable, and its absence significant. Perfect apposition of fragments was of more consequence in proximity to joints. Fractures of the anatomical neck were rare. In fracture dislocations, there was necessity for the removal of the head where reduction could not be accomplished.

Dr. Randolph Winslow, of Baltimore, had had a number of cases of fracture of the surgical neck of the humerus, and had found it impossible in some cases to effect reduction until the arm was drawn into a position of extension and the bones held together by means of screws, but he had had some good results by that method.

Dr. A. A. Law, of Minneapolis, stated that in the University of Minnesota they had a different procedure from that mentioned, and their results had been different from those related by Doctor Winslow. They resorted to the treatment suggested by Maxwell and Ruth in old people rather than let them be up and about, with the prospect of a deformed joint and a lack of function of the joint. One woman, eighty-seven years of age, and another of ninety-two, had functioning joints and union by following the Maxwell-Ruth method. This method in old people was attended with uniformly good results.

Dr. Robert T. Morris, of New York, said that in cases in which we did not wish to do an open operation we could often, in selected cases, do a simple operation: First, put the limb behind the fluoroscope; second, run a narrow bladed knife down near the fracture; third, put in a cannula; fourth, run a drill through the cannula, and transfix both fragments; fifth, run in a silver pin and leave it there, taking everything else out. One could pin a whole lot of fractures behind the fluoroscope with the patients under the influence of cocaine. This method did away with the disadvantage of keeping these patients in bed. In many cases of fractures in joints one could put in a pin and do a simple operation.

Experimental Anatomical and Physiological Observations Bearing upon the Total Extirpation of the Colon.—Dr. August Schachner, of Louisville, said that when we considered the arrangement by which twenty or more feet of small intestine were being supported through a peritoneal attachment measuring five inches, the weakness of the abdominal wall in the inguinal region and the hernias that resulted from the gravitation of abdominal contents against this lowest and weakest point, if we compared the darkened lungs of the human subject with the clean pink lungs of the quadruped living under the same condition as a proof of how unequal the cilia were in their efforts to lift the dirt and bacteria laden mucus against gravity, and when we watched the pathetic efforts of the tuberculous subject to raise against gravity his expectoration, we got the full swing of the disadvantages of the upright position.

Mr. Arbuthnot Lane, through his work that extended over more than ten years, especially his recent writings, together with Elias Metchnikoff, deserved the credit for calling the attention of the world to the injurious effects of intestinal stasis. While the end to end anastomosis was functionally the most natural, the end to side had the advantage of more security and practically the same advantages that applied to end to end. His experimental work justified him in believing that when an ileoproctostomy, or ileosigmoidostomy was made by the lateral method, the intestinal contents did not pass through this opening as a rule, but continued the natural course through the colon provided no obstruction existed. In other words, it was a repetition of what occurred in the stomach after a gastroenterostomy with a patulous pylorus. The work of Metchnikoff plainly suggested the chemical side of the question, that is, the chemistry of the large intestine when its functions were for any length of time interfered with. The influence of an abnormally movable kidney as a factor in the development of splanchnoptosis, had not received the attention it deserved. Few of us perhaps realized that the retroperitoneal position of the kidney when making excursions, enabled it to dissect loose through attrition the peritoneal attachment that served to anchor the viscera to the vertical column. The problem was comprehensive enough to accept all the assistance it could through gymnastics, bandages, regulation of diet and habits, and still furnish an abundant percentage of human wreckage, as Mr. Lane expressed it, for the surgeon to attempt to reclaim.

Dr. John Young Brown, of St. Louis, pointed out the advantages of complete physiological rest of the entire large bowel in the treatment of certain diseases of this organ which had heretofore been treated by some of the surgical methods, and described a technic by which this rest could be accomplished, and when its purpose had been fulfilled the bowel could be put back into commission in a manner both safe and satisfactory. Through a right rectus incision sufficiently long for general exploratory purposes, the abdomen was opened. The cecum was at once sought, and the large bowel was carefully examined from cecum to sigmoid. All pericolic adhesions were then severed, the appendix removed, and the stump buried. The ileum was next severed between two clamps, close to the ileocecal valve. The distal ileum was tied off and buried as was the appendix. At a suitable part of the cecum, a purse string suture of linen was placed and the cecum was next incised. Through this incision, a large rubber catheter was inserted after which the purse string was tightly tied. A second purse string of No. 1 chromic catgut was next placed. Under the loops of this purse string, three long catgut fixation sutures were placed. A stab wound was next made at McBurney's point through which a forceps was inserted. The catheter and fixation sutures were grasped in the bite of this forceps and pulled through the stab wound. The peritoneal surfaces of the cecum surrounding the catheter were next scarified and the catheter was pulled through the stab wound, carrying with it the three fixation sutures. The catheter was now slipped through the button and the fixation sutures were threaded through the eyes in the button and tightly tied, thus closely approximating the serous surfaces of the cecum to the parietal peritoneum. A staff rubber drainage tube was next inserted into the proximal ileum and fixed with a double purse string suture. The ileum was now brought out at the lower angle of the rectus incision. The parietal peritoneum was made to hug it snugly by a few catgut sutures, and the abdominal wound was closed in the usual way. The indication for restoring the continuity of the large bowel were improvement of the patient's general condition and the return to normal of the discharge from the excluded large bowel, as shown after repeated chemical, microscopical, or cultured growth examination of irrigation fluids passed through it. This restoration should not be made too early, particularly in the ulcerative lesions of the colon. When the surgeon deemed that the large bowel had sufficiently healed and desired to put this organ back into commission, this restoration was readily done by simply cutting out the anus at the lower angle of the rectus incision, closing its end with a purse string suture, making a lateral anastomosis of ileum to ascending colon or by switching the ileum into the sigmoid. He had never found any difficulty in restoring intestinal continuity. On the contrary, the operation was simple and easy. His experience had been gained from ten cases so operated in. Two were of chronic intestinal stasis, with obstructions due to pericolic bands and flexures. Both had greatly improved and were now comparatively cured. Three operations were done for the relief of amebic dysentery. All the patients were cured. One was a case of ulcerative colitis with extensive involvement of the sigmoid and rectum; patient was now in good health. One was a case of extensive obstructive tuberculous colitis; this patient received great relief from the operation and lived in comfort for two months. Three were for late and inoperable malignant disease of the rectum. One lived six months, one five months, and the third patient was still living, nine months after operation, was comfortable and in reasonably good health, so there was no mortality in the series.

(*To be continued.*)

Letters to the Editor.

ANTINARCOTIC LEGISLATION.

NEW YORK, *February 10, 1913.*

To the Editor:

The editorial article in the last issue of your valuable JOURNAL on Antinarcotic Legislation touches a very important part in the practice of every physician, especially, as pointed out by you, that of rhinolaryngology. The proposal to forbid physicians the use of any stronger solution than four per cent. is so ridiculous that it is almost beyond discussion. In laryngological work we use twenty per cent. solutions every day in our office practice. In bronchoscopy, which at present is also being done in private practice, that solution is pushed to the point of toleration; and in certain operations on the nose the writer as well as other colleagues use pure cocaine. Shall we be obliged to get a permit, whenever we operate for a deviated septum, or must the patient suffer pain because a few rascals in the profession have turned a valuable anesthetic into profane business? Because there are some abortionists with the diploma of M. D. in this city, are all obstetricians to be put under a special code?

Furthermore, it is scientifically wrong to keep cocaine in solution for any length of time, as it decomposes so quickly. Only those who use a great deal may do that. As a rule, however, every physician ought to prepare his own solution at the time he needs it. For that reason he must be able to get the pure cocaine, and not a four per cent. solution.

Finally, the writer would ask, why only regulate the sale of the opium and coca derivatives? Aren't there many other drugs that could be and are being sold fraudulently and to the detriment of the patient? One drug especially, that is being used in connection with cocaine so frequently, comes to our mind, viz., epinephrine. There are great chances for quacks to perform miraculous cures with that drug, and yet epinephrine is free, though it has brought about the death, as pointed out by the writer, in a number of cases. Would rhinologists care to be restricted in its necessary and legitimate use?

To prevent the injudicious sale of morphine, cocaine, etc., to the public is an entirely different matter, and nobody objects to having that regulated in a rational manner. But to restrict physicians in applying these drugs to patients is, to say it mildly, erroneous.

It seems to us that a tendency prevails at present—not only in the Legislature—to restrict the already restricted physician. A regular physician is regulated by his education, his diploma, his associations and medical societies, while the quack is allowed to advertise his impossible cures, to sell his swindling medicines, and to carry on a large business without interference from anybody.

If a physician has been found to have committed any criminal action we should have the right to *disbar* him, i. e., to take away his diploma. Otherwise he must have full freedom in the practice of his profession. We want to enlarge his sphere of usefulness, and not hamper it.

WOLFF FREUDENTHAL, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Student's Manual of Surgical Diagnosis. By GEORGE EMERSON BREWER, M. D. New York and London: D. Appleton & Co., 1912. Pp. 40.

Success in treatment depends largely upon accuracy in diagnosis, upon a system of reasoning which includes all possible pathological processes. In this comparatively small but commendable publication, the author presents to the student a valuable system of surgical diagnosis, a system "by exclusion," which comprises two series of charts; the first, designated "preliminary charts," represent the simplest class of the four primary groups of surgical lesions, viz., injury, deformity, inflammation, and new growth, and the second, the more complicated "regional charts," together with a number of case histories to illustrate their use. At the end of the book are blank pages to encourage the student to make his own original charts. Doctor Brewer's wide experience both in clinical work and teaching, has made him unusually well fitted to prepare a manual of this kind. The latter bears the stamp of individual trial of the methods advocated. The "exclusion" method unquestionably possesses the most advantages for the correct diagnosis both of simple and obscure clinical problems. The present manual applies the principle very consistently to the subject of clinical surgery and should prove of great value to both students and teachers of surgical diagnosis.

Elementary Biology. Animal and Human. By JAMES EDWARD PEABODY, A. M., and ARTHUR ELLSWORTH HUNT, Ph. B. New York: Macmillan Company, 1912. Pp. xiv-212. (Price, $1.)

The authors of this work state that the primary emphasis in the whole course should be placed on the many relations of biology to human welfare. With this as the point in view, they have succeeded in producing a very valuable book. Starting with the insects there follow chapters on birds, frogs, fishes, crayfishes, and the paramecium. Wherever possible the relation to the human being is emphasized. The second portion of the book deals with human biology and the presentation is very good; microorganisms are briefly but satisfactorily discussed. A chapter on foods and one on stimulants and narcotics follow. The dangers of alcohol and tobacco, particularly the latter, may be somewhat overestimated, but it is the safe side on which to err. The digestive, circulatory, and respiratory systems are described sufficiently, and a chapter is given to a brief review of the skin, skeleton, muscles, nerves, eye, and ear. The material is ably and conveniently presented, and the cross references by means of paragraph numbers add much to the value of the book. There is one fault, however, and that seems to be a grave one; everything is omitted that would indicate the existence of the genitourinary tract. To teach biology with no reference to reproduction is futile; it is like trying to build an arch without a keystone. In every other respect the volume can be highly recommended.

Maladies du rachis et de la moelle. Par MAURICE AUVRAY et ALBERT MOUCHET. Paris: J. B. Baillière et fils, 1913. Pp. 528.

The fourteenth volume of this notable treatise on surgery deals with diseases of the spine and spinal cord. The distinguished surgeons whose names appear as authors are sufficient guarantee of the excellence of the text. The first section of the work is devoted to surgical anatomy, physiology, pathology, operative technic, injuries, and tumors. The second section describes congenital diseases, acquired deformities, and inflammatory affections. Both sections contain the most recent additions to our knowledge of the important subjects under consideration and give the reader an accurate and practical description of a field of surgery which has in the last few years made great advances both in diagnosis and operative treatment. The chapters devoted to the technic of laminectomy for fractures and removal of tumors, resection of the posterior roots for the relief of intractable neuralgia, spastic paralyses, and gastric crises are particularly worthy of attention. The various steps in the operation of laminectomy are illustrated by excellent drawings and diagrams. The subject of spina bifida receives a very systematic and complete description and the various forms of the abnormality are fully discussed from a pathological and surgical point of view. The volume maintains the high standard set by the preceding ones and will be welcomed by the general surgeon as well as the specialist in neurological work.

The Clinical Pathology of Syphilis and Parasyphilis and Its Value for Diagnosis and Controlling Treatment. By HUGH WANSEY BAYLY, M. A., M. R. C. S., L. R. C. P. New York: William Wood & Co., 1912. Pp. xiii-194. (Price, $2.25.)

In this handy little volume much widely scattered material is collected in accessible form. The life history of spirochæta, its culture and microscopic diagnosis, and syphilis in animals occupy the first three chapters. The succeeding eight sections are devoted to the Wassermann reaction and its technic; then follows a chapter on salvarsan and its administration. Chapter fourteen deals with the serum reaction in relation to the mercurial and arsenical treatment; chapter fifteen considers anaphylaxis; and the final section deals with the serum reaction and life insurance. The book is certainly to be recommended not only as a comprehensive though condensed textbook for the beginner, but also as a handy reference volume for those who are unable to look up sources in the many and important practical questions arising in the newer syphilography.

Aids to Tropical Hygiene. By Major R. J. BLACKHAM, D. P. H., R. A. M. C. New York: William Wood & Co., 1912. Pp. vii-192. (Price, $1.25.)

This small volume is very valuable because, although it is small, it contains a large amount of information clearly and succinctly put. Although it is supposed to deal with tropical hygiene, it is just as applicable to all climates, excepting that unusual stress is laid upon insects and their relation to disease. The chapter on the prevention of malaria gives a good review of methods that have been found effective. There are no illustrations, but the value of the book is as great, possibly greater, without them. There are two important tables, however, one giving the tropical diseases necessitating preventive measures; the other showing the distinctive characters of the more important species of flies found in houses. The book is a useful one and can be recommended when considered as an aid to the study of tropical hygiene, but not as an authoritative textbook.

Le Radium, son emploi dans le traitement du cancer. Des angiomes, chéloïdes, tuberculoses locales et d'autres affections. Par LOUIS WICKHAM et PAUL DEGRAIS. Avec 53 figures dans le texte. Paris: J. B. Baillière et fils, 1913. Pp. 95.

General considerations, in this little work of MM. Wickham and Degrais, of radium and radioactivity, and of the separate emanations and alpha, beta, and gamma rays serve to introduce a subject on which the ideas of the profession in general are still uncertain; following this is a brief description of the apparatus employed, the methods of filtration, and the tissue reactions that follow the employment of the remedy. Most of the small volume, however, is occupied by a consideration of the practical results attained in epithelioma and cancer of various kinds, in sarcoma, in mycosis fungoides, in angiomata and nævi, in keloid, lupus, and various other tumors of the skin and the internal organs. The "before and after" illustrations, of which there are a considerable number, are in some instances fairly convincing; in others, however, their results seem inconclusive, and are certainly not better than those obtainable by simpler means. For the main objection to the radium treatment, and the reason why its status as a therapeutic measure has not been determined long ago, is its expense; a remedy that is so costly as to be beyond the reach of the profession must give very unmistakable evidences of indispensability before it can be generally adopted.

Internationale Uebersicht über Gewerbekrankheiten. Unter Mitwirkung von Leo Kann bearbeitet von Dr. ERNST BREZINA. III. Heft. Wiener Arbeiten aus dem Gebiete der sozialen Medizin. Herausgegeben von Dr. LUDWIG TELEKY. Wien: Alfred Hölder, 1912. Pp. 122.

This book, though composed of but 122 pages, is an extremely complete encyclopedia of occupation diseases. Statistics as to deaths due to various diseases in the different countries of Europe are given; methods for preventing industrial accidents are expounded in detail; e. g., the perfuming of odorless and deadly gases (page 61); details of ventilating apparatus in glassblowing factories to prevent extraordinarily high temperatures, etc. This should be a valuable book, not only for physicians, but also for manufacturers who desire to improve conditions in their various businesses. It is to be regretted that there is not an English translation.

Physiologische und therapeutische Wirkungen des Radiums und Thoriums. Von Dr. ALFRED FÜRSTENBERG. Halle a S.: Carl Marhold, 1912. Pp. 68.

In this small monograph the component elements of the rays from radium and thorium, the occurrence in nature of radioactive substances, the measurement of radioactivity, the biological action and the therapeutic indications for radium treatment, etc., are detailed; thereon follows a résumé of the specific affections in which the method has been used. The more recently proposed radium baths, inhalations, and drinking waters are briefly considered; finally, the thorium and allied substances receive attention. The whole forms a concise account of our present knowledge on this interesting even if hardly practical important therapeutic group.

Die Krankheiten des Verdauungskanals. Von Dr. PAUL COHNHEIM. Berlin: S. Karger, 1913. Pp. viii-275.

That three editions of this work have appeared is sufficient indication of its value, particularly when the author is one so well known in his special field. As much has appeared in the past few years, this edition contains several new portions dealing with diagnosis by the x ray, endoscopy, the significance of occult blood in the feces, trypsin estimation, etc. The first section is devoted to general matters, physical examination, and the examination of the gastric contents, chemically and microscopically. The greater part of the book takes up the diseases of the special divisions, the esophagus, stomach, and intestines. The author lays much stress upon the necessity of obtaining an accurate case history, admitting that it is difficult and time consuming, but that it is the only basis for diagnosis and treatment. At the end of the book is given a brief summary of the symptoms of the more important digestive disturbances. This work is a good one.

Die Skrofulose. Von. Prof. Dr. G. CORNET. Wien und Leipzig: Alfred Hölder, 1912. Pp. x-520.

This addition to Nothnagel's System of Medecine maintains the standard set by the other volumes. As some seven years have passed since the publication of the first edition, much has appeared during that time. Many of the older ideas have been substantiated and many questions have been cleared up. Some investigators hold that scrofula is nothing else than a chronic or distinctly localized manifestation of tuberculosis; others that it is from the beginning a distinct entity that frequently is complicated by tuberculosis. The author also states that as a result of the differentiation of the tubercle bacilli into the human and bovine types, many conditions formerly inexplicable have been made plain. Concerning infection of the human being by the bovine bacillus it is stated as being of little importance in general. On the other hand, it plays probably a distinctly important part in tuberculosis of children in regard to infection of the mesenteric and cervical nodes. In looking through the book one gets the impression that there has been little overlooked in this important field; it is indeed an excellent publication.

Meetings of Local Medical Societies.

MONDAY, *February 17th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Medical Society of the County of Erie, N. Y.; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, *February 18th.*—New York Academy of Medicine (Section in Medicine); Psychiatrical Society of Ward's Island; Tri-Professional Medical Society of New York; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburg Medical Association; Oswego Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, *February 19th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Woman's Medical Association of New York (Academy of Medicine); Northwestern Medical and Surgical Society of New York; Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, *February 20th.*—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Aesculapian Club of Buffalo, N. Y.

FRIDAY, *February 21st.*—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Alumni Association of Roosevelt Hospital; Saratoga Springs Medical Society.

SATURDAY, *February 22d.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending February 8, 1913:

Darnall, M. H., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hunt, Va., on February 1st, and proceeded to his home at Washington, D. C. **Foster,** G. B., Lieutenant, Medical Corps. Left Fort Leavenworth, Kansas, on January 31st, en route to Manila, P. I. **Hall,** J. D., Major, Medical Corps. Left Fort Strong, Mass., on February 13th on four months' sick leave, with permission to go beyond the sea. **Heflebower,** R. C., Lieutenant, Medical Corps. Sailed from San Francisco, Cal., on February 5th, for the Philippines. **Munson,** E. L., Major, Medical Corps. Left Presidio of San Francisco, Cal., on January 26th, for Washington, D. C., for examination for promotion. **Reno,** W. W., Major, Medical Corps. Left his station at Fort D. A. Russell, on February 1st, on two months' leave of absence.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending February 8, 1913:

Brownell, C. D., Surgeon. Detached from duty at the Navy Yard, Portsmouth, N. H., and ordered to the Naval Hospital, Boston, Mass., for treatment. **Richards,** T. W., Surgeon. Ordered to additional duty at the Naval Hospitals in Boston, Mass., and Newport, R. I. **Wright,** B. L., Surgeon. When discharged from treatment at the Naval Hospital, Norfolk, Va., ordered to duty at the Navy Yard and Naval Hospital, Portsmouth, N. H.

Births, Marriages, and Deaths.

Born.

Fleitas.—In Philadelphia, on Friday, January 31st, to Dr. and Mrs. Joseph, Fleitas, a son.

Married.

Castlen—Galbraith.—In Seattle, Wash., on Monday, January 20th, Lieutenant Charles R. Castlen, Medical Corps, United States Army, and Miss Lura Mareta Galbraith. **Coffin—Corwin.**—In Liberty, Mo., on Wednesday, January 29th, Dr. George Oliver Coffin and Miss Ida Corwin. **Cook—Hunt.**—In Cleveland, Ohio, on Wednesday, January 29th, Dr. Joseph E. Cook and Miss Nettie Hunt. **Cronin—Doyle.**—In Watervliet, N. Y., on Saturday, February 1st, Dr. Marcus Denis Cronin, of Albany, and Miss Helen Margaret Doyle. **Gammons—McBride.**—In Rutland, Mass., on Wednesday, January 29th, Dr. Herbert Francis Gammons and Miss Emma T. McBride. **Groetsch—Buhler.**—In New Orleans, La., on Saturday, February 1st, Dr. Charles William Groetsch and Miss Buhler. **Johnson—Roe.**—In Brooklyn, on Friday, February 7th, Dr. John George Johnson and Miss Emma Bellows Roe. **Nothnagle—Dyson.**—In Philadelphia, on Saturday, January 25th, Dr. Frank R. Nothnagle, of Chester, and Miss Florence Dyson. **Post—Dick.**—In Washington, D. C., on Thursday, February 6th, Assistant Surgeon Dana C. Post, United States Navy, and Miss Helen McEwen Dick. **Pulley—Hardman.**—In New York, on Thursday, January 30th, Dr. William Joseph Pulley and Miss Edythe Hardman. **Samorini—Montesi.**—In Brooklyn, N. Y., on Wednesday, January 29th, Dr. Arnaldo A. Samorini, of Schenectady, and Miss Ilna Montesi. **Tuttle—Jones.**—In Ridgeway, Va., on Thursday, January 30th, Dr. Andrew Frye Tuttle, of Spray, N. C., and Miss Daisy King Jones.

Died.

Birch.—In Newburg, N. Y., on Friday, January 31st, Dr. James Gulick Birch, aged seventy-six years. **Burwald.**—In Cleveland, Ohio, on Saturday, February 1st, Dr. Ernest S. Burwald, aged seventy-four years. **Carrington.**—In Richmond, Va., on Tuesday, February 4th, Dr. George W. Carrington, aged eighty-three years. **Clark.**—In Fitchburg, Mass., on Wednesday, January 29th, Dr. Joseph Leonidas Clark, aged sixty-one years. **Corson.**—In Bridgeton, N. J., on Saturday, February 1st, Dr. Francis F. Corson, aged sixty-five years. **Epstein.**—In Chicago, on Sunday, January 26th, Dr. Ephraim M. Epstein, aged ninety-nine years. **Fletcher.**—In Waterville, Me., on Friday, January 31st, Dr. Arthur Stanford Fletcher, aged thirty-one years. **Hartt.**—In Seattle, Wash., on Wednesday, February 5th, Dr. Samuel Whitfield Hartt. **Ireland.**—In Roslyn, N. Y., on Wednesday, February 5th, Dr. Treadwell Lewis Ireland, aged eighty-six years. **Jenckes.**—In Woonsocket, R. I., on Monday, January 27th, Dr. George Washington Jenckes, aged eighty-three years. **Lloyd.**—In Danville, Pa., on Saturday, February 1st, Dr. Thomas Lloyd, aged thirty-four years. **Luebbers.**—In St. Louis, Mo., on Monday, January 27th, Dr. Alfred Luebbers, aged forty-seven years. **Mackaye.**—In Newport, R. I., on Sunday, February 2d, Dr. Henry Goodwin Mackaye, aged fifty-six years. **Moore.**—In East Providence Centre, R. I., on Thursday, January 30th, Dr. Elmer E. Moore, aged fifty-two years. **Seymour.**—In Flushing, N. Y., on Wednesday, February 5th, Dr. Mason S. Seymour, aged eighty-five years. **Smith.**—In Neenah, Wis., on Friday, January 31st, Dr. Eli J. Smith.

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Original Communications.

THE DIAGNOSTIC SIGNIFICANCE OF PAIN IN TABES.

By Allan McLane Hamilton, M. D., LL. D., F. R. S. (Edin.),
New York.

Tabetics in the early stage of their disease, as a rule, complain of the familiar pains situated mostly in the lower extremities, and in the apparent absence of qualifying symptoms these are often mistaken for other forms of disease; in fact, the ordinary patient with locomotor ataxia frequently insists in the beginning that he has had rheumatism or neuralgia. The similarity of pain, due to irritation of the posterior nerve roots, with that of the more common disease, is sometimes further increased by the influence of barometric changes and enlargement of the joints, which in the spinal affection constitutes the neuroosteoarthropathies. While it is true that the latter joint troubles are rarely painful, this is not invariably the case, and there is sometimes room for great error.

Early tabes is therefore by no means so easily diagnosticated as may be supposed, because of what Fournier[1] calls the "initial polymorphism," which is expressed by symptoms common to, and often mistaken for those of other affections. Among these are the peculiar *accès* of fulgurating pains, which are not always as characteristic and definite as some medical writers aver, gastric crises, ocular paralysis, failure of vision and inability to discriminate colors, vesical disturbance, laryngeal spasm, and a number of other preataxic manifestations.

The pains, however, are the most important indication of the commencing sclerosis of the posterior nerve roots, and may be of very early appearance, constituting the only dominant or even apparent symptom for perhaps even ten or twelve years; but I doubt if there are many cases where some of the lost reflexes may not at the same time also be detected, especially after a year or two. The severity of the peripheral pains, however, does not equal the so called abdominal or thoracic crises which symptomatize tabes and are erroneously attributed to other conditions, often leading to improper medical treatment or surgical interference. The likelihood of error is also increased by the fact that these are of early appearance in one third of all cases of tabes, and they may be uncomplicated for years.

Charcot first described the so called *crises gastriques* as pains beginning in the groins and running up the abdomen on either side, finally becoming fixed at the epigastrium.[2] This description is not an altogether broad one, for the erratic nature of the pain is characterized by variations in its appearance, and sometimes it may be accompanied by violent palpitation, vertigo, and vomiting, but these features are not always present. Like the fulgurating pains of the lower extremities, notably in the muscles supplied by the crural nerves, they are manifested by patients who are subject to osteoarthritic changes. Buzzard presented six patients with arthropathy of whom all had crises, and this is the experience of others. The pains, which are more commonly epigastric than of any other variety, differ greatly, not only in their mode of onset and disappearance, but in their relation to the condition of the stomach itself. At the risk of repeating much that is well known, passing reference may be made to the three varieties of gastric pain fixed by Vulpian, Charcot, and Fournier, viz.: 1. Gastric colic (or the grand gastric crises of tabes); 2, vomiting with pain; 3, gastralgia alone.

These seizures do not always occur at the time of eating, although the pain at first often seems to be due to gastric indigestion and there is intolerance of everything taken, even of ice, which is afterward ejected in the form of warm water. The attacks of pain become almost habitual, and the vomiting lasts perhaps for five or six days. The latter may be "dry," or it consists of mucus and perhaps some blood. The true gastric colic has an absolutely sudden appearance, and the acute pain may be localized. Sometimes it radiates to back, thorax, or abdomen; again it follows the course of the intercostal nerves. Not only are epigastric pains familiar, but Raynaud speaks of renal neuralgia, and Stewart of deep seated dorsal and lumbar pains. With the tabetic renal neuralgia there are even at times vesical tenesmus and retraction of the testicle. Bearing in mind the very extensive supply of nerves with sensory functions it is possible to conceive of almost any kind of pain other than those ordinarily known and looked for. Indeed, pain at crisis may counterfeit that from local disease of numerous kinds, and we must be prepared sometimes to disregard the positive qualification that it is invariably of sudden appearance and departure. In some tabetics the attacks are so

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[1] Alfred Fournier, *De l'ataxie locomotrice d'origine syphilitique*, Paris, 1882.

[2] A very early reference was made by Romberg to these pains in his classical work, *A Manual of the Nervous Diseases of Man*, Sydenham translation, ii, p. 397.

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closely connected and apparently so continuous as to convey the idea that they have nothing to do with a spinal lesion. I have known tabetic rectal neuralgias to be mistaken for the sharp pain of cancer, stricture, fissure, or other conditions, and the diagnosis adhered to until an unsuccessful operation had been performed. Such a case is one where a stricture of the anus was alleged to exist, and repeated stretching was resorted to without any result whatever, but the pain was ultimately found to be due to genuine locomotor ataxia.

Another case of this kind was recently seen in consultation. According to this patient's story, about five years ago he consulted a surgeon for rectal neuralgia, who removed hemorrhoids, but with no resulting relief of the pain, which was described as exceedingly violent, burning, and paroxysmal in character, darting chiefly toward the perineum. He subsequently consulted several surgeons, one of whom removed a testicle, while another made a deep posterior incision, cutting through the sphincter ani, but these operations were inefficacious. He finally fell into the hands of an intelligent medical man whose attention was drawn to a deep cup shaped erosion on the ventral side of the glans penis. This was the site of an old venereal sore, supposed to be a chancroid, which had followed an infection when he was a boy of fifteen years. The man is now about forty. Ten years ago he became suddenly deaf in both ears, but chiefly on the right side. About one year ago he had, according to his story, a transient attack of ocular muscular paralysis so that he had to correct his diplopia when reading by changing the position of the book before him. It is impossible to say exactly of what this consisted, though there is to-day an apparent slight internal strabismus. In March, 1912, according to Dr. David Geringer, he was "mentally deficient, indifferent, and melancholic." At the same time there was a marked Romberg sign. and the pupils were then both rigid. According to Dr. J. W. Weeks, who then saw him, he "had a tendency to Argyll Robertson pupils." A Wassermann test was made in May, 1912, which was weakly positive. He then received 0.6 gramme salvarsan by intramuscular injection, and one month later a second test proved negative. The intravenous neosalvarsan injections of which he subsequently received three—0.6, 0.9, and 0.9 gramme—did not modify his pains, which were intense, but "seemed to improve him physically."

I saw him prior to an operation undertaken by Dr. A. B. Johnson for the repair of his mutilated anus and rectum, on November 21, 1912. He immediately said he had a violent crisis, referred to his anus and entire perineum and pain which caused him to draw away and place his hands over the lower part of the abdomen. This pain often occurred with intensified desire to urinate, and a feeling as if an orgasm was to take place. While there was an emotional element, suggesting hysteria, there could be no doubt of the spinal origin of the painful paroxysm. He referred to fulgurating pains in the thighs of more remote occurrence. Argyll Robertson pupils were found, but the knee jerks and Achilles reflexes were greatly exaggerated as were the plantar reflexes. There was some static ataxia, but no motor ataxia. There was neither tactile anesthesia nor analgesia, but, on the right side especially, the thermic sense was disordered. No Babinski symptom was elicited. There is no difficulty in voiding urine or retaining it, but, owing to the uselessness of the sphincter ani, the patient constantly loses the contents of the lower bowels.

Crural neuralgia of an explosive type is a tabetic symptom, and when it is associated with retraction of the testicle it has led to the delusion that a calculus existed. It is unusual, however, to find pain at the end of the penis, which is a symptom of nephritic colic. The crises suggest involvement of the branches of the lumbar and sacral plexus in the groin, thigh, and hypogastrium. There is rarely scanty or high colored urine, in fact in the tabetic condition the distress is accompanied by a copious and repeated flow of urine. As the sudden liberation and passage of a stone through the ureter is attended by sudden cessation of suffering, such may be the case in the pseudocolic due to the spinal lesion. In many cases of nephritic colic I have found spots of residual tenderness, not only in the lumbar, but in the hypogastric regions as well, and the same thing in hepatic colic over the region of the gallbladder and common duct. My attention has been called to a recent case in which an operation for gallstones was happily averted despite the insistence of the attending physician that the gallbladder should be removed. The medical man who was called in was a competent neurologist, who promptly discovered rigid pupils and other evidences of a long standing tabes without any other dominant symptoms. The diagnosis was made more interesting because of the fact that the patient was a woman, and, as less than two per cent. of all tabetics are of this sex, an additional doubt was raised. In one of my own cases, in a remarkably slowly progressive case, the same thing occurred. Finally, distinct gastric crises made the case more clear, and with this the absence of knee jerks became evident.

Starr refers to a tabetic patient in whom gastric crises existed, and the attacks reappeared at intervals of three or four months for four years before loss of knee jerks and Argyll Robertson pupils were found and made their nature clear. The patient meanwhile had been treated by lavage, special diet, and in other ways with the idea that the condition was simply a gastric one. Most writers have something to say about the errors in diagnosis that have been made in cases of simple gastric ulcer, in fact any gastric condition characterized by ephemeral pain of sudden appearance, with or without nausea or vomiting, may be confounded with the pain of the more serious diseases.

S. Basch,[3] in an exceedingly valuable article upon this subject, refers particularly to the distinction between gastric crises and the pain of ulcer or cancer of the stomach, perigastritis, gastrosuccorrhea, functional nervous vomiting, gastralgia, duodenal ulcer, cholelithiasis, cerebral vomiting, and vomiting of uremia. I do not think we need concern ourselves with the latter two conditions, although they may at times suggest the central nervous disease, but the importance of mistaking the pain and vomiting of gastric ulcer cannot be minimized. Basch calls attention to the fact that the pain of gastric ulcer begins usually half an hour after eating, and is situated at a fixed point in the epigastrium. Then, too, there is a coincidence between the time of ingestion of food and the vomiting, "the latter taking place at the height of digestion." The vomited matter as the result of ulcer usually contains free hydrochloric acid and blood, the former in large quantities. In gastric ulcer the pain is as a rule gnawing as it is in cancer. Osler speaks of a form of epigastric pain which is found in ulcer of the stomach at about the level of the tenth dorsal vertebra.

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[3] S. Basch, *Medical Record*, October 14, 1899.

The appearance of tabetic gastric pain is not always in the classical manner referred to by Charcot, but may have existed, as I have said, for years without any other symptom. In some rare examples, one pupil only may at first have become rigid, but not markedly so, and it can be conceived how a careless examination which does not include *both* eyes may lead to error. A perimetric examination will also show in certain cases a contraction of the field of vision for the perception of both colors and white. Reference may be made to a case of doubtful tabes reported by Brudenell-Carter, with slight central impairment of the vision of one eye, and a tendency to pallor of the optic disc; as a rule, however, the fields of both eyes are narrowed. In a lesion of the kind leading to delayed reflex loss, it is probable that the lesion in the posterior columns is circumscribed, small, and confined perhaps more to the root zones of the columns of Burdach and possibly to the lumbar region. The deep pains are those most apt to deceive the investigator, for superficial sensory disturbance, paresthesia, and the like are too characteristic to be mistaken.

The pain of supposed aortic disease is sometimes very intense and may have some other explanation than that generally adopted. So called angina pectoris, if occurring in comparatively young subjects, need not depend upon aortitis or serious valvular trouble, stenosis, or regurgitation. When the sudden pain is disconnected from undue muscular exertion, or even occurs during sleep, the gastralgia may be due to unrecognized tabes; in fact, in over six per cent. of the cases of tabes there is some aortic disease, the actual cardiac lesion being due to local syphilis. In many other cases with no arterial or valvular lesions there may be crises of pain which are of purely central origin, the individual being tabetic. Even in properly diagnosticated thoracic aneurysm the pain may sometimes be the sole result of posterior spinal sclerosis, as Clifford Albutt has pointed out. The clinician should never avoid a search for the condition of the reflexes in every case of dorsal or extremity pain, no matter how clear the diagnosis may seem at first, and the patient should be examined with regard, not only to the response of the pupil to direct illumination, but to accommodation, though Argyll Robertson's symptom is of not very early appearance unless the disease at its invasion attacks the upper dorsal segments, which is unusual. It may be present long before there is any pain or ataxia. In my own cases, I long ago[4] reported the early presence of diplopia, even without apparent strabismus. These ocular symptoms as a rule come later than the loss of the knee jerk which obviously depends upon a lesion involving the second and third lumbar segments, this being the early region of invasion.

Two forms of occasional pain may resemble those due to disease of the posterior columns, and these are the cramplike abdominal pains symptomatic of arteriosclerosis of the big mesenteric artery, and the intermittent claudication due to arteriosclerosis, as well as to tobacco toxemia. In the former the duration of the pain is not so protracted nor is the pain so intense as in true tabes, while the tonic contraction in claudication is the chief feature, and the distress is nearly always confined to the posterior leg muscles. There are anomalous cases, however, when the pains are most extensive in the course of the crural nerve and the muscles it supplies.

Various hidden and serious arterial disorders may for a very short time deceive the physician, but there is inevitably a clearing up with revelation of the real nature of the condition. I can remember such a case in the person of a patient whose pupils had been rigid for some time, although she presented no other sign of tabes, but had symptoms of advanced thyroid disease, the pupillary contraction being evidently due to an anomalous sympathetic irritation instead of the well known paresis and dilatation usually found. When shopping one day, she was suddenly seized with agonizing abdominal pain and vomiting, and, some hours afterward, by moderate tympanites, and later by obvious intestinal obstruction. There was at first no apparent gastric cause and the association of the pain with the pupillary rigidity suggested a true crisis. There were however, features suggesting something more serious, and the diagnosis of embolism of the mesenteric artery was made by the surgeon who was called in.

In all cases of trunk pain of doubtful nature, an effort should be made to investigate a possible history of earlier sensory disturbance, which in true tabes involves the lower extremities. By many clinicians the distinctive character of the fulgurating pains of the lower extremities is considered to be sufficient without the verifying accompaniment of lost pupillary reflexes and absent knee jerks. Seguin,[5] who was a careful observer, even went so far as to say that fulgurating pains in all men over twenty years of age were of tabetic origin or at least "very suspicious." The very vagrant nature of these cannot be confounded with the pains of gout, rheumatism, or neuralgia, although the twinges of the former resemble the shooting pains of locomotor ataxia. The extreme limitation of the painful regions is significant, for the areas are circumscribed and circular or elliptical or they radiate from some central point. Again, the darting streak of pain is short, and does not follow the course of a nerve trunk; the painful points that remain may be at any cutaneous region and differ from those of neuralgia when the tenderness is found over some foramen or point of escape of the nerve itself. In the recurrence of pain the intervals are very short, suggesting the alternation of a galvanic current rather than the continuity of the direct.

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[4] Allan McLane Hamilton: *Nervous Diseases, Their Description and Treatment*, Philadelphia, 1878.

[5] *Boston Medical and Surgical Journal*, December 25, 1890.

Although modern surgery has at times afforded some relief from the suffering attendant upon gastric crises, the results are not always encouraging, and the pathological explanation of this symptom is still a matter of doubt, consequently the exact diagnosis is difficult. It is by no means clear whether the pneumogastric is at fault, or whether the pain is due only to some condition relievable by section of the spinal nerve roots. Vallas and Cotte, in 1906, opened the abdomen, and after freeing the solar plexus from the celiac axis, stretched the same; relief was asserted. By these reporters and others the sensory fibres from the pneumogastric and sympathetic system are supposed to be at fault in such conditions. On the other hand, Head believes that the sensory fibres innervating the stomach are derived from the seventh to the tenth dorsal roots, and Frazier[6] has repeatedly performed rhizotomy severing the seventh, eighth, ninth, and tenth sensory roots, with relief in all his cases. In one of my patients operated upon at Johns Hopkins Hospital extensive section of all these nerves, however, failed to afford any permanent benefit and the patient finally succumbed to the great agony of his pain and consequent prostration after his return to his home some years later. This case would point to the pneumogastric origin of the crisis.

So far as I know, no deep operation has been devised for the relief of rectal crises, for the sacral nerves are not only inaccessible, but, if it were possible to reach and divide them, much more serious mischief would be the result.

36 East Fortieth Street.

A STUDY OF MORTALITY IN FOUR THOUSAND FEEBLEMINDED AND IDIOTS.*

By L. Pierce Clark, M. D.,
and William Leland Stowell, M. D.,
New York.

In a study of this sort it is necessary to recognize that the different degrees of feeblemindedness, ranging from the slightest mental defect to that of complete idiocy, are almost invariably accompanied by various grades of defect in physical development. To this latter fact the importance of this study in mortality of mental defectives is largely to be attributed. Although we have to consider here the mortality of a kind of child both physically and mentally handicapped, an early death is not invariably the rule. A belief is common among the laity and many physicians that idiotic children rarely grow to adult life. This mistaken idea is probably fostered, if not engendered, by the teachings in the medical school where the idiots and imbeciles used in the lectures are almost invariably children. While it is true that life is markedly curtailed in the feebleminded and idiotic, a very considerable number living beyond even the age of forty years is not uncommon. A study by Clark and Atwood of one thousand deaths showed that while the maximum number died under twenty-five years of age, thirty lived to be over thirty-five, seventeen over forty, and four over fifty years of age.

A point of more social and medical importance than the question of longevity of the feebleminded and idiotic is the steadily increasing number of these unfortunates in the community at large where they increase in numbers, but wax not strong. We have good authority for saying that three hundred thousand feebleminded exist in the United States, of whom thirty thousand are in New York State alone, according to data furnished by the State Board of Charities.

While as a general rule the frailty of body and mind in the feebleminded as a class is conceded, a more exact analysis of the conditions of death and disorders from which this class die is of interest.

During 1903 to 1911, a period of nine years, we cared for 4,275 patients,—2,667 classified as feebleminded, and 1,608 as idiots. Of the first group 184 died, a mortality of 6.5 per cent. Of the second group 316 died, a mortality of 19.6 per cent. During the same time nearly eight thousand children of normal mental power were treated at the same place with a mortality of 3.38 per cent. The New York City Children's Hospitals and Schools are situated on Randall's Island between the Harlem River and Long Island Sound, now within the city, but an ideal place for children sick or well. Here, under the same management and service, the mortality of the feebleminded was double that of the normal children. The lower grades, imbecile and idiot, gave a mortality three times that of the feebleminded, i. e., 19.6 per cent.

There is evidently truth in the statement that as a rule the lower the mentality, the lower the physical stamina and power of resistance to disease; their opsonic index is low. We find varied statements as to the longevity of these people. Vogel said, "fortunately most of these individuals die of convulsions during their first dentition and never attain puberty." Another says that "the mortality of the feebleminded at Sandelbridge is practically negligible"; while, according to Shuttleworth the feebleminded have a mortality nine times that of normal individuals. We find in our cases a middle ground, i. e., 11.6 per cent. The total deaths, 547, are arranged below in groups that are of interest, especially when compared with the census reports for the registration area.

The aments frequently die suddenly or after very brief observed illness. We may almost say they have a habit of dying without warning. Mongolian idiots are said to die suddenly more often than do other kinds. This circumstance accounts for the large number of coroner's cases, namely, eleven.

The proportion of pneumonias is so high, about thirty per cent., that we are constrained to believe that the house staff uses that term in sudden cases where there was not time to differentiate the real cause of the death. We do not seem to have so many in the sick wards.

In our institution the deaths from tuberculosis are very low, less than ten per cent., compared with thirty-nine per cent. in some places. Caldecott at

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[6] *American Journal of the Medical Sciences*, January, 1913.

*Read before New York Academy of Medicine, Section in Neurology, December 10, 1912.

Earlswood Asylum reports 1,000 consecutive deaths over six years of age with 39.2 per cent. due to tuberculosis, 30.5 per cent. to pulmonary affections, 12.4 per cent. to epilepsy, ten per cent. to pneumonia, and 1.1 per cent. to meningitis.

Referring to our own table, it will be noticed that there was a very wide range of causes of death aside from the usual groups.

TABLE.

PERCENTAGE OF DEATHS FROM IMPORTANT DISEASES COMPARED WITH UNITED STATES REGISTRATION AREA OF 1909.

Infectious diseases:	Feeble-minded.	Idiots.	Children.	Registration area.
Typhoid, measles, scarlatina, pertussis, diphtheria	10.9	9.1	20.8	5.1
Tuberculosis, all forms.....	8.1	6.5	17.7	11.2
Pneumonia, all forms, including pleurisy and congestion of lungs.........	28.1	32.0	25.7	9.6
Endocarditis, etc., heart disease	4.5	6.5	3.6	10.0
Diarrhea and enteritis.....	....	9.8	5.5	1.0
Inanition	22.7	16.9	11.6	2.0[1]
Epilepsy	7.2	7.1	4.2	0.3
Meningitis	1.8	3.2	4.2	1.1
Nephritis	3.6	1.9	2.4	6.6

There also occurred apoplexy, 2; sunstroke, 1; peritonitis, 2; hydrocephalus, 4; Ludwig's angina, 1; erysipelas, 2; pernicious anemia, 1; intestinal obstruction, 1; gastric ulcer, 1; œdema glottidis, 2; sepsis, 1; coroner's cases, 11; cancrum oris, 1; accident, 1.

[1] Congenital defects, etc.

Nearly one fifth of the infants born die in less than a year. We cannot begin comparison until two years, and at the third year find the greatest divergence from the census ratio—a difference of six to one. During the "teens" there is very little disparity, but after twenty years there appears a divergence the reverse of that in childhood. The explanation would seem to be that the routine of life in a healthful institution affords immunity from accidents and many diseases due to exposure or special kinds of work, etc.

Among these patients Atwood found about twenty per cent. of two hundred cases analyzed giving positive Wassermann reactions, yet syphilis was not recognized as a fatal element in any of the 547 deaths. No doubt, however, this disease lowered the vitality and made the inroads of a fatal disease easy.

The average age at death was practically thirteen years, which is less than a third of forty-four years, the present average age limit.

Practically no autopsies are obtainable. The physician's request for an autopsy, following as it does closely upon the announcement to the parents of the death of the child, defeats the acquirement of a permit. Parental refusal for autopsy on an idiotic child amounts almost to an obsession. It is proposed to overcome this defect in our work in the Randall's Island institutions by having a law permitting autopsy in case of death of any custodial inmate suffering from feeblemindedness, epilepsy, or idiocy provided that the institution shall print conspicuously upon all application blanks used in the admission of patients the fact that the medical authorities have the above stated power in relation to the making of autopsies. Such a law is already in force in many of the State institutions caring for this class, such as the Craig Colony for Epileptics, the Rome Custodial Asylum, and Letchworth Village for Mental Defectives.

About sixty-five per cent. of all custodial admissions to the Randall's Island institutions are discharged to the homes from which they come. No law permits their detention against parental request for discharge. As the vast majority of these discharges are obviously from the high grade mental defectives and therefore those most likely to propagate their kind, the importance of sterilization or segregation of this class is obvious. It is the problem of the future.

PROPOSED REMEDIES.

1. Segregation is the ideal remedy, as it runs counter to no moral, religious, or social law or

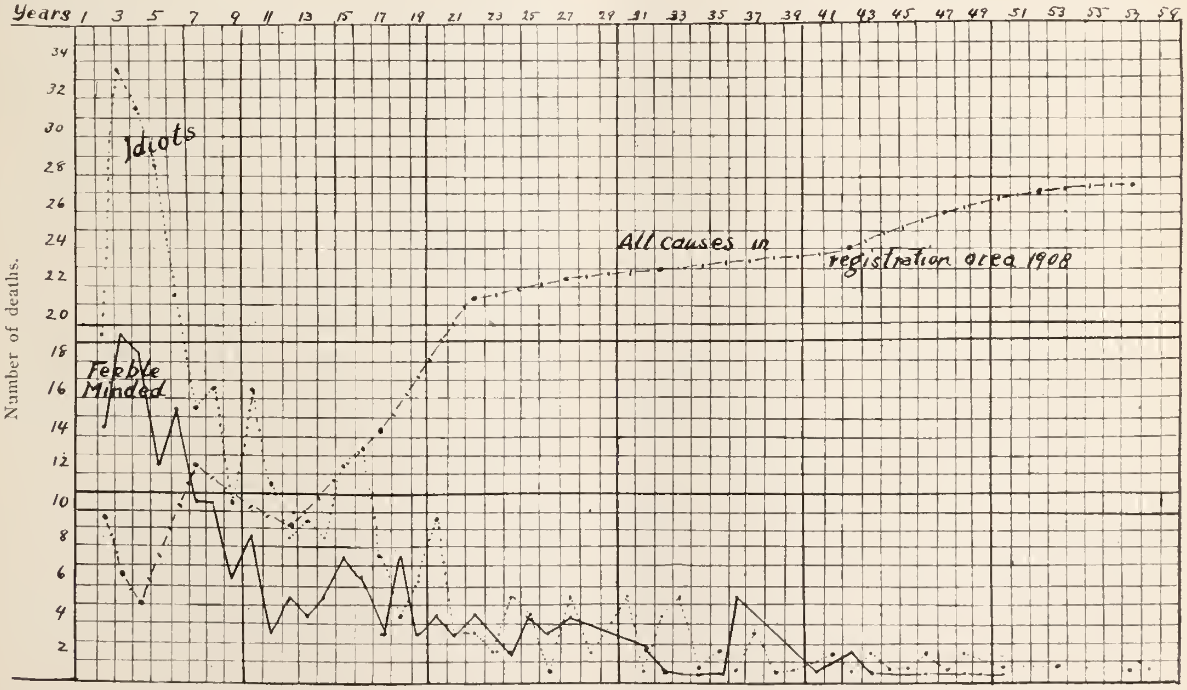

Chart illustrating the age at death of 547 feebleminded and idiots. Note great number of idiot deaths at three years and general excess above feebleminded. After early adult years the deaths are few as contrasted with general population exposed to infections, accidents, and acquired ailments.

custom. The practical objections are the enormous expense in providing proper segregation facilities, as the State is now greatly overburdened by taxation in caring for the wards it already has under custodial care, and it is doubtful whether the public can be induced freely to meet the problem in this manner, as it would require ten times the number of institutions we now have.

2. Sterilization of the unfit. A very earnest campaign of education and proof of the harmlessness to the individual is necessary if this plan is to be put in general practice and prove adequate to the size and importance of the problem. At present writing the operation of the laws governing the same in the different States are almost void owing to the general distrust of the whole procedure. Legislation has plainly outrun public sentiment in this direction. Personally, we believe in the effectiveness of this preventive measure and that it works no harm to any concerned.

3. Last, the restriction of the marriage laws so there may be no mating of the unfit. Aside from the fact that the unfit often have little need and infrequently invoke the right of marriage license to propagate, this latter rational but Utopian scheme interests society but little at present. Love in its protean form not only laughs at locksmiths, but gives little heed to social rules and customs running counter to its desires.

As feeblemindedness is an incurable condition rather than disease, we should be thankful that its continuance is by nature curtailed. In this age every effort is being made to lengthen the life of fit and unfit alike. We have no wish to turn back from this high plane, but in the case of defectives let us make more genuine efforts to prevent their being at all, by segregation, sterilization, and eugenics.

84 East Fifty-sixth Street.
160 West Seventy-third Street.

CONTRADICTORY FINDINGS IN THE WASSERMANN TEST.

Gross Variations in the Results of Different Serologists.

By Abr. L. Wolbarst, M. D.,
New York,
Consulting Genitourinary Surgeon, Central Islip State Hospital; Visiting Genitourinary Surgeon, People's Hospital.

It is universally agreed that the Wassermann reaction may be considered diagnostic as to syphilis. In view of the large proportion of positive reactions obtained in undoubted luetic cases, the specificity of the test and its reliability, when properly performed, have passed beyond the stage of doubt. Nevertheless there is one feature of the reaction to which, it is hoped, this paper will call attention. The reaction is still dependent for its true results and proper interpretation on the man who makes the test; the personal equation has not yet been eliminated from this most important aid in diagnosis and therapeutics, consequently errors and serious variations in the result are not infrequent.

It goes without saying that the value of the test depends in great measure on the accuracy with which its reagents have been standardized, and on the correct interpretation of its findings. The test itself is simple enough; any tyro can do it after a few weeks of instruction in a laboratory. But it must be evident that the correct result of the test depends upon the proper coordination of the various factors entering into its composition and the absolute standardization of these factors.

Naturally it follows that a test which depends upon so many diverse and uncertain factors must be subject to variation, in so far as the laboratory worker adheres to or departs from the exact requirements of the test. The greatest skill, experience, and laboratory knowledge are necessary for the proper adjustment of the reagents employed, and upon this absolutely exact coordination depends a truthful or untruthful result.

Various writers have given passing notice to this uncertain human element in the Wassermann reaction, but they have spoken of it under the name of "faulty technic." Thus, Carl Bruck, one of the authors of the test, in his excellent work, *Die Serodiagnose der Syphilis,* distinctly states that all positive reactions in diseases other than syphilis, framboesia tropica, and leprosy must be attributed to faulty technic.

Castelli (*Journal of the American Medical Association,* LIII, 12), in referring to this feature of the test, quotes Fournet as having gone before the Paris board of health and asked that on account of the extreme difficulty and delicacy of the Wassermann test and its invaluable utility to humanity at large, the French government should establish laboratories supervised and conducted by competent biologists who would do nothing else but the Wassermann test, and to open them free for the medical practitioners.

In line with this idea, B. Sachs (*loco citato*) admits that "there are so many possibilities of error in the performance of the test, that credit can be given to results only if those working by it are known to be thoroughly conscientious and capable."

Another word of warning is given by Kaplan (New York Medical Journal, September 7, 1912), who states that "the last factor, and by no means the least, is the ability and experience of the individual worker. The number of positives from beginners is dangerously large, stamping innocent people with syphilis."

In view of these and numerous other expressions of opinion along similar lines, it does seem passing strange that very little attention has been paid to the "man behind the test," if we may use this expression. We read in the literature of reports in which a positive or a negative result was found in a certain case or series of cases, but we are not told who made the tests and what precautions were taken by the serologist toward absolute standardization of his reagents. Noguchi himself warns us that an excess of amboceptor for sheep's blood corpuscles in the blood leads to hemolysis, even in the presence of a syphilitic antibody (*Journal of the American Medical Association,* LIII, 12). On the other hand, Fox has pointed out the fact that when the serum is used in an active state the test is thereby rendered too delicate and too liable to give positive reactions where negative reactions should be given (*Journal of Cutaneous Diseases*, August, 1909), and this is confirmed by Boas, who has shown that by using active serum, more positive reactions were obtained in nonsyphilitic cases than was previously supposed to be possible (*Berliner klinische Wochenschrift*, 9, p. 400, 1909).

These observations seem to contradict the dictum of Blaschko, which is confirmed by others, that the Wassermann reaction has never given positive findings in the certain absence of syphilis. Nevertheless, when we consider the possibility of error, due to improper coordination of the reagents employed in the test (principally an excess of antigen), we can very readily see that there is no actual contradiction in these conflicting sentiments. Not only the performance of the test, but its interpretation requires the greatest care and skill. W. J. Butler has strongly pointed out this correlation between performance and interpretation of the test. In a strong paper (*Journal of the American Medical Association*, LIV. 14) he says: "The proper performance and interpretation of the serum reaction for syphilis demands of the operator a considerable acquaintance with laboratory technic in immunity work and experience with the reaction itself, for otherwise the results are not dependable. Discrepancies in results obtained with the Wassermann technic and modifications of it, not infrequently arise from overenthusiasm and shortcomings in one's own work."

As a clinician, I beg to call attention to the great importance of the human element or personal equation in the Wassermann reaction. Not enough emphasis is being given to this phase of the subject, because we are usually satisfied with results, without asking how and by whom these results were obtained. The point I wish to urge is that the source of error liable in the test, due to faulty technic or other human causes, must be recognized in our daily work. It is time that we realized and fully appreciated the fact that our laboratory reports may be and often are faulty. Who knows how many men and women are living a life of dread and fear as a result of a conviction of syphilis by an untruthful laboratory report. If, as the legal phrase has it, it is far better that a thousand guilty men go free than that one innocent man be punished, is it not likewise far better that a thousand real syphilitics go undiscovered than that a faulty report shall condemn an innocent man or woman to lifelong dread and unceasing treatment, with all that these things convey? D. M. Kaplan states the case admirably in a paper on The Practical Value of the Wassermann Reaction (*Medical Record*, June 15, 1912), when he says:

> In the Wassermann reaction, the stumbling blocks are many and can be overcome by experience and patience only. The beginner makes many nonluetic sera positive, the theoretical worker does the same to a lesser extent, and the mature worker fails to report many syphilitic sera as positive. The confidence that the general practitioner places in the Wassermann reaction makes the former two a menace to his patients and jeopardizes the doctor's private practice. The harm done by the experienced worker is comparatively mild, as sooner or later the clinician will find the true cause of the trouble. It is by far less harmful to err with a negative report on a luetic serum than render an innocent person uncomfortable with the knowledge of having been made syphilitic by the laboratory.

It must have been the experience of every clinician who has employed the Wassermann reaction, either as corrobative of his diagnosis or as a therapeutic guide, that the reaction has an inexplicable perversity at times, that is not only perplexing, but absolutely embarrassing. Who has not been told that a serum from a patient with active lues gives a negative reaction? And, on the other hand, when our diagnosis has been negative, based on the absence of clinical manifestations and corroborated by the negative history of the patient, have we not been mortified to be told by our laboratory slip that the serum has given a positive Wassermann reaction? In the past, before the days of Wassermann, we thought we were able to make a diagnosis in the average case by a careful study of the clinical symptoms. If we were in doubt, we consulted our colleague, and if both of us agreed on the diagnosis, we were usually right. To-day, however, many of us have come to believe implicitly in the dictum of the laboratory, notwithstanding the clinical evidence. And there are among us men who would invariably accept the positive report of the serologist in preference to the negative diagnosis of any number of clinicians, based on the utter absence of luetic phenomena and a nonsuggestive history. Nevertheless, the very men who do the best serological work, admit that errors are not only possible, but not uncommon.

The clinician, in his daily work, has a right to expect that the serologist is doing his work properly. When we place serum in his hands for a report, we give evidence of our implicit faith in his ability and integrity, both as to performance of the test and its interpretation, as well. Nevertheless in the course of this study of the subject, competent and honest serologists have sent me contradictory results on the same sera. One man has reported a serum *positive*, while another, equally competent, as far as I know, has sent a *negative* report on the same serum taken at the same moment in another test tube. Whom are we to believe? Which report is correct? How are we to reconcile these contradictions with our clinical findings and what shall we tell our patient?

When we ask these questions of our serologists, they shrug their shoulders and say "faulty technic somewhere." True, but where is the serologist who is ready to admit that *his* work is not done in strict accordance with Wassermann's instructions?

In these circumstances, there must be something wrong, either with the test itself, or with the factors entering into it. Exact standardization seems to be the pivot around which the accuracy of the test depends, yet there does not appear to be any way of telling who is using properly standardized reagents. The general clinician cannot know these things, and still his clinical experience and his reputation are weighed in the balance and often made to suffer as a result of improperly standardized reagents or faulty interpretation on the part of the man upon whom he relies for accurate information

A case from my personal experience in this regard is of unusual interest. A young man, with absolutely no symptoms of syphilis and a vague history of having suffered from a suspicious angina years ago, was informed that a Wassermann test might clear up the doubts which we entertained as to his ever having had syphilis. Blood was drawn in two test tubes and sent to two laboratories. Laboratory A reported *negative;* laboratory B, with equal certainty, reported *four plus.* Four days later blood was drawn again in three test tubes. One tube was sent to laboratory A, and the report came back as before, *negative;* the remaining two tubes were sent to laboratory B, under different names, and both were reported *positive,* for the second time. Here was certainly a very unsatisfactory state of affairs. One laboratory examines two specimens, four days apart, and reports them both *negative;* the other laboratory examines three specimens and reports them all *strongly positive.* The patient was clinically negative. Ten days later blood was drawn for a third time and sent to a third serologist, who in turn reported *positive.* It is to be regretted that no check was made on this examination. What is the clinician to do in the presence of these conflicting results, and what is he to tell his patient?

For some time I have been studying this feature of the Wassermann reaction, and I herewith submit the findings in thirty-seven cases. To avoid error resulting from improper sterilization of the test tubes, absolutely new tubes were used, each tube taken from its paper wrapper. They were thus perfectly dry and beyond suspicion of contamination. The blood was obtained in the usual way by venous puncture and permitted to flow continuously into two or three tubes. About five c. c. were collected in each tube. When sent to the same laboratory different names were attached, so as to avoid any possibility of mental suggestion on the part of the serologist.

It will be seen by the following data that the reports agreed in twenty-six cases (seventy per cent.). Disagreements in the findings occurred in eleven cases (thirty per cent.). Of the latter it was found in six cases that the variation was not very great, there being two cases varying from *doubtful* to *positive,* and four cases varying from *doubtful* to *negative.* In five cases, however, there was a distinct contradiction, one laboratory reporting *positive* and the other *negative* on the same serum. It is thus seen that in five cases out of a total of thirty-seven (fourteen per cent.), the serologists flatly contradicted each other as to the result. It will also be observed that certain serologists uniformly obtained *positive* results, while *negative* results seemed to predominate simultaneously at the hands of the other workers. I have not attached any importance in this study to the subject of the clinical condition of the patient. For present purposes this seems to be unnecessary, inasmuch as this paper deals with the diversity of the findings rather than with their correctness. However, in the table, I have stated the patient's clinical condition simply as a matter of interest. The names of the serologists have not been mentioned, also for the obvious reason that it would be immaterial and likewise unnecessary. The various laboratory workers have been designated as A, B, C, D, and E.

TABLE.

Showing Diversity of Wassermann Reports on the Same Serum Taken Simultaneously.

Case:
1, Serologist A, *positive;* Serologist B, *negative;* clinically *negative.*
2, Serologist A, *positive;* Serologist B, *negative;* clinically *negative.*
(two tubes)
3, Serologist A, *positive;* Serologist B, *negative;* clinically *negative.*
4, Serologist A, *positive;* Serologist C, *negative;* clinically *negative.*
5, Serologist C, *positive;* Serologist E, *negative;* clinically *positive.*
6, Serologist A. *positive;* Serologist A, *doubtful;* clinically *negative.*
7, Serologist A, *positive;* Serologist A, *doubtful;* clinically *positive.*
8, Serologist A, *negative;* Serologist A, *doubtful;* clinically *positive.*
9, Serologist A, *negative;* Serologist A, *doubtful;* clinically *negative.*
10, Serologist A, *negative;* Serologist A, *doubtful;* clinically *negative.*
11, Serologist C, *negative;* Serologist A, *doubtful;* clinically *negative.*

A review of the foregoing data shows that in four cases clinically *negative,* serologist A found the reaction *positive,* while B and C found them *negative;* in one case clinically *positive,* A found the reaction *positive* and E found it *negative.* It is also seen that serologist A differed somewhat in his own reports of the serum of the same patient, submitted to him at the same time under different names. Thus in two cases he reported *positive* and *doubtful,* and in three cases he reported *negative* and *doubtful.* Serologist C found one case *negative* which A reported *doubtful.* I attach little importance to these variations between *positive* and *doubtful,* because either of these reports may be accepted as an indication for further treatment; but there is considerable importance in the discrepancy between *negative* and *doubtful,* owing to the hesitancy with which treatment is instituted in the presence of a *negative* report as compared with the general feeling that a *doubtful* report is suggestive of the need for further treatment.

On the other hand, the care with which serologist A has done his work may be judged from the fact that his reports have agreed absolutely in nineteen cases in which two or more sera from the same patient were examined by him under different names. Among these he found eleven *negative* cases, seven *positive,* and one *doubtful.* In each of these nineteen cases there was no diversity in the reports, indicating that the work was being carefully done and equally carefully reported. Nevertheless this serologist was flatly contradicted by another serologist in five cases (twenty-one per cent.), and his own reports on the same sera under different names also differed somewhat in five cases (twenty-one per cent.). We may therefore conclude that however carefully the Wassermann reaction is done, there is a fairly large percentage of probability that contradictory results will be obtained by several serologists examining the same serum at the same time. Consequently the inference is clear that whenever serum is to be examined, the results of the test are subject to variation at the hands of different serologists and that certain steps must be taken to overcome these chances of variation.

It thus appears to be absolutely necessary for us to check up our work by submitting the serum to more than one serologist, if we would be certain as to our result, and when these serologists differ, a third or a fourth test must be made by still other workers. The preponderance of opinion must be accepted as the correct result in much the same way that we accept the preponderance of opinion on any other matter involving human thought and action. Since it is demonstrable that the Wassermann reaction is dependent for its accuracy on the character and ability of the man who does the work, it must necessarily follow that his report is essentially his *opinion* of the reaction given by a particular specimen of blood submitted to him for analysis. And since opinions may differ according to innumerable elements that enter into the personal equation, we are forced to the conclusion that any one man's opinion, be he ever so learned and experienced, may be wrong, and consequently his reported result is necessarily wrong. Consequently we owe it to our patients, as well as to our professional reputations, to use every means at our command to secure an opinion that is as nearly the truth as it is possible for us to obtain.

We must, therefore, submit the serum for examination only to such men as we are certain will do the work honestly and skillfully, according to the most approved methods. Novelties and short cuts have no place in this work, when by such innovations the element of risk and uncertainty is introduced. We should always know the man who is doing the work, so that in speaking of a *positive* or *negative* seroreaction we can name the serologist who performed the test. His work should have the same reputation and standing as the work of any other consultant or expert brought into a case for his expert opinion. True, any expert may err, and so may the serologist, if he is human. It is for this reason that the work of the expert whom we select for this purpose shall be checked and controlled by one or more equally good experts to whom we submit the serum drawn simultaneously from the patient. Now, we have the opinions of two or more experts specially chosen for their fitness and high technical standing. Their results ought to agree if the Wassermann reaction is all that is claimed for it. And if their results do agree, we are bound by all the rules of commonsense to accept such opinion as the sum total of our knowledge on this particular subject. If, on the other hand, they disagree, as they often do, and as any other experts equally often do, it is our duty to accept the majority opinion or submit another quantity of serum, either to the same or to other serologists, for another test. We must accept the opinion of these men as we accept our legal opinions, and give them the dignity and power of that which we call *law*. We create law by the majority opinion of the men who sit in judgment as experts in their chosen work, and we must deal with this complicated question of the seroreaction in absolutely the same manner. If three competent men examine the same serum, and two agree against the third, I think it is proper and just to our patient to accept the verdict of the majority and act according to their judgment. In this way, and in this way only, can we ever be sure that our patient is receiving the best possible judgment on his case. I know of nothing that is so unfair and cruel to our patient as to impose on him a conviction of syphilis as a result of a faulty Wassermann reaction made by one serologist. He is entitled to the truth as nearly as we can determine it, and there is no better or more certain manner of determining the truth in any given case than by having two or preferably three skilled serologists pass judgment independently of one another. In this way alone can we do justice to our patient, as well as to the man whose name the test bears.

CONCLUSIONS.

1. The Wassermann reaction is dependent for its result on the skill and knowledge of the serologist.

2. The results of the test depend in great measure on the absolutely perfect standardization of the reagents used; these are subject to variation in the hands of different serologists.

3. As a result of these differences, diversity in results is not infrequent, but insufficient attention has hitherto been given to this particular feature of the reaction.

4. It is a gross error to accept the findings of one serologist as conclusive, *particularly if his result is positive and the diagnosis dependent on his report;* his work should be checked up by one or more equally competent workers.

5. If two or more competent serologists report on a given serum, the majority opinion may be accepted as fairly conclusive; frequent reexaminations are always of advantage to the patient.

6. Of thirty-seven cases thus studied for discrepancies, agreement of findings took place in twenty-six cases (seventy per cent.); absolute contradiction of findings took place in five cases (fourteen per cent.); slight disagreements took place in six cases (sixteen per cent.).

7. All mention of results of the Wassermann test, in the literature or elsewhere, should be accompanied by the name of the serologist who made the test, in order that the measure of accuracy and skill employed may be estimated.

8. The serologist should be selected with the same care and caution as is exercised in the selection of a consultant or expert in any other branch of medical science.

113 East Nineteenth Street.

THE DAY CAMP FOR TUBERCULOSIS.*

By A. P. Francine, A. M., M. D.,
Philadelphia,
Associate in Medicine, University of Pennsylvania; Visiting Physician, Philadelphia General Hospital, Department of Tuberculosis.

The day camp idea, a place where patients may spend the day in the open, away from the squalor of their tenements and alleys, under medical supervision, has been applied elsewhere with success, notably in New York and Boston. It is necessary briefly to explain the reason and need for it in Philadelphia. The principle of tuberculosis dispensary work among the indigent in Pennsylvania is, or should be, to send at once every patient with open tuberculosis who applies (and who can go away) to a sanatorium for a preliminary course of education, training, segregation, and cure. This is made potentially possible by the splendid sanatorium and infirmary facilities offered by the State; but the patients who are capable of improvement cannot live indefinitely in a sanatorium (and it is neither advisable nor necessary that they should), so the most effective work of the dispensary consists in following the return patients into their homes and bending every effort to apply, to continue, and supplement in the homes the work of education, prevention, and cure begun in the sanatorium. The function of the dispensary is thus in the first instance a distributing centre for the sanatorium. This does not for a moment imply that the dispensary should not from the admission of a patient begin its propaganda of education and uplifting in the home, but, both as applied to the patient himself and through him to his family and surroundings, this can be infinitely better carried out *after* his sanatorium experience than *before*. The attempt to treat patients in their homes without sending them away is a good one, perhaps, in theory; but does not work out practically among the poor, certainly not in the majority of cases or as a principle. This is so for a number of reasons, among which might be mentioned the ignorance, carelessness, and prejudice inherent in poverty; lack of sustained effort or consistency of purpose; physical difficulties to be overcome in the home surroundings, overcrowding, lack of any available facilities or air space for a cure; inability to buy proper food, lack of facilities and ignorance as to how to cook it; the deadening worry and mental unrest of continuous and pressing want, where the wage earner or one wage earner is incapacitated (at best the combined family income is inadequate for more than a bare subsistence). These and other reasons which could be cited, make it necessary that the sick man or woman should be sent away and the home in many cases reorganized. In other words, the best principle in handling these cases is not to treat the sick man and support his family, which must usually be done if the burden of his sickness is to be borne in the home, but to relieve the family of the burden and the danger of the sick member and make them self supporting.

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*Read at the Philadelphia County Medical Society, November 27, 1912.

But even with the remarkable sanatorium facilities furnished by the State Department of Health, it is practically impossible to send *every* patient away. There are always those who will not or cannot break home ties, even temporarily and for the best interest; parents who cannot leave their children; wives or husbands who cannot or will not be separated; children whose parents refuse to allow them to go. Then there are the return patients whose homes offer no possible facilities for taking a cure and who are yet unable to work.

It was for this relatively large group of cases that the day camp was first opened two summers ago, and kept open from July until December, 1911, and from May until November, 1912. This latter period is the one I hope we can stick to in the future for obvious climatic conditions.

It is unnecessary to go into the subject of organization or the results of treatment in any great detail, for such a report is filed with the College of Physicians, where it may be consulted by those particularly interested.

Suffice it to say that we were able to raise a fund of $1,843, entirely by private contributions, and that a pier on the Delaware River front was secured by the kindness of Mr. E. Meyle, president of the Independent Pier Company, the cure chairs were loaned by the Shut-in Society, so that of the foregoing sum the total cost for construction was for a railing and pavilion, i. e., $287.55. This left approximately $1,550 for maintenance and it cost on an average of 35 cents a day for each patient. For the second year we secured from the same source a pier better adapted to our purpose, and Mr. Meyle further fitted up a nurse's office and toilet room for us, so that of the $1,650 raised for the second year's work, every cent was spent for maintenance. Both piers were very accessible by trolley, the one being at the foot of Bainbridge Street and the other at the foot of South Street.

RÉGIME AT THE CAMP.

The camp was open daily, except Sundays, with a trained nurse constantly in attendance, and patients were required to report by 9 a. m. and stay until 5 p. m. A pint of milk with bread and butter was served at 10 a. m. and at 3 p. m. to each patient; and a good, hot lunch at noon. Each patient who could not afford to pay his own carfare received two car tickets a day, one to come and one to return. Regular attendance was required, but each patient reported every two weeks to his physician or the dispensary that had sent him in, and was supervised in his home by the nurse from his own dispensary. Is it any wonder that these people, many of whom had never known what it was to get a wholesome full diet, or a day full of fresh air, should gain in health, weight, and spirits under this fair régime?

In order to systematize the work, all patients were required to apply to the writer for a card of admission, and no distinction of creed, nationality, or color was made, the only requirement being that the case was under the care of a doctor who wished it to be admitted and was not too serious, i. e., requiring bed treatment. Only three patients were refused admission, all on the ground of being too ill.

All of the cases were moderately advanced or far advanced, though ambulatory. The capacity of the camp was thirty patients a day. The camp was practically full all along.

It has been impossible for lack of time yet to tabulate the second year's report, but it is quite similar to the first, and the few facts I shall cite are for the season of 1911.

Of the ninety-one patients treated at the camp, fifty-nine were United States citizens (of whom fifty-two had been born in the United States) and thirty-two were foreign born and unnaturalized. Ten foreign countries were represented in our list. There were forty-four males and forty-seven females; and a family history of tuberculosis in forty-two of the ninety-one patients.

The question of family income is interesting because it illustrates well the poverty of the people with whom we were dealing. There was an average of four persons in each family and the average income from all sources of the family was $27 a month and the rent $10; or, looked at in a little different way, the average monthly income for each patient in this group was $6.75 and the average monthly rent $2.50.

The majority of the patients were simply delighted with the régime at the camp, which is shown by the fact that of the ninety-one patients, seventy-three attended an average of forty days each. Eighteen patients attended less than one week. Unfortunately, among the very poor and ignorant, there is always wanting persistency of purpose. When a patient attended irregularly, it was reported to the nurse having charge in his home, and if following her efforts he did not do better, he was discharged. Among these eighteen patients were some, too, who were found after admission to be really too ill and were referred to hospitals for bed treatment.

The total weight gain at camp by those who staid more than one week, i. e., seventy-three patients, was 175.75 pounds. The largest individual gain was twenty pounds. The total weight lost among the ninety-one patients was thirteen pounds, and there were twenty-four patients whose weight remained stationary; that is, the weight on admission and on discharge varied less than one pound.

A regular daily hospital chart was kept, by the nurse, of each patient throughout his stay and the weight recorded each week.

Upon the discharge of a patient the results of treatment, that is, as to whether he was improved or unimproved, was estimated upon the general condition, and not upon gain in weight alone. This latter was considered as one factor only, and general and local functional betterment was used as the criterion.

Only the seventy-three patients who stayed more than one week were classified as improved or unimproved; of these, fifty-eight were improved, approximately eighty per cent., and fifteen unimproved. It will be seen in the detailed report (College of Physicians) that there were four patients classified as unimproved, all of whom gained in weight and whose total gain was 6.75 pounds, but in these cases there was practically no improvement in the temperature, pulse rate, cough, and strength.

It is interesting to note a few of the reasons for discharge from the camp, as it gives an idea of how largely we tried to avail ourselves of, and cooperate with other institutions dealing with the tuberculous sick, and how the effort was continually made for the more permanent care of the cases.

There were placed in Mont Alto twenty-eight, in Chestnut Hill four, in Eagleville four, in homes in the country eight, and twenty of our patients were able to return to work. The next to the last item related mostly to children, who, through the children's bureau or other agency, we were able to send to the country. Under the heading "returned to work," is included a number of patients for whom suitable work was found, some who were able to return to their own work, and a number of wives and mothers who were able to resume their household duties.

Along this same line may be mentioned the institutions and doctors who sent cases to the camp, a fairly good showing, but still not as general as we should be glad to have it. Four institutions availed themselves of the camp, the State Dispensary, the Phipps Institute, and the tuberculosis dispensaries of the University and Presbyterian Hospital; and cases were referred by sixteen different physicians.

The organization of the camp consisted of a Board of Friendly Visitors and a corps of physicians who voluntarily visited the camp; one day a week being assigned to each, with the view of having daily medical attendance. It should be repeated, however, that every patient while at the camp remained under the care of the physician sending him in and reported to him regularly, so that the visits of the camp physicians was more of a tour of inspection and encouragement than for any strictly medical duties or need.

In conclusion, let me say that without the very real interest and help of Mr. Edward B. Smith, the treasurer of our organization, this good work could hardly have been carried on.

1932 Spruce Street.

MAIMONIDES THE PHYSICIAN.*

By Max Kahn, M. A., M. D., Ph. D.,
New York,
Director of the Beth Israel Hospital Chemical Laboratory.

The advent of the victorious Mohammedan armies into the southwestern peninsula of Europe carried in its wake the various educational and scientific influences that were to affect the whole course of later European culture. The Saracens brought to Spain, under protection of the banner of the Crescent, the stored up treasures of ancient learning. While churchridden Europe reposed ignorant of the wealth of knowledge and wisdom that the pagan writers had contributed to civilization, the peaceful Arabs and Moors interpolated their studies of the Koran with readings from the Arabic translations of Greek and Latin philosophers. Unlike the earlier Moslem warriors, the Saracens preserved and cherished the treasured volumes which they found in the conquered cities. It is related of an immediate successor to Mohammed that he ordered his victorious general in Alexandria to destroy the papyri that were stored in the famous library, for the reason "that the Koran contained all that was worth knowing, and that the other books were either superfluous, if they corroborated, or pernicious, if they denied the truths of the Holy Writings." It is fortunate, however, that not all of the Moslem priests were so fanatic.

The battle of Xeres de la Frontera, in the year 711, decided the destiny of the Spaniards, and of the Jews that had found a haven in the Pyrenean peninsula. Of all the cities which submitted to the Moslem yoke, Cordova alone excelled in commerce and in letters. There, in the houses of learning, men of fame studied and taught, and there also, in 960, the Jews founded their first academy. The Moors and Hebrews lived in peace with one another, and good naturedly endeavored to outrival each other in literary and philosophical attainments. In the twelfth century, Cordova was at the zenith of its glory under the prosperous reign of the noble Abderhaman.

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*From the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons.

On the fourteenth day of Nissan (March 30, 1135), on the anniversary of the delivery of Israel from Egyptian bondage, there was born to the famous Rabbi Maimon of Cordova a son who was named Moses. Of the pedigree of Moses we know that his immediate six ancestors were distinguished by the title "Wise," and there is a legend that his family could trace its kinship to the monarch David. Buxtorf quotes Maimonides thus: *Ego Moses filius, Majemonis judicis, filii Josephis sapientis, filii Isaaci judicis, filii Obadiæ judicis, filii Salamonis, filii R. Obadiæ judicis, etc.* There is a tendency at all times to halo the life of a great and beloved man with romantic legends. The birth of Maimonides has also been touched by the artistic finger of romance. His father, so runs the story, had decided never to marry, but there came to him several times at night a vision which bade him take to his nuptial bed a pure maiden of lowly birth. He obeyed the heavenly command, and married the daughter of a poor craftsman. His wife redeemed the life of her only son, Moses, by sacrificing her own in giving birth to him. Rabbi Maimon, his father, married a second time, and by his second wife had two children, a daughter, and a son, David.

MAIMONIDES.

Concerning the early life of Maimonides various myths are extant. Rabbi Gedaliah relates that in his youth Moses was very unruly and impious so that he had to be constantly upbraided. This irritated the lad, and he fled his native city. He wandered about in an ungodly fashion until once he accidentally visited the synagogue of a distant town. He slept in the synagogue and the spirit of the Lord came down upon him, so that he vowed he would devote his life to a study of Holy Writ. He was instructed by Rabbi Megas, a famous student of the law, and his progress was so phenomenal that his fame spread wide. Once, after many years' exile, he returned to his native town, Cordova, and delivered a discourse upon the Sabbath, which so pleased his father that they became reconciled. There is also a tradition that Maimonides and his preceptor spent twelve years in a cave, fasting and studying the law.

There is no evidence, however, that there is any truth in these legends. It it almost positive that Moses led a very quiet life as a boy, and that he profited well from the kind and learned guidance of his father and teacher.

It was not destined, it seems, that the calm peace and contentment should continue without interruption in the Saracen towns in Spain. From the northern coast of Africa there came a fanatic band of destroyers, who proceeded with fire and sword to reclaim peaceful Spain and turn it into a very den of chaos, where intolerance was boasted of and where lack of conformity to Islam faith was punished by death unless the "unbeliever" had the good fortune to exile himself ere the hand of the Mosque was laid upon him. Under the leadership of Yussof, son of Teshfin, who was influenced by the zealots, Abdallah and Abdelmumen, the Almoravids, a fierce and warlike tribe, waged warfare against the peaceful inhabitants of Spain. They were entirely successful in their ventures, and, in 1148, conquered the beautiful town of Cordova, and vandallike destroyed its beautiful buildings and drove out all who would not accept Islamism.

The story of the wanderings of the family of Maimonides is not known. In 1159, we find them in Fez, where, though they persisted in the Hebrew faith, they were left unmolested. When twenty-three years of age, Maimonides began a commentary on the *Mischnah*, which, after laborious study, he completed in 1168. In his writings and explanations he was ever at variance with his predecessors and contemporaries, who delighted to indulge in luxuriant phraseology and vague symbolic blandishments. He made it his aim to eschew prolixity for brevity, and to confess ignorance where positive knowledge was not forthcoming. It was he who said that it is possible for a wise man to be taught by a fool, and he was fond of remarking to his scholars: "Teach thy tongue to say, I do not know."

During all the stress and strain of a very busy life, Maimonides's pen was never idle. He wrote on astrology, on metaphysics, on general philosophy, on religion and the law, and on medicine. His writings on the latter I shall review in detail later on. I shall touch but briefly on his varied nonmedical tasks.

Maimonides was constantly studying and writing. "While my mind," he wrote, "was ever troubled amid the God decreed expatriations from one end of Heaven to the other, I wrote notes on many a *halachah* on journeys by land or while tossed on the stormy waves at sea." In 1158, he wrote a short treatise on the Jewish calendar, entitled *Maamar-ha-ibbur,* and an exposition on logic, *Milloth Higgayon,* to which Moses Mendelsohn, many centuries later, added a commentary.

It was his great work, *Jad Chazekah,* The Strong Hand, also called *Mischnah Hathora,* The Repetition of the Law, that established Rambam's[1] great fame as a jurist. This labor lasted twelve years, and as Prideaux states, "in spirit of elegance and and perspicuity of style, as well as methodical arrangement, it fairly vies with the Roman civil code or with any code of law extant." It may be regarded, says Peppercorne, as a compendium of whatever is worthy of notice in the Talmud. The laws relating to the poor and the stranger are especially worthy of remark.

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[1] Rambam, i. e., Rabbi Moses ben Maimon.

At twenty five years of age he wrote a dissertation on apostasy, *Maamar Kiddush Hashem*, in which he exhorted his coreligionists not to abandon the Jewish faith. Nevertheless, he argued that a soft word, if it will turn away wrath, is better far than an obstinate, if more heroic, brutal retort. In pleading with the Hebrews to keep the Law of Moses and the faith of the Covenant, he remarked, however: "If a man asks me, Shall I be slain or utter the formula of Islam? I answer, Utter the formula and live."

His *Resurrection of the Dead* he wrote at the age of fifty-five. His thirteen articles of *Confession of the Faith* are still adhered to by modern orthodox Jews. Perhaps the most famous work of Maimon is the *Guide to the Perplexed, More Nevochim.* It is a discussion of various metaphysical subjects with dissertations on abstract philosophical and religious problems. We find here treatises on good and evil, on the creation of man, on the atomic philosophy, etc.

While in Fez the Maimonides family throve well in wealth. David, the brother of Moses, was a diamond merchant and was quite successful in his undertakings. While in Cairo, where Maimonides later resided, his father died. His brother perished at sea during one of the voyages to the Orient, and with him the whole wealth of the family was lost. Of the matrimonial life of Rambam little is known. He had a daughter and a son, Abraham, who was also a physician and succeeded his father in the high positions in the Sultan's court.

The death of his brother left Maimonides without financial support, and he was compelled to earn his own livelihood. He adopted the medical profession, and after several years of practice and study, became a recognized authority on medical matters. He was appointed private physician to Saladin's vizier Al-Kadi-al- Fadil-al Baisami, who recommended him to the good graces of the royal family. A certain Arabic historian, according to the Jewish Encyclopedia, declares that the position of court physician was offered to Maimonides by the King of Franks in Ascalon, Richard Cœur de Lion, but that the honor was declined.

In 1179, the brave and learned Sultan appointed Maimonides as chief court doctor. He held the position with great dignity and marked esteem until the death of the sovereign, and was reappointed by the successor to the royal throne.

Maimonides was a very busy and conscientious practitioner. One can obtain a glimpse into the busy life of the famous doctor in perusing a letter that he wrote to his friend, Samuel ibn Tibbon: "I live in Egypt at a distance of nearly two Sabbath day journeys from al-Cairo, where the Sultan resides. The duties of my appointment demand regular attendance on him every morning. If there is nothing amiss at the court, I return home toward noon, almost famished for want of food; on my return I find the approaches to my house crowded with Gentiles and Jews, men of all ranks, impatiently awaiting my return. As soon as I have taken refreshment, I examine my patients until I become so overpowered with the fatigue of speaking and prescribing that my speech almost fails me before I can conclude." In a letter to his favorite pupil, Joseph ibn Aknin, he thus remarked of his medical career: "You know how difficult this profession is for one who is conscientious and exact and who states only that which he can support by argument or authority."

Among the Jews the science and practice of medicine were, from the earliest times, considered of great dignity and worthy of great honor and respect. While yet very young Moses ben Maimon, without entertaining any idea of ever practising the healing art, studied anatomy, physics, and botany. Later on he carefully studied the writings of Galen (200 A. D.) and of Avicenna (eleventh century). The medical art seemed to Maimonides a holy calling, and he practised it as if it were his religious duty. The purpose of medicine, he considered, "was to teach humanity the causes of ill health, the correct dietetic hygiene, the methods of making the body capable of useful labor, how to prolong life, and how to avoid disease. It thus directly elevates the human being to a higher moral plane where the pursuit of Truth is possible and where the happiness of the Soul is attainable."

In his *Commentary to the Mischnah* he gives various medical conclusions and opinions upon the treatment of disease. In his great *Book of Law*, he devotes a separate chapter of the *Sefer Hamaddah*, to the medical art. He recommends certain dietetic rules, following the prevalent medical theories of his day. It is interesting to examine, even if cursorily, these regulations in dietetic hygiene.

> Sound health of body is an unavoidable prerequisite in the development of the soul. It is, therefore, the duty of all persons to avoid all harmful things. One should eat and drink only when one has hunger or thirst; but even in these cases one must not fill his belly full, but allow about one quarter of the appetite to remain unsated. During meals one should not drink water; one might use a little wine mixed with water. The wines are harmful in youth but can be tolerated in age. In summer one should partake of cold food and little of vegetables, in winter the opposite. Certain foodstuffs are especially harmful, and it is wise to neglect them, for example, large fish, cheese, and meat which are old and are preserved in salt. Sour fruit is not to be eaten, unripe fruits act upon the body like a sharp knife. . . . Bathing should be indulged in once every seven days. A person should sleep eight hours. During the day one should not sleep. Disease will not attack him who lives moderately. Among a thousand persons, only one dies a natural death; the rest succumb early in life owing to ignorant or irregular behavior.

Maimonides closed his dissertation in the following words: "I assure the person who will follow my precepts that he will not suffer bodily pain and that he will not require the services of a physician. He will retain his powers and faculties all through a long life, and at extreme age, will die a natural death. These regulations are always valid. They, however, who since birth have suffered from a bodily ailment or who in youth have accustomed themselves to evil practices, will do well to read the *Book of Remedies*, which I am now preparing."

Before I proceed further, I will enumerate the medical writings of Rabbi Moses ben Maimon, and then discuss the various topics with which the writings deal. I am indebted to A. Friedenwald for the following exhaustive list of Rambam's contributions to medicine:

1. *Medical Aphorisms,* translated into Hebrew by Nathan Hamati. National Library, Paris.
2. *Abridgement of the Sixteen Books of Galen,* an Arabic work, quoted by Osaiba.
3. *Treatise on Hemorrhoids and Their Treatment.* National Library, Paris.
4. *Consultation on Snuffling in the Nose and Throat.*
5. *Treatise on Poisons and Antidotes,* translated by Ibn Tibbon. Paris.
6. *Treatise on Coitus.* Hebrew translation in Paris.
7. *Asthma.* Hebrew translation in National Library, Paris.
8. *Commentary on the Aphorisms of Hippocrates.*
9. *Of the Regimen of Health.* National Library, Paris.
10. *Hebrew translation of Ebn Sena:* Manuscript in Library of Dominicans at Bologne.
11. *Explanation of Drugs,* an Arabian pharmacopeia, quoted by Osaiba.
12. *Medical Consultations,* Hebrew manuscript, National Library, Paris.
13. *Modes of Curing Those Bitten by Venomous Animals, or Who Have Been Poisoned.*
14. *Treatise on the Cause of Disease.* Bodleian Library.
15. *Sefer Refuoth.*
16. *Sefer Ha Murza.*
17. *Abridgement of Works of Ebn Sena.*
18. *Treatise on Gout.* Arabian Escurial Library.

Hygiene was the favorite theme for discourse with Maimonides, especially dietetic hygiene. He was one of those who strongly believed in the avoidance of disease rather than in the cure of it. In his *Guide to the Perplexed,* which is not a medical work, he states that the variety of food taken by an individual should not depend upon his taste or caprice, but upon certain dietetic principles, whose aim it is to enhance the health and usefulness of the body. One should not accustom oneself to foods that tickle the palate, but should always keep in mind the desire of prolonging life and increasing health; and he should, therefore, partake only of wholesome food, no matter whether sweet or bitter. Exercise, he asserted, has in certain cases a decidedly beneficial effect. They who only follow sinful inclinations lower themselves to the form of brutes. "For those gifts of intelligence and judgment with which he—the human being—has been endowed for the purpose of acquiring perfection, but which he has failed to apply to their proper aim, are used by him toward wicked and mischievous ends; he begets evil things as though he merely resembled man or simulated his outward appearance."

There was at that time a certain class of ultrareligious Jews who thought it sinful to consult a physician. Disease, they argued, was a manifestation of the anger of the Lord, and in order to become cured it was necessary to fast and pray and make amends, but not to use medicinal herbs or other therapeutic remedies. The use of these, in their opinion, smacked too much of insubordination to the Divine power. Maimonides, on the contrary, strongly urged upon the community the benefits to be derived from medicine: "A person should not reside in a neighborhood where a physician does not dwell," was one of his recommendations. Among the absolute requirements of a municipality were the physician, the surgeon, and the bath house. In his introduction to the *Mischnah Commentary,* Maimonides quotes Ben Sirah thus: "The Lord has planted medicinal herbs on the face of the earth, and the sensible man will not neglect them." He was especially particular to point out the biblical law that the physician shall be used in time of illness.[2] "Like unto a murderer," he wrote, "is the physician who refuses to tender his assistance in time of necessity, or who practises without due study of the ailment which he is treating."

Maimonides opposed secret, magical, or mysterious remedies. "You must beware," he wrote in the chapter On the Names of God, "of sharing the error of those who write amulets. Whatever you hear of them or read in their works, especially in reference to the [magic] names [of God] which they form by combination, is utterly senseless; they call these constructions holy names, and believe that their pronunciation demands sanctification and purification, and that by using them they are enabled to work miracles. Rational persons ought not to listen to such men nor in any way believe their assertions." In another chapter he pleads strongly for progressive scientific and philosophical investigations: "It was not the object of our prophets and our sages to close the gates of investigation entirely by these utterances,[3] and to prevent the mind from comprehending what is within its reach as is imagined by simple and idle people, whom it suits better to put forth their ignorance and incapacity as wisdom and perfection, and to regard the wisdom and distinction of others as irreligion and imperfection, thus taking darkness for light and light for darkness."

It has been said that Rambam was the most rational physician of the Middle Ages. As Muenz states, his desire was to give clear reason precedence over vague mysticism. "The eyes," wrote Maimonides, "look forward not backward." He never prescribed a remedy which he had not himself tested before or which had no good authority for its use. He was an enemy of complicated, odious medications, and in his *System of Treatment,* he recommended only simple, logical methods. "In minor ailments," he wrote, "Nature cures the body without the need of medicinal remedies, if the patient only follows certain dietetic regulations. Where, however, the services of a physician are required, he should see to it that he aids Nature in her beneficial course. Most of the doctors err in their treatment. In endeavoring to assist Nature, they weaken the body with their prescriptions."

Perhaps the most important medical work of Maimonides was his abbreviated edition and translation of Galen. He systematized the writings of the Pergamite, and commented on those chapters which he thought worthy of special note. He did not, however, feel himself bound to agree with Galen in every respect. On the contrary, he was not at all loth to point out the errors and misstatements that abound in the writings of the "Prince of Doctors."

The *Sefer Refuoth,* or Book of Remedies, must needs be reckoned his most widely known, if not most important contribution to medicine. Steinschneider has examined this book of Maimonides, and has written somewhat extensively about it. He states that Rambam based his aphorisms on some thirty writings of Galen, and he mentions the physicians whom Rambam cites as authorities.

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[2] *Ecclesiasticus,* xxxviii, 1 to 15.

[3] "Neither make thyself overwise; why shouldst thou destroy thyself?" *Ecclesiastes,* vii, 16.
"It is not good to eat much honey (learning)." *Proverbs,* xxv, 27.
"Do not inquire into things which are too difficult for thee; do not search what is hidden from thee; study what thou art allowed to study, and do not occupy thyself with mysteries." *Chagigah,* 13a, cited from *Book of Ben Sira,* iii, 18.

Maimonides relates in this book the case of a woman who suffered from stomach disease. All the remedies that had been suggested to her she had tried, but they had proved of no avail. "I prescribed," he wrote without any intent to boast, "for the patient that which, no sooner had she taken it, than she became stronger and her appetite returned." In another place he relates the medical history of a young man who suffered from a disease of the brain membranes; "with the help of God" he was able to cure him.

There is a legend among the vulgar to the following effect: In a certain town there lived a young man who was suffering from excruciating pain in his cranium. The physician who was called, opened the skull, and noticed that a large worm was lodged in the brain. The doctor was in a great quandary. To extract the worm forcibly meant certain death to the patient, and to let the parasite be, would also prove fatal. Having heard that Maimonides was in the town on a short visit, the physician called the famous sage into consultation: "Take a cabbage leaf and place it near the worm," said Rambam. This was done and the worm, attracted by this bait, wriggled out, and the patient was thus cured.

The appointment of Maimonides to the position of chief physician to the king carried in its wake the envy and enmity of the other court doctors, astrologers, and magicians. There is a story that this jealousy culminated in a conspiracy to assassinate the great and learned Hebrew. The Arabian physicians requested Saladin to judge that doctor the greatest, who should be able to take a dose of poison and then so treat himself that he would not die. They so arranged it that Maimonides was the first to take the poison. Saladin, hesitating somewhat, gave his consent to the ordeal. On the appointed day, Maimonides, having previously taken an antidote to the poison, swallowed down the deadly draught, which had been cheated of its effects, and having survived the test, he was forced to witness his opponents partaking of the poisonous beverage and promptly succumbing to its deadly action.

Maimonides was always courageous. His good faith, his knowledge, and his wisdom stood him in good stead, and he was able to withstand the machinations of his enemies. When his daughter and beloved scholar died, he almost lost hope, and grieved so profoundly that he became desperately ill. In a letter which he wrote to his son Abraham, who was then in Spain, we see the anguish and despair of the great sage: "My son, the great labors of studying and writing and the immense responsibilities of my position in court, as well as the cares of the family, have worn me out so that I am now on the bed of disease. My enemies are alive and mighty, the number of my haters is great, and the death of your sister and my beloved pupil has increased my sorrow a hundredfold."

In 1193, Saladin the Great died, and the sun of the fortunes of Maimonides became somewhat obscured. However, with the ascent of Sultan Almalik Alafdal to the throne (1198), the horizon cleared and Rambam again was reclothed in the great dignities and honors that were his before.

This sultan was a sickly prince, whom dissipation and debauchery had weakened both in body and spirit. Maimonides had indeed here a royal patient suffering from various real and imaginary, corporal and spiritual ailments. Nevertheless, the physician did not permit that the royal station of his patient should in any way interfere with his method of treatment. He was strict, and endeavored to cure the soul of the prince as well as the body. He concluded one of the letters that he wrote to the monarch, in these words: "May God in His mercy increase the number of the days of my lord, and strengthen his health, and grant him happiness of soul *here* and *there* according to the sincere prayers of his servant, Moses ben Maimon."

The sultan suffered from asthma, and Maimonides made a special study of this disease, which he later gave to the world in a *Treatise on Asthma*. He described the symptoms of this ailment, recommended methods of treatment, and related various anecdotes of the practices of the Arabian physicians in Morocco. The work consists of thirteen sections, divided into paragraphs.

At about this time, the Mesir Alfadhel requested Maimonides to write a discourse on poisons and their treatment. The cause for this request was the prevalence of disease in Egypt induced by the bites of animals, especially snakes. Maimonides in his introduction to this essay pretended to no originality, but stated that he had compiled all that was known in his time about the treatment of poisoning and that he had endeavored to present this to his reader in a concise and succinct form. The book consists of two divisions. The first is divided into four sections and deals with the treatment of the bites of animals. The second division, consisting of six chapters, treats of the manner of antidotal administration for internal poisons.

Some of his recommendations have borne the test of time: The wound induced by the bite of a poisonous animal should be sucked dry by the lips, should be kept open, and alcohol and oil should be applied. Emetics should be promptly administered. He suggested various applications to the wound, among which were common salt, onions, asafœtida, etc. For internal poisoning he advised the use of mandrake, bezoar, precious stones, various aromatic principles and especially theriaca, which in all times was believed to possess the property of combating the effects of the bites of venomous animals.

He described the symptoms of hydrophobia and argued strongly that the bite of a mad dog was the one to be feared, whereas that of a healthy dog was of minor importance. He enumerated several histories of patients bitten by dogs, and reported their symptoms and the treatment pursued.

Another treatise was dedicated to the Sultan El Melik of Hamat, who was a very weak and impotent prince; the work is entitled *On Coitus*. Maimonides's fame was so great that foreign monarchs requested his advice and followed his prescriptions. The original Arabic version of this book is in

Munich and in Oxford. A few copies of the Hebrew translation are also extant, one in Vienna and another at Parma.

In the *Causes of Disease* he enumerated etiological factors of various illnesses and logically correlated the cause and effect of disturbances of health. In other works he discussed the etiology, symptoms, and treatment of hemorrhoids and of gout, always endeavoring to suggest to suffering humanity only those remedies which seemed to him efficacious, and avoiding, as far as possible, quack, pseudopharmaceutical medications.

The fame of Rabbi Moses ben Maimon was very great during his lifetime, and after death, all nations united in praising him. He has been called the "Eagle of Doctors," "*lumen captivitatis*" and "*Moses Ægyptius.*" All his successors had naught but praise for him after his death. The Arabic poet and cadi Al Said ibn Surat al Mulk sang his praise as a physician in ecstatic verse:

Galen's art heals only the body,
But Ibn Amram's (Maimonides's) the body and the soul.
With his wisdom he could heal the sickness of ignorance.
If the moon would submit to his art,
He would deliver her of her spots at the time of full moon.
Cure her of her periodic defects,
And at the time of her conjunction save her from waning.

On the thirteenth day of December, 1204, in the sixty-ninth year of his life, Ibn Amram Moses ben Maimon died in Fostat, where both Jews and Mohamedans observed public mourning for three days. His body was taken to Tiberias for interment and his tomb became a place for pilgrimage.

Both Hebrews and Arabians have a common saying: *Mimoshe we' ad Moshe lo kom k'Moshe,* "From Moses the Lawgiver until Moses ben Maimon, there was none like Moses."

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115 SECOND STREET.

FUNCTIONAL NERVOUS CONDITIONS.*

Practical Points in Treatment.

BY WILLIAM V. P. GARRETSON, M. D.,
New York,

Adjunct Professor of Nervous and Mental Diseases, New York Polyclinic Medical School and Hospital; Assistant Attending Neurologist, City Hospital.

There is probably no class of cases so undesirable to the average practitioner of medicine as those of the so called functional nervous group, comprising the conditions known as neurasthenia, psychasthenia, and hysteria, all of which are intimately related and overlapping. Properly treated, no class of patients offers such gratifying results; they are usually most loyal and appreciative; but, unfortunately, it must be admitted that no class of patients suffers the negligence and maltreatment that these people do.

The average trained medical mind is ever on the alert to find the pathological factor which may account for the patient's symptoms, both subjective and objective; but in examining the functional case, as a rule the physical evidence is misleading. These patients are frequently healthy in appearance, and usually there is no objective evidence of trouble.

The psychological phase of medicine has only recently come into its own, and a better understanding of some of its phenomena on the part of medical men will make possible a more intelligent treatment of this group of patients. I will not attempt to tabulate the innumerable causes of functional nervous conditions, but will mention at the outset that there is often a physical basis, to be determined only by painstaking examination, which is always essential before inaugurating a successful campaign of treatment. One must be cautious against overenthusiastic tendency to extremes, and not endeavor to interpret all symptoms as either psychical or physical. Psychic conditions frequently exist for a time alone, but physical disorders are frequently associated with varying degrees of psychical disturbance, which may be so dominant as to mask the organic element; against this condition one must ever be on guard.

One of the first requisites, in undertaking treatment of a functional nervous patient, is to listen to every detail of the patient's story, as he may wish to tell it. Allow him to relate every symptom and express his own ideas, if he so desires. Then question him carefully in the general method of obtaining a case history; and finally, make a most elaborate and thorough examination, not only for personal satisfaction, but *as an essential part of the treatment,* for the patient undoubtedly has been examined many times before, and notes with keenness every step of the entire procedure. A careful examination instills confidence, and when finished and in full possession of all the data, you are in a position to speak authoritatively, and to meet every argument and question. This procedure frequently must be continued into a series of sessions before a familiarity with the patient and his condition can be obtained. Venture no opinion until in full possession of all the facts and data (blood and urine analyses, etc.), and then demand that the patient listen to your interpretation of the condition.

By this time you will, as a rule, have your patient on the road to recovery simply by having obtained his *confidence and faith.* Explain to him every detail as to the wisdom and logic of the plan of treatment which you outline; explain in a simple academic manner the causes of the various symptoms of which he complains. In this age people are well informed—often too well enlightened for their own good—and they insist on knowing the whys and wherefors. It is essential that they should know, as an intelligent understanding of their symptoms, which are mostly subjective, eliminates the element of fear and apprehension which has given rise to much mental suffering.

A large group of the functional nervous cases are dependent upon some disturbance of metabolism, either as a primary or secondary factor. Disturbances of the internal secretory glands, and more often gastrointestinal disturbances, figure largely in this class. Intestinal fermentation and putrefaction are productive of autointoxication which produces a well known and very large group of the so called autotoxic neurasthenias. Dietetic errors, intake of excessive amounts of proteid food, defective elimination due to sedentary habits, are productive of the so called lithemic neurasthenic states.

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Saturation with the toxines of defective metabolism gives rise to the most vicious irritation of the nervous system. Certain toxines appear to have a selective action in certain individuals for special cells of the nervous system, giving rise in one person to irritant effects of some one or more groups of nerves, displaying symptoms of a simple neuritis, while in another arthritic symptoms will predominate, or, most frequently, the entire nervous system is subjected to the irritant process, which affects the aggregate cellular structure nutritionally. Such nutritional derangement is productive of dynamic disturbance, and the energizing power of the nervous system is diminished. The brain and cord represent the dynamo which runs the psychical and physical mechanisms. Functional disturbances of body organs result, and these in turn are productive of metabolic disturbances, giving rise again to an increase of toxines; hence, the so called *vicious cycle*. Subjective symptoms dominate. Treatment of disturbances of metabolism alone does not suffice; nor does treatment of the nervous system alone effect results. The condition must be attacked from both ends. Each patient is an entity, and offers different problems from all other patients. The neurologist who, in treating these patients, sees only the nervous system, is in error. *A fault too frequent with all specialism is observation limited to the functions of the special organs embraced by the particular specialty of the examiner.* The nervous system, the most important entity of the entire organism, is all too frequently neglected in routine examination. The functions of every organ in the body are dependent upon it, and it, in turn, is secondarily subjected to derangements by disturbances of those organs; therefore, the successful examiner must equip himself with diagnostic acumen, and interpret each case by a thorough examination of the entire body.

In the treatment of the types under discussion, it is usually desirable, and in most cases essential, that the patient be taken out of the home environment. Personally, I do not approve of sanatorium treatment for the functionally nervous patient. Institutional treatment should be insisted upon for mental cases, and is desirable in other organic diseases of the nervous system or elsewhere, but for the average functional cases, in my opinion it is adding fuel to the fire to send them to sanatoria. These patients are given to morbid introspection and depression, and any atmosphere which tends to further this is bad. Contact with other persons in poor health, with incident opportunities for observation of and conversational indulgences with such people, offer ideal conditions for the further development of that which we are endeavoring to eradicate. *Sanatoria are hotbeds of bad suggestion.* These patients should be brought in contact with normal, healthy people *only*, and live in an environment of health.

For the foregoing reasons, I insist at the outset in transplanting these patients, during treatment, from the atmosphere in which their troubles developed, to a new and healthy one, even though it be only a block away from the patient's home. My personal plan is as follows: I usually select a hotel or boarding house, according to the patient's circumstances, in the vicinity of my office, where I may be assured of the patient's comfort, and where, without interference of sympathizing friends and relatives (which is understood at the outset) I can dominate the situation. As a rule, the cooperation of the patient is easily obtained. A most essential adjunct in the treatment is the service of an intelligent, tactful nurse companion. Such aids are, unfortunately, all too rare. The average hospital nurse is worse than useless; male nurses I rarely employ for such work. Fortunately, there do exist some trained nurses who, after a little experience, qualify successfully in this special field. Such a nurse is to serve as the physician's proxy in the management of the patient. I never allow my nurses to wear uniforms while with the patient, or to be spoken of before the patient as "nurse"; in fact, everything is done to eliminate the thought of sickness. As to the details of the routine followed in treatment, such as drugs, hydrotherapy, electrotherapy, exercise, recreation, and rest I shall not take time to specify, although all are of extremely great importance.

The psychoneuroses, embracing the psychasthenic and hysterical states, are treated in a manner similar to that briefly outlined above, but it is in connection with these conditions, especially the hysterical states, that I wish to dwell upon some of the more modern conceptions of psychological treatment. Here, again, the successful cure depends upon ascertaining the etiological factors in the given case, but, differing from the other forms of therapy, the determination or elucidation of the cause, by a process of psychoanalysis, is the thing that effects the cure. This method, for which we are indebted to Professor Sigmund Freud, of Vienna, was first evolved by him and his coworker, Breuer, in 1895 (*Studien über Hysterie*). However, it received but little notice as a direct method of therapy until very recently, and now, like everything which makes a sudden appeal, it is undoubtedly being abused in its application by extreme enthusiasts and those who are not qualified to know how to use it, and, consequently, fail in its proper application.

The psychoanalytic method, in brief, assumes that the basis of every psychoneurosis depends upon a psychic factor which is the determinant, and it is in the effort to ascertain what this may be that the analysis is undertaken. To subject the neurasthenic and average psychasthenic patient to this ordeal, which I shall presently describe, is absurd folly; yet this is all too frequently done, especially by overenthusiasts. In my opinion, it is a method of value in selected cases, especially those of the hysterical type. There is little or no difficulty for the trained and tactful neurologist, or I may say, general physician, in undermining the etiological factors in the psychic realm of the neurasthenic or average psychasthenic patient, for these are the patients who are conscious of their mental complexes, but often refrain from relating them to others, realizing a lack of appreciation or understanding on the part of the hearer, or through shame or fear hesitate to tell those things which are most formidable sources of anxiety to them. But once such a patient realizes that a competent and interested physician is at his disposal, his innermost thoughts and repressed complexes are poured out from his soul's depths. He is only too anxious to tell them to some one, but the restraint and repression exist until that *some one* has awakened in him a feeling of confidence and faith.

The development of faith is an essential factor, and a most potent one in its influence on the psychic state of all individuals, sick or well. The physician who obtains the confidence and faith of his patient can perform miracles. The privilege of the patient to relate his innermost thoughts to one in whom he has faith effects the cure by so called *psychic catharsis*. The confessional of the church obtains this result in much the same way. It matters not to what the individual pins his faith, be it a religious cult, a god, a relic, a fetish, or what not, he may be cured, provided his troubles are psychic.

To return now to the procedure of psychoanalysis, it will be essential to narrate briefly Freud's interpretation of the etiological factors essential to the development of the psychic states existent in the group of cases amenable to treatment by this method. The active etiological factors are always those experiences which produce a painful affect of fear, anxiety, or shame. These are spoken of as psychic traumata. Whether an experience becomes a psychic trauma naturally depends upon the individual, some being more susceptible than others. In the traumatic hysterias, for instance, the physical injury may be slight and yet manifest itself by profound physical disability. In these cases, the etiological factor is not the bodily trauma, but the affect of the fright, which is the psychic trauma. Such cases are common, and are very frequently encountered in the courts, where damages are claimed for disability from accident and injury. Cases of this type are justly entitled to their claims, within limitations, although frequently denied a just verdict because of the lack of convincing objective evidence to back up their claims of injury sustained. Here I am digressing upon a very interesting and important subject, but one foreign to this paper. To resume, in a case of hysteria, for instance, one trauma is not always the exciting factor, but frequently many, which may seem individually insignificant, but when grouped, act much the same as one of severe type. Freud further asserts that the "causal connection between the provoking psychic trauma and the hysterical phenomena does not, perhaps, resemble the trauma, which as the *agent provocateur* would call forth the symptom which would become independent and continue to exist." "The phychic trauma or the memory of the same acts like a foreign body, which even long after its penetration must continue to influence like a new causative factor."

The hysterical person suffers mainly from memories, but many of these have long been forgotten. The loss, however, of the affect of these memories depends upon the manner in which the person reacted to the experience which originated them. To quote Freud: "By reaction we understand a whole series of voluntary or involuntary reflexes, from crying to an act of revenge, through which, according to experience, affects are discharged. If the success of the reaction is of sufficient strength, it results in the disappearance of a great part of the affect. Language attests this fact of daily observation in such expressions as: To give vent to one's feelings. . . . To be relieved by weeping. . . . Hit back when struck," etc.

If the reaction is suppressed, the affect remains united with the memory. An insult retaliated, be it only in words, is differently recalled than one that had to be taken in silence. To obtain a reaction is, therefore, what is desired and this may be done voluntarily by the patient successfully in many ways, one of which is by talking the matter over, giving vent to the irritation of the experience in language, as in confession, which serves as a satisfactory reflex in many cases. However, many of these experiences are of so unpleasant and painful a nature that they are not reacted to, but repressed, which is the tendency of most individuals. Effort is made to forget that which is unpleasant, and so the thoughts of the experience are repressed without suitable reaction. The patient so intentionally inhibits and represses the memory of the psychic trauma from his conscious memory. These repressed psychic irritants are frequently reflected somatically, and are productive of many of the physical symptoms objectively evident in hysteria, e. g., contractures, tics, paralyses (blindness, deafness, aphonia, etc.).

By hypnosis, a short cut to a cure may be obtained by suggesting away from the patient the annoying symptoms, but it does not remove the etiological basis of the trouble. This is arrived at by analyzing the psychic state of the person and bringing to the surface from the cellar of the subconscious mind the memories of the original experiences; in other words, making the patient live through the experience again, and so producing a reaction by having the patient relate the details as recalled, thus bringing the memory so long buried to the surface and effecting an *abreaction*.

In some cases, to overcome inhibitory tendencies, or where conscious memory of the experience is lacking, the patient, when hypnotized, will recall the entire experience and relate it in detail. As a rule, however, the conversational method of free association, as Freud calls it, will suffice. Bringing the repressed complexes to the surface, in the content of the conscious mind, thus eliminating the irritant foreign body, is what effects the cure, by what is called psychic catharsis.

Jung, of Zurich, has devised a method which I will briefly mention, which may be resorted to in those cases where the method of free association fails to elucidate satisfactorily. This is known as the word association method, the awakening of thoughts by the use of stimulus words. In this the cooperation of the patient is essential. He must repeat at once the word or thought occurring to him in association with the word suggested. In this way, after a painstaking test, many valuable data may be obtained in awakening latent complexes.

This paper has already assumed a form too voluminous for me more than to mention, in closing, a matter always to be reckoned with in treating functional nervous conditions, especially the hysterical states; I refer to the sexual instincts. Sexuality is well known as a dominant factor in normal, and more so in abnormal psychological states. Freud asserts that all psychoneurotic illnesses develop on a basis of some abnormality of the sexual life. This may or may not be an exaggeration, but it certainly is a factor to be dealt with, especially in making a satisfactory psychoanalysis, and the relative frequency with which one undermines a sexual basis as a foundation of hysterical states is more than convincing that it is a dominant factor to which too little attention has been given. Fortunately, prudery and false modesty are daily becoming less and less, and we may now mention and discuss with our patients matters of sexual nature which formerly would have been considered highly improper.

One may well imagine the difficulty arising at times in acquiring a knowledge of the sexual life of a given patient, especially one of the female sex; but by the various methods at hand, and one more, of which I will merely make mention, very satisfactory data can be obtained.

The perversions and inversions may be satisfactorily explained by the Freudian interpretations of the sexual theory, and those afflicted may be cured, if they desire. However, I will not at this time dwell on this subject. The psychic traumata are so frequently of a sexual nature that any analysis is incomplete which does not involve a thorough consideration of the patient's sexual life.

I referred above to another method of obtaining valuable data; this is the analysis of dreams. In brief, dreams represent one of two things, either the experience of something which the person fears or dreads, or that which is desired or wished for. Most dreams represent the fulfilment of a wish. When the censorship of the conscious mind is eliminated, as in sleep, the thoughts occurring are frequently those of such a nature as the patient would not voluntarily entertain or allow to enter the mind. Dreams very frequently appear superficially to be absurd, yet upon analysis and interpretation they often symbolically lay bare many underlying motives. Here, again, the patient's cooperation is necessary, and if the dreams are correctly related the evidence is most enlightening and important.

112 West Eighty-fifth Street.

SEWAGE POLLUTION OF THE GREAT LAKES.

By Allan J. McLaughlin, M. D.,
Washington, D. C.,
Passed Assistant Surgeon, Public Health Service.

INEVITABILITY OF POLLUTION.

The Great Lakes with their very populous drainage basin cannot escape pollution even if the sewage of the cities were disposed of by the most approved methods. The same is true of their connecting rivers. After heavy rains, thaws, and floods, much pollution reaches these waters independent of the sewage which is discharged from city sewers.

This pollution of the lakes is greatest near shore, along the water front of great cities, and at the mouths of large streams. This polluted zone has no fixed boundaries. It may extend one half mile from shore, and it may extend five miles or more. This variability in the boundaries of the polluted zone is due to the irregularity of currents.

LAKE CURRENTS.

Direction and velocity of lake currents may be said to depend entirely upon the wind. The frictional action of wind upon bodies of water causes a surface current in the direction of or "with" the wind, and a piling up of the water on the shore directly opposed to the direction of the current and lowering of the water at the opposite end. There is also alteration of temperature by mixture and by importation of waters of different temperatures.

The direct effects of wind action are the most important from a sanitary standpoint. The first because of its direct carriage of polluted water for considerable distances. The second operates in two ways: 1. The rapid lowering of water level carries the polluted water in the low end of the lake out of harbors into the lake; 2, after the piling up of water at the high end of the lake and without a change of wind, pollution is carried out of harbors by a "backwash" or undertow in spite of the persistence of a surface current toward the shore. The effect of alterations of temperature, probably has less sanitary significance.

When an unusual disturbance of a large body of water occurs due to strong winds, the immediate results are as indicated above; a surface current in the direction of the wind, a piling up of the water on the lee shore, and a fall of the water on the weather shore. The return to stable equilibrium is effected by a series of rhythmic oscillations about a central nodal line. These rockings or oscillations are of decreasing amplitude until stable equilibrium is established, and in a comparatively long and narrow lake, with the wind in the direction of the long axis of the lake, resemble the motion of a child's seesaw or teeter. The Great Lakes because of rains, thaws, and floods on the watersheds are polluted near shore independent of the direct sewage discharge of the cities on their shores.

The boundaries of this shore pollution are variable depending upon the very variable winds and currents which prevail in the Great Lakes. For the same reasons the great connecting rivers are polluted, not only by the sewage of cities, but by the washings of the entire country side during storm and flood. This latter pollution alone is sufficient to make the water of these rivers unfit for drinking purposes without purification many days in the year.

REMEDIES FOR CORRECTION OF SEWAGE POLLUTED WATER SUPPLIES.

This brings us to consider what remedies are best adapted to the correction of our sewage polluted surface supplies. Purification of water supplies takes precedence over sewage purification in preventing water borne diseases for two reasons: 1. It is more effective; and, 2, it is cheaper.

As pointed out above the purification of city sewage, even carried to the extreme limit of feasibility, does not insure purity in either lake or river water at all times. It is therefore ineffective as a substitute for water purification. As a general problem it is cheaper to purify water than sewage.

Inasmuch as sufficient pollution is inevitable to render necessary purification of water supplies, even if sewage purification were carried out in our large cities, it seems pertinent to ask how much pollution may safely be permitted, in order to utilize the economic advantage of cheap sewage disposal. This brings us to the question of sewage disposal by dilution.

SEWAGE DISPOSAL BY DILUTION.

Two results may be attained by treatment of sewage: 1. The putrescible material may be changed to more or less stable constituents so that the effluent is stable or nonputrescible, thus obviating nuisance; 2, the bacterial content may be reduced and the pathogenic bacteria eliminated, so that the effluent will not be a factor in the transmission of disease. Sometimes sewage purification methods effect both these results; sometimes necessity demands only the avoidance of nuisance.

At other times, where there is ample dilution available, no nuisance can result, and the only necessary object is to secure an effluent which is not dangerous to health as a carrier of pathogenic bacteria.

Contact beds, sprinkling filters, and many other more or less complicated and expensive processes were devised primarily to avoid nuisance by charring or oxidizing the putrescible material in sewage, so that the effluent could be discharged into some watercourse without causing an offense to the senses. Various kinds of septic tanks were devised to effect the same result in another way, viz., by making use of the anaerobic bacteria for getting rid of at least a portion of the solid matter by digestion—and carrying out the putrefactive changes in the tank, hoping to get a stable effluent. The amount of sludge digestion in septic tanks and the character of their effluents have been a disappointment, but these methods, especially the oxidation processes effected by sprinkling filters, are useful and often necessary to prepare sewage effluents for discharge into streams with small flow to avoid nuisance and preserve fish life. From the standpoint of transmission of disease it must be remembered that these processes do not render the effluent safe, and although the putrescible material is reduced or removed the bacterial count remains high.

In considering sewage purification in cities on the Great Lakes or their connecting rivers, the question of preventing nuisance is not difficult of solution. It is estimated that a stream flow of three to seven cubic feet a second will care for the sewage of 1,000 persons without nuisance, or that a dilution of fifteen to twenty times the quantity of sewage discharged will be sufficient to obviate nuisance.

In view of the enormous quantity of water available for dilution, the only object to be obtained in the lake cities by sewage disposal plants is to obtain an effluent which does not endanger the public health by transmission of pathogenic organisms.

Disposal of sewage by dilution is the cheapest known means, and where this method can be employed without detriment to the water supplies or danger to the health of other communities the exaction of more complicated and expensive methods is scarcely justifiable. In cities on the seaboard disposal by dilution has been employed and is justly considered to be an asset of great value.

This is an age of conservation and there is a natural tendency to conserve our natural resources. By utilizing dilution in sewage disposal, we take advantage of a natural resource and save millions of dollars. When this may be done without detriment to the public we are justified in taking advantage of the opportunity.

How far should treatment of sewage be carried as an adjunct to the necessary water purification? No rule can be formulated to cover all places. Each problem must be considered separately and a balance struck between these two great agencies in the protection of the public health.

It becomes an economic question. The combination which will protect the public health at the least cost should be the one selected. Sewage disposal by dilution should be permitted in the Great Lakes for economic reasons where this may be done without danger to the water supplies of other communities, or where such methods do not place an unreasonable burden or excessive cost upon the water purification plants of those communities.

The problem of sewage pollution of interstate waters with special reference to the spread of typhoid fever has been studied intensively by the writer for the past two years. During that time his investigations have covered the entire drainage area of the Great Lakes within the United States from Duluth, Minn., to Ogdensburg, N. Y. As a result of this study certain fundamental facts seem to stand out prominently in the discussion of this problem.

1. The primary necessity from a sanitary standpoint is safe water supplies, 365 days in the year without waiting for solution of sewage disposal problems.

2. In spite of the most elaborate methods of sewage purification, pollution of these waterways will take place at certain times, so that sewage purification cannot be considered a substitute for the inevitable purification of water.

3. Because of winds and currents, floods and thaws, the boundaries of the zone of shore pollution are constantly changing. The only way to secure safe water every day in the year, without unjustifiable expense, is by some method of water purification.

4. Sewage purification may often be an aid and sometimes a necessity to improve the quality of the raw water, but will rarely, if ever, make one of these surface supplies absolutely safe. For this reason it must be considered as secondary to water purification in preventing water borne diseases.

5. The use of streams for sewage disposal within permissible bounds is an economic advantage and absolute prohibition of this use is unjustifiable.

6. Such use of streams is sound in principle and safe in practice *when proper restrictive control is exercised.*

7. The permissible limit of pollution of each river, lake, or waterway can only be fixed by careful study of the waterway of the uses which must be made of it and to which it is best adapted.

8. That although prevention of all pollution is impossible, control of pollution is feasible and imperatively necessary. The absolute prohibition of discharge of sewage into these waters is scarcely justifiable and the legality of such legislation would be extremely doubtful.

9. The discharge of sewage should be under control and permitted, when possible for economic reasons, within certain limits. The permissible limit of such reasonable use should be fixed by official standards of the raw water after a careful sanitary survey and consideration of the purposes for which the waterway is necessary or available.

10. These official standards would have to be made for each problem separately and independently, it being manifestly impossible to attempt to fix any general standards of raw water to cover all cases.

The acceptance of these basic facts will tend to prevent unjustifiable generalization in a problem where each city is a law unto itself. By allowing a reasonable use of these interstate waters in the reception of sewage or sewage effluents subject to such restrictions coupled with water purification, which will amply protect the public health, the more intensive processes of sewage purification may in many cases be avoided. A city may thus be saved a very great expense which could be justified only on sentimental and not on practical grounds.

To attempt the impossible is not only to court certain failure, but further, such attempts make difficult any later efforts of a more conservative and practical nature.

TWENTY-FIFTH AND E STREETS, N. W.

THE COLORADO METHOD FOR THE EXAMINATION AND CARE OF PUBLIC SCHOOL CHILDREN.*

By MARY ELIZABETH BATES, M. D.,
Denver,
President, Humane Education Society.

Following is the Colorado law. The provisions in italics are the only amendments, made by the Senate and concurred in by the House, to the bill as I wrote it and as it was introduced in the House by Hon. Alma V. Lafferty, the one woman member of the Assembly. Section 2 without its amendment, was included in a bill to collate the School Laws introduced in the previous Assembly, but failed of passage.

It is the duty of the State Bureau of Child and Animal Protection to promote the interests of all the children in the State, to secure the enactment and enforcement of legislation for their benefit, and to have especial care of the abused, neglected, dependent, delinquent, and defective children. For this reason it was made the especial duty of the Bureau of Child and Animal Protection to enforce the Physical Examination (Bates) law, at the suggestion of its executive officer, the secretary, Mr. E. K. Whitehead who has long been particularly interested in what might be termed prophylactic child protection. The Bureau of Child and Animal Protection has endeavored to promote the physical welfare of the children coming under its especial care, but has been able to do so universally and more effectively since the passage of this law. The Bureau has brought several prosecutions for failure to conform to the statute but has not brought any such cases in the Juvenile Court of Denver.

The Denver Juvenile Court has a corps of special officers designated to look after the delinquent children of this city, but has never paid any attention to possible physical defectiveness as a cause of delinquency, nor has it made any attempt to remedy such defectiveness either by recourse to this law or in any other way.

AN ACT PROVIDING FOR THE EXAMINATION AND CARE OF CHILDREN IN THE PUBLIC SCHOOLS, AND MAKING AN APPROPRIATION IN CONNECTION THEREWITH.

Be it Enacted by the General Assembly of the State of Colorado:

Section 1. The State superintendent of Public Instruction shall prepare or cause to be prepared suitable test cards, blanks, record books, and other needful appliances and supplies to be used in testing the sight, hearing, and breathing of pupils in the public schools, and the necessary instructions for their use; and shall furnish the same free of expense to every public school in the State. The teacher or principal in every public school, or where there is no principal, the county superintendent, shall, during the first month of each school year, test the sight, hearing, and breathing of all pupils under his charge; *such examination to be made by observation without using drugs or instruments, and without coming in contact with said child;* and keep a record of such examinations according to the instructions furnished and make a written report of such examinations to the State superintendent of Public Instruction as he may require.[1]

Section 2. Every teacher in the public schools shall report the mental, moral, and physical defectiveness of any child under his supervision, as soon as such defectiveness is apparent, to the principal or, where there is no principal, to the county superintendent. Such principal or county superintendent shall promptly notify the parents or guardian of each child found to be defective, of the child's defectiveness, and shall recommend to such parents or guardian that such child be thoroughly examined as soon as possible by a competent physician or surgeon with special reference to the eyes, ears, nose, throat, teeth, and spine.

If the parents or guardian of such child shall fail, neglect, or refuse to have such examination made and treatment begun within a reasonable time after such notice has been given, the said principal or superintendent shall notify the State Bureau of Child and Animal Protection of the facts; *Providing, however, that whenever it shall be made to appear to the said principal or superintendent, upon the written statement of the parent or guardian of said child, that such parent or guardian has not the necessary funds wherewith to pay the expenses of such examination and treatment, the said principal or superintendent, shall cause such examination and treatment to be made by the county physician of the district wherein said child resides; and it shall be the duty of such county physician to make such examination and treatment, and if he be unable to properly treat such child he shall forthwith report such fact to the county commissioners of the county with his recommendation.*

Section 3. The State auditor is hereby directed to draw his order for such sums and at such times as the State superintendent of Public Instruction may require to carry out the provisions of this act. The total expenses under this act shall not exceed one thousand ($1,000) dollars in any biennial period ending November 30th.

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*Read at a conference on Conservation of School Children, Lehigh University, South Bethlehem, Pa., April 4, 1912, under the auspices of the American Academy of Medicine.

[1] Adapted from Dr. Frank Allport's Vermont law.

Before the measure was introduced it had been endorsed without suggestion of change by the State superintendent of Public Instruction, Mrs. Katherine M. Cook; the superintendent of the Denver Public Schools, Dr. Charles E. Chadsey; the Executive Committee of the State Teachers' Association and the Association itself; the State Ophthalmological Society; the Democratic Women's Legislative Committee and the Colorado Federated Women's Clubs' Legislative Committee, but none of them had any part in its passage.

There was no real opposition in the legislature, but the bill happened to present a convenient excuse for filibustering tactics and the constant attention it required for safe conduct through every possible legislative procedure devolved upon Mrs. Lafferty and myself. Governor Shafroth promptly signed it, and it went into effect in July, 1909.

The circular letter of instructions on the modus operandi of the law, the record blanks, tests, letters to parents, etc., were prepared by the then State superintendent of Public Instruction, Mrs. Katherine M. Cook, and myself, and they are still in use. Tests and blanks in use in other States and cities were consulted and adapted to our conditions and purposes. The text thereof is as follows, and the Colorado method is best comprehended by reading them in their entirety.

INSTRUCTIONS

ON THE LAW FOR THE EXAMINATION AND CARE OF PUBLIC SCHOOL CHILDREN.

[Circular Letter.]

The teachers will fill out the blanks in the Teachers' Record Cards as instructed, using the carbon paper to make two copies at the same time; the one marked "Principal or county superintendent" is to be sent to those officials, and the other marked "Teacher's Stub" is to be left in the book for subsequent reference, comparison, and summary.

Use a good, sharp pointed pencil with force enough to produce clear copies not easily erasible.

If it becomes necessary to rerecord a pupil during the same school year, affix the second stub to the stub of first record.

The teacher will place a * in red ink after the names of pupils whom she considers it desirable or necessary to refer for medical attention in accordance with the law, and indicate the reason therefore by a * opposite the number in the margin of the record card where defectiveness is indicated.

The principal or county superintendent will file the teachers' record cards when received with the Notice of Parents Book.

The record cards of pupils whose parents the principal or county superintendent notify are to be attached to the stub of the corresponding notice to parent or guardian, as directed thereon.

The principal or county superintendent will send the notices to parents or guardians in accordance with the law (Session Laws of 1909, page 490), and record same on the record card received from the teachers.

Should the principal or county superintendent require medical care for pupils not advised by the teacher or not require it of any so recommended, he will notify the teacher to that effect, with date of sending of notice. In lieu of information to the contrary the teacher will assume that notices have been sent when marked therefor on her record card, and will date the "reasonable time" allowed for the return of the physicians' report from the date of the sending of the record card to the principal or county superintendent.

The physicians' report is to be returned to the teacher. If within a reasonable time the physician's report is not received by the teacher or proves to be unsatisfactory; or where in lieu thereof the parent or guardian sends a written statement that he has not the necessary funds wherewith to pay the expenses of such examination and treatment; the teacher will send a *failure notice* (with such written statement if any) to the principal or county superintendent, recording same on the pupil's teacher's record card.

The principle or county superintendent will record the failure notice on pupil's record card and forward the notice to the State Bureau of Child and Animal Protection, State House, Denver.

If a written statement of inability to pay accompanies a failure notice, the principal or county superintendent will at once "cause such examination and treatment to be made by the county physician of the district wherein said child resides"; who if unable to treat such child shall forthwith report such fact to the county commissioners with his recommendation. If satisfactory results are not had within a reasonable time, the failure notice, written statement of inability to pay, statement of reference to county physician, etc., with other information germane to the case, is to be forwarded by the principal or county superintendent to the State Bureau of Child and Animal Protection.

What constitutes a "reasonable time" will be left to the judgment of the teacher, under the advice and direction of the principal or county superintendent. If, after taking all the circumstances into consideration, doubt exists, refer the matter to the Bureau of Child and Animal Protection, with full particulars.

Whatever unpleasant or difficult duty may arise in the enforcement of the law for the examination and care of school children, is laid by the law, not upon the teacher, the principal, the county superintendent or the State superintendent of public instruction, but upon the State Bureau of Child and Animal Protection.

Whenever the State Bureau of Child and Animal Protection receives a failure notice it will at once send its own notice to the parent or guardian requesting compliance with the law, and will, at the same time notify the teacher of that action.

In most cases a notice from the bureau will be sufficient to induce prompt obedience to the law. If, however, they still "fail, refuse, or neglect," the teacher will send a second failure notice, marked "No. 2," to the principal or county superintendent, who will forward it to the State Bureau of Child and Animal Protection at the State House, Denver. The date of the second notice is to be recorded also upon the record cards.

When the Bureau of Child and Animal Protection receives a failure notice accompanied by a written statement of inability to pay, etc., it will investigate and assist.

When the bureau receives a second failure notice it will send an officer who will first consult with the teacher, if possible with the principal or county superintendent, and acting under the direction of the bureau will take charge of the case.

In most communities there is at least one local volunteer officer of the Bureau of Child and Animal Protection, fully empowered to act, and to whom the teacher might be disposed to report cases, unless otherwise instructed. But in order to obtain accurate records and for other obvious reasons, teachers are instructed to report all cases in accordance with the directions herein prescribed.

Teachers will record the results of the law enforcement by the State Bureau of Child and Animal Protection upon the pupil's record card.

The teachers will fill out the teacher's summary blanks and mail to the county superintendent at the end of the fall term and at the end of the school year.

The county superintendents will fill out the county superintendent's summary blanks and mail to the State superintendent at the end of the fall term and at the end of the school year.

Record card books and all other supplies for the execution of the provisions of the State "For the Examination and Care of School Children," or any part of them are to be sent upon her demand to the State superintendent of Public Instruction.

Teacher should cross out words not needed and fill in blanks when occasion demands.

All unused blanks should be returned to County Superintendent's office.

INSTRUCTIONS
ON
SIGHT, HEARING, AND BREATHING TESTS.

In Accordance with Chapter 203, Pages 490-491, Sections 1, 2, and 3, Session Laws of 1909.

To Superintendents, Principals, and Teachers:

The examination should be made by the teacher under whose immediate observation the child is to be, and under the direction of the principal, or where there is no principal, of the county superintendent.

It is to be made during the first month's attendance of the child during each school year.

Every child must be examined.

The examination must be made privately and singly.

The record blanks must be filled out with the data obtained, and kept on file. The duplicate is to be sent to the county superintendent at the end of each school term and upon request of the State superintendent.

CHART No. I.

DISTANCE VISION CHART—LETTERS.

Sight—

Children already wearing glasses should be tested with such glasses properly adjusted; *i. e.*, frames straight, lenses on the same level and not touching the eyelashes. The head must be held straight, not tilted, and the eyes must look through the centres of the lenses.

The vision chart must be kept in this envelope when not in use, as familiarity with it leads to an acquaintance with its letters. When it becomes soiled and worn, apply for a new one. Do not cover it with glass.

Place the vision chart on the wall in good light, side light preferred, and on a level with the child's head.

Place the child at a distance of twenty feet from the chart and directly facing it.

Examine each eye separately. Hold a card in front of and close to one eye, while the other eye is being tested.

Press the card against the nose, but not against the covered eye, as pressure on the eye will induce an incorrect result.

Have the pupil begin at the top of the chart and read aloud down as far as he can; first with the right eye from right to left and then with the left eye from left to right.

The line marked 20 should be seen and read at a distance of twenty feet if the child has normal vision.

To record the acuteness of eyesight:

The number opposite each line of the vision chart shows the distance in feet at which those letters should be read by a normal eye. If the eye reads the letters (or with a mistake of only one or two letters) on the line marked 20, the vision is to be noted as 20/20, or normal; if the smallest letters which can be read are on the 30 foot line the vision will be noted as 20/30 (if vision is 20/30, parent need not be notified, if child is otherwise in good health), if on the 40 foot line, as 20/40; and so on.

If the child cannot see the letters on the 200 foot line, have him approach slowly until he can see them. If 15 feet is the greatest distance at which he can read them, the record will be 15/200; if 10 feet, 10/200; and so on.

To prevent memorizing, one letter at a time may be shown, and in irregular order, by covering the others with a piece of pasteboard having a hole cut in it, large enough to expose one letter.

CHART No. II.

DISTANCE ILLITERATE VISION CHART—FIGURES.

Use this chart in place of the "Distance Vision Chart—Letters" for children who do not know the letters, and in exactly the same way as directed for Chart No. I.

CHART No. III.

ASTIGMATISM CHART.

Test for astigmatism:

Use the astigmatism chart in the same way at the same distance. If all of the lines are seen as equally dark and heavy, the child has no apparent astigmatism.

If one or more of the lines are seen to be blacker and heavier than the others, the child has apparent astigmatism, and the record should show which line is the blackest by its number on the chart.

Whenever it is learned that the child has less than 20/20 vision in either eye, or can see unusually far; that the lines on the astigmatism chart are not seen to be of even blackness; that the focusing power is markedly poor; that the child habitually tilts the head; that the eyes or eyelids are habitually red or inflamed, or styes have existed; that the eyes are crossed or have a strained appearance; that headaches of any kind, or pain in eyes or head, follow use of the eyes in reading, music reading, sewing, or other near work with the eyes; that train sick headaches or morning headaches in the back of the head are frequent; or that the letters blur or run together when reading; the teacher will refer the case to the principal or county superintendent, who will send a notice to the parent or guardian of the child, that the child's eyes need medical attention, as the law requires. Effectual medical attention, with properly fitted and properly worn glasses, will cure most of these conditions.

HEARING.

Ears:

All children should be examined. Children should be examined privately and singly.

Examine the ears separately and together.

Ascertain whether the child has earache, has pus or a foul odor proceeding from either ear; suffers from frequent "colds in the head"; is subject to a constant catarrhal discharge from the nose or throat; or has noises in the ear.

Seat the child, with both eyes closed, facing you, near one end of a *quiet* room with the windows *closed*, and begin the tests of the hearing at a measured distance of twenty-five feet. The test is to be made by having the pupil close one ear tightly with his finger, while you observe the ability of the child to repeat your moderate whispers, with equal emphasis, of numbers between twenty-one and ninety-nine, inclusive—avoiding numbers with ciphers. Avoid having a wall behind you to act as a sounding board.

Record the distance at which the child correctly repeats a series of three numbers, which gives his hearing distance for that ear, thus:

If he repeats the numbers correctly at twenty-five feet, his hearing is 25/25, or normal; if the child only repeats the numbers correctly at twenty feet, his hearing is 20/25; and so on.

Further tests for ears, thus found defective, can be made by observing the greatest distance at which each ear can hear the tick of an ordinary watch. The normal distance is at least three feet.

When the hearing of either ear is found to be defective, the teacher will refer the case to the principal or the county superintendent, who will at once notify the parent or guardian of the child, that the child's ears need medical attention, as the law requires.

BREATHING.

Ascertain whether the child is a constant or frequent mouth breather; has frequent attacks of tonsillitis or sore throat; has a flat or depressed chest; occluded nostrils or difficulty in breathing on exertion.

To ascertain if the nostrils are occluded, have the child press his fingers against one side of his nose and breathe forcibly through the other—note whether one side or the other is stopped up.

If any of these conditions exist, or are of frequent recurrence, the teacher will refer the case to the principal or county superintendent, who will notify the parents or guardian of the child, as the law requires.

COLORADO PUBLIC SCHOOLS.
RECORD CARD.

Date...............

TEACHER'S TESTS OF SIGHT, HEARING, BREATHING, AND MENTAL, MORAL, AND PHYSICAL DEFECTIVENESS.

City or Town..........County..........School.......
Principal's name............Teacher's name............
Superintendent's name........................
Pupil's name ....
Age.........Sex...........Nationality.............
Parent's or guardian's name.........Address..........

From 4 to 11 underline in ink the points that apply to this pupil.

1. SIGHT ....
   Glasses used—Yes, No.........................
2. HEARING ....
3. BREATHING ....

4. Mental activity, (Good.....Average.....Slow.....)
5. Mental defectiveness ....
    1. Inattentive.............
    2. Backward............
    3. Imbecile............
6. Frequent absences...........Cause ....
7. Moral defectiveness.....Vicious personal habits.....
    Moral delinquencies...........
8. Physical activity (Excessive...Average...Poor...)
9. Posture...............................
10. Vaccination—Yes, No..........
11. Physical defectiveness—Under or over development, uncleanliness, twitchings, limping, deformity, head tilting, offensive breath, skin eruptions, frequent colds, hoarseness, cough, nasal, voice, pain in head, hip, or knee, headaches, backaches, signs of fever, signs of contagious diseases, pallor, poor circulation, teeth (crooked, prominent, decayed, dirty), frequent urination, enlarged glands, stuttering.

Indicate marked mental, moral, or physical defects.

Disposition of this case...............................
(*a*) Parent or guardian notified........Date............
(*b*) Examination instituted.............Date...........
(*c*) Result................Report of physician returned.
(*d*) State Bureau of C. and A. P. notified.
(*e*) Remarks ....

These record cards on sheets, in pairs, are made up in pads, a carbon sheet being used between each pair.

The first of each pair bears the following footnote:

This sheet is to be sent by the teacher to the principal, or where there is no principal, to the county superintendent.

The second, being the carbon duplicate, has the following footnote: Teacher's stub—Retain for reference.

PRINCIPAL'S OR COUNTY SUPERINTENDENT'S STUB.

To this stub attach for permanent record, when received, the duplicate record card of the teacher's test of sight, hearing, breathing, and mental, moral, and physical defectiveness, from which make up the reports to the superintendent of public instruction, to the State Board of Child and Animal Protection, and the notification letter to parent or guardian. Sections 5873a and 5995a, School Laws of the State of Colorado, 1909.

STATE OF COLORADO.

NOTICE TO PARENT OR GUARDIAN.

THIS NOTICE DOES NOT EXCLUDE THE PUPIL FROM SCHOOL.

THIS NOTICE EXCLUDES THE PUPIL FROM SCHOOL FOR...WEEKS

School............ Town............ County............

..........................19..

Mr. ....

Your child, , has been examined according to sections 5873a and 5995a, School Laws, '09, and it is found that......[2]sight, hearing, breathing, seem to be defective, and we advise that the child be taken to a competent physician for examination and treatment.

If this notice with a satisfactory report from the physician employed is not returned to the child's teacher within a reasonable time, it will be considered as failure, refusal, or neglect to comply with the law, which will necessitate report of the same to the State Bureau of Child and Animal Protection.

In case of contagious disease, the pupil will be excluded from school in accordance with the rules of the State and local boards of health..

....
Principal.

....
Co. Superintendent.

Date of notification of parent or guardian...............
Examination instituted ....
Treatment begun ....
Result to child.......................................
Date of notification of State Bureau of Child and Animal Protection ....
Remarks: ....on further course of case.......

REPORT OF PHYSICIAN.

Town ....County ....Date ....19..

....
Teacher.

Dear Sir: Madam:

I have examined....................in accordance with your recommendations and find the following conditions, and have instituted the treatment as noted:

Eyes ....
Ears ....
Nose ....
Throat ....
Teeth ....
Spine ....
General conditions ....
Contagious disease ....
Diagnosis ....
Remarks ....
....
....
....

Respectfully,

....
Physician.

....
Address.

....
Physician.

Attach to original teacher's record when returned.

PHYSICAL EXAMINATION REPORT TO SUPERINTENDENT OF PUBLIC INSTRUCTION.

	Male.	Female.	Total.
Enrollment	....	....	....
Number of pupils examined..........	..	....	....
Number of pupils with defects of sight	...	....	....
Number of pupils with defects of hearing	..	....	....
Number of pupils with defects of breathing	....	....	....
Number of pupils with mental defects	..	..	....
Number of pupils morally defective....	..	..	....
Number of pupils physically defective other than enumerated	....	....	....
Total number of pupils with one or more defects	....	....	....

....
Superintendent of Schools.

............, 191.. of ....County ....

From the Biennial Report of the State superintendent of Public Instruction, 1909-1910. Mrs. Katherine M. Cook:

Physical Examination:

Among several worthy laws concerning schools, enacted by the Seventeenth General Assembly, no one was of greater importance for the protection of children than that concerning the physical examination of children.

While the returns are incomplete and not wholly accurate, owing to unfamiliarity of teachers with the law and its provisions in this, the first year of its existence, they are sufficiently complete and reliable to give a fair idea of its importance.

The report is tabulated by counties, and will be found among statistics at end of this volume. Out of the sixty counties in the State, Dolores, Garfield, Kiowa, Larimer, Park, and Washington failed to make any return. The law was not complied with by the superintendents, principals, and teachers of these counties, and the children in their schools are not included in the totals.

In the remaining fifty-four counties 108,798 children are enrolled. Of this number 92,427 were examined, with the result that 41,546 were found defective physically, mentally, or morally to a degree sufficient to warrant reporting their condition to their parents, in accordance with the terms of the law.

Surprising as this result is, and certain as it is to be received with incredulity by all who have given the matter little or no attention, it is still short of the percentage of defectives found elsewhere. It must be remembered that this examination is pretty thorough and searching, and covers defectiveness of any kind, which in many cases might go unnoticed for years, even by the parents of the children. This is especially true of the sight, hearing, and breathing tests. The law provides that especial attention be paid to the eyes, ears, nose, throat, teeth, and spine. If defectiveness were looked for in no other organs, and if mental and moral defectiveness were left out altogether, the number of children found defective would very nearly equal the total found. In fact the returns show that sight, hearing, and breathing alone would account for nearly all of them. The number of adults who have perfect sight, perfect hearing, and whose air passages are in normal condition is very small, indeed; and while the proportionate number of children normal in these respects is higher, it is much lower than most people suppose.

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[2] Cross off words not needed.

The returns from Colorado show forty-five per cent. of defectiveness in the children examined. In Chicago, out of 123,897 children examined, fifty-one per cent. were found defective; in Kansas City fifty-six per cent. were found defective.

Out of the 41,546 children found defective in Colorado, defects of sight existed in 26,978, hearing in 6,155, breathing in 8,045, and other unclassified defects, 21,825. There were 3,071 mental defectives and 746 moral defectives.

In Chicago 32.3 per cent. had defective teeth, twenty per cent. enlarged tonsils and 15.9 per cent. defective vision. In Colorado 29.1 per cent. had defective vision, a difference which our brilliant sunshine and frequent dust storms may perhaps account for in part.

In Colorado 6.6 per cent. had defective hearing and 8.8 defective breathing.

It was found in one school in Denver, the only one in which such a record was kept, that the teachers' examination made under the directions from the superintendent of public instruction, was confirmed by the physician's diagnosis in ninety-eight per cent. of the cases discovered by teachers and reported to the parents for medical examination. If a like degree of accuracy or anything approaching it was reached in the rest of the schools hardly anything better can be asked.

Without going further into an analysis or comparison of the results obtained than to say that they show for the first year a value and importance not merely justifying the law, but fixing its place as a permanent part of our school law not less in importance than the instruction for which our schools have heretofore existed, it may be said that Colorado is far in the lead of any other State or country in the world. England is the most progressive foreign country in this respect, yet she ranks below Massachusetts, and the superiority of the Colorado law over that of Massachusetts is so great as to be practically out of comparison.

Out of the 41,546 cases of defectiveness reported to the State superintendent of public instruction as having been discovered, and presumably reported to the parents of the children, 221 cases were reported by teachers to the State Bureau of Child and Animal Protection for failure of parents to have the medical examination indicated by the teachers' examination made. Whether this was the total number of cases which should have been reported we have no means of knowing. In the absence of further information it may be assumed that it does not depart far from the total which should have been referred.

With one exception the parents in all these cases were induced by letter or by the visit of an officer to do whatever the children's condition required. In the one case where it was necessary to bring the parents into court the child's throat was nearly closed by enlarged tonsils and his health seriously affected. At the trial the father was sentenced to thirty days' imprisonment.

Owing to the failure of some superintendents, principals, and teachers to comply with the law and the reluctance of others to do so the instructions of the State superintendent of public instruction this year contain the following paragraphs:

"The requirements of the law providing for the examination and care of children in the public schools are mandatory upon teachers, principals, and county superintendents.

"In all cases where teachers, principals, and county superintendents fail, neglect, or refuse to comply with the terms of the law it will be the duty of the State Bureau of Child and Animal Protection to enforce against them the provisions of the following sections of the law for the protection of children: "'It shall be unlawful for any person having the care or custody of any child wilfully to cause or permit the life of such child to be endangered, or the health of such child to be injured, or wilfully to cause or permit such child to be placed in such a situation that its life or health may be endangered . . . or in any other manner injure such child.

"'Any person who shall be convicted of violating any of the provisions of the preceding section of this act shall be fined not exceeding one hundred dollars, or be imprisoned in the county jail not exceeding three months, or both, in the discretion of the court; and upon conviction for a second or any subsequent offense shall be fined not exceeding two hundred dollars or be imprisoned in the county jail not exceeding two months.'"

A quantity of informative circulars, one on the care of the teeth, prepared by the Denver Dental Association, and one on the care of the eyes, ears, nose, and throat, prepared by the Humane Education Society, Denver, were sent to the county superintendent of schools, accompanied by the following letter:

STATE OF COLORADO
DEPARTMENT OF PUBLIC INSTRUCTION.
DENVER.

February 14, 1910.

To the County Superintendent of Schools:

I am sending some circulars on the physical care of children, prepared by the Humane Education Society and Denver Dental Association. They are for general distribution. It is hoped, by those who have issued them, that they will prove of some assistance in the enforcement of the new law on the physical examination and care of children in our public schools.

Respectfully,
KATHERINE M. COOK.

The circulars mentioned have, also, been incorporated in the State course of study.

While we were somewhat lenient in the enforcement of this law, during the past year, because of its newness and the fact that parents and teachers were both unfamiliar with its provisions, I believe it should hereafter be rigidly enforced, and I feel the utmost confidence in the ultimate good to be accomplished thereby.

OFFICE OF THE STATE SUPERINTENDENT OF PUBLIC INSTRUCTION
DENVER, COLORADO.

CARE OF THE TEETH.

Teeth that are well cared for are beautiful as well as useful.—Their chief use is to prepare the food for the stomach—to grind the food and mix it with the saliva. Food that is not thoroughly chewed causes indigestion and constipation.

Teeth should last to the end of life.—If they do not it is due to decay or loosening.

Decay is caused by acids, formed from bits of food left after eating, along the edge of the gums, between the teeth, and in the crevices of the grinding surfaces.

Loosening of the teeth is caused by diseased gums.—Tartar is the chief cause of diseased gums. Swollen and bleeding gums are diseased gums. The way to prevent decay and loosening of the teeth is to keep them clean. The general health will be better if the teeth are kept in good condition, so that the food can be thoroughly chewed.

If children are taught to chew their food thoroughly their teeth will grow strong and healthy.—Teeth can best be kept clean by scrubbing with a fairly stiff brush, with bristles well apart, to reach between the teeth, and some good powder or paste. Scrub all sides of the teeth, and in all directions, for at least two minutes, night and morning.

Irregularities of the teeth should receive careful treatment, especially those which make it impossible to close the teeth properly, thus leading to poor digestion and mouth breathing.

The first permanent molars are the most important teeth in the mouth.—They come at about the sixth year, and are located right back of the temporary or "baby" teeth, and are often neglected because they are mistaken for temporary teeth.

The temporary teeth should last until the permanent ones come in.—Any that decay before that time should be filled. This is necessary to the good health of the child. As good care should be taken of the temporary teeth as of the permanent ones. Too early extraction of the temporary teeth is a cause of deformities of the mouth.

A dentist should carefully examine the teeth at least twice a year.—A bad condition of the throat, the nose, and the ears is made worse by decayed teeth. They add to the chances of catching infectious diseases. Well cared for teeth and a clean mouth help prevent *tuberculosis.*

CLEANLINESS IS THE BEST GUARD AGAINST DISEASE.

The sense of hearing is very valuable to every one.—Although each person has two ears well protected in dense bone, they are readily reached by diseases that attack the lining membrane of the nose and throat, such as colds, la grippe, measles, scarlet fever, and diphtheria.

The ears are connected with the throat by two gristle-like tubes. It is through these tubes that air is forced into the middle ear cavities during the act of swallowing. For good hearing there must be air in the middle ears to balance the air pressure from without.

There is a pair of glands, called tonsils, one on either side of the root of the tongue, and also naturally (normally) a small tonsillike mass called adenoids, in the upper part of the throat, close to the tubes leading to the ears.

When either the tonsils or the adenoids become too large, they interfere with the air entering the tubes to the ears and with the circulation of the blood to and from the ears. As a result the hearing becomes dull, especially when the child has a "cold." Repeated "colds" bring about lasting dullness of the sense of hearing.

Children with earaches almost always have adenoid growths.—Earaches should have prompt and proper care for they may result in deafness or in serious disease of the bone in which the middle ear is located.

"Running ears" are diseased ears.—If neglected they result in damaged hearing and are a source of danger to life. All such ears should be kept clean and have proper treatment.

Nasal breathing is not only necessary for the preservation of hearing, but for the general health. It is known that even in dogs when nose breathing becomes impossible the hair falls out, the skin grows wrinkled, and asthma sets in. And the same thing happens to the puppies born when the mother dog is so affected.

Bony deformities and other growths inside of the nose may also prevent nose breathing and, like tonsils and adenoids, by causing mouth breathing, give rise to deformities of the upper jaw, irregular teeth, and to a number of nervous troubles and diseases, such as St. Vitus's dance, night terrors, headaches, restlessness, night sweats, mental dullness, backwardness in school, asthma, rheumatism, and tuberculous glands of the neck.

Mouth breathers are more liable to contagious diseases and to diseases of the bronchial tubes and lungs, which are more apt to be fatal than in nose breathers.

Practically all of the causes of mouth breathing are curable, and the earlier they are removed the easier it is for the child to overcome the "mouth breathing habit."

(Information for parents. Prepared for the Humane Education Society, Denver, by Dr. William C. Bane, Dr. Osee W. Hoffman, and Dr. Mary E. Bates.)

EYES.

Eyes are necessary for self protection and to make a living, yet they are the least cared for and the most abused part of the body.

Eyestrain is an excessive or abnormal effort of an eye or a pair of eyes to maintain perfect vision (sight).

Eyestrain is due chiefly to some defect in the shape of the eyeball or to weakness of the muscles of the eyes. It may also be due to or made worse by overuse or unwise use of the eyes.

A perfect eye can be strained by over or unwise use just as a perfect arm or leg can be. There are few perfect eyes.

The imperfect eyes are on a strain whenever open.—They are more easily harmed by over or unwise use. This means a leakage of nerve force in the eyes and in other parts of the body. Such eyes may seem to be perfect and yet by using up more nerve force than their share, in order to see, may lead to diseases in other parts of the body thus deprived of nerve force.

Slight imperfections of the eyeballs causing small amounts of eyestrain often do more harm by continuously undermining the general health than do the greater ones that are more readily felt and hence more quickly relieved.

Reading while lying down, and by poor light, night or day, is harmful to the eyes.

SOME BAD EFFECTS OF EYESTRAIN.

Headache and neuralgia, particularly over the brows and in the back of the head and neck.

Inflammations: redness, scales, crusts, and styes of the eyelids and ulcers of the eyeball.

Cross eyes: the eye that crosses usually loses vision from nonuse and may become practically useless if not corrected.

Reflex nervous conditions: epileptic spasms, convulsions, "nervousness," restlessness at night, palpitation of the heart, St. Vitus's dance, nausea, vomiting, indigestion, a "run down" and even more serious physical conditions are common.

Watering of the eyes and blurring, when reading, sewing, or doing other near and fine work.

Backwardness in mental growth, and truancy.—Eyestrain produces an irritation in the brain expressed by a restless desire to run away from school (and near work) and then they stay away for fear of failure in class.

Tilting of the head.—When constant this is often due to an effort to straighten out crooked vision and may lead to spinal curvature with its bad effects.

Holding the work close to the eyes shows eyestrain.

When these conditions are caused by defects in the eyeballs, glasses are necessary and they cannot be permanently cured without glasses.

Children's eyes should always be tested with pupils dilated by atropine (belladonna).

Spectacles are better than nose glasses.

It is as necessary to keep the glasses on straight as it is to have a proper fit. If glasses are not comfortable or do not fit they will be taken off and not worn. Because a child refuses to wear the glasses it is no sign that he does not need properly fitting spectacles. (Prepared for the Humane Education Society by Dr. William A. Sedwick and Dr. Mary E. Bates.)

The following leaflet was prepared for use in the Denver Public Schools by one of the Denver School Inspectors, Dr. Rose Kidd Beere, and in connection with it the notice following thereafter is used:

DENVER PUBLIC SCHOOLS.

School District Number One in the City and County of Denver, Colorado.

NOTICE TO PARENTS.

We ask your help in the effort we are making toward the education of the children in the care of the teeth.

Much bad health comes from decayed, unclean teeth.

Your part:

To see that your child brushes his teeth after every meal.

If he has decayed teeth, take him to a dentist.

Our part:

To give proper instruction on the care of the teeth.

To provide tooth brushes for seven cents.

Food left about the teeth decays and forms lactic acid which destroys the enamel.

Green stain, if not removed by a dentist, should be brushed persistently using precipitated chalk, occasionally powdered pumice stone.

The temporary (baby) teeth should be kept filled and in place until gradually pushed out by the coming second teeth, for if lost too early those taking their places are apt to come in crooked.

The sixth year molar often begins to decay early. It is the sixth tooth from the middle line, on each side, above and below. Watch it and have it filled if it shows a spot of decay, for no tooth will ever come in its place if it is lost.

Teeth should be examined every six months.

DENVER PUBLIC SCHOOLS.

School District Number One in the City and County of Denver, Colorado.

To the Parent or Guardian:

An examination of your child indicates that the child's teeth need attention.

I suggest that a dentist be consulted.

The dentist who examines this pupil is requested to sign and date this card and return it to the child, who will return it to the teacher. A subsequent report of the result of this treatment will be appreciated.

..............................Principal.

I have this day examined the above named pupil and have begun treatment.

Date......... .... D. D. S.

Any law which adds to the requirements and duties of the teacher may meet with her opposition if she is ignorant of its need, its objects and its benefits; if she is blind to its absolute and relative importance and indifferent to her true mission and opportunity, determined to earn her salary the easiest way.

When schooling ceases to be the present senseless routine of imparting and receiving a hodgepodge of miscellaneous information and becomes a truly educative process the physical welfare of the pupil will be recognized as the prerequisite of successful mental, moral, and spiritual development.

The demand which the Bates Law for the Examination and Care of Public School Children has created for a better understanding of mental, moral, and physical defectiveness and their interrelations has shown the need for the special instruction of teachers therein as well as their special training in the methods of examination and the enforcement of the law.

The State Bureau of Child and Animal Protection has kept Dr. W. R. Callicotte, professor of moral and humane education, in the field throughout the State for that purpose where such instruction has not been furnished by other authority, and the State Normal School at Greeley has added to its curriculum such a course which will be given by Doctor Callicotte. Proficiency in performance of her part in the law will doubtless soon become mandatory before a would be teacher can obtain her certificate.

In Denver, during the present school year, the Denver School Board has employed two school inspectors, who have supplemented the work of the teachers where the teacher found defectiveness. This has operated to the better protection of parents from needless recourse to a physician and a better differentiation and comprehension of defectiveness, as well as a training of the teachers in their duties under the law. The discovery by Doctor Beere of scores of cases of trachoma in the public school maintained by Denver in the State Home for Dependent and Neglected Children, was one of the benefits of this additional medical inspection, as desirable in its way as the release of the teacher from her responsibility by a purely medical inspection would be undesirable.

As a State proposition paid medical inspection by physicians is at present a financial impossibility. None of the many valid objections to possible political incompetents as such inspectors apply to the Colorado method.

Here the benefits are not limited to the examination made at the beginning of the school year, for ours is a system of continuous observation, including both prophylaxis and cure.

The foolish and vicious trend of the times promoted by the juvenile courts and other influences, to relieve parents of their obligations and responsibilities to their children, and to the community for the welfare of their children, by assuming such obligations and responsibilities or placing them elsewhere, and the equally foolish and pernicious doctrine that, *per se*, "parents know what is best for their own children" and will therefore do what is best for them, find no support in the Bates law.

The law was designed to fit conditions in Colorado; to utilize the public school system in a proper and available way; to obtain at a minimum cost a practically continuous observation and investigation of the health and needs of school children; to hold parents responsible for the relief and cure of defectiveness in their children; to permit them freedom of choice of a "competent physician or surgeon"; to furnish information to parents of value to them, their children and the community; to assist them wherever necessary for the best good of the children and to provide a legal way to compel delinquent parents to meet their legal parental obligations and responsibilities.

The following letter presents the subject from the standpoint of the law's enforcement by the Bureau of Child and Animal Protection.

THE STATE BUREAU OF CHILD AND ANIMAL PROTECTION.
State Capitol, Denver.

DENVER, COLO., *March 17, 1912.*

Dr. Mary Elizabeth Bates,
520 Majestic Building, Denver.

My dear Doctor:

There are no general statistics available on the operation of the law requiring the physical examination of school children later than those furnished by the State superintendent of Public Instruction in her biennial report for 1909-1910. They covered the first year of the law's enforcement, it having been passed in the spring of 1909. The next biennial report of that office will appear in January, 1913, and will be for the years 1911-1912.

However, the statistics in the report for 1909-1910 will answer the purpose of determining the value of the law and its practical working. We have no reason to expect any considerable changes in the next report except, probably, a more complete and intelligent observance of the law by teachers. There is no question of its being a permanent and most valuable addition to school legislation and of its broadening from year to year the narrow view heretofore held of what the school and the teacher ought to do for the child.

Not so many cases of neglect or refusal by the parents to act upon the teacher's notice were referred to this office the second year as the first. As might be expected, few such cases came from places which furnished many the first year, and *vice versa*. We have no reason to think this is due to lax observance of the law but rather to general acquiescence and compliance with it. Some towns where teachers and principals are known to be thorough going and alert report no difficulty in any case.

We have thus far had only three cases where our officers found it necessary to bring parents into court under the general law against wrongs to children for refusing to have examination made and treatment begun after notice from the teacher. In two of these cases the parents were convicted and given, each, a thirty day sentence in jail, which they escaped serving by complying promptly with the law. The third case has not yet been tried but we expect, without doubt, to convict.

It should be said that this bureau makes all reasonable effort to secure compliance of parents with the law without court action. When teachers notify us of the failure of parents to respond to their notices of apparent defective conditions in their children we, in our turn, notify the parents that they must comply with the law within ten days or give some good reason for not doing so. At the same time we send a notice to the teacher and ask to be informed about all who do not act upon our notice within the ten days. At the expiration of ten days if the teacher has not notified us of proper action by the parents we send our officer to the delinquents. In all the cases we have thus far had, now probably approaching a thousand, we have secured compliance with the law in all but the three cases already referred to without going into court.

After an experience of nearly three years we can suggest no necessary amendments to the law under the conditions existing in this State.

In our opinion the law in usefulness and value occupies the front rank, sharing it with the general law forbidding and punishing wrongs of any kind to children, the compulsory education law and an adequate law requiring moral and humane education, ...these four.

Sincerely,
E. K. Whitehead, *Secretary*.

The object of this law was to provide a way by which all the public school children of Colorado might be under continuous, intelligent, and interested observation with the view of aiding them to achieve the highest possible degree of physical, mental, and moral health, and to provide adequate means for enforcing such attention and care by parents as might be necessary therefor. The experience of the three school years that have elapsed since the law was passed indicates that this object is being attained.

520 Majestic Building.

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Abstracts and Reviews.

NEPHRITIC HYPERTENSION.*

Clinical and Experimental Studies.

By Theodore C. Janeway, M. D.,
New York,
Professor, Practice of Medicine, Columbia University.

Seventy-five years ago Richard Bright first published his observations upon the relation of hypertrophy of the heart to disease of the kidneys. His work was a combination of most careful and painstaking clinical observation with subsequent post mortem examination wherever possible. He showed that in the greater number of patients with cardiac hypertrophy there were definite lesions in the kidneys. He showed further, however, that cardiac hypertrophy did occur in patients whose kidneys were to all appearances normal. Bright did not indulge in fanciful speculation, but contented himself with the statement of observed facts. Those who have come after him in the study of this subject have supplied the speculative and fanciful interpretations of which we hear so much.

It was only after the perfection of the Riva-Rocci sphygmomanometer that the relation of high blood pressure to the presence of cardiac hypertrophy and renal disease was observed and subjected to study. And it has been only within the past twelve years, since a number of the life insurance companies have made blood pressure readings a matter of routine, that we have had a really correct index of the normal and abnormal limits of this pressure. We may now safely consider a blood pressure above 160 mm. Hg. as abnormal and, in all probability, more extended records will somewhat lower this figure.

In the following presentation I will use the term "renal disease" in the broad sense and not attempt to limit the expression "nephritic hypertension" to any single anatomical type of renal lesion.

Among the first of the theories offered to explain the occurrence of hypertension and cardiac hypertrophy was that of reduction in the renal circulation through disease involving the glomeruli. This seemed, at first sight, an adequate explanation for those cases in which considerable disease of the kidneys was found, but it failed to account for those in which there was little or no renal involvement. Further, it was shown that partial ligature of both renal arteries did not cause any material alteration in the systemic blood pressure. The same negative results were obtained in the experimental production of thrombosis of the renal vessels by the injection of paraffin. Other workers approached the problem by removal of one kidney in dogs and then caused graded reduction in the size of the other by successive excisions of portions. In a long series of such experiments five dogs showed an average rise in blood pressure of 21.5 mm. Hg. together with some hypertrophy of the left ventricle of the heart. I have recently conducted experiments on dogs along similar lines, excising one kidney and ligating some of the branches of the renal artery at the hilum of the other, thus causing infarction and reduction in the total renal tissue of the animal. In two dogs I obtained prolonged rise in blood pressure of a moderate grade, combined with albuminuria and polyuria.

As a result of such observations on the reduction of total kidney volume in dogs there are three constant changes which have to be explained:

1. Vascular hypertonus.
2. Hypertrophy of the left ventricle.
3. Hypertrophy of the left auricle and right ventricle.

The first is now recognized as a constant phenomenon secondary to such reduction and has not been explained. The second is held to be secondary to the continued hypertension induced by the hypertonus of the systemic vessels. The third is in turn secondary to the development of stasis through partial failure of the hypertrophied left ventricle.

To account for the increased tonus of the systemic vessels seen in these experimental studies and in clinical cases in man, two theories have been offered. The first is based upon the assumption of an increased viscosity of the blood. This is little more than a theory, as it is unsupported by either experimental or clinical observations and, in case of the greatest increase in blood viscosity, such as extreme polycythemia, high blood pressure is often absent.

The second hypothesis is the more important. It predicates the existence in the blood of chemical bodies which cause a stimulation of the vasoconstrictor mechanism. This hypothesis affords ground for study along a number of lines. Two chief theories have been suggested, namely, first, that there is some accumulated pressor substance, probably arising from renal autolysis, constantly thrown into the blood stream; the second, that there is an increase in the epinephrine content of the blood.

As to the first hypothesis, we may state that the evidence is variable and very conflicting and, on the whole, is not convincing. One of the most important objections that can be raised from the clinical point of view is that the hypertension is the greatest in those cases which are the most chronic and it is precisely these in which the autolysis of the kidneys is the least marked.

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*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, February 15, 1913.

The epinephrine theory was first propounded by Neusser, who assumed an increased activity of the suprarenals due to a hyperplasia of the glands. He reported several cases in which this hyperplasia could be demonstrated, but it has been shown that such an occurrence is rare and that in other cases there may be a distinct hyperplasia without any increase in the blood pressure. Experimentally it has also been shown, in technically perfect operations, that complete exclusion of the suprarenals from the circulation is not associated with a fall in the blood pressure. Many observers, however, contended that even in the absence of any hypertrophy of the adrenal glands there might be an increased production of epinephrine. They sought to prove their point by determining the amount of blood pressure raising substance present in the blood taken from patients showing hypertension and comparing this with results obtained with the blood from normal individuals. Results were again conflicting, some reporting a greater vasoconstriction from the blood in the hypertensive cases, others reporting no difference. Those who found the blood from the hypertensive patients more active held that this activity was due to an increased epinephrine content, and, therefore, regarded this as confirming the epinephrine hypothesis. The careful work by O'Connor showed the fallacy of these contentions by the demonstration that epinephrine would cause an inhibition of the movements of the excised and perfused living intestine, while the substance found in the blood in the hypertensive cases produced the opposite effect, although it did cause vasoconstriction. He further showed that this pressor substance could be found only in blood which had been clotted, and that if clotting is prevented by citrate or hirudin no such substance is demonstrable.

A further test for the presence of epinephrine is its power to cause dilatation of the coronaries when perfused through them. Applying this test, I have been able to confirm the findings of O'Connor, showing that the substance which caused vasoconstriction of the carotid artery also constricted the coronaries, and was, therefore, not epinephrine. I further found, with O'Connor, that this pressor substance is to be found only in blood which has undergone clotting. It may, therefore, be regarded as resulting in some way from the chemical processes which the blood undergoes in clotting and not as epinephrine.

In unclotted blood from hypertensive patients I have been unable to find any trace of epinephrine using the following biological tests: 1. The perfusion of the fresh carotid artery of the ox; 2, perfusion of the coronaries; 3, perfusion of a loop of living intestine; 4, the frog's eye test of Meltzer.

The study of the epinephrine content of the blood in hypertensive patients may be approached from one other side. It has been shown that in animals whose livers are well stored with glycogen the administration of epinephrine will cause a hyperglychemia. Now in one hypertensive patient at present under my care we have found a hyperglychemia. The condensed table of observations is given.

Date.	Diet.	Blood sugar.	Blood pressure.	Urea concentration.
November 25....	NaCl poor	0.099	235	0.168
December 20....	NaCl poor	0.133	220	.....
x January 18....	each 2 hours after	0.201	230	0.188
x January 22....	100 gm. glucose	0.192	225	.....
x February 8....	N poor	0.1605	205	0.375

A noncritical analysis of these findings seems to offer strong support to the view that the hyperglychemia in this case offered an index of the presence of an excess of epinephrine in the blood and that this was, therefore, the cause of the hypertension. Critical inspection, however, shows that there is no relation between the blood sugar concentration and the blood pressure, and that the two are independent phenomena. The explanation suggested is the retention by the kidneys of toxic products of metabolism, and this is strongly supported by the extremely high urea concentration found. At the times marked x the blood was tested for epinephrine and, while some of the tests were very suggestive, in no single specimen was I able to secure positive results by three of the four methods used, although two were often positive.

In view of these confusing results in the epinephrine tests, I gave a dog a constant injection of a known amount of epinephrine and took blood one minute before the cessation of the injection, and while the blood pressure was still high. The results lead me to the statement that no proof of the presence of epinephrine in the blood is sufficient unless at least three different methods of testing give positive results.

From these and other observations we may conclude that it cannot be assumed that epinephrine exists in the blood of hypertensive patients in sufficient amounts to maintain high blood pressure.

Basing my remarks upon my observation of 459 patients with blood pressures above 160 mm. Hg., I would group them into two classes:

1. Hypertensive cardiovascular cases.
2. Hypertensive cases with cerebral symptoms.

The first group shows disease of the renal arterioles, but there is reason to believe that this may be secondary to a maintained functional hypertonus and hypertension. In addition, patients frequently show arteriosclerosis and cardiac hypertrophy, and they die from apoplexy. In my opinion the hypertonus has its origin elsewhere than in the kidneys in some factor which disturbs the vasomotor regulatory mechanism. With these cases we certainly see the association of gout, and, in some instances, dietetic and hygienic measures seem to give prolonged relief in the earlier stages, showing conclusively that, then at least, the hypertension is functional and not due to organic change in the vessels. We know of only one definite cause of this functional hypertension, that is lead. In addition to what has been said, I believe that we must consider renal retention as a cause in a number of the cases. This is supported by experiments already cited and by clinical observations in cases of total ureteral obstruction by cancerous growth. In the later stages of this type the development of chronic passive congestion may lead to the secondary renal changes so often found at autopsy.

The second group is of equally obscure etiology, but it presents a different clinical picture. These patients usually show polyuria and in them uremic symptoms are prone to develop.

In support of the retention theory I may cite my own observations, in which I have seen transitory hypertension in cases of acute nephritis.

Lastly, let me urge that in the present state of our knowledge it were wise to treat these cases of both groups from a purely clinical standpoint rather than in the light of present renal pathological anatomy.

The necessity for further experimental work along these lines is patent to all, but it is my belief that we must also resort again to the methods of Richard Bright, observe with exquisite care both at the bedside and in the post mortem room, and confine our statements to fact, leaving theory alone as likely to confuse the issue.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXX.—How do you treat subacute and chronic laryngitis? (Closed January 15th.)

CXXXI.—How do you treat psoriasis, and with what success? (Closed February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXIX was awarded to Dr. Ben N. Wade, of Portland, Oregon, whose article appeared on page 244.

PRIZE QUESTION CXXIX.

THE MANAGEMENT OF CHRONIC ULCERS OF THE LEG.

(Concluded from page 354.)

Dr. Thomas W. Jenkins, of Albany, N. Y., points out that—

Three things are necessary: The ulcer must be softened, protected, and supported, the last being the most important. To soften an ulcer, it may be poulticed, applications of the clay preparations may be made, or hot water compresses applied, the latter being the most desirable. If the edges of the ulcer are markedly indurated, they should be incised with a very fine sharp bistoury.

They may be protected by dressings of carbolized petrolatum, ten per cent. boric acid, or clay preparations may be used. If eczematous, diachylon ointment should be used or an ointment of salicylic acid, one part, zinc oxide, three parts, and petrolatum, eight parts, make a very good dressing when the solvent action of salicylic acid is needed, as in thickened, eczematous skin.

But the main feature and often the only one needed, is to support the circulation of the leg with a proper bandage, extending from the base of the toes to the knee. The bandage I have exceedingly great success with is the stockinette bandage. This is the material used for the cuffs and ankle bands of underwear and may be purchased at any knit goods store. It can be purchased in lengths of five yards, and as it is a cylinder, it should be slit up on each side, and you have two bandages which will last from three to six months at a cost of fifty cents. After an ulcer is healed, patients should be instructed to wear these bandages continually, putting them on before getting out of bed and taking them off at night, always rolling them up as soon as taken off, as this maintains their elasticity. Objections may be made that this bandage is too bulky and too warm, but it is not true. It is a comfort and a blessing.

Dr. Sterling O. Fields, of Newport News, Va., writes:

Since by far the greater number of these cases have their origin in the existence of varicose veins, syphilis, tuberculosis, or arteriosclerosis (phlebosclerosis), our line of procedure from a preventive point of view is evident. So much for the prophylactic aspect.

The amelioration or correction as far as possible of the causal factor, whether this is general or local, is logically the first step in the active treatment. Since the ulcer is associated in the greatest number of cases with a varicose condition of the veins of the lower extremity, no plan of treatment can hope for much success which leaves out of consideration the concomitant phlebectasia. For this varicose condition (when present) we may employ the milder forms of treatment, as the elastic stocking, Trendelenburg's open saphenous ligation, etc.; or the more radical methods, as Schede's circumferential incision, open resection of the varicose trunks and tributaries, the C. H. Mayo simplification of Narath's method, this last being most effectual as it also includes excision of the ulcer and the application of Ollier-Thiersch grafts.

Where syphilis is the suspected or proved etiological factor, a vigorous antisyphilitic course is indicated. Personally, the writer is partial to the so called intensive treatment with mercury and the iodides orally and neosalvarsan intravenously.

If there is a tuberculous basis for the ulcer, the line of treatment, hygienic, dietetic, etc., is unmistakably indicated.

If the presence of an arteriosclerosis (phlebosclerosis) seems to be a factor in the ulcer's production, we must adopt measures looking to the relief of the vascular hypertension—the use of the iodides; the restriction of the nitrogenous portion of the diet; the limitation of muscular and mental exertion; the proper condition of the emunctories, etc. In every variety of chronic leg ulcer the surgeon will find it necessary to keep the bowels and kidneys active, and to tone up the system generally.

There are as many varieties of local treatment as there are individual surgeons. The plan, however, most universally successful in my own cases and the cases which came under my observation while on duty in the outpatient department of two hospitals is as follows:

The patient is enjoined from using the limb any more than necessary, even being placed in bed when possible. The affected limb is baked daily at moderate heat for half an hour in the hot air apparatus, the ulcer having been previously cleansed with warm normal saline solution. Then the whole limb is bathed in sodium bicarbonate (five per cent.) or boric acid (five per cent.) solution as hot as can be borne, and rubbed dry, this not only improving the cutaneous and vascular tone of the limb, but also being invaluable for the eczema usually found in the neighborhood of the ulcer. If crusts are marked about the ulcer a little sterilized liquid petrolatum will loosen them, and the use of water and ethereal soap will effectually remove them. As a further step in the treatment the ulcerated area is touched with a two per cent. solution of silver nitrate; a hot moist dressing (normal saline) is then applied if practicable, if not a dry, sterile dressing is almost as effectual.

In many cases the so called Unna's dressing applied from the roots of the toes to just below the knee and allowed to remain on about four to six weeks is very satisfactory.

If the ulcer is adherent to deeper structures, radiating incisions in its bottom, going through the deep fascia, not only permit contraction, but allow granulations to sprout in the cuts. Where the granulations become exuberant, touch them with five per cent. silver nitrate solution and curette lightly until sounder tissue is reached. Remove any sloughing parts about the ulcer; open up any sinuses; remove any dead bone. The faithful application of the foregoing principles has brought satisfactory results in any number of cases in which the outlook seemed anything but bright.

Dr. Louis Nagorsky, of New York, remarks:

To treat chronic ulcers of the leg successfully it is necessary to ascertain the cause of their presence and persistence. Hence it is essential to enter into the patient's history.

Under constitutional conditions we may learn as the supposed cause gout, rheumatism, syphilis, or tuberculosis. Therefore we must treat the disease as well as the local condition and not confine our attention solely to the local condition, the ulcer. Since varicose ulcers, however, are most commonly met with, these only shall be considered, and the treatment of other forms of ulcers due to constitutional derangement, omitted.

Of the numerous methods of treating ulcers (varicose) of the leg, I have found the following to be very serviceable: A laxative, such as magnesium sulphate, should be taken by the patient every morning before breakfast. If the patient is in poor physical condition his general health should be taken care of.

In ambulatory cases (and these are nearly always met with) where the ulcers are not discharging, and not very large in size, I apply over the ulcer a thin layer of sterile, absorbent cotton previously dusted with bismuth subgallate. Then a rubber bandage, three inches wide and six feet long, is evenly wound about the leg so that no folds of skin result. This is kept on all day; the patient is enabled to go about his business and in comfort. At bedtime the rubber bandage is removed and placed in a two per cent. carbolic acid solution.

The leg is washed and carefully dried and lotio calaminaris is applied. A gauze bandage can be applied to prevent soiling the bed clothes. In the morning the rubber bandage is carefully dried and applied again with the same treatment as described above. The advantage of the rubber bandage over other bandages is that it permits of stretching and gives the arteries more chance properly to function. It also regulates the blood pressure in the vessels of the leg.

We know how obstinate chronic ulcers are. Granulations are slow to form and usually the margin of the ulcer becomes edematous and tense, causing pain and distress. Multiple incisions along the margin alleviate the tension and pain, and healing takes place more rapidly.

If inflammation about the ulcer is present, wet dressings of borosalicylate give immediate relief. Unna's paste, applied next to the skin, is an excellent method of treatment, but I think should not be used in ulcers which discharge. As the paste offers no avenue for drainage, the secretion must necessarily collect, and as it is a positive fact that moisture interferes with healthy growth of granulation tissue, the paste is contraindicated. The same holds true for ointments of all kinds.

For large ulcers, strapping offers good results, especially when the limb is kept at rest. Here I might add that rest and elevation of the limb should be enjoined in all cases.

Of the stimulating ointments, scarlet red gives most excellent results in dry ulcers. Where granulations become exuberant, cauterization with silver nitrate in form of the stick, followed by the application of an ointment, hastens the healing of the ulcer.

With ulcers that discharge, the astringent solutions, such as zinc sulphate or acetate, should be applied for a few days or till there is no more secretion. If the ulcer is foul smelling, washing with potassium permanganate solution will overcome the stench. For the eczema, often coexisting with the ulcer, any bland ointment may be used at the same time.

My routine procedure in the treatment of secreting ulcers of any size, is to dust a thin layer of antiseptic powder over the ulcer and then to apply an "apron," which is nothing else than a piece of gauze, five inches wide or more and long enough to encircle the leg, and held fast by strips of adhesive plaster. This thin covering permits the air to get at the ulcer and aids the gauze in absorbing the discharge.

In conclusion I will add that if the varicosities are extensive, all local medicinal treatment is of little avail, for, though we may succeed in healing a chronic ulcer of the leg, it is certain to break down again at some future time; therefore extirpation of these veins should be resorted to if a permanent cure is hoped for.

Dr. Charles Haase, of Elmira, N. Y., advises:

To old indolent ulcers apply silver nitrate pencil to destroy the indolent tissue and stimulate granulation. Then apply a wet dressing of gauze saturated in a solution of normal salt solution containing 0.5 per cent. of sodium citrate. Keep dressing wet and change as often as it becomes soiled from discharge. When discharge stops apply zinc oxide ointment daily. Once a week incorporate a small amount of scarlet red into the application of zinc oxide (enough to make the ointment pink). Should the ulcer discharge freely at any time change back to the saline solution as long as necessary. If the edges of the ulcer are hard like scar tissue and are indolent, a number of radiating cuts should be made through this tissue, so that it bleeds. This stimulates granulation and epithelial proliferation. When the ulcer becomes clean, one or more narrow strips of adhesive plaster should be strapped over it. The strips should not be more than one quarter of an inch wide and should be placed about one inch apart. They should be placed so that they pull the edges together and bind them down to the surface of the ulcer. In treating recent or well granulating ulcers it is not necessary to use the silver nitrate.

The general condition of the patient should be improved; regulate the bowels; tonics, such as iron, are often indicated; massage to aid the veinous circulation.

The most important aids in treating varicose ulcers are elevation, support, and absolute rest for the affected limb. They are obtained by placing pillows under the limb, bandaging and strapping, and by placing the patient in bed.

If the patient is unable to keep off his feet the ulcer should be cleaned and the entire limb strapped with adhesive plaster. The plaster should be applied in the morning before the patient gets out of bed. If the discharge shows through the adhesive plaster or pressure causes pain, cut a window over the ulcer and apply saline solution as described above. Renew straps every ten days.

Dr. A. S. McCormick, of Akron, Ohio, maintains that—

The first essential is *rest,* preferably in bed. If not able to be confined to bed the patient must keep the leg at rest in the horizontal position as much as possible. Exertion and excitement are to be avoided as much as possible and all possible sleep indulged in.

Internal treatment and feeding.—The bowels are kept regular. If a laxative is required that which works best is used, but preference is given cascara sagrada—one or two teaspoonfuls at night as required, so that not more than one day will pass without a movement. The food is plain and nourishing, omitting all fancy, trashy, greasy, indigestible matter and tea, coffee, alcohol, etc.

Local treatment.—The ulcer is daily cleaned by hydrogen peroxide or sodium perborate. After this is completed the foam is removed by clean antiseptic absorbent cotton. Meat extract is then applied direct. Then a piece of lint is covered by the extract and applied to cover not only the ulcer but the surrounding area for a margin of one inch. This is in turn covered by a firm, well fitting, aseptic dressing and bandage. When it does not cause pain a rubber bandage is preferred.

Varicose ulcer.—I apply a rubber bandage. If no improvement results an operation is performed.

Eczematous ulcer.—I apply boric acid ointment or zinc oxide ointment, and over this dressing a rubber bandage, which must be worn also after the cure for some time.

Callous ulcer, with inflamed, hard edges causing pain and discomfort, I give internally

℞	Hydrargyri subchloridi,	gr. iss;
	Antimonii sulphurati,	grs. ii;
	Resinæ guiaici,	grs. ii;
	Olei crotonis,	♏⅓.

M. Fiat pilula. Mitte tales xii. Sig.: One night and morning for two days, then one as required.

The croton oil seems to have some specific action upon the ulcer. A rubber bandage is not advisable for such a case, as it causes pain. If the edge is thick, hard, raised, it can be softened by alternate deep and shallow incisions radiating outward like spokes of a wheel. Each deep incision should penetrate the deep fascia and extend from one to two inches beyond the edge. Then cleanse well with hydrogen peroxide and apply the beef extract as above. For an extensive, obstinate ulcer skin grafting is sometimes necessary.

Therapeutical Notes.

Treatment of Tuberculous Laryngitis, Complicating Pulmonary Tuberculosis.—Frank Neall Robinson, in *Monthly Cyclopedia and Medical Bulletin* for September, 1912, emphasizes the importance of local cleanliness in the treatment of this complication. The entire larynx should be wiped with pledgets of cotton on an applicator—lightly at first—under reflected light and with a mirror, until the patient becomes accustomed to the procedure. No local anesthetic is used, in order to avoid the secondary vasodilatation. After the cleansing the surface should be thoroughly wiped with some mild alkaline solution, and one of the albuminate of silver solutions, in the strength of 10 to 25 per cent., applied. In making the silver application a cotton swab of fair size, well saturated with the solution, is placed as far down below the chink of the glottis as possible, so that when the muscles contract it is squeezed out.

The author also requires his patients to wear a cold compress about the neck, at night only if the case is not severe, otherwise both night and day. The compress is made from an old soft hand towel or napkin, and is applied firmly but not tightly.

When pain from ulceration is severe the author uses a solution of ten grains of iodine in one drachm of alcohol and eight ounces of glycerin, to which some analgesic drug is added. He advises against the use of powders for insufflation in these cases because they tend to accumulate in the laryngeal spaces and absorb the secretions, with resulting irritation of the mucous membrane, foul odor, as well as opportunity for inspiration pneumonia.

Voice rest is absolutely imperative, though whispering is permissible in the earlier stages.

In the use of tuberculin, sight must not be lost of the primary factor, lung tuberculosis, and the dose should be regulated both according to the pulmonary condition and the effect on the larynx, which must be carefully inspected daily.

Treatment of Aortic Aneurysm.—Pierret and Duhot, in *Echo médical du Nord* for September 1, 1912, report three new cases of aneurysm in which an intravenous injection of 0.6 gramme of salvarsan brought prompt relief from previously continuous pain. In each of these cases the Wassermann reaction was positive, and in none did any untoward results follow. In one case the pain returned in three weeks, after a long walk, but was gradually again relieved by a series of twenty injections of benzoate of mercury. In no instance was the size of the aneurysm, as shown by radiography, diminished by the treatment. The authors believe salvarsan to be without danger in aneurysms of moderate size, provided no other contraindicating lesions are present. The blood pressure is practically uninfluenced by the remedy, the tendency being rather toward a slight fall than a rise. Pain and dyspnea are relieved much more quickly than by mercury. In view of the undoubted efficacy of the latter agent and its more ready administration, however, Pierret and Duhot believe it should be reserved for cases in which daily mercurial injections and full doses of potassium iodide have failed to benefit.

Treatment of Lichen Planus.—H. G. Adamson, in the *Clinical Journal* for September 18, 1912, remarks that while arsenic is regarded by some as a specific in this affection, in the experience of others it is in but few cases that it has any effect, and then only when pushed to the limit of tolerance. Mercury bichloride, recommended by Liveing, gives good results in many cases. It may be given in doses of one to one and a half ounce of the liquor hydrargyri perchloridi, B. P. (each ounce containing one half grain of the bichloride and one half grain of ammonium chloride).

To relieve the itching a favorite application is:

℞	Phenolis,	♏x-xv;
	Hydrargyri chloridi corrosivi,	gr. ii;
	Unguentum zinci oxidi,	℥i.

M. ft. unguentum.

A weak phenol, lead, or tar lotion may be used.

Since lichen planus often occurs in persons who have been worried or overworked, the best measure of all is to keep the patient in bed for a time.

In lichen planus hypertrophicus, with heaped up, irregularly shaped, and almost warty patches, varicose veins frequently coexisting, a plaster of salicylic acid may be applied to the diseased area and the veins supported by an elastic stocking or a bandage.

Treatment of Syphilis.—D'Arcy Power, in *Proceedings of the Royal Society of Medicine* for October, 1912, states that when, in private practice, a patient has declined to be treated by intramuscular injection, and recourse is to be had to mercury bichloride and potassium iodide by mouth, he has found the following mixture less nauseous than that usually prescribed, both the metallic flavor of the mercury and the acridity of the iodide being successfully masked:

I.

℞	Hydrargyri chloridi corrosivi, Ammonii chloridi,	ana gr. ss;
	Potassii iodidi,	ʒi;
	Syrupi,	℥i;
	Mucilaginis tragacanthæ,	℥ii;
	Olei amygdalæ amaræ (sine HCN), Olei cinnamomi,	ana ♏ii;
	Aquæ chloroformi, q. s. ad,	℥viii.

M. ft. mistura.
Sig.: Take an eighth part three times daily.

II.

℞	Hydrargyri chloridi corrosivi, Ammonii chloridi,	ana gr. ss;
	Potassii iodidi,	ʒi;
	Fluidextracti chiratæ,	♏xii;
	Benzosulphinidi,	gr. ii;
	Infusi gentianæ compositi, N. F., q. s. ad,	℥viii.

M. ft. mistura.
Sig.: Take an eighth part three times daily.

The first preparation is for those who like sweet tastes; the second, for those preferring bitter.

Treatment of Morphinism.—Maurice Page, in *Bulletin médical* for July 20, 1912, discusses the question of avoidance of distress during the withdrawal of morphine from the isolated patient. He lays especial emphasis on the psychic distress which the highly imaginative addicts suffer under these conditions; this demands relief even more than the coexisting physical distress. The chief remedy, he has found, is to keep the patient in total ignorance of the rapidity with which the morphine is being withdrawn, and of the dose given at any one time. Contrary to what one would expect, a morphine habitué, even of long standing, is unable to tell how great a reduction of dose is being made. In this way most patients can be brought down to injections of sterile water without knowing it for three or four days. During this time they still demand and are satisfied by their injections (of water), and they are thus spared the mental agony occurring at the time of complete withdrawal. Obviously, the total period required varies with different cases. Withdrawal is carried out as quickly as possible, but without setting any definite date. In thirty cases treated by the author, the minimal time required for complete withdrawal was four days, the maximal thirty-one days, and the average, from eight to eighteen days. Of these patients, twenty-two had been taking morphine for over two years; twenty-five took more than 0.6 gramme (ten grains) daily; fourteen took in addition other drugs, such as cocaine, ether, and chloral hydrate. Eighteen had not returned to morphine two years after being treated.

The physical distress attending withdrawal may be diminished by frequent purgation with sodium sulphate and baths, including light baths. Another good adjuvant is sparteine sulphate in hypodermic injections—especially during the last few days of withdrawal and after its completion. For sedative and hypnotic purposes the author uses ammonium valerate, bromides, and veronal in moderate doses, but only when the patient is really suffering.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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ANAPHYLATOXINES AND ENDOTOXINES OF THE TYPHOID BACILLUS.

The existence of preformed poisonous substances in the cell bodies of bacteria has long been considered a satisfactory explanation of the toxic phenomena witnessed in various infections, especially typhoid fever and cholera. There have, nevertheless, remained a number of diseases. such as those caused by anthrax bacilli, streptococci, or staphylococci, in which this, the endotoxine theory of Pfeiffer, has proved totally inadequate by reason of the fact that no toxic substances could be obtained from the bodies of these organisms. Recent work by Friedemann and Friedberger has led to a suspicion that the assumption of specific endotoxines in any of the bacteria is quite unessential to a comprehension of bacterial toxemias in general. These investigators have shown that by treating cells and bacteria of various kinds with specific antibody and complement, nonspecific acutely toxic substances are produced. To these the term "anaphylatoxines"—owing to the virulency of their effects upon injection into experimental animals—has been applied.

In the February issue of the *Journal of Experimental Medicine,* Hans Zinsser, of Stanford University, records the results of a study of this problem with special reference to the typhoid bacillus. Not only were the findings of previous experimenters confirmed, but it was ascertained, in addition, that exposure of the bacilli to blood serum for as long as fifteen hours at 37.5° C., instead of destroying the anaphylatoxines once formed, yielded a higher degree of toxicity than after shorter periods of exposure. It became apparent that a complement action of considerable vigor is required to obtain from the typhoid organism any appreciable yield of anaphylatoxine, and that the poison, once formed, is more stable than that produced from other organisms. All this leads Zinsser to suggest that the conditions prevailing in the body infected with typhoid germs are, at the height of the disease, ideal for anaphylatoxine production, since vigorously sensitized bacilli in large numbers are under the prolonged influence of considerable quantities of complement. An anaphylatoxine thus appears to play an important rôle in typhoid toxemia.

In his experiments with the so called "endotoxines" or preformed toxic bodies in typhoid bacilli, the author found that the conditions produced by the injection of extracts and filtrates of the bacillus—diarrhea, hemorrhages into the serous surfaces and large intestine, and protracted symptoms—differed considerably from the acute illness with rapid death or recovery caused by anaphylatoxine poisoning. He nevertheless feels that the participation of endotoxines in typhoid toxemia has not been proved, and believes it not improbable that all the phenomena witnessed represent solely a protracted or subacute state of anaphylatoxine poisoning.

The important bearing of these studies upon the pathogenesis of typhoid fever and its complications can hardly be overestimated. They suggest also that in certain toxemias the very immunizing process instead of protecting the organism, tends to aggravate the morbific phenomena—an additional plea to the multitude in favor of preventive medicine.

A FAIRY TALE OF SCIENCE.

The moving picture camera has been catering superbly to one of mankind's most vital needs—that of being entertained. It has become as well an important factor in the teaching of physiology, of disease prevention, and of sanitation; while its most recent usefulness is in the reproduction of phases of biology. Plant and insect life are amazingly reproduced; a flower is seen developing from seed to blossom, all in exquisite coloring; there is a moving picture of a chicken hatching from an egg; there is a cinematograph showing the evolution of a butterfly from a caterpillar, even to its emergence from the chrysalis.

But physicians will be especially interested in the representation of microscopic and ultramicroscopic life. Dr. J. Comandon has, by a combination of the microscope and the moving picture camera, demonstrated the venous flow in a tadpole's tail; he has photographed phagocytosis, which phenomenon is shown with "all the realism of a dog fight." Bacteria live, move, and have their being in the midst of normal cells; spirochetes unroll their spirals, move wavingly along, hide behind blood cells, screw their tails around one another, and separate but to join again; trypanosomes dart hither and thither, spreading their undulating membrane, tossing about the erythrocytes, while leucocytes remain staunchly in position.

Under the ultramicroscope erythroctyes look like bright rings. One sees the brilliant granules of which the leucocytes are composed and among them the shadowy outlines of the many lobed nucleus; these granules, it seems, do not appear in mononuclear leucocytes. Platelets or blood dust particles one inch in diameter, especially numerous during fat digestion, are shown to exhibit Brownian movements.

The leucocytic property of throwing bacteria-agglutinating antibodies out into the serum is demonstrated; spirochetes in the blood of a fowl suffering from *Spirochæta gallinarum* first form strings, then star shaped groups, finally large clumps, one or more leucocytes forming the centre —until no spirochete is seen to move about by itself. And erythrocytes (which in the fowl are normally egg shaped and well defined) become pale, with indistinct circumference, while *pari passu* the nuclei become clearly seen; the spirochetes have been seen inside such hemolyzed cells, having entered perhaps through a tear in the external membrane. The other leucocytic property of pseudopod extension and bacterium digestion is seen in a film showing newt's blood; first the cell wall juts out, forming what appears like a clear bladder, into which the granules begin to pour; then, when this bladder becomes filled, the now emptied half contracts until the whole is again rounded. This process of locomotion is repeated until bacteria or degenerated cells are reached, when phagocytosis takes place.

NECESSITY FOR EXPLICIT DIRECTIONS ON PRESCRIPTIONS AND LABELS.

A death resulted recently in Pittsburgh because a drug clerk dispensed lysol instead of the laxol prescribed. In commenting on this case the *American Druggist* points out as a contributing factor to the error the lack of any directions for taking. The prescription, we are told, bore only the words "take as directed." The dispenser, therefore, had no clue to the use to which the remedy was to be put nor to the quantity which was to be taken. The ordinary dose of laxol is from one to two tablespoonfuls. Lysol is a powerful and toxic disinfectant, not used internally. Had the prescriber written "two tablespoonfuls before breakfast," or other explicit directions, lysol would never have been dispensed, for any prescription clerk would recognize the fact that such directions could not apply to lysol. It is highly important that the directions for taking be written out in full on the prescription. This not only acts as a check on possible mistakes as to identity, but would frequently prevent misunderstandings as to quantities desired. The only excuse for failure to write the directions is lack of time, or, in some few cases, lack of space on the label, but even in these latter cases directions can be written in a condensed form and amplified verbally. Aside from the safeguard against error in dispensing furnished by written directions, their presence on the label would obviate the possible misunderstanding of verbal directions and forgetfulness on the part of nurse or patient. It frequently happens, moreover, that the nurse or orderly in charge of the patient is changed from time to time, and in this case verbal directions would have to be transmitted through another person. thus doubling the opportunities of misunderstanding. There is no adequate excuse for not writing out in full the directions on a prescription, and failure to do so may vitally involve the welfare of the patient.

THE ETIOLOGY OF BLACKWATER FEVER.

Mr. W. M. Graham, director of the Medical Research Institute at Lagos, has compiled a very valuable report on blackwater fever which was published only lately by the South Nigerian government. As to its etiology, the author says that it is unknown, but he believes that the observations made by him during many years of tropical service might be useful in elucidating the point. Of the numerous hypotheses he selects four which he deems important enough to discuss: 1. Blackwater is simply an attack of pernicious malarial fever with bilious and hemoglobinuric symptoms. This statement he proves to be untenable. 2. Blackwater fever is induced by quinine intoxicants. Doctor Graham thinks that there must be some additional factor which produces along with quinine hemoglobinuria. 3. An unstable condition of the blood is produced by repeated or badly treated attacks of malarial fever and once this condition obtains a dose of quinine determines hemolysis, which again produces hemoglobinuria. This is at present apparently the favored hypothesis, but the author shows that it too is at fault. 4. Blackwater fever is a specific disease caused by infection with a specific organism. The author discusses this point at great length without coming to a definite conclusion; he even speaks of possible contributory factors, such as venereal disease, diet, alcohol, fat, etc.

The etiology of blackwater fever is therefore shrouded in absolute obscurity, and as long as post mortem examinations cannot be made the rule, a proper answer will not be obtained. Doctor Graham proposes a certain schedule which would make recorded observations uniform and would thus greatly assist in researches concerning a disease which has become so important in tropical districts.

THE POSSIBILITY OF CURING TABES.

Grand-Clément, of Lyons, has a communication in *Journal de médecine de Paris* for January 18, 1913, in which he states that, encouraged by the report of two successful cases, he is ready to advance a theory that tabes dorsalis is curable if recognized sufficiently early. Considering tabes to be always a sequel of syphilis, usually of a mild attack not vigorously treated, he attributes its intractability to the continued action of the poison on a nervous system gradually becoming more and more feeble with age. Of the cases cured one was under his care, the other was reported by Beard, of Angoulême, in *Revue internationale d'hygiène et de thérapeutique oculaires.* Both occurred in young men and were recognized by ocular symptoms. His case was cured by persistent mercurial inunctions, Beard's by three injections of salvarsan.

The ocular symptoms, frequently pretabetic, which demand the immediate attention of the therapeutist, if he hopes for success, are: Transient paralysis of the muscles or motor nerves of the eye; loss of pupillary reflex to light; miosis with irregularity of the pupil; pupillary irregularity with ptosis of one eyelid (of grave prognostic significance); progressive atrophy of the optic papilla. Above all, however, Grand-Clément emphasizes the occurrence of a monocular mydriasis, which often precedes the paresis by several years, is of serious import, and demands rigorous treatment by a combination of salvarsan, mercury, and potassium iodide.

AZOTURIC PROPERTIES OF SQUILL.

A. Pic and S. Bonnamour have ascertained that squill, while increasing the amount of urine excreted, favors especially the elimination of urea. It is, therefore, particularly indicated in nephritis where there is retention of an excess of nitrogen. They publish their observations in the *Presse médicale* for December 18, 1912. Accordingly, its administration should no longer be empiric—in all cases of dropsy—but should be based upon an examination of the urine for signs of urea retention. The best form to use is powdered squill, given in cachets of 0.15 gramme each, of which three or four are exhibited daily; the total amount may be increased to as much as 0.8 gramme a day. No harmful effect on the renal parenchyma was observed by the authors, and the albuminuria either remained stationary or was diminished. Where urea and chlorine retention coexist, squill and theobromine should be given together; here the addition of the squill will remove the edema where theobromine alone may fail. In dropsy of cardiac origin, urea retention is in certain cases the predominant condition; here the action of squill will supplement the cardiovascular and chlorine eliminating action of digitalis. In the normal subject squill causes a much greater increase in the urea elimination than in the amount of urine. The effects of squill are ascribed by the authors to a selective action on the renal secreting cells.

SURGERY IN THE BALKAN WAR.

The Vienna correspondent of *Semaine médicale* in the issue of that journal for February 5, 1913, reports the comments of von Frisch and Clairmont at a meeting of a Viennese medical society, on their experiences at Sophia, Yamboli, and other points, in the treatment of wounded Bulgarian soldiers. It was interesting that these men withstood anesthesia admirably, a fact attributed to their customary abstinence from alcohol up to the age of fifty years. The operations on aneurysms were notably successfull, partly because the surgeons were careful to wait till collateral circulation had become thoroughly established. Water was scarce, and the operators wore rubber gloves because they could not wash their hands. Infection, much of it from *Bacillus pyocyaneus*, was the greatest danger, and fractures of the skull were always treated as if they were infected. Every soldier should be provided with a first aid outfit to cover a head wound at the first available opportunity. Surgeons intending to volunteer should be thoroughly familiar with the rational treatment of wounds. Apparently the amateur nurses had given a good deal of trouble from their incompetence, and Clairmont was urgent in insisting on a supply of carefully trained nurses and orderlies.

HOSPITAL RELIEF FOR THE COUNTRY.

Any one who has paid attention to the sanitary conditions of the rural districts in many of our States must have been seriously impressed with the fact that there are many thousands of men, women, and children who suffer from preventable pain, but who cannot be reached under the present condition by medical advice. The betterment of this condition and the solving of this question have been discussed for a number of years. Professor C. Wardell Stiles, of the United States Public Health Service, publishes an interesting essay on the question in the *Public Health Reports* for January 31, 1913. His article is made valuable through his personal experience. He thinks the most feasible method to solve the problem would be a hospital train to make short trips in such localities as are not to-day supplied with specialists on the eye, ear, nose, and throat, and in gynecology. The strain upon the physicians attending such train would be, indeed, very considerable, but the good derived from it would repay such arduous work. The train could be sidetracked at certain remote stations, there to serve as an outpatient dispensary.

ETIOLOGY OF TUBERCULOUS INFECTION.

According to *Presse médicale* for January 15, 1913, A. Calmette and C. Guérin presented at a recent meeting of the Académie des sciences a report on some experimental researches they had made which showed that, under conditions of natural contagion, tuberculosis was first of all a generalized infection of the lymphatic system, which condition was followed only at a considerable interval by the appearance of lesions. Cohnheim's law, or the law of lymphatic reactions, which is constantly invoked to support the theory of infection by inhalation, does not hold under conditions of natural infection such as obtain, for example, in an infected stable. This natural infection produces, first, general disease of the lymphatic system, which may, but not always, become localized, create tubercles, and so develop into lesions visible to the naked eye. The authors aver, therefore, that tuberculosis presents as to its pathogeny the closest analogy with glanders, the intestinal origin of which has never been denied.

UNUSUAL CASE OF SITUS VISCERUM INVERSUS.

According to *Presse médicale* for January 29, 1913, Podevin and Dufour presented to the Paris Société de psychiatrie on January 23d a case of complete inversion of the viscera in a woman, aged forty-two years. She had presented herself complaining of severe pain in the left side, and examination disclosed that the appendix was on the left, further investigation showing that all the other viscera were similarly inverted. A curious exception to the rule in these cases was that the woman was not left handed.

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News Items.

Obituary Note.—Mr. Joseph V. Standish, clerk of the University and Bellevue Hospital Medical College, died at his home in New York on February 10th, of angina pectoris. During the fifty years that he served as clerk of the college he endeared himself to thousands of students by his cheerful and encouraging ways. The funeral services from St. Agnes's Church, on Wednesday, February 12th, were largely attended by the faculty, students, and graduates of the college.

Manhattan Medical Society.—Professor Jacques Loeb, of the Rockefeller Institute, will give a lecture before this society on Friday evening, February 28th, on Some Recent Experiments on Artificial Pathogenesis. The meeting will be held in the Würzburger Hofbrau House, Broadway and Eighty-third Street. The officers of the society are: Dr. Benjamin T. Tilton, president; Dr. William H. Stewart, vice-president; Dr. Harold Hays, secretary; Dr. Albro R. Carman, treasurer.

Lodge Meeting of Medical Freemasons to be held in London in Connection with the International Congress of Medicine.—The Committee of Representatives of the Medical Lodges of Freemasons in London has issued an announcement that a lodge meeting of freemasons who are members of the International Congress of Medicine will be held on Monday, August 11, 1913, in the Grand Temple at Freemasons' Hall, Great Queen Street, W. C., London. Lord Ampthill will open the lodge at 5 p. m., and will close it at 6 p. m. A reception will be held at 4 p. m. in the Connaught Rooms, adjoining the hall. The committee hopes that all who wish to be present will communicate with the Grand Secretary of their own jurisdiction as soon as possible, in order that suitable arrangements may be made.

The Harvey Lectures.—The seventh lecture in the course will be given on Saturday evening, March 1st, at the New York Academy of Medicine, by Dr. Edward G. Conklin, professor of biology in Princeton University, his subject being the Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence, and Rejuvenescence.

A Testimonial Banquet to the President of Temple University.—Dr. Russell H. Conwell, president of Temple University, Philadelphia, was the guest of honor at a banquet in the Hotel Walton on the evening of February 13th, given in honor of his seventieth birthday. The testimonial was given under the auspices of a citizens' committee of thirty-five in recognition of Doctor Conwell's work in the upbuilding of Temple University and of the Samaritan and Garretson Hospitals. Nearly five hundred persons attended the dinner, among them being prominent members of the State legislature, graduates of the university, and leaders in religion, education, and finance in the city. City Solicitor Ryan was toastmaster.

Homœopathic Medical Society of the State of New York.—At the sixty-first annual meeting of this society, held in Albany last week, the following officers were elected: President, Dr. B. W. Sherwood, of Syracuse; secretary, Dr. Bert B. Clark, of New York; treasurer, Dr. Reeve B. Howland, of Elmira; necrologist, Dr. John L. Moffatt, of Ithaca. The society adopted a resolution recommending the reappointment of Dr. Eugene H. Porter as State Commissioner of Health. The association also amended its constitution so that it may hold its annual meeting in the future on the second Tuesday in April at any place designated by the executive committee; heretofor these meetings have been held in Albany, on the second Tuesday in February.

The Work of the German Hospital.—Reports submitted at the annual meeting of the German Hospital and Dispensary, held on February 17th, showed that 48,228 patients received the benefits of the institution during the year. Of this number 6,935 were treated in the hospital department, receiving 80,040 days of care. In the dispensary department 106,849 consultations and treatments were given to accepted applicants. The medical staff comprises about 140 physicians. The institution is nonsectarian and makes no distinction as to race, nationality, or creed. The hospital and dispensary maintains a training school for nurses and has at present more than eighty pupils. The school is one of the oldest in the United States, having passed the twenty-sixth year of its existence.

Changes in the Faculty of Tufts Medical School.—Important changes have been announced in the faculty of Tuft's Medical School, by which two professors have been made professors emeritus, and five men have been advanced to full professorships. The two professors who have retired from active service are Dr. Morton Prince, who has been professor of neurology in the institution for several years, and Dr. George Hamlin Washburn, professor of obstetrics. The five men advanced are: Dr. John Jenks Thomas, who is appointed professor of neurology; Dr. Alfred William Balch, who is made professor of chemical pathology and toxicology; Dr. Stephen Rushmore, who becomes professor of gynecology, Dr. Leo Victor Friedman, who has been appointed assistant professor of obstetrics, and Dr. Elmer Walter Barron, who becomes assistant professor of children's diseases.

Federation of State Medical Boards.—The annual convention of this federation will be held in the Congress Hotel, Chicago, on Tuesday, February 25th. It is only by harmonious and united effort of all boards that the best results may be obtained; they are now as never before in position to give needed assistance to medical colleges; it therefore behooves the boards officially to uphold the good colleges. Dr. George H. Matson, State House, Columbus, Ohio, is secretary-treasurer of the federation, and the other officers are as follows: Dr. Arthur B. Brown, of New Orleans, president; Dr. Charles H. Cook, of Natick, Mass., and Dr. P. H. Tatman, of Eureka Springs, Ark., vice-presidents. The address of the president will open the programme promptly at 9 a. m. Among the subjects to be discussed are Standards of Preliminary and Medical Education, Rules and Regulations Governing Examinations, Universal Reciprocity, Methods of State Board Record Keeping, Qualifications of Examiners, and What Fee Shall be Charged for Examinations.

The Epidemic of Measles in Pittsburgh.—Surgeon Stoner, of the Public Health Service, reported by telegraph from Pittsburgh, February 8, 1913, that during the week ended February 1, 1913, there had been reported in Pittsburgh 376 cases of measles, with 5 deaths, making totals of 4,031 cases and 62 deaths since the beginning of the outbreak, November 1, 1912.

An English Speaking Conference on Infant Mortality.—The National Association for the Prevention of Infant Mortality and the Welfare of Infancy, will hold a conference in Caxton Hall, Westminster, England, on August 4 and 5, 1913, under the patronage of the King and Queen. The work of the conference has been divided into two sections, administrative and medical, which will sit simultaneously. A provisional programme of subjects to be discussed has been issued, those for the administrative section being the Responsibility of Central and Local Authorities in the Matter of Infant and Child Hygiene, and the Administrative Control of the Milk Supply. On Monday, August 4th, the morning session of the Medical Section will be devoted to discussing the Necessity for Special Education in Infant Hygiene, and the afternoon session to Medical Milk Problems. There will be but one session of the Medical Section on Tuesday, in the morning, and the subject to be discussed is Antenatal Hygiene. The Hon. John Burns is president of the association; Sir Thomas Barlow, president of the Royal College of Physicians, is chairman of the Executive Committee; Sir Lauder Brunton, M. D., and Councillor W. F. Anderson, D. L., are vice-chairmen, and Alderman Benjamin Broadbent is acting vice-chairman. All who are interested in this conference and desire to become members of the association should communicate with the secretary, Miss Halford, 4 Tavistock Square, London, W. C.

Personal.—The degree of LL. D. was conferred upon Dr. William M. Polk, president of the New York Academy of Medicine, and Dr. J. A. Witherspoon, of Nashville, Tenn., president-elect of the American Medical Association, by the University of Georgia, on the occasion of the dedication of the new building of the medical department on January 29th.

Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, winner of the Nobel Prize in Medicine, has been appointed a Chevalier of the Legion of Honor by the French Government. Doctor Carrel has also been appointed corresponding member of the French Academy of Medicine.

Dr. S. Weir Mitchell, of Philadelphia, celebrated his eighty-fourth birthday on Saturday, February 15th. He is said to be in excellent health, and is still engaged in active practice, as well as in literary and scientific work.

Dr. John B. Deaver, of Philadelphia, was the guest of honor at a dinner given on the evening of February 14th by the Deaver Medical Society. He was presented with a silver loving cup, Dr. Stanley P. Reimmann, president of the society, making the presentation. Dr. George Ross was toastmaster, and addresses were made by Dr. Henry Lloyd and Dr. Lewis Ziegler.

Dr. William H. Welch, professor of pathology at Johns Hopkins University, has been appointed chairman of an administrative committee, composed of members of the faculty, to conduct the affairs of the university until a president is appointed.

Dr. J. W. W. Stephens, lecturer in tropical diseases at the London School of Tropical Medicine, has been appointed to the chair of Tropical Hygiene, made vacant by the recent resignation of Sir Ronald Ross, who has gone to London.

Dr. Roswell Park, of Buffalo, N. Y., lieutenant in the Medical Reserve Corps of the United States Army, has been assigned to active duty at Washington, D. C., in order to deliver two lectures on surgery at the Army Medical School. According to preliminary reports of the midterm examinations, the present class is an exceptionally strong one.

Dr. Theodore B. Sachs was elected president of the Chicago Tuberculosis Institute, at the recent annual meeting of the organization, succeeding Dr. Henry B. Favill, who resigned. Dr. Frank Billings and Dr. Robert N. Babcock were elected vice-presidents.

Dr. Samuel C. Stanton, of Chicago, has been appointed surgeon general of the Illinois National Guard, with the rank of colonel.

The Late Dr. Lewis Steinbach.—The staff of Mount Sinai Hospital, Philadelphia, has sent to the widow of Dr. Lewis Steinbach the following letter of sympathy and condolence:

> The staff of the Mount Sinai Hospital take this means of expressing to you and your family their deep grief and sense of personal loss at the sudden removal of their beloved and distinguished colleague, Dr. Lewis Steinbach, and to extend to you their sincerest sympathy. Doctor Steinbach's life represented continual self sacrifice and perfect self forgetfulness in his service and devotion to the poor and sick to whose appeal he was ever ready to respond. His conscientiousness and energy and the manner in which he was enabled to surround himself with a host of loving and loyal clientèle and friends were an inspiration to us all. His presence will be missed, but his influence for good in the example of his life will live and continue to grow.
>
> May this be a solace to you and yours, that in his memory you have an invaluable treasure that must remain with you forever.
>
> HARRY LOWENBURG, M.D.,
> Representing the staff.

Gifts and Bequests to Hospitals.—The will of Dr. Orville Horwitz, late emeritus professor of genitourinary surgery in Jefferson Medical College, Philadelphia, contains a bequest of $15,000 to the Jefferson Hospital, to be used for the establishment of three free beds in the institution, to be placed in the genitourinary, the surgical, and the gynecological wards, respectively.

Announcement is made that the net proceeds from the German Charity Ball this year amount to $10,000, which has been distributed as follows: German Hospital and Dispensary, $2,000; St. Mark's Hospital, $1,150; St. Francis's Hospital, $1,150; German Poliklinik, $1,150; German Society, $1,150; Isabella Home, $900; Wartburg Orphan School, $900; Deutscher Frauen Verein, $800; West Side German Dispensary, $800.

The Sanatorium for Hebrew Children, at Rockaway Park, N. Y., has received $20,000 from the executors of the estate of Caroline Neustaedter, in payment of her special bequest to that institution.

The will of John M. Lohse, who died in New York in April, contained bequests of $10,000 to the Presbyterian Hospital, $8,000 to the Mount Vernon Hospital, $15,000 to the German Hospital and Dispensary, and $5,000 to the Fritz Reuter Home, at Union Hill, N. J.

Announcement is made that Mr. Elizabeth McCauley has contributed $5,000 to the Methodist Episcopal Hospital, of Philadelphia, to endow a bed in the institution in memory of her son.

Assistant in Experimental Therapeutics Wanted in the Philippine Service.—The United States Civil Service Commission announces an examination for assistant in experimental therapeutics, Philippine Service, for men only. The position to be filled is that of research assistant in experimental therapeutics in the Bureau of Science, Manila, at a salary of $2,000 a year. This position offers to the ambitious and capable physician a wide field for experimental therapeutic work. The Bureau of Science possesses one of the largest and most favorably known research laboratories in existence and is in the immediate vicinity of the Philippine General Hospital, which is probably the best institution of its kind in the Eastern Hemisphere. In view of the excellent opportunities presented qualified persons are urged to enter this examination. It will not be necessary for applicants to appear at any place for examination. Their eligibility will be determined upon the evidence furnished in connection with application and examination Form B. I. A. 2, concerning their training and the work which they have accomplished. Applicants must be graduates in medicine, and in addition must show at least one year's postgraduate experience in conducting laboratory research work in experimental therapeutics, or, as equivalent to the year's work, they may submit copies of publications prepared by them, evidencing their ability to carry on original experimental therapeutic work. A person is desired who is especially qualified in research, and it is stated that, for one who is satisfactory, the prospects of promotion are excellent. Statements as to training, experience, and fitness are accepted subject to verification. Applicants must have reached their eighteenth but not their fortieth birthday on the date of the examination. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington prior to the hour of closing business on March 10, 1913.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

December 1, 1912.

Fifteen Years' Experience with Collargol.—Fehde has learned to appreciate the prophylactic and therapeutic value of intravenous injections of collargol. It is especially valuable in puerperal sepsis, typhoid, angina, rheumatic diseases, and particularly in the endocarditis of childhood. The fever in mixed tuberculous infections was rapidly and favorably influenced when daily intravenous injection of collargol and hetol were given alternately. When larger doses are given from the start one must be prepared for a marked reaction, manifesting headache, vomiting, and rise of temperature; therefore it is advisable to begin with small doses, e. g., 0.05 gramme. One injection is not sufficient. In severe cases of sepsis three injections are to be given daily. Five c. c. of a two per cent. solution is injected into the lumen of a vein by means of a very fine cannula so that none of the solution is deposited outside of the vein. In the latter instance a severe inflammation of the tissues results. The author uses the original preparation of collargol to the exclusion of all others.

Liquid Paraffin in the Treatment of Wounds.—Auerbach uses liquid paraffin on the skin surrounding wounds to protect it from eczema. It is sufficient thoroughly to paint the circumference of the wound over a wide area. This method also prevents the bandages from sticking to the wound and even though they may be soaked with blood they almost fall off by themselves.

December 8, 1912.

Codeonal.—Oy says that codeonal is a pleasant and harmless hypnotic which is especially recommended for the old and decrepit with a marked degree of restlessness or a slight cough. Its sedative action is insufficient in cases of marked restlessness, delirium, and excited states. Habit formation from prolonged administration was not noticed.

December 15, 1912.

Respiratory Disturbances in Uremia.—J. Pal asserts that the most important forms are: 1. The subacute which are closely related to the uremia itself; loud and deep breathing and Cheyne-Stokes phenomenon. 2. The acute forms are related to the toxemias in close relation to the cardiovascular changes; the paroxysmal cardiac high tension dyspnea. They are both products of the acute high tension. The cardiac form occurs when the ventricle becomes relatively insufficient on account of the high tension. The other is the result of an excessively high pressure tension in a heart capable of working. All the respiratory phenomena occurring in the course of uremia are not absolutely uremic phenomena. They should therefore be designated as uremic only when the other related symptoms are present. The prognosis in the first group is less favorable. The therapeutic measures must be aimed at the general underlying cause, therefore the prognosis for its removal is less. The symptoms of the second group are very stormy; they are in the main mechanical factors and can be removed only by corresponding measures, such as venesection, lumbar puncture, and medication lowering blood pressure.

December 22, 1912.

Diagnosis of Acute Poliomyelitis.—Starck says that we must accustom ourselves to keep the possibilities of a poliomyelitis more frequently in view than we have up to the present time. Only then will it be possible to detect the disease in its initial stages. Any case of acute febrile disease, especially in children, which is characterized by a general hyperesthesia of the skin with a tendency to profuse sweating, absence of leucocytosis, weakness, and decrease of the muscle tonus in certain muscle groups with diminished tendon reflexes should strongly arouse suspicion.

December 29, 1912.

Acute Hemorrhagic Pancreatitis.—Hellwig reports two fatal cases. When the patients with a tendency to obesity who have repeatedly had gallstone colic are suddenly attacked with pain in the upper part of the abdomen and collapse, a diagnosis of acute hemorrhagic pancreatitis should be thought of. The best thing to do is to perform laparotomy immediately and pack the pancreas.

ZENTRALBLATT FÜR CHIRURGIE.

January 25, 1913.

X Ray Treatment of Actinomycosis.—Richard Levy reports two cases in which actinomycosis was apparently cured by x irradiation. In the first case an operation had been performed and the patient was also taking iodide, so the result could not be ascribed with certainty to the rays, but the secretion stopped immediately and the fistula closed within a few days after the first exposure. The second patient had been operated on repeatedly, undergoing about a year previously a partial resection of the upper jaw. The infiltrate disappeared completely under x ray treatment alone and the fistula closed. No recurrence had appeared in either case at the end of six months.

ZENTRALBLATT FÜR INNERE MEDIZIN.

January 25, 1913.

Electroangiograms.—A. Bittorf was able to demonstrate active contractions of the femoral artery at each pulse beat in dogs, by connecting Huth's electrocardiograph with the exposed and elevated artery through nonpolarizable electrodes. In man, similar attempts, without exposure of the vessel, were unsuccessful, except in a single case of chronic nephritis, in which a distinct angiogram was obtained.

PARIS MEDICAL.

February 1, 1913.

So Called Specific Therapy in Tuberculosis.—Léon Bernard recalls that three kinds of so called specific agents are used to combat tuberculosis, the tuberculins, which are supposed to confer an active immunity, the antituberculous serums, used to give a passive immunity, and the *Immun Körper* of Carl Spengler. Passing these rapidly in review the writer concludes that none of them has any special value. Where their use has been followed by amelioration, the case was probably one of spontaneous cure.

Tuberculosis in French Colleges.—Raoul Brunon takes the college authorities of France severely to task for their negligence of the students' health. The young men do not bathe enough, exercise sufficiently, nor pass enough time out of doors, while their work is so exacting as to deprive them of proper hours of sleep; "too long hours of study, too many note books, too many lessons, too many appeals to the memory, too many compositions," form part of Brunon's indictment. Speaking of other countries, he expresses great admiration for the grand scale on which the college campus and recreation ground are planned in the United States.

Recognition of Tuberculosis in the Infant.—Ribadeau Dumas and Robert Debré lay the greatest stress on von Pirquet's skin reaction in the early diagnosis of tuberculosis; second come the osseous and cutaneous lesions, the loss of weight, fever, etc.; last, but also important is the x ray.

PRESSE MÉDICALE.

January 18, 1913.

Treatment of Fracture of Ulna at Its Upper Third, with Dislocation of Upper End of Radius.—J. Abadie urges the abandonment of simple arthrotomy or excision of a portion of the radius in this condition, and advises treatment as follows: In recent cases reduction without operation should first be attempted. The joint should be immobilized in the acutely flexed position and two radiograms from different aspects taken. If the radial head is not in place, or if there is overlapping or angular displacement of the ulna, which would probably later hinder supination and pronation, operation after at least a week has elapsed is indicated. The ulna should first be fixed in proper position, preferably with Lambotte's plate, and the head of the radius then replaced *de visu*. In cases already of long standing, simple arthrotomy is useless because the irreducibility is bony in origin, the ulna having become too short for the radius. An osteotomy of the ulna should first be done, and this bone fixed in its normal condition, if this is possible; if not, the radius should be reduced primarily, and the ulna then sutured in a corresponding position. Excision of the radial head should be done only if reduction has proved impossible. If there has been rectilinear consolidation of the ulna—almost always, however, with some shortening—a choice will have to be made between oblique ulnar osteotomy with open reduction of the radius, and primary excision of the radial head. This point can only be settled by further experience, but other things being equal, the former procedure seems preferable, since the normal skeletal conditions are preserved.

Relationship between Seroanaphylactic Phenomena and Certain Forms of Tuberculosis.—P. Courmont reports three cases in which severe toxic manifestations followed five injections of five c. c. of Marmorek's antituberculous serum, the first dose in each instance being given by rectum and the remainder subcutaneously. All these patients had had tuberculosis at one apex, long since healed and remaining only as an area of fibrous induration; also a chronic rheumatoid condition of the extremities, of tuberculous origin, and a high agglutinating power of the serum. After mild local phenomena, appearing soon after the injections, these cases all presented severe cutaneous and especially articular reactions, the latter progressing to hydrarthrosis with fever and loss of weight, the whole constituting a pseudorrheumatic fever. No similar phenomena had been observed in a large series of cases of tuberculosis in other forms previously treated. Their severity is attributed to the fact that patients with fibroid tuberculosis readily form antibodies, through the conflict of which with the specific antigens injected anaphylactic accidents may arise. Such patients also react strongly to tuberculin.

January 22, 1913.

Treatment of Fractures of Patella and of Olecranon by Subcutaneous Suture.—Chaput considers operative treatment indicated in patellar fractures where there is separation to the extent of two cm. and the lateral aponeurotic expansions are torn sufficiently to admit the tip of the index finger. He operates subcutaneously, after an interval of three or four days, during which the skin of the knee is carefully cleansed and covered with aseptic dressings. Three small stab wounds are made through the skin into each lateral expansion; catgut is passed from the uppermost to the lowest opening with a curved needle; the ends are then returned beneath the skin and both brought out through the central opening. The fibrous covering of the patella is next similarly dealt with, U shaped sutures introduced through four stabs and knotted on one side being employed. Finally the fragments are firmly drawn together by an assistant and the sutures tied and cut flush with the skin, the knots having sunk in of themselves. Any accumulations of blood are evacuated either through the stabs or by aspiration. The good results and freedom from infection secured by this method in patellar fractures were also obtained in two cases of fracture of the olecranon similarly treated.

SEMAINE MÉDICALE.

January 22, 1913.

Acute Circulatory Disturbance due to Sudden Vagal Hypertonia.—J. Schwartzmann reports four cases in which a sudden drop in the pulse rate, with partial syncope, was observed to take place, in two instances during injections of salvarsan, and in the others during ordinary blood pressure estimations with the Riva-Rocci instrument. In all recovery soon took place. In the first two cases, in which the psychic factor could be ruled out, since the untoward phenomena appeared only at the close of the injection, the disturbance was attributed to a direct action of the drug on the pneumogastric centres; in the other patients, who complained of pain during the inflation of the blood pressure cuff, the bradycardia may have been reflex, likewise through the vagi.

SEMANA MÉDICA.

December 26, 1912.

New Treatment for Pneumonia.—Aquino, reports the successful treatment of grippe, above all when complicated with pneumonia, with the salicylic preparations, by Doctor Boutchinskaïa, a Russian. The treatment consists in a local application upon the affected parts of a solution composed of ten grammes of salicylic acid in ninety per cent. alcohol and ten grammes of castor oil. These applications should be made three or four times in the twenty-four hours and cause only a slight erythema which the patient bears very well.

Ocular Symptoms Caused by the Affections of the Nose and Adjacent Sinus.—Gómez says that very often glasses are prescribed to relieve frontal cephalalgia which is later found to be caused by an affection of the ethmoid bone or of the frontal sinus. This happens because as yet the differential diagnosis between ocular cephalalgia and that caused by nasal affections has not been established. The cephalalgias caused by ocular disorders are bilateral, are not generally severe, do not cause nausea or vomiting, and are very often diurnal. They are, as a rule, frontal, temporal, or occipitofrontal. The vertical ones or those that invade the entire head are not always of ocular origin. The cephalalgia at the nucha are oculodynamic and are complicated with an imbalance of the ocular muscles. Other symptoms of ocular cephalalgia are pain and malaise, congestion of the palpebral conjunctiva, blepharitis, watering, etc., of the affected eye. The author says that cephalalgia may also be caused by vasoocular disorders.

January 2, 1913.

Serotherapy in Tetanus.—Bard says that antitetanic serum as a prophylactic medium for tetanus in man has been largely discussed, but the last word has not yet been written. Among surgical infections tetanus is the typical disease of intoxications; a specific microbe, Nicolaier's, when inoculated in a wound, secretes a toxine which poisons principally the nerve cells. The spores live for one or two hours in a temperature of 80° C., die in fifteen minutes in steam at 100° C., and in five minutes at 115° C. in the autoclave. Vaillard says that in the experimental antitetanic serotherapy it is not easy to prevent tetanus when the serum is applied after the toxine has penetrated. However, large doses of serum often have a good effect several hours after the toxine has been injected. Laboratory experiments show that tetanus occurs regardless of the preventive injection of the serum, when the spores are inoculated mixed with sand in Berzelius paper, because the phagocytes in this case cannot destroy the bacilli of Nicolaier.

Argon.—Delfino recalls that Lord Rayleigh and Sir William Ramsay, after a long series of laborious experiments, succeeded in separating this gas from other substances present in the atmosphere. The English chemists employed two methods to isolate the nitrogen of air and so found the new gas. One was the classic process of Cavendish, which is used to show the nitric acid composition, and which by submitting the air to the action of a series of electric discharges in presence of potash, gives to this substance the nitrous vapors which are formed, while the rest of the oxygen is absorbed by an alkaline pyrogallate. The rest of the gas which is not absorbed by the phosphorus or pyrogallic acid in an alkaline solution nor by alkalies, is constituted by the *argonides*, which are a mixture of argon, helium, neon, xenon, and krypton. The other process employed consists in causing oxygen to be absorbed by red hot copper and carrying the residue upon a red hot tube which contains filings of magnesium, lithium, or calcium mixed with magnesium and lime. Argon seems to resemble nitrogen in having two different spectra, but in the latter one shows striped bands and the other bright lines, while in argon both show bright lines.

BRITISH MEDICAL JOURNAL.

February 1, 1913.

Exotic Flora of the Uterus in Relation to Fibroids and Cancer.—J. Bland-Sutton regards the condition of the uterus which has a submucous fibroid as much the same as that in the presence of retained fragments of placenta in a parturient woman. The same holds good even to a greater extent in the case of uterine cancer. Both conditions greatly favor the growth and development of exotic and pathogenic microorganisms, among which the most important are streptococci, staphylococci, pyocyanei, and colon bacilli. It is precisely these organisms which are to be found in the clots which form in the deep epigastric veins, the femoral, iliac, or ovarian veins. Bland-Sutton has found that the occurrence of postoperative pulmonary embolism is much more frequent as a result of hysterectomy for fibroids than for any other condition save for cancer. It is his contention that in these two conditions there is a far greater likelihood of there being a local infection in and about the uterus and vagina, and that from this it is almost certain that the operator's fingers and sutures must become contaminated, at least in certain cases. The contamination is transmitted to one or other of the sets of veins mentioned, either by manipulation or through the introduction of buried sutures. This latter he believes to be the most common mode of introduction of the germs which result in the formation of thrombi.

Varieties of Tuberculin in the Treatment of Tuberculosis.—Nathan Raw divides tuberculosis into two types: 1. Those lesions due to the human strain, including pulmonary and pleural, secondary tuberculous enteritis, laryngitis, and fistula in ano. 2. Those due to the bovine strain, including primary abdominal tuberculosis, adenitis, bone and joint disease, genitourinary, acute miliary, lupus, meningitis, and a small percentage of pulmonary tuberculosis. From the observation of over 6,000 patients in the last ten years, Raw states that it is rare to find lesions of the one type associated with those of the other in the same patient. He suggests that mild infection by the bovine type of bacillus will protect against subsequent infection by the human type and that it is most probable that a large number of people are thus immunized against pulmonary tuberculosis in after life by having been infected in early childhood by bovine bacilli in milk or food. As a result of his experience he contends that the lesions in the human body, due to the human strain of bacillus, are benefited more quickly and certainly if a tuberculin prepared from the bovine strain is used; and in all cases of pulmonary tuberculosis he now uses only bovine tuberculin. The opposite holds true with equal force, that is, that the bovine lesions in man are best treated by the administration of human tuberculin. Further advantages of bovine tuberculin are that it is less toxic and does not so readily cause reaction, it is more easily tolerated, and it causes the bacilli to leave the sputum more quickly than does the human.

A Year's Experience of Dioradin in Surgical Tuberculosis.—Atkinson Stoney treated twenty-eight cases of surgical tuberculosis with dioradin and reports the following as his results: There were eleven apparent cures, in seven cases there was great improvement, in four there was some improvement, and in the remaining six there was no definite improvement. As the result of his extended trial he concludes: 1. Dioradin injections are not a certain cure for all cases of tuberculosis; in some cases they will produce a cure more rapidly and more certainly than any other treatment of which he has had experience. 2. Early cases of joint disease treated by injections combined with the ordinary measures of diet and hygiene will recover more rapidly and more surely than when the injections are not given. The same is probably true of glandular and other surgical affections. 3. In advanced cases with abscess formation, if injections are started before, or at the time the abscess is opened, it will usually heal rapidly, the tuberculosis process apparently comes to an end and a cure results in a large proportion of cases. 4. In those cases complicated by septic infection dioradin injections will generally reduce the temperature to normal, increase the appetite and weight, lessen the amount of discharge, and in some cases even bring about a cure.

LANCET.

February 1, 1913.

Treatment of Syphilis with Salvarsan.—Lancelot Kilroy gave a total of 2,147 injections to 1,000 patients and observed invaliding in only thirteen, no deaths, and only twenty-four clinical relapses. The relapses were chiefly among those who had received not more than two injections, while of sixty-eight cases in which three injections were administered, there was a relapse in only one.

New Growth and Inefficient Immunity.—Helen and Albert S. F. Gruenbaum find that in rats the presence of a hemolysophilic substance is associated with susceptibility to sarcoma. A similar substance also appears temporarily after the injection of some vaccines, and the susceptibility to sarcoma is then increased. The administration of certain immune bodies will cure sarcoma in rats and diminish new growth in man. Their experiments lead the Gruenbaums to the hypothesis that there are at least two factors concerned in the causation of new growth. One of these factors is general and variable, is the immediate cause, and is irritation, either chemical or physical. One of its forms may well be the action of parasites or their products. The specific factor or predisposing cause will be the result either of some derangement of function of the affected tissue or of the failure or aberration of some hormone produced by another tissue. Presupposing the existence of two definite substances, the absence of one may give overwhelming preponderance to the other, or a definite increase of the substance favorable to the new growth may mask that which is unfavorable. The temporary presence in rat experiments of the hemolytic substance during the negative phase of the opsonic index suggests that this hemolysophilic substance may be an immature form of the substance which later becomes the immune body. The hypothesis given does not require the presence of a different and separate parasite or microorganism for each form of new growth, nor is it expected that generalized cancer can be induced in the absence of a general tissue susceptibility.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

January, 1913.

Diagnosis, Prognosis, and Treatment of Cervical Abscesses of Aural Origin.—Deodato de Carli gives as the pathognomonic finding the fact that gentle pressure on the neck forces out pus from the external auditory canal or from some mastoid fistula. Prognosis is guarded, even in superficial abscesses; extremely so in lateral sinus thrombosis and perisinus abscesses. Untreated, these abscesses tend toward the mediastinum; they may spread via the lymphatics and may even end in the axilla or the back. Treatment should include mastoid operation, simple or radical, except when the mastoid is not involved, as in adenitis or abscesses about the pharynx. Used early, rest, hot applications, and antiseptics about the infected area may abort them. Carbolic injections, in three per cent. strength, into a lymphoadenitis will at times arrest its development. After suppuration, incision (with or without mastoid operation, *v. supra*) must be done. Cauterization may supplement early free incisions in adenophlegmon. In lateral sinus or jugular suppuration, the vessels should be opened and ligated below the thrombus. Ligation of the jugular is done by incision about three inches long in a line running from the angle of the lower jaw parallel with the anterior border of the sternomastoid toward the clavicle, the patient's shoulders being raised, neck extended, and face turned toward the opposite side. Beneath the skin and superficial fascia the anterior border of the muscle is found, and by blunt dissection, the vascular packet is opened, the vein lying behind and opposite the artery. Double ligature is passed beneath the vein, which is then cut; the pus escapes or the thrombus is removed. The wound is allowed to close by second intention. Superficial cervical abscesses may be simply incised. Deep submastoid abscesses require removal of the mastoid tip. Lateral pharyngeal abscesses may result from extension from the neck, or may extend from the middle ear via the Eustachian tube. These should be opened externally, either premastoid or retromastoid. The premastoid method means incision along the lateral border of the muscle, and blunt dissection through the aponeurosis and past the great vessels (which are pushed toward the mesial aspect) to the involved peripharyngeal cellular tissue. By the retromastoid route, cutaneous incision, about two inches long, follows the posterior border two fingers' breadth below the mastoid tip, through the aponeurosis and retracting outward the muscles and great vessels, thus reaching the abscess. Retropharyngeal abscesses are best opened with the patient sitting upright, by a free incision half an inch long, made over the prominent part of the swelling, from below upward. The head is bent forward immediately following the incision to prevent inspiration of pus.

Suboccipital abscesses may be incised through the thickness of the neck down to the bone. In all these cases the point of most efficient drainage is to be selected for incising the abscess.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

January 1, 1913.

Experimental Kalaazar.—R. Row reports that of various animals experimented upon, only in *Macacus sinicus* and tame mice developed a generalized kalaazar infection with a minute dose of the virus. This was done by intraperitoneal injection. The parasites seemed to lose their virulence by passage through mice. Intracutaneous and subcutaneous injection in the monkey led only to a well defined localized lesion of the nature of a young fibroma, which led to no general infection or constitutional disturbance.

PRACTITIONER.

January, 1913.

Tuberculosis.—This number is devoted to the exclusive consideration of tuberculosis and forms a very good compendium of what is at present known concerning this disease. It contains thirty-seven different papers, many of them by well known writers, as well as a number of practical notes, which present the subject in all manner of aspects. In the introduction Sir T. Clifford Allbutt says: "I have read carefully all these articles; they are written by men who have a first hand and first rate conversance with the subject as a whole, and especially with the part of it which each has most intimately studied." These words point out the value of the papers more clearly than could be done by a long review, which is impossible. Allbutt reviews and discusses the various papers, calling attention particularly to points concerning which there is uncertainty of opinion, and to modern methods of treatment, in a manner that is peculiarly illuminating. Then follow the papers themselves, first on the bacteriology, pathology, and research, the ways in which tubercle bacilli enter and spread in the body, diagnosis including the x rays, treatment in the early stages, general, sanatorium, home, climatic, and dietetic treatment, treatment by graduated rest and exercise, the use and abuse of drugs, phosphorus metabolism, the pneumothorax treatment, continuous antiseptic inhalation, the opsonic method in relation to tuberculosis, surgical treatment, and two articles on tuberculin, one with special reference to dispensary treatment, the other as given at the Torquay dispensary. Then follow tuberculous diseases of bone and joints, the use of plaster of Paris in the treatment of disease of the spine, and the trypsin treatment of surgical tuberculosis; Dr. Wilhelm Baetzner, of Berlin, reports excellent curative effects of this treatment, digestion of fungoid masses, disappearance of tubercle bacilli, diminution of pain, and marked improvement of appetite. He accentuates the importance of using only a highly active preparation. His statements are based on the use of *injectio trypsini* (Fairchild), diluted with sterile salt solution in the proportion of two parts to ten. Disease of special organs are dealt with in papers on tuberculosis of the colon, rectum, and anus, of the stomach and intestines, of the urinary and genitourinary tract, of the larynx, of the ear, of the eye, the associations of tuberculosis with disorders of the nervous system, tuberculosis in children, and the treatment of localized tuberculous infections. Following these are papers on rain-bearing winds and the prevalence of tuberculosis, tuberculosis in Ireland, the education of the public in relation to the prevention of the disease, public health, first with reference to the housing problem, second with reference to sanatorium benefit, and finally one on pulmonary tuberculosis in relation to life insurance. These essays are all good; they cover all parts of the subject, and they overlap much less than is usual when such a collection is secured.

CHINA MEDICAL JOURNAL.

November, 1912.

Need for Physiological Standards in Clinical Research, with Special Reference to South China.—G. Duncan Whyte gives much valuable information concerning the differences, anthropological, physiological, and pathological, between the Chinese and the Caucasian. The height of the Chinese, although of more interest to the anthropologist, is rarely of importance in diagnosis, though ankylostomiasis, achondroplasia, Mongolian imbecility, and myxedema suggest themselves as conditions associated with stunted growth. The average height of a thousand Chinese proved to be 5 feet 4.07 inches. The question of corpulence—the relation of height to weight—is of practical importance in the determination of any loss of flesh, as in phthisis. The average weight of a Caucasian for a height of five feet four inches is 160 pounds, while the Chinese average weight is only 116 pounds. Each inch of stature corresponds not to 2.5 or three pounds as in Caucasians, but to less than two pounds (twenty-eight to thirty-one ounces). The urine of the Chinese has three outstanding features, the large amount passed (1,800 c. c.), its low specific gravity (1,004 to 1,012), and the very small amount of nitrogen content (seventeen grammes). As to the gastric contents we find the percentage of hydrochloric acid is much the same as with Caucasians, but the total acidity is much less—a total acidity of thirty-five would be normal in a Japanese, while in a European it would indicate a deficiency. Passing down the alimentary canal to the sigmoid flexure we find the contents more bulky and less offensive than those of Europeans, but it is normal for those stools to contain the eggs of intestinal parasites (ninety-nine per cent. are thus infected). *Trichocephalus trichiuris* cannot be considered a common cause of appendicitis, for in China there are more individuals infected with this parasite and fewer cases of appendicitis. *Ascaris lumbricoides* is present in ninety per cent. of the hard working Chinese. *Opisthorchis sinensis* was found in forty per cent. of the healthy business men and students examined. *Destomum crassum*, found in two cases, produced no definite symptoms. *Ankylostomum duodenale* is often present without causing any of the symptoms of ankylostomiasis; it cannot be suspected of causing beriberi or kalaazar. All these parasites are to be regarded as normal inhabitants of a healthy native's intestinal tract. The blood examinations of the Chinese are indeed unique in results.

The average amount of hemoglobin is between seventy and eighty per cent.; some showed even ninety per cent. and this in spite of the presence of a few ankylostomes. The specific gravity of the blood of the Chinese is yet undetermined, although of practical importance in the treatment of cholera. The red cells vary from the European in amount. An excess of five million red cells to the c.mm. is frequently found and forms a striking contrast to the low hemoglobin figure. The suggestion is offered by the writer that because of the lack of hemoglobin smaller red cells are required so that a relatively larger surface is offered for the diffusion of oxygen and carbon dioxide. The consideration of the white cells brings us to the verge of the pathological. The presence of a certain degree of leucopenia and of a relatively high percentage of mononuclear cells associated with slight enlargement of the spleen and a moderately high temperature is suggestive of typhoid fever, but this blood picture is normal for any man with chronic enlargement of the spleen. Again, it is normal for a parasite infected patient (this includes ninety-nine per cent. of the Chinese) to show a high degree of eosinophilia. The blood pressure of the Chinese corresponds very closely with that of the European.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 6, 1913.

Circumscribed Epidemic of Diphtheria.—Herman M. Adler describes an epidemic of diphtheria that occurred in the Denver State Hospital, started by a patient admitted in a stuporous condition, who presented nothing unusual physically and was admitted with the provisional diagnosis of dementia præcox, catatonic form. After dealing with the incidents of the epidemic he thus summarizes his conclusions: A patient suffering with indefinite catatonic symptoms should be carefully examined for physical disease, even if the usual signs of acute disease, such as fever and pain, are lacking. A diphtheria bacillus may be causing active disturbance without local manifestations. A true diphtheria bacillus may be introduced into the wards of an institution for the insane and spread without causing clinical diphtheria among the patients. The diphtheria bacillus under these conditions maintains its virulence and is capable of causing clinical diphtheria. The diphtheria bacillus does not as a rule cause clinical diphtheria in insane patients. The attendants are liable to infection with true diphtheria and often present the clinical picture, although none of the patients in their charge are characteristically ill with the disease. Diphtheria antitoxine should be used freely, even in the absence of clinical diphtheria.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 8, 1913.

School Diseases.—Edwin O. Jordan admits that childen of school age contract measles, scarlet fever, and diphtheria more frequently than older persons, but pertinently remarks that it may be because children of school age are more susceptible to infection rather than that school conditions favor their transmission. On the other hand, there are those who maintain that school attendance plays a larger part, if not the chief part in the dissemination of infectious disease among groups of children of susceptible ages. While the plate, the common drinking cup, and the roller towel are becoming things of the past, there still remains the friendly exchange of pocket handkerchiefs, lip moistened lead pencils, chewing gum, and the like. Sneezing, coughing, or speaking give rise to a discharge of minute droplets of spray from mouth or nose, which may float about in the air for some minutes and can be borne by air currents to a distance of several feet. These air borne droplets are looked upon by some as the principal factors in the spread of tuberculosis. Increase in the number of associates must necessarily increase the chances of infection. Although for diphtheria there is sufficient evidence of infection through school attendance, we are yet uncertain as to the relative importance of this source. Knowledge of the mode of spread of scarlet fever and measles is still more uncertain, which shows the need of an extensive and searching investigation by competent experts. Without adequate knowledge of the channels of infection strength is wasted in misdirected effort. In preventing infection efficiency should mark our efforts, and methods should be devised to produce the maxiumum effect with the smallest amount of injury or disturbance to the normal relations of human life. We do not at present know to what extent the various influences of school attendance are factors in the dissemination of infectious diseases.

Methods of Water Purification for Large Cities.—Rudolph Hering's account of the methods of water purification for large cities assures us that this branch of public service has reached a stage of development at which it is possible to furnish healthful water supplies at reasonable cost, whether they are obtained from subterranean or from surface sources.

Developments in the Skin Grafting Operation for Cancer of the Breast.—William S. Halsted offers many reasons for the use of the skin grafting operation in these cases: An almost unlimited amount of skin may be removed and these grafts present a definite obstacle to the dissemination of carcinomatous metastases, and recurrences in the deeper planes may be promptly detected under the thin, grafted skin. Finally, the inner or thoracic wall of the axilla being covered to the extreme apex with grafts, the skin on the outer flap may be utilized, *in redundant fashion*, for covering the axillary vessels, for obliterating the subclavian dead space, and for elevating the axillary fornix.

Salvarsan in General Paresis.—E. H. Trowbridge has already (see this JOURNAL for March 16, 1912, p. 555) rehearsed the general negative results in the treatment of general paresis with salvarsan by the subcutaneous method; in many cases the salvarsan was not absorbed, and the method of administration was painful. Of late he has been using the intravenous method. The reports of eight cases are given with the conclusion that salvarsan is as ineffectual in these cases as are many drugs long since consigned to the waste basket. While some slight improvement has followed its use in a few cases, the drug when pushed has intensified the destructive action of the disease and hastened the death of the patient. Trowbridge suggests two ways of working toward the eradication of the disease: Education of the public as to the future evils of syphilis and their prevention by immediate treatment; the other depends upon the discovery of the intermediate process or toxine which is causing the disease, and a curative drug or antitoxine to cure it.

Narcotic Addiction, a Systemic Disease Condition.—Ernest S. Bishop states that a satisfactory solution of the problem of narcotic addiction has not been reached. He believes firmly that there is a strong element of definite disease condition which demands consideration. Accepting this theory and applying it in treatment he has been able to obtain better results and in most cases a far more comfortable course. The writer pleads for more consideration and scientific investigation of this diseased condition.

Effect of Strong Purging on Blood Pressure and the Heart.—Charles H. Neilson and Robert F. Hyland's experiments, added to the clinical fact that patients with diseased hearts may become worse after brisk catharsis, warrant the assumption that all cases in which severe purging is used for depletion of the blood ought to be controlled by carefully watching the blood pressure, rate of pulse beat, regularity of the heart action, and the general condition of the patient.

MEDICAL RECORD.

February 8, 1913.

General Anesthesia by the Intravenous Route.—William F. Honan and J. Wyliss Hassler emphasize the advantages of intravenous general anesthesia. By this method the anesthetic is directly introduced into the blood, a minimum amount is used, it is maintained there at a certain definite percentage, and it can be withdrawn abruptly without leaving in the body such excess as may later prove harmful to the patient. The induction of anesthesia is very rapid, the preliminary stage of excitement is nearly always absent, the respiration is almost natural, the color of the skin remains good, and the relaxation and flexibility are entirely satisfactory to the operator. The degree of narcosis can be maintained exactly, and when the operation is finished the patient is almost if not quite rational. The anesthetics are varied, a five per cent. solution of ether, with filtered, sterile, normal saline solution at 85° F.; hedonal dissolved in normal saline solution at 70° F. to make a 0.75 per cent. solution; paraldehyde 2.5 per cent., and ether three per cent. in normal saline solution; or paraldehyde alone. Ether has always raised the blood pressure from two to twenty mm., while with hedonal it falls from ten to twelve mm. One case, purposely selected, with a blood pressure of 186 mm., dropped to 142 mm., and remained at that level for some hours. There have been no evidences of hemolysis beyond that usually occurring in ordinary saline transfusion, or in the respiratory administration of ether. As far as the blood picture is concerned, hedonal is well borne. Complete anesthesia occurs in from one and one half to twenty-three minutes with ether, with hedonal in from twelve seconds to four minutes.

Extradural Anesthesia.—Jerome M. Lynch makes a preliminary report of seven operations under extradural anesthesia, and describes the technic of the method. In all but one case the anesthesia was perfect and satisfactory in all respects. In the one failure it was done very hurriedly and was abandoned, and on account of the nervousness of the patient, a general anesthetic was given. As a sufficiently large amount of the solution was not injected the writer feels that this case should not be included. The writer suggests the value of this method in cases of urethral stricture in oversensitive patients in whom it is necessary to explore the urethra or bladder, and also in old men on whom it is necessary to do a prostatectomy, or with any procedure involving the urethra or bladder.

The New Chemistry and the New Materia Medica.—Hermann Hille shows that inorganic matter and organic material are essentially the same, but they differ in form and structure. The inorganic world is crystalline, the organic is colloidal. The inorganic is coarse in particle and slow in vibratory activity, the organic fine in particle and rapid in vibratory activity. Mineral bodies, in organic form, are an essential constituent of food and of the animal organism, and are vitally important in the prophylaxis and cure of disease. On the other hand crystalline, or inorganic minerals are not suitable as food or remedies for the animal organism, and will be eventually eliminated from materia medica and replaced by vitochemical, or true organic minerals. The smaller the particles of a colloidal minerai and the higher their rate of vibration, the easier it is assimilated and the better it is adapted as a remedy. Many of the so called "organic" salts are not such in the true sense because all, or part, of the compound is still crystalline and not colloidal. The old chemistry is unable to differentiate between inorganic and organic. The new chemistry not only makes clear the difference between inorganic and organic but also sheds light upon *Nature's evolutionary principle.*

Neglect of Oral Treatment in Infectious Diseases.—C. Everett Field holds that the minutest instructions as to the care of the mouth are as important as therapy and diet. The teeth should be cleansed twice daily and the mouth rinsed or swabbed out before and after each feeding with a stimulating alkaline antiseptic solution. This course will tend to lessen complications and autoinfection. The food will taste better, the appetite will be maintained, and assimilation will be carried on to the utmost.

ANNALS OF SURGERY.

December, 1912.

Fatal Postoperative Embolism.—L. B. Wilson analyzes the cases of fatal postoperative embolism from the opening of the Mayos' clinic, September 30, 1889, as follows: The total number of deaths in the hospital for the period under consideration, from all causes, was 864, of which the fatalities from embolism are approximately five per cent. The mortality from embolism, based on 63,573 operations, is 0.07 per cent., or one death in every 1,352 operations. Twenty-six of the patients were males and twenty-one females, the youngest being twenty-five years of age and the oldest seventy-two. Forty-one of the patients had been from two to thirty-five years, subject to some form of severe chronic debilitating disease. Nineteen of the fatalities occurred within the first week after operation, twenty-one more within the second week, four in the third week, and one each on the twenty-sixth, the thirtieth, and the sixty-fourth days, respectively. In thirty-six of the cases the embolism was pulmonary, in ten cerebral, and in one coronary. In twenty-eight of the forty-one cases posted, the originating thrombus was found in the field of operation or femoral vein. From a study of his cases and of the literature, he calls attention to the following general considerations: 1. Following operations, particularly on the bloodvessels, alimentary canal, and genitourinary organs, from one to two per cent. of all cases give more or less distinct clinical evidence of emboli, above seventy per cent. of which are in the lungs. 2. About ten per cent. of postoperative emboli which give clinical symptoms of diagnostic significance cause sudden death. 3. The source of the emboli can be definitely determined by autopsy as venous thrombosis in about eighty per cent. of the cases, as cardiac thrombosis in ten per cent., while ten per cent. are scattering or indeterminable. 4. The most important factors are the injury of the vascular walls, slowing and stagnation of the blood stream, the disintegration of the corpuscles of the blood from toxic substances and bacteriemia. 5. In consideration of the above mentioned factors the following precautionary measures suggest themselves: 1. The reduction of vascular traumatism to a minimum; 2, the encouragement of very early free movement on the part of the patient; 3, the preoperative administration of drugs to increase the coagulability of the blood; and, 4, measures looking toward the reduction of bacteriemia.

Management of Grave Emergency Cases of Extrauterine Gestation.—F. Cobb draws the following conclusions from a study of 137 cases of tubal and interstitial gestation at the Massachusetts General Hospital from 1902 to 1910: 1. More than thirty-three per cent. of extrauterine gestations occur in young primiparæ. 2. Salpingitis, or pelvic infection, is not an essential or frequent causative factor. 3. Most of the cases of complete rupture with alarming hemorrhage occur in the early weeks, often in the first month; these are the cases that are rapidly fatal unless operated in. Patients who have gone two months or more are those that furnish the greatest number of nonemergency cases. 4. Cases of sudden, severe rupture, until signs of marked intraabdominal hemorrhage are present, often simulate other grave abdominal emergencies with tenderness and spasm, high white blood count, fever, and vomiting. 5. In grave emergencies with signs of extreme hemorrhage, operation should be done at once without waiting for a possible reaction. 6. In the less severe cases of tubal rupture, without signs of marked hemorrhage, a correct diagnosis is often difficult or impossible. 7. The menstrual history cannot be depended upon; many of the most alarming cases had skipped no period. 8. The character and location of the pain may vary within wide limits. 9. Tubal abortions are nearly as frequent as tubal ruptures. Cases of tubal abortion seldom give a history of skipping a menstrual period, but a history of continued slight flowing or dribbling since the last period. 10. In regard to treatment he makes the following statements: Immediate operation is the method of choice; delay, even for transfusion, is dangerous and fatal, especially *delay with stimulation*; with proper technic and use of intravenous salt solution the percentage of deaths directly due to operation will be very low; in a very small percentage of cases direct transfusion will be needed and will save the small number of cases that would be fatal otherwise; direct transfusion should be done after operation, not before; at present, with the availability of infusion and direct transfusion, it is criminal for any operator of reasonable skill to delay.

Bevan's Operation for Undescended Testicle.—J. H. Jopson reviews the essential features of Bevan's operation as follows: Incision; laying open of the inguinal canal; exposure of the peritoneal pouch; division of cremaster muscle and fascia and transversalis fascia overlying it; transverse division of the sac (tunica) and ligation of upper end as in hernia operation; pursestring closure of the lower end to form a new tunica vaginalis testis; gauze dissection of the peritoneum from cord, including vas and vessels, and accompanied by division and separation of everything in the way of fibres or fascial bands from the vas and vessels, leaving these structures alone undivided. Then follows the preparation of a pocket or pouch in the same side of the scrotum, which is usually undeveloped, and after measuring the length of the cord by laying it downward upon the thigh, the testicle is placed in the scrotum and retained there by a pursestring at the base of the scrotum. Closure of the canal by the Bassini method, omitting transplantation of the cord, completes the operation. Exceptionally sufficient lengthening is not obtained by such free dissection of the cord to permit placing the testicle well down into the scrotum, and in these cases it will be noted that the spermatic vessels, the artery, and veins, and not the vas, are the agents holding it back, and the division of these vessels between the ligatures is then indicated, leaving the artery and veins of the vas to care for the nutrition of the testicle, a task to which they are nearly always equal.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

December, 1912.

Temporary Paralysis of the Right Vocal Cord, with Sensory Disturbance on the Left Side of the Body.—Wolfstein reports an unusual case in which the following symptoms were especially noteworthy: Transitory paralysis of the right vocal cord; marked disturbance in swallowing which was at first complete; the syringomyelic type of dissociation of sensation on the entire left side of the body below the lower border of the mandible, limited rather sharply to the midline of the body. The onset of the symptoms was acute with no subjective phenomena, except the inability to swallow. Improvement was rapid, and when the patient was seen six months later there was no sign of the disturbance remaining. The lesion was presumably a small hemorrhagic focus involving the nucleus ambiguus of the right pneumogastric nerve, and the rapid improvement is explained by its absorption. An extensive discussion of the anatomical relations concerned accompanies the report.

Examination of the Cerebrospinal Fluid for Arsenic Following the Administration of Salvarsan.—Camp has analyzed the cerebrospinal fluid in seventeen cases of syphilis to each of which was administered 0.6 gramme of salvarsan intravenously. The fluid was withdrawn at intervals of from fifteen minutes to forty hours after the injections, and the conclusions are drawn "that doses of salvarsan up to 0.6 gramme, or perhaps more, given intravenously, do not ordinarily result in the presence of any arsenic in the spinal fluid, and that arsenic is present in the spinal fluid practically only when the dose is so large or so frequently repeated as to cause a meningoencephalitis, which is sometimes of a fatal character. The assumption that the introduction of salvarsan into the blood stream causes it to reach all parts of the body is, therefore, not borne out by observations." This would help to explain the unsatisfactory results of this treatment in cases of syphilis and metasyphilis of the nervous system.

Some Atypical Forms of Tabes and Paresis in the Light of Serodiagnosis.—Riggs emphasizes the importance of serodiagnosis, especially the four clinical reactions of Nonne, in the study of irregular types of parasyphilitic disease, and briefly records four illustrative cases of tabes in all of which the typical pupillary and reflex signs were lacking. The author states that the biological and chemical findings are not to be regarded as final, but "rather they should be used in conjunction with the clinical syndrome and regarded as corroborative only. Consideration of both these factors will enable one to arrive at a diagnosis in the great majority of instances."

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18, and 19, 1912.

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

(Continued from page 370.)

Adhesion of the Sigmoid.—Dr. H. A. Royster, of Raleigh, N. C., said that sigmoid adhesion was associated with definite symptoms which he believed could be relieved by simple means. Three years ago he directed attention to sigmoid adhesion as a cause of pain in many cases of salpingitis which were attributed to the ovary and other organs. Further experience and observation had convinced him not only of the importance of this adhesion, but of its more widespread interest, so that the whole question had assumed a broader aspect and was coming into consideration in every case of abdominal diagnosis that we had presented to us. Women commonly complained of left sided pain, but it was not always properly interpreted. The ovary was too often blamed as the chief offender when, as a matter of fact, there was very little pain associated with ovarian disease. Most often the tube was the source of the pain and tubal trouble usually preceded any ovarian involvement. In a number of instances neither the tube nor ovary was found involved, yet the woman had pain. The particular thing which was characteristic of sigmoid adhesion, as observed clinically was, first, pain during defecation, and not afterward. In addition to this, some of the patients described a stoppage at certain points. Constipation was the rule, but in a few cases the condition was associated with mucous diarrhea or a mucous discharge from the bowel. Usually the pain was low down in the left iliac region, but it might be higher up, near the spleen or midway. Most of it was below the anterior spine of the ilium. A typical example of sigmoid adhesion was that of a married woman who had given birth to two or three children. She complained of incessant pain in the left quadrant of the abdomen, and was sent in as having probably a case of tubal disease. Her greatest suffering was on going to stool. She was obstinately constipated. Pelvic examination was negative. Her abdomen was opened and a classic sigmoid adhesion revealed. This was dealt with the abdomen closed. She had been free from pain now for more than two years.

Dr. Guy Leroy Hunner, of Baltimore, said the first of two or three cases he saw of this condition was operated in more than once for pelvic and other conditions in the abdomen which might be imagined to be causing the real trouble, and finally these sigmoid adhesions were found and relieved, with recovery of the patient. As regards the etiology, some of these adhesions did not come from the large bowel, but from without to the sigmoid. He found that in some of these cases the adhesions ran from the internal inguinal opening over to the large bowel in the shape of fanlike peritoneal adhesions. In other words, the infection had apparently not come from the large bowel at all, but from the lymphatics running into the peritoneal cavity with the broad ligament. He found in some cases chronic urethritis was associated with this condition of left sided pain, but not all females with chronic urethritis who had pelvic pain had these adhesions.

Dr. Henry T. Byford, of Chicago, stated that in those cases in which the adhesions were not connected with the sigmoid, he thought the pain was usually low down, extended off toward the false pelvis about the iliac region, and made it more or less a backache; whereas in the other class of cases the pain extended up along the colon, was apt to extend into the back and be more to the left side.

Dr. James E. Moore, of Minneapolis, said sigmoid adhesion was a definite surgical entity, and we could relieve it by surgical measures. In a certain number of cases there was a definite symptom which would enable one to make a positive diagnosis from the ordinary examination, and that was a sausage shaped tumor extending up the left iliac region toward the splenic flexure.

Dr. Walter B. Dorsett, of St. Louis, said if sigmoid adhesion was due to the colon bacillus or to some other organism, it occurred to him that it would be just as frequent in the male as it was in the female. In dealing with these cases he made the incision in the median line because of the fact that he had had some unpleasant complications in making the incision to the left of the rectus muscle.

Dr. Gordon K. Dickinson, of Jersey City, spoke of four types of immobilization of the sigmoid. One was the congenital type, where the attachment of the left annexa to the sigmoid was rather closer than usual and interfered with its function. The second was the inflammatory type from the left annexa. The third was one in which there were inflammations around the cecoappendix which drew it over to the right and immobilized it, and, fourth, the type described by Doctor Royster. To him he had given a very perfect description of diverticulitis or multiple diverticula of the sigmoid.

Dr. J. Wesley Bovee, of Washington, D. C., said when there was infection of the left appendage it was entirely on the peritoneal surface; it would also spread under the peritoneum, and there was infiltration of tissue in the peritoneum which gave rise to adhesions. The one class of cases that gave rise to adhesions was that class in which upon examination he was not sufficiently expert to differentiate between tubal and ovarian disease and sigmoid adhesion. He was not expert enough in many cases to even find the tube or ovary where it had become diseased, for as the result of old infection it was plastered on the wall of the pelvis. If it contained pus, the pus was absorbed. We had a small tube and ovary buried in adhesions and on the surface one could not find them nearly as easily as he could find the round ligament or ureter by bimanual examination in normal cases.

Pseudoperitoneal Cauls of the Colon.—Dr. John Wesley Long, of Greensboro, N. C., considered the nomenclature of the subject, analyzing the terms, adhesions, membranous pericolitis, veils, pseudomembranes, etc., which were ordinarily applied to the conditions described. He showed that we often used very inexact terms in speaking of the membranous formations found about the colon. He proposed the term "pseudoperitoneal caul" as being description and withal correct. Caul meant a thin, serous membrane, and was especially applied to peritoneal membranes as the layers forming the great omentum. The membranes in question were evidently of peritoneal origin and by the testimony of the majority of writers they were a new formation, therefore pseudo; hence the term, "pseudoperitoneal caul of the colon."

There were four chronic conditions found in the right iliac fossa, namely, chronic appendicitis, Lane's kink, Jackson's membrane, and cæcum mobile, all of which had much in common as to etiology, pathology, and symptom complex, and were difficult to differentiate clinically. Of this group the writer laid stress on the pseudoperitoneal cauls of the colon, and believed them to be largely of infectious origin, though he did not deny the influence of developmental errors, splanchnoptosis, and intestinal stasis.

Proctoclysis; Experimental Study.—Dr. Hugh Trout, of Roanoke, Virginia, said in February, 1912, he presented a preliminary report of a comparative study of normal saline solution and tap water for proctoclysis in nearly one thousand cases. The present report was based on over two thousand cases and included all types of operations as well as replies received, from two hundred and thirty-two hospitals with the following deductions: 1. There was no uniformity in preparing saline solutions in the various hospitals. 2. A soft rubber catheter was employed instead of a hard nozzle, and very seldom did the patient realize anything was in the rectum. 3. All sodium salts were toxic, and quite frequently dangerous doses were given by the rectum. 4. Tap water did not irritate the rectum, and patients would absorb one third more than they would of salt solution. 5. It required twice as much water by mouth to relieve thirst when patients were taking salt solution by rectum. 6. Salt solution did not seem to have any effect on the renal functional test of phenolsulphophthalein. 7. Twenty-seven patients had tested salt without knowing the character of the solution they were taking by rectum. 8. Fifty-eight cases had been operated in at other hospitals, and all the patients had commented on the absence of thirst and decrease in nausea in comparison with previous operations. 9. Two hundred and eighty-seven operations on the perineum and rectum in which proctoclysis could not be employed, had been in the hospital during this period, and all showed a marked increase in thirst and nausea in comparison with other cases. 10. Four cases of death had been reported in the literature from the use of salt solution. 11. The giving of fluid by rectum met Nature's demands for the relief of postoperative thirst in a simple, effective, and harmless manner.

Dr. J. Wesley Bovee, of Washington, D. C., congratulated Doctor Trout on his work in this direction, because it was painstaking and thorough. He had no idea he would get nearly as good results with plain or tap water as with water containing salt, and he said this after having had a large experience in the use of salt solution.

Dr. Ernst Jonas, of St. Louis, said they had been changing from saline solution in the rectum to plain water proctoclysis, and although he could not give the exact statistics, he could confirm the very favorable report of the essayist. Patients had been much more comfortable. Edema of the legs had been observed less frequently.

Dr. F. W. McRae, of Atlanta, said in one case he knew of, a stronger salt solution was used instead of the usual dilute salt solution, and death supervened twelve hours later. It was a simple appendectomy where the nurse used a pint of the stronger solution.

Dr. F. D. Parham, of New Orleans, said that for some time he had been using very much weaker solution, namely, one tenth of one per cent. solution, in place of the ordinary normal salt solution, but had not done it as systematically as the essayist, who had brought out clearly the advantages of using water in place of salt solution in most of these cases.

Dr. J. M. T. Finney, of Baltimore, had had the opportunity of seeing some of Doctor Trout's work and knew the care with which these observations had been made and the long series of cases which they covered make it a paper of great importance in view of his findings.

Dr. Robert Milne, of London, England, said it would be interesting to know the temperature of the tap water in the receptacle. At the London hospitals they gave salt solution as a routine for years, and in the receptacle the temperature of it was 105° F. until some one found that when the saline solution came out of the end of the catheter its temperature was only about 90° F., that is, in running through a rubber tube three or four feet long the saline solution dropped about fifteen or twenty degrees in temperature. Since then they usually kept it in a thermoflask at the foot of the bed and kept it in that flask at a temperature of 120° F.

Dr. O. H. Elbrecht, of St. Louis, Mo., said if one would take a tube, six feet long, which was about the average length of the tube which would be used for proctoclysis work, he would find there was a drop of 40° F. in temperature in the six feet of rubber tubing, with the water running at the rate of sixty drops a minute. This he simply used as a standard to gauge how much salt solution would run in in an hour.

Dr. W. P. Carr, of Washington, D. C., had always been rather afraid of salt solution, especially when it was used intravenously and subcutaneously, and he did not think he had given it intravenously in half a dozen cases, and he seldom used it under the skin. He was glad to hear of such gratifying results from the use of plain tap water.

Doctor Trout had been able, except in a few cases, to get nine quarts of salt solution in the rectum. He had found drainage cases absorbed more than any other class of cases. He used from 3,500 to 4,000 c. c. in the water cases, and with salt solution he used from 2,500 to 3,000 c. c. He gave it every two or three hours by catheter, would let it run in, and then take out the catheter.

Acute Invagination of Ileum Secondary to Sarcoma of Small Intestine.—Dr. C. Jeff Miller, of New Orleans, said a search through the list of reported cases revealed only a few similar instances in which sudden acute symptoms gave the first warning of intestinal trouble. He found only three such cases in Moynihan's list. In the other thirty-seven cases, symptoms of transitory abdominal pain, occasional vomiting attacks, and nausea preceded the recognition of the growth from a few weeks to over three years. If there could be a cardinal symptom it would be the presence of a tumor. It was present in over ninety per cent. of the cases when brought for examination or operation. It was always present in children and nearly as constant in adults. More than half the cases were reported in patients over forty years of age. Cachexia was marked in children only, except in the late stages. Fever was often present, as might be expected from the large percentage in which ulceration occurred. Constipation was not a reliable symptom, although often present. Diarrhea was noted in a few. Three cases had been reported as occurring in the ileum years after severe attacks of typhoid fever, and Nothnagel had reported an instance of sarcoma that developed from tuberculous ulcerative scars. In thirty out of forty-six instances the growth was single, in sixteen multiple. It was curious to note the frequency of adhesions between the bladder and involved coil of intestine. In forty-six cases Lecene had reported adhesions in twelve, seven of which were instances in which the bladder was the involved structure.

Extrauterine Gestation.—Dr. Stuart McGuire, of Richmond, Virginia, reported five cases on which he had operated a second time for extrauterine gastation. He quoted Dr. Richard R. Smith who tabulated 2.998 operations for tubal gestation in which recurrence followed in 113 cases or 3.8 per cent. He did not believe these figures represented the true frequency of the accident, as he thought it was impossible to follow up such cases accurately over a sufficient period of time to get final results. While he agreed theoretically with the rules laid down by Smith, he did not think they would prove of much service practiacally, as they left the decision of the question too much to the patient. A woman just before an operation for a ruptured ectopic sac was in no condition to understand or settle a complicated proposition. If she decided either for or against the removal of both tubes, she would in after life frequently regret the responsibility of the decision, fearing on the one hand a repetition of her former accident, or indulging on the other in morbid longings for a child whose advent she had made impossible. The operator should settle the question for himself without taking the woman into his confidence, remembering all the time that a surgeon's and a patient's attitude toward an operation was often very different, and that their estimates of the desirability of a baby were often very far apart. In deciding the question the surgeon should try to put the patient in the position of a member of his own family and ask himself, "what should I want done if this were my wife or my sister or my daughter?"

Indications for Abdominal Cæsarean Section.—Dr. Reuben Peterson, of Ann Arbor, said the more common indications for this operation were obstructions to labor, pelvic contractions, fibromyomata, ovarian tumors, stenosis of the cervix and vagina, miscellaneous, such as previous ventrofixations, and large size of the child. Other indications were uterine hemorrhages, concealed accidental hemorrhage, placenta prævia, constitutional crises, eclampsia, and contracted pelvis. Probably more Cæsarean sections would be performed for this indication than for any other. The operation was imperatively demanded in cases where the conjugata vera measured 7.5 cm. or less, and the child was living. When the child was dead and the true conjugate was 6.2 cm. or under, Cæsarean section was still indicated, on account of the danger to the mother of attempts to deliver the craniotomized child through such a small pelvic diameter.

He was at present engaged in tabulating the results of 425 cases of eclampsia treated by abdominal Cæsarean section, and some very interesting facts were being brought out. Not only had the literature been carefully searched and all recorded cases been collected, but many operators all over the world had been kind enough to furnish him with unpublished cases. Thus, the statistics represented not the work of a few, but over two hundred operators. The total maternal mortality, counting patients operated upon before the aseptic era, was 36.9 per cent. while this was reduced to 31.8 per cent. if only the 317 patients operated upon since 1900 were counted. The fifty per cent. mortality ascribed to abdominal Cæsarean section in the treatment of eclampsia could be explained by errors in the selection of cases, for many eclamptic patients were subjected to the operation who were hopelessly septic. These patients did not die from the eclampsia or the operation itself. Many of them perished because of the poor judgment on the part of the operators. They would have died even if the operations had not been performed for eclampsia.

In 245 cases of eclampsia, where there was no sepsis or very little chance of it prior to the abdominal Cæsarean section, the material mortality was only twenty- four per cent. It was significant that in fifty cases where operative procedures preceded the Cæsarean sections, the material mortality was forty-eight per cent., the difference in mortality being due, not to the eclampsia, but to the sepsis accompanying the eclampsia, a condition which could be avoided once this relation of sepsis to Cæsarean section was fully realized by the profession. The results of abdominal Cæsarean section for eclampsia so far as the fetus was concerned should be and, as a matter of fact, were gratifying in the 425 cases. In 217 cases since 1900, where the fetal statistics could be studied, the fetal mortality was only 5.5 per cent. Even this mortality was reduced to 3.7 per cent. in 132 cases where the sections were performed after from one to five eclampsia convulsions.

These statistics were cited to show that the last word had not been said regarding the place of abdominal Cæsarean section in eclampsia. At last, the statistics in over 400 cases had shown beyond a doubt that no one was justified in dismissing the treatment of eclampsia by abdominal Cæsarean section with a short statement that the mortality was so high as to make it an unjustifiable operation.

Abdominal Gestation with Living Child.—Dr. J. Shelton Horsley, of Richmond, Va., reviewed the literature on abdominal pregnancy with a living child and reported a case. From 1809 to 1912 there were 103 cases on record. Regarding those cases as entirely successful in which both mother and child were saved, and the child living a year after the operation, there were five such cases. The author reported a case which fell within these requirements, that of a colored woman in whom pregnancy was supposed to be normal until her physician was called in at about full term. He recognized abdominal gestation as the uterus was empty. Doctor Horsley did an abdominal section and delivered a male child, well formed, and weighed six pounds. The mother made a satisfactory recovery, and a year after the operation both mother and child were well.

Application of Iodine to the Generative Organs of Women in Infections and Preparations for Surgical Operations.—Dr. J. Wesley Bovee, of Washington, D. C., stated that the conditions in which this treatment was applicable were: 1. Acute infections of the vulva, vagina, urethra, and the whole endometrium. 2. Acute peritoneal infection with proper limitations. 3. Chronic conditions following infections of these structures and of the tubes, ovaries, and pelvic peritoneum. 4. In pelvic surgery requiring examinations, manipulations, or operations on or through the vagina. 5. In such procedures as required opening the cervical canal or uterine cavity from either the vaginal or peritoneal side. 6. As a routine method of preparation of the field of operation on all these structures as well as the rectum.

For several years he had confined the treatment of recent and remote Neisserian infection of the vulva, urethra, vagina, and cervix to the application of iodine. He had great confidence in the efficacy of this remedy when applied early. If the condition might be treated before the infection had passed into the uterine cavity or the glands of Bartholin, it could often be eradicated by one thorough painting of the exposed areas below the uterine cavity. If the first application failed, a second made three days later commonly succeeded. In pelvic surgery that required examinations, manipulations, or operations on or through the vagina, this plan of local sterilization was far superior to any other he had used. The importance of the vaginal application of iodine was emphasized in the radical operation for cancer of the cervix uteri. The high mortality from infection of the peritoneum as a result of breaking of the specimen during its removal and resulting leakage was a striking feature of the recent report of Wertheim's work in this field. This sad complication was best obviated by the use of the iodine to both the vagina and endometrium, preceded by galvanocauterization with or without curettement, if excrescences or craters were present. Since the etiology of cancer was not known, he would warn against driving any cancer material beyond the uterus by employing considerable pressure in injecting that organ.

The Best Operation for Cancer of the Uterus.—Dr. Herman J. Boldt, of New York, stated that vaginal extirpation of a carcinomatous uterus gave a lower primary mortality, particularly the method of vaginal hysterectomy generally employed, than the extended abdominal hysterectomy. It must be conceded, however, that in cancer of the cervix the percentage of recurrences was larger after cancer operations in which vaginal hysterectomies were done. When one decided upon vaginal extirpation, the technic devised by Schauta, of Vienna, whereby the ureters were exposed and the uterine arteries isolated and tied, so that the parametria might be extensively extirpated, was the method that should find preference. Paravaginal section, which was a secondary accompaniment of the operation, would, if surgical precautions were used, give no more trouble than any ordinary wound. With the paravaginal section one secured satisfactory access to the field of work, which, without it, would be a physical impossibility.

Despite its great superiority over the regular hysterectomy, the method usually employed, it should be limited to obese women, the incipient stages of epithelioma of the vaginal part of the cervix, and to cancer of the body of the uterus, when the uterus was freely movable. It was particularly applicable in the cases of the aged, because of the greater sluggishness of the lymphatic system in persons well advanced in years. Generally speaking, however, the extended abdominal operation should be done unless there was a contraindication. One could undoubtedly remove more parametrium through the abdominal route. Furthermore, one could inspect the glands and extirpate them if the abdomen was opened, which could not be done when the vaginal route was used. The remote results showed, that if the abdominal operation were done properly, the ultimate percentage of recoveries from cancer of the uterus was fully fifty per cent. more than by the vaginal route. But one must really do the extended operation, not the original panhysterectomy first done by Freund for cancer of the uterus.

Fatal Hemorrhage from Erosion of the Gastroduodenal Artery by Ulcers.—Dr. James E. Thompson, of Galveston, had seen two fatal cases of bleeding from duodenal ulcers in spite of the operation of gastroenterostomy. In both cases the ulcer was situated on the posterior surface of the first portion of the duodenum, and in both the hemorrhage which proved fatal came on at a time when it looked as if the patients would recover from the operation. The first patient died thirty-four hours after the operation with all the symptoms of concealed hemorrhage, but as no autopsy was allowed, one could only surmise from the position of the ulcer that the gastroduodenal vessel was eroded. The second patient lived forty-two hours after the operation.

A Sign of Value in Obscure Cases of Chronic Appendicitis Elicited by Rectal Palpation.—Dr. Francis Reder, of St. Louis, stated that in the more obscure forms of chronic appendicitis, where other points had failed, he had been able to make an absolute diagnosis through a point located in the first (sigmoidal) portion of the rectum. These cases belonged to a class whose symptomatology did not invite attention to the appendix region on account of the total absence of focal symptoms. In many of these cases pressure at McBurney's point had not given the reflex pain that was expected and usually obtained in a lesion of the appendix of this character, while pressure at Morris's point had proved equally as negative. An absence of these reflexes was usually sufficient to dismiss the thought of an existing appendix lesion. The point in the rectum, however, had invariably given a positive reaction in the presence of a chronically diseased appendix. The part of the rectum concerned in this examination was the first portion. It began at the sacroiliac synchondrosis, usually the left side was entirely covered with peritoneum, and had a mesorectum which gave that portion of the bowel a certain amount of mobility. This mobility was of some value in the examination. Within the lumen of the bowel at the junction with the sigmoid about three and a half or four inches above the margin of the anus, there existed aggregations of circular fibres that formed a valve. This valve was constant, was known as the valve of O'Beirne, and varied but little in its distinctive circular characteristics. This valve served as a landmark and was an important factor in the examination.

In making the examination to reach the points, the patient was comfortably placed on the examining table upon his back with both legs flexed. The index finger, well lubricated, was introduced into the rectum, and a search made for O'Beirne's valve. This valve was sometimes reached with some difficulty, especially when it was located high or when the examining finger was rather short. It was absolutely necessary that the valve be located. Its recognition was easy; the sensation imparted was very similar to that which the examining finger experienced when introduced into the os uteri during the first stage of labor. In size, he had found the valve to vary in some as large as a ten cent piece, and in others as large as a quarter. The valve having been located, the finger was hooked into it and gentle traction made upon the structures to test the mobility of that portion of the rectum. The tip of the finger was allowed to rest within the lumen of the valve, and the patient asked if he experienced any pain. The answer was usually no. Should there be any pain, it was generally referred to the sphincter area of the rectum. By allowing the finger to rest for a short time this pain would subside. After being assured of the total absence of pain by the patient, the tip of the finger was gently pushed upward toward the right iliac fossa, when, in the event of a lesion of the appendix, the finger would touch a point beyond the valve that would cause the patient great pain. As a control manœuvre a similar point might be touched by sweeping the examining finger toward the left inguinal fossa, usually with negative results. The accuracy of the diagnostic value of this point had been verified in some two hundred cases. The patients comprising this series gave a period of time when their health was not good ranging from six months to twelve years. After removal of the chronically diseased appendix, the patient was fully restored to health in from three months to two years.

(*To be concluded.*)

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Textbook of Ophthalmology. By Professor Paul Roemer. Translated by Matthias Lanckton Foster, M. D. Volume II. New York: Rebman Company, 1912. Pp. 276-571.

The first volume of this textbook, to be completed in three volumes, we reviewed some time since. This, the second volume, is quite the equal of the first in every respect. The text shows the same masterful translation, and once more we congratulate the author on his translator. There is no denying the forceful personal element in this work. The form of the clinical lecture cannot be surpassed as a means of impressing the reader; indeed it is intermediate teaching of the highest order. The teaching is sound throughout and so thoroughly modern as to commend it to every seeker after ophthalmic truth. The four chapters that stand out are those on sympathetic ophthalmia, on judicial medical opinion in injuries of the eye, on diseases of the orbit, and on glaucoma. It is not often that the original investigator so puts the very essence of himself into a textbook. Our only complaint is the same one we indulged in at the first volume, namely, the scant reference to any but German authorities; but anyone who reads this book carefully will readily forgive the author because he has made the reader think; and that is no small thing to accomplish in a textbook in this day and generation.

Mind and Its Disorders. By W. H. B. Stoddart, M. D., F. R. C. P. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xvi-518. (Price, $4.)

Recent advance in psychiatry has been so rapid that, although the first edition of this book appeared but three years ago, preparation of the second edition required alteration in almost every chapter, as well as the addition of two new chapters dealing with the study of the subconscious mental processes by methods of psychoanalysis. The work is arranged in three parts, the first being devoted to normal psychology, the second to the psychology of the insane, and the third to a consideration of mental diseases. About 175 pages are used by the first two parts which are calculated to prepare the reader better to comprehend and see in perspective the symptoms of mental disease. The classification of insanity is with slight modifications that of Kraepelin.

Skin Grafting. By Leonard Freeman, B. S., M. A., M. D. St. Louis: C. V. Mosby Company, 1912. Pp. 139. (Price, $1.50.)

This small volume furnishes an excellent epitome of the whole subject of skin grafting. The author takes up the history of the procedure from the very earliest times, and after describing in detail each of the several methods, gives at the end a comparison of methods based on the experience of others and himself. The book shows careful study and practical knowledge and cannot but be of interest and profit to one desiring either a superficial view of the subject or details of any method. The author has introduced some excellent photographs and diagrams which help to elucidate the technic of the various steps in the operation.

The History of the Prison Psychoses. By Dr. Paul Nitsche, and Dr. Karl Wilmanns. Authorized Translation by Francis M. Barnes, Jr., M. D., and Bernard Glueck, M. D. With an Introduction by William A. White, M. D. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. xiii-84. (Price, $1.25.)

The influence of prison confinement on the development of insanity has received the attention of psychiatrists for more than fifty years. The Germans particularly have directed attention to the subject, and the present volume is a review of their literature and a presentation of the modern conception of the prison psychoses. This is a most important question, for there is no doubt that a very large proportion of criminals is composed of sufferers from dementia præcox and other psychoses as well as various grades of degeneracy. This fact does not receive sufficient consideration in courts of law, and this type of offenders as a consequence is usually placed in the worst possible environment. The effect of prison life on the mentally unstable varies according to individual predispositions and conditions; existing psychoses receive special coloring, and acute or chronic psychoses develop of a more or less characteristic type. These and other considerations call for improved methods of dealing with the criminal, and to those who are interested in these problems this monograph will be particularly welcome

Jahresbericht über die Ergebnisse der Tuberkuloseforschung, 1911. Von Dr. F. KÖHLER. Jena: Gustav Fischer, 1912. Pp. 194.

In this publication the author has not attempted to give a complete summary of all that has been published, but has selected what seems to be the more important. The arrangement of the material is good under the headings of prevalence, etiology, pathology, diagnosis, prophylaxis, and therapy with some subdivisions. In addition there are a good index and a list of authors' names. As a means of ready reference this compilation of abstracts is extremely good and of distinct value; a very large amount of information has been made accessible.

Die Krankheiten der Leber. Von. Prof. Dr. H. QUINCKE und Prof. Dr. G. HOPPE-SEYLER. Bearbeitet von Prof. Dr. G. HOPPE-SEYLER, Kiel. Wien und Leipzig: Alfred Hölder, 1912. Pp. viii-809.

That this is part of Nothnagel's System of Medicine and that it is written by so widely known an author as Professor Hoppe-Seyler is sufficient indication of its value. The work is really colossal; the world's literature has been searched and the best made use of. Following the various portions are the references from which the material has been drawn. The book is really an encyclopedia of the diseases of the liver. In this second edition various diseases have been more fully discussed, tuberculosis and syphilis now having a chapter devoted to each. Although the attempt has been made to deal only with the essentials and to condense them as much as possible, this edition is larger than the first. Inasmuch as numerous important investigations appeared during the printing an appendix has been added in which have been placed these newer matters. In regard to Banti's disease the author states that syphilis must always be thought of. The one criticism that might be made is that some of the photographs, used for the plates, are not very clear. The book is a very valuable one and can be highly recommended.

Herzmissbildungen. Von Professor J. G. MÖNCKEBERG. Jena: Gustav Fischer, 1912.

This splendid work consists of a series of sixty-five plates upon which are shown 114 cross sections of hearts the seat of anomalies such as septal defects, bicuspid aortic valve, congenital aortic stenosis, rudimentary left ventricle, persistent ductus Botalli, cor biloculare, etc. Sixteen cases, in addition to the normal hearts of two newborn infants, are dealt with, most of them showing unusually severe types of malformations, the nature of which is very clearly shown in the sectional drawings. Ample descriptive matter accompanies each of the plates. Special pains were taken by the author to ascertain the condition of the auriculoventricular system in each of the specimens. In none were either the sinus nodes or the auriculoventricular bundle missing, although the latter was sometimes identified only with difficulty owing to the absence of the septum or coronary sinus or abnormal relations of the great vessels. From his experiences with these hearts, Mönckeberg concludes that the so called "central fibrous body" of the heart, situated behind the root of the aorta, is the most trustworthy and constant guide to the point of origin of the auriculoventricular system.

BOOK AND MAGAZINE NOTES.

We have often had the pleasure of directing the attention of our readers to the bound halfyearly volume of *The Prescriber,* the monthly journal edited in Edinburgh by Thomas Stephenson, Ph. C., F. R. S. E., F. C. S. Volume VI has just been issued and will be found as useful and as entertaining as its predecessors.

A recent issue in the Riverside Educational Monographs is *The Teacher's Health,* by Lewis M. Terman, associate professor of education at Leland Stanford, Jr. University. We commend this book to our readers as affording much unexpected information regarding the profession of teaching and those who undertake it. Teachers seem to be drafted into our schools in a somewhat wholesale manner, and the addition of a medical psychologist to examining boards might not be a bad idea. Moreover, a very large percentage of women teachers suffer from ill health of various kinds, a fact which should direct expert medical attention to their problems. The book is published by the Houghton Mifflin Company.

The Psychology of Insanity, by Bernard Hart, M. D., of London, is a late issue of the Cambridge Manuals of Science and Literature published in the United States by G. P. Putnam's Sons. This little work of 172 pages may be cordially commended to the general practitioner who has not had the time or opportunity to study insanity carefully, especially as it offers an excellent introduction to the theories of Freud which promise to revolutionize the attitude of the practitioner toward a certain class of patient, yet are little known to many American physicians. A careful reading of the preface will prevent the uninstructed reader from being misled.

Another Cambridge manual is *The Individual in the Animal Kingdom,* by J. S. Huxley, B. A., a book of 160 pages which the author hopes will help to bridge the gap between science, philosophy, and the ideas and interests of every day life. To anyone with a rudimentary knowledge of biology this book will be of fascinating interest, while it will stimulate useful thought in those who are accustomed to correlate their knowledge and apply apparently extraneous information to the problems of practice.

Etude historique et critique sur les générations spontanées et l'hétérogénie, by Hector Grasset, published by Jules Rousset in Paris, is a valuable and interesting contribution to the subject of spontaneous generation, and those who have made up their minds on this question may find, upon its perusal, that their conclusions were somewhat premature. The author is a distinguished scholar and critic, of vast erudition and practical laboratory knowledge, and has presented this deep problem of fundamental philosophical importance in a lively and agreeable style, brightening it with personal recollections. The book consists of 190 closely printed pages, and is priced at four francs; it is to be hoped that, in view of the paucity of English books on the subject, a translation will be offered.

La vie du règne minéral is another publication of Jules Rousset, a brochure of 115 pages issued at three francs. It is by René Schwaeblé and takes up the curious similarities recently observed in the mineral kingdom to the phenomena of biology, which seem to prove that there is really no inorganic chemistry. On a basis of the unity of matter, proofs of which are offered, the author discusses form and crystallization and extends his thesis of there being a life in the mineral kingdom as in the animal and vegetable kingdoms. The foreshadowing of these ultramodern theories by the alchemists has interested the author. The book deserves the attention of the intelligent physician as well as of scientists and thinkers generally.

Meetings of Local Medical Societies.

MONDAY, *February 24th.*—Medical Society of the County of New York.

TUESDAY, *February 25th.*—New York Dermatological Society; New York Psychoanalytic Society; Metropolitan Medical Society of New York; New York Medical Union; Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Woman's Hospital Society, New York; Washington Heights Medical Society; Alumni Association of Seney Hospital, Brooklyn; Buffalo Academy of Medicine (Section in Pathology); Rome, N. Y., Medical Society.

WEDNESDAY, *February 26th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

THURSDAY, *February 27th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Bronx Medical Association; New York Physicians' Association; New York Celtic Medical Society; Hospital Graduates' Club, New York.

FRIDAY, *February 28th.*—New York Academy of Medicine (Section in Public Health); Academy of Pathological Science; Society of German Physicians, New York; New York Clinical Society (annual); Manhattan Medical Society; Italian Medical Society (Geneological Hall); Hospital Graduates' Club, Brooklyn; Audubon Medical Society.

Official News.

United States Public Health Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 5, 1913:

Clark, T., Surgeon. Directed to proceed to certain points in Kentucky, to investigate the smallpox situation and advise with local health authorities relative to its control; leave of absence for seven days en route to station amended to read "five days leave of absence en route to station." **Driskell**, S. E., Acting Assistant Surgeon. Granted six days' leave of absence from January 30, 1913, under paragraph 210, Service Regulations. **Frost**, W. H., Passed Assistant Surgeon. Granted five days' leave of absence, February 1 and February 5-8, 1913, under paragraph 191, Service Regulations. **Goldsborough**, B. W., Acting Assistant Surgeon. Granted one day's leave of absence, without pay, February 2, 1913. **Kempf**, G. A., Assistant Surgeon. Granted three days' leave of absence from January 19, 1913, on account of sickness. **Lloyd**, B. J., Passed Assistant Surgeon. Leave of absence for two days from December 13, 1912, on account of sickness, amended to read "two days' leave of absence from December 13, 1912." **Warner**, H. J., Passed Assistant Surgeon. Leave of absence for seven days from January 19, 1913, amended to read "five days' leave of absence from January 19, 1913." **Wertenbaker**, C. P., Surgeon. Granted one day's leave of absence, January 23, 1913.

Board Convened.

Board of medical officers convened to meet at Vancouver, B. C., for the reexamination of a family of detained aliens. Detail for the board: Acting Assistant Surgeon H. R. Storrs, chairman.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending February 15, 1913:

Chase, C. L., First Lieutenant, Medical Reserve Corps. Left Fort Dade, Fla., on February 15th on leave of absence; placed on inactive list on expiration of leave. **Chilton**, F. N., Lieutenant, Medical Corps. Left Fort Myer, Va., on February 12th on leave of absence for one month and fifteen days; under orders to proceed to the Philippine Islands on April 5, 1913. **Hill**, E. C., Captain, Medical Corps. Sick in quarters on February 10th. **Lemmon**, Robert, First Lieutenant, Medical Reserve Corps. Resignation accepted, to take effect February 9th. **McKnight**, J. R., Lieutenant, Medical Corps. Left Fort Andrews, Mass., on February 14th, for Newport News, Va., to report to the Medical Superintendent of the Army Transport Service. **Merrick**, J. N., First Lieutenant, Medical Reserve Corps. Relieved from active duty in the Medical Reserve Corps on February 7, 1913. **Morse**, A. W., Major, Medical Corps. Left Fort Barrancas, Fla., on February 9th, to inspect the Mississippi Militia. **Murtagh**, J. A., Major, Medical Corps. Left Fort Leavenworth, Kansas, on February 7th, on leave of absence for one month, with permission to apply for an extension of one month. **Rand**, Irving W., Major, Medical Corps. Left Fort Hancock, N. J., on February 10th, on ten days' leave of absence. **Schreiner**, E. R., Major, Medical Corps. Ordered to accompany the Third Squadron, First Cavalry, to the Presidio of Monterey, Cal., and, upon completion of this duty, to return to Boise Barracks, Idaho. **Siner**, J. L., Lieutenant, Medical Corps. Left Fort Ethan Allen, Vt., on February 12th, on leave of absence for twenty days. **Thornburgh**, R. M., Major, Medical Corps. Left Letterman General Hospital, San Francisco, Cal., on January 31st, on leave of absence for two months. **Wilson**, W. H., Lieutenant, Medical Corps. Left his post, Fort McKinley, Me., on February 6th, on leave of absence for twenty days.

United States Navy Intelligence:

No change in the stations and duties of officers serving in the Medical Corps of the United States Navy was reported during the week ending February 15, 1913.

Births, Marriages, and Deaths.

Born.

Sterling.—In Philadelphia, on Thursday, January 30th, to Dr. and Mrs. A. Sterling, a son.

Married.

Bedell—Wilson.—In New York, on Wednesday, February 12th, Dr. Arthur Joseph Bedell, of Albany, and Miss Bessie Wilson. **Bond—Faulkner.**—In Denison, Ia., on Tuesday, February 4th, Dr. L. L. Bond and Miss Helena Faulkner. **Bricker—Campbell.**—In Ocean City, N. J., on Wednesday, February 5th, Dr. William H. Bricker, Jr., and Miss Nenoetta Campbell. **Dreibelbies—Swymler.**—In Philadelphia, on Tuesday, February 4th, Dr. Wilmer Dreibelbies and Miss Alice Swymler. **Taylor—Hungerford.**—In New York, on Wednesday, February 12th, Dr. Joseph Charles Taylor and Miss Marion R. Hungerford.

Died.

Callan.—In Brooklyn, N. Y., on Thursday, February 13th, Dr. William J. Callan, aged forty-seven years. **Campbell.**—In Kansas City, Mo., on Sunday, February 2d, Dr. William H. Campbell, aged eighty-three years. **Duffy.**—In Providence, R. I., on Saturday, February 8th, Dr. James F. Duffy, aged sixty-two years. **Ganster.**—In Brooklyn, N. Y., on Tuesday, February 11th, Dr. William F. Ganster, aged forty-seven years. **Geddings.**—In Washington, D. C., on Thursday, February 13th, Dr. H. D. Geddings, Public Health Service, aged fifty-four years. **Grimm.**—In New Martinsville, W. Va., on Saturday, February 1st, Dr. R. B. Grimm, aged eighty years. **Hughes.**—In Chicago, on Wednesday, February 5th, Dr. John O. Hughes, aged seventy-two years. **Jarboe.**—In Hagerstown, Md., on Tuesday, February 11th, Dr. Joseph T. Jarboe, aged sixty-five years. **Jeffery.**—In Brooklyn, N. Y., on Tuesday, February 11th, Dr. George Clinton Jeffery, aged sixty-one years. **Jump.**—In Plainfield, Ill., on Saturday, February 1st, Dr. David W. Jump, aged sixty-five years. **Magoris.**—In Binghamton, N. Y., on Wednesday, February 5th, Dr. A. Eugene Magoris, aged sixty-five years. **Monteiro.**—In Cambridge, Mass., on Saturday, February 8th, Dr. Manuel Garcia Monteiro, aged fifty-four years. **Parker.**—In Eau Claire, Wis., on Friday, February 7th, Dr. Edward H. Parker, aged fifty-eight years. **Ritchie.**—In St. Paul, Minn., on Sunday, February 2d, Dr. Parks Ritchie, aged sixty-seven years. **Ross.**—In Ambridge, Pa., on Tuesday, February 4th, Dr. Daniel C. Ross, aged thirty years. **Sanford.**—In Attleboro, Mass., on Wednesday, February 5th, Dr. Edward Sanford, aged eighty-seven years. **Sensenig.**—In Harrisburg, Pa., on Wednesday, February 5th, Dr. Isaac B. Sensenig, aged sixty-six years. **Shaw.**—In Maysville, N. C., on Thursday, February 6th, Dr. Graham Shaw, aged fifty-two years. **Small.**—In Saranac Lake, N. Y., on Monday, February 3d, Dr. Edward Hanna Small, aged fifty-two years. **Smith.**—In Los Angeles, Cal., on Friday, February 7th, Dr. George B. Smith, aged sixty years. **Steinbach.**—In Philadelphia, on Monday, February 10th, Dr. Lewis W. Steinbach, aged sixty-two years. **Washburn.**—In New Haven, Conn., on Monday, February 10th, Dr. Edward L. Washburn, aged seventy-four years. **Williams.**—In New York, on Wednesday, February 12th, Dr. James Jeremiah Williams.

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Original Communications.

ESSENTIAL FEATURES OF SYMPTOMATOLOGY AND PROGNOSIS IN DEMENTIA PRÆCOX.

BY F. X. DERCUM, M. D.,
Philadelphia,
Professor of Nervous and Mental Diseases, Jefferson Medical College.

The symptomatology of dementia præcox and its prognosis is so extensive as to permit in a paper of this kind but the briefest consideration. I shall therefore outline the symptoms only in so far as they serve to define the affection; it is absolutely necessary before discussing the prognosis to know definitely the disorder to be considered.

I need not here refer to the original studies of Kahlbaum, in which he separated out from the mass of demented cases the two forms to which he gave the names hebephrenia and catatonia, nor to the subsequent studies of hebephrenia by Hecker, and still less to the generalizations by Kraepelin as to the close relation existing between these two forms which he grouped together under the term dementia præcox. Subsequently he gave to the affection, which other German writers had described as acute paranoia and the French writers as acute systematized insanity, the term dementia paranoides, and included it also under the term dementia præcox.

The term dementia præcox has very many objections. It has, however, gained wide acceptance and must be regarded as having been definitely added to our nomenclature. The term is of French origin; it was first employed in Germany by Pick, was afterward applied by Kraepelin, as just pointed out, to the hebephrenic, the catatonic, and the paranoid forms of juvenile insanity. Subsequently Kraepelin expanded the term so as to embrace also the hallucinatory form of paranoia or the *Wahnsinn* of other German writers; he reserved the term paranoia, with its German equivalent *Verrücktheit*, for the affection which has been recognized by other alienists as the nonhallucinatory form of paranoia.

This expansion of the term is, I believe, unfortunate, because it includes in a group of juvenile disorders a lifelong adult affection, and one especially distinguished by slowness of evolution and chronicity of course.

Bleuler has invented the name schizophrenia, which he believes to be preferable to dementia præcox. He bases the term schizophrenia upon his interpretation of dementia præcox as a cleavage or fissuration of the psychic functions. He points out that there is a cleavage of the associations so that the personality of the patient loses its unity; first one, then another psychic complex represents the personality. However, cleavages or fissurations of the personality are not peculiar to dementia præcox. Ordinary confusion presupposes breaks in association; for instance, we cannot satisfactorily explain the occurrence of well differentiated hallucinations, such as voices which address the patient, save on the basis of a well differentiated cleavage of the personality. To maintain, perhaps, that the cleavage or dissociation in dementia præcox is peculiar does not, to my mind, justify giving it so general a term as schizophrenia, for schizophrenic phenomena occur in many forms of mental disease as well as in the neuroses, especially in hysteria. The term schizophrenia should, in my judgment, be rejected as being even more objectionable than dementia præcox.

It will serve our purpose best, i. e., the study of prognosis, to set aside the chronic hallucinatory paranoia (Kraepelin's phantastic form of paranoia, his second form of dementia paranoides), and to embrace under the term of dementia præcox only hebephrenia, catatonia, and dementia paranoides.

Let us briefly now pass in review the essential features which are common to all of these three forms. In my judgment these features may be briefly outlined as follows:

First, there is a gradual onset, usually of the character of a confusion, but sometimes possessing elements of systematization; second, there is present in the early period of the affection hypochrondriasis and depression and in the later period expansion; third, in the majority of cases the affection is progressive, the mental impairment steadily increases and terminates in dementia. The mental state is best interpreted as a confusion. There are present, in general terms, the elements of a confusional insanity, i. e., there are present unsystematized, fragmentary, and unrelated delusive ideas, together with hallucinations. In some cases, i. e., the older or paranoid cases, there is present or there is an approach to systematization.

This confusional insanity, probably because of the period of life at which it appears, probably because of the mode of onset, and probably because of the nature of the dementing process itself, presents special features. That the mental state should be one of confusion and that the delusions evolved should at best be but poorly systematized, is not surprising. Irrespective of the possible action of toxines, we must bear in mind the relatively im-

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mature condition of the mind of the child at puberty and early youth. Especially do these facts acquire significance when we reflect that in dementia præcox there is often a delayed and defective establishment of puberty. Further, as is now well recognized, and as was shown by Pickett some years ago, statistically, the average age of the paranoid cases is greater than that of the catatonic cases and that of the catatonic cases greater than the hebephrenic. In keeping with these facts, the tendency to systematization is least evident in the hebephrenics, slightly more evident in the catatonics, and most developed in the paranoid cases.

Further, the mode of onset, especially when the latter pursues the more common gradual course, permits of the preservation for a longer or shorter period of a relatively high degree of lucidity; this lucidity becomes impaired only in proportion as disturbed and hallucinatory states, on the one hand, or stuporous states, on the other, are established. In keeping with this are the facts as to the preservation of orientation and the preservation of memory; these faculties are, as is well known, preserved to a surprising degree in many cases. These features of the confusion are common to all of the three forms, hebephrenia, catatonia, and dementia paranoides. Among the other features common to the three forms are, first, the initial period of exhaustion, hypochrondriasis, and depression, together with delusions, painful in character. These delusions may consist merely of ill defined notions and feelings; at other times they are very vivid and characterized by ideas of suffering, torture, poisoning, burning, mutilation. Quite commonly they are well marked and dominate the picture, and they indicate more or less clearly the reference by the patient of his sufferings to agencies without, i. e., to agencies in the external world. In the older patients ideas persecutory in character, sometimes vague, sometimes quite well defined, are observed. They are quite frequently accompanied by hallucinations sometimes these are very numerous. Hallucinations of hearing are the most frequent, while hallucinations of the other special senses and of the somatic sense may also be present. In cases that pursue a relatively quiet course they may not be striking or prominent.

Second, the patients pass from the depressive to the expansive period. As a rule the transition is gradual. The depressive ideas become less prominent and expansive ideas take their place. For a time both depressive and expansive ideas may exist together, first one group and then the other being more prominent.

The delusions of the expansive period are on the whole ill defined, frequently changing, fragmentary, and not at all or poorly systematized. They may in various degrees be accompanied by excitement and exaltation and may betray ideas of self importance or consequence. Quite commonly they are puerile, and I think it may be added with truth, that they as a rule betray an intellectual enfeeblement somewhat more advanced than that of the depressive period. The change from the period of depression is seen most typically in the paranoid patients, i. e., the older patients, but both the depressive and expansive phases are present in the younger patients as well. Hecker long ago showed this to be the case for hebephrenia, and clinical experience, it may be safely asserted, shows the same to be true for catatonia. The slowly oncoming mental change is accompanied by depression to which expansion sooner or later succeeds. The histories of cases are often unsatisfactory as regards the early stage and it therefore happens that now and then a clearly marked depressive phase seems to be lacking. I am quite sure that this is commonly due to the faulty observation or absence of observation by relatives and others at a time when the patient is still without medical observation. That this is likely to be the case when the depressive phase is relatively light and short can readily be imagined.

All of the above features are common to dementia præcox as a whole. The features which distinguish the various forms from each other may be briefly outlined as follows:

As regards hebephrenia it may be stated, first, that the symptoms of dementia præcox are here generalized in type. The characteristics of the more differentiated forms, catatonia and dementia paranoides, are lacking; i. e., there are lacking more or less markedly, on the one hand, the special motor phenomena, the fixation, resistance, negativism, and verbigeration of catatonia, and, on the other hand, the systematized delusions of paranoid dementia.

Second, as is well known and as was shown statistically by Pickett, hebephrenia is the form met with among the younger patients, i. e., the youngest group of all. Consequently, and as might perhaps be justly inferred, the degree of the emotional departures from the normal is less marked than in catatonia and paranoid dementia. In other words, the depth of the depressive wave is apt to be decidedly less than in the other forms, and this is equally true of the height of the wave of expansion. Sometimes the initial period is characterized merely by a sense of illness, of hypochrondriasis, the child complaining of headache, dizziness, obscure bodily distress and sleeplessness, and manifesting a depression relatively moderate in degree. It is more frequently, too, in hebephrenia that the initial period escapes observation, which would hardly be the case if it were pronounced. Again, the expansive phase, while relatively more marked than the depressive phase, may manifest itself more by exuberant and boisterous conduct than by expansive delusions. As a rule, however, both the initial wave of depression and the subsequent wave of expansion are clearly marked, though less so on the whole than in the other forms.

Third, the delusive ideas are in hebephrenia wholly unsystematized, fragmentary, changeable, and transitory. In this particular the contrast is most marked with the paranoid form.

The distinguishing features of catatonia consist in that there are added to the general symptoms of dementia præcox already roughly outlined, definite motor phenomena, spasms, fixed attitudes, stereotyped postures, automatism, negativism, verbigeration, stupor. Catatonia, according to Pickett's statistical observations, occurs in a group somewhat older than the hebephrenics. In keeping with this fact we find a well marked initial wave of depression and a well marked wave of expansion. The delusions are, as in hebephrenia, unsystematized, unfixed, varying, changeable, disappearing, though now and then clearly marked paranoid references are met with.

Dementia paranoides presents the general symptom group of dementia præcox and in addition is characterized by the fact that the delusions present distinct evidence of systematization, although this systematization is comparatively feeble. Delusions of persecution, in part confused and disordered, in part coordinated and systematized, now dominate the picture. Hallucinations and delusions alike are painful, and the patient clearly and definitely refers his sufferings to agencies in the external world. In the expansive stage the patient is talkative, boastful, and believes himself to be a person of consequence. Sometimes, as in paranoia itself, he evolves ideas of power and greatness. The various delusions seem to follow without relation to each other. Apparently they are based haphazard upon the hallucinations and upon the misinterpreted sense impressions. Perhaps it is just because they are varied and multiple that the delusions lack the coordination seen in paranoia, and, as might be expected, they lack the fixation of paranoia; the trend of the ideas, however, continues to be the same, and this trend persists during the disturbed period of the affection. The close relations of dementia paranoides to the other forms of dementia præcox is shown, not only by its course and general symptomatology, but also by the not infrequent occurrence of catatonic phenomena, such as fixed positions and resistive and even stuporous states.

The course of dementia paranoides is at times relatively rapid; particularly may this be true of the period of evolution. It is this fact which has led the French writers to describe the affection under such names as *délires systématisés aigus* and *délires systématisés d'emblée*, while the Germans have applied to it such expressions as *acute Verrücktheit*, *acuter Wahnsinn*, and *paranoia acuta*. All of these expressions imply a symptom group which both in its development and progress is much more rapid than that seen in paranoia; indeed, there is a distinct contrast in this respect between paranoid dementia and paranoia, the course of which is, obviously, essentially chronic.

Time will not permit us to discuss the differential diagnosis between dementia præcox and the other mental disorders which occur in the juvenile period of life; it should not be necessary to draw the differential diagnosis between a dementia præcox on the one hand and melancholia or mania on the other hand, nor should we forget that youthful patients like adults suffer from psychasthenias, postinfectious psychoses, confusions, and stuporous states that have no bearing whatever upon dementia præcox. To go into these subjects would take us too far afield. For reasons which I will leave you to imagine, I have purposely refrained from discussing the psychoanalytical interpretation of dementia præcox advanced by Freud, Bleuler, Jung, and their followers.

PROGNOSIS.

With these rough outlines before us, let us turn our attention to the intricate subject of prognosis. The prognosis of dementia præcox is on the whole unfavorable; the following facts, however, which modify sometimes in a slight degree, sometimes in a great degree the eventual outcome, must be borne in mind: First, the patient may pass through an attack with its phases of depression and expansion and the other attendant mental phenomena without presenting at the end of the attack any recognizable mental impairment. This is distinctly the exception, but it does occur. I have repeatedly observed this result, as no doubt have others in cases that have been of such a character as to permit of extramural treatment, i. e., in cases which it has been possible to treat by rest in bed, by forced feeding, by bathing, by massage and exercise, and, it may be, by other physiological measures.

An increasing clinical experience, however, has shown that the cases in which recovery has apparently taken place, quite frequently suffer a recurrence of symptoms—sometimes after a number of months, sometimes after several years—and that after such recurrence, mental deterioration is usually more or less in evidence. This truth applies not only to hebephrenia, but to catatonia and paranoid dementia as well. It was for a long time thought that the cases of paranoid dementia or acute paranoia, *délires systématisés aigus*, as it was earlier called, not infrequently terminated in recovery. Particularly was this the view of the French writers, who believed that a favorable outcome was quite common. However, the fact of repeated recurrences, each attended in some degree and usually by an increasing degree of mental deterioration, has demonstrated that paranoid dementia is no exception to the general rule; and, as in the other forms, a terminal period of dementia with some persistence of delusions and confusion is likely finally to supervene. This terminal mental loss is usually more or less evident; notwithstanding, cases are met with in which marked mental deterioration does not ensue, even after repeated attacks. The patient, it is true, is mentally somewhat impaired, yet the impairment is at times quite moderate in degree. The patient is often able to live outside of institutions and to conduct himself reasonably well as a member of his household. Thus, a young man of nineteen years passed through a typical attack of hebephrenia. His case was relatively mild, and with the aid of competent nurses, rest, and physiological measures he was treated successfully outside of the asylum, the entire attack lasting something less than a year. At the end of this time he was apparently entirely well. Two years later he entered a business prepared for him by his father, married, and conducted himself in an apparently normal manner. After the lapse of another year, however, it was found that he was not giving the necessary attention to his affairs, and soon that the latter were being badly neglected. It was recognized that he was again not well, and he was as before brought under medical observation. Soon persecutory ideas, ideas of danger, of harm to himself and to others became manifest, and before long he became violently disturbed. His condition was so much worse than at the previous attack that commitment to an asylum became necessary. Here he remained for some eighteen months, when he again appeared to have recovered. He remained in this condition of apparent recovery for a period of some nine years. It should be added, however, that during this time he never reentered business, never took up any occupation, and that though apparently rational and lucid, he spent his time in idleness, in dawdling, and in trifling pastimes, that he read nothing, that he was indifferent and inactive and also headstrong, obstinate, willful, and unreasonable. Such a condition can hardly be looked upon as a recovery. Further, for a year past, another recurrence of symptoms appears to be establishing itself. The patient has become distinctly persecutory, he believes that he is being disparaged, treated as though he were of no consequence, that the members of his family are taking advantage of him, that he is being abused and ill treated, and he has of late centred upon one member of his family as the cause of all of his troubles. The facts are he is being most generously, even lavishly treated and receives the utmost consideration. It looks indeed as though a paranoia were now about to develop.

Notwithstanding such instances as the foregoing, it must be admitted that cases of dementia præcox may and do end in recovery, especially the milder cases; at least they disappear from view and one never hears from them again. Not infrequently, when they are asylum cases and the patients are dismissed, they are subsequently recommitted to institutions other than the first, and in this way track of them is lost and correct histories are, as we all know, often impossible to obtain. When all is said and done, it must be admitted that the recovery is rarely complete. Quite commonly, even in the most favorable cases, some evidences of mental deterioration—deterioration of general mental make-up, efficiency, and character—are noted, though it must be confessed that sometimes, though rarely, these evidences are very slight and practically nonexistent. Ordinarily, mental impairment is left in recognizable degree; quite commonly this impairment is decided so that at best only a partial or incomplete recovery results. In other cases again, and indeed the larger number, the mental loss is pronounced, and the final result is one of a terminal and chronic dementia; there may for a long time be some mental activity, some persistence of the confusion and delusions of the active period, but finally even these phenomena disappear.

Recovery in a case of dementia præcox, even when approximating the normal level, should be looked upon with distrust. Quite frequently such a supposed recovery is merely, as we have seen, a period of more or less prolonged remission. It is true that all alienists can recall cases of recovery without subsequent recurrence. One such case was studied by myself many years ago; the boy, fourteen years old, passed through a typical and pronounced hebephrenic attack which terminated in recovery. This recovery has apparently persisted, but I have not since had the opportunity personally to examine the patient. Quite commonly the patient passes from out of observation, and we are limited to the rather unsatisfactory account of friends and relatives; or the case is definitely lost to view.

Having laid emphasis upon the unfavorable aspects of the subject, let us now turn our attention to such facts as offer some encouragement. It is found, in the first place, that cases of catatonia offer a distinctly more favorable outlook than the other forms. We can all recall cases in which marked catatonic symptoms were present and in which recovery subsequently ensued. Kraepelin's observations led him to state that the proportion of recoveries is about eight per cent. in hebephrenia and about twenty per cent. in catatonia. While my own experience in regard to recoverable cases would place the figures somewhat higher than this, it all depends upon what is meant by recovery. Kraepelin himself places the percentage of recoveries with impairment much higher. The practical fact for us, however, remains that quite a number of patients get well, most frequently with some traces or evidence of permanent damage.

The second question that confronts us is, Is there any fact which justifies the hope of a favorable outcome in an individual case? Unfortunately the answer that can be returned to such a question is not very satisfactory. It may be said, however, that in addition to the more favorable outlook presented by catatonic cases, we have, first, the relative mildness or severity of the attack. If the attack is mild, so mild for instance that the patient can be cared for outside of an institution, simple rest in bed, with full or massive feeding, bathing, massage, exercise, and other physiological methods, will often yield surprisingly good results. The social condition of the patient, his ability to secure detailed and elaborate care, is therefore also a factor of moment and indeed a very important factor. Under any circumstances, however, and as might have been anticipated, the less severe the attack, other things being equal, the more favorable the outcome, and this is doubtless one explanation of the more favorable results often achieved in extramural treatment.

Second, as a probable factor in the prognosis, is the relative acuteness of onset and course. Cases that pursue an acute and active course presage, other things being equal, a lesser duration and therefore a lessened danger of permanent change. In cases of slow and relatively chronic course, the danger of mental deterioration by the time the attack is over, is, other things being equal, much greater.

Third, the age of the patient is also important. Relatively early age or youth is proportionately favorable. Unfortunately attacks of dementia præcox, as we know, do not always occur in youth. Sometimes a hebephrenia does not set in until the third decade of life is well advanced; similarly a catatonia may not put in an appearance until the late thirties, or even forties, are reached. Cases of late hebephrenia and of late catatonia offer a relatively unfavorable prognosis; duration is especially prolonged—often for years—and the final outcome is quite commonly marked and persistent deterioration. In regard both to late hebephrenia and late catatonia, I am convinced that the attack observed is frequently not the first attack of mental disturbance from which the patient has suffered; not rarely a careful study of the patient's early history reveals attacks variously diagnosticated as nervous prostration, hypochondriasis, hysteria, neurasthenia, lasting often a year or more. The inference is justified that the observed attack is in reality a recurrence, a recurrence frank and pronounced, but, because it is a recurrence, less promising as regards the outcome. Further, I think it very probable that an early and perhaps improperly diagnosticated attack of hebephrenia may recur years later in the form of a catatonia; the diagnosis then of a "late" catatonia is made. It cannot be sufficiently emphasized that late attacks of dementia præcox, no matter of which form, offer an unfavorable outlook, both as regards duration and final recovery.

The prognosis of paranoid dementia is deserving of another word. Its duration extends over months and years; i. e., the periods of depression and expansion may be completed in the course of several months or a year or two, but the patient, as already pointed out, is frequently left in a condition of persistent and more or less marked mental impairment. Again, as we have seen, the attack does not always, nor necessarily, imply a subsequent impairment or dementia; i. e., the patient, as in the other forms of dementia præcox, may make a recovery. Of this I can recall a remarkable experience and one in which I was able to place the patient in bed and keep him under a persistent course of full feeding and subsequent physiological measures for many months. The young man made to all intents and purposes a complete recovery and has since reentered business. Unfortunately, just as in the other forms, there is in dementia paranoides a well marked tendency to recurrence; months, more frequently several years after the first attack, another may make its appearance. This is apt to be followed by evidences of deterioration more or less marked. Subsequent attacks emphasize the damage, or the affection may assume a chronic form. Repeated attacks are disposed to be of increasing duration.

In conclusion I would like to elicit discussion as to the length of life in cases of dementia præcox and also of the final cause of death. According to my own observations—and these are unfortunately not statistical—as to cases that fail of improvement or recovery, very few of the patients reach middle life. A large number die in the third decade; a smaller number in the fourth, and very few reach the fifth decade. Again, for some time preceding death, tuberculous lesions become evident. In my own observation these lesions do not, as a rule, begin in the lungs, so that the picture of pulmonary tuberculosis is very infrequently presented at first. Much more often do we have the picture of a tuberculosis of the intestines, of the peritoneum and abdominal viscera generally, and of the lymphatics. As a matter of course, tuberculous lesions of the lungs become evident long before the patient dies, but in my observation they are not usually the beginning lesions. The relation between dementia præcox and tuberculosis is a subject of wide possibilities. I am not of the opinion that tuberculosis stands in any causal relation to dementia præcox. The tuberculous infection is probably the result of a terminal diminution of resistance. The fact that it is almost universal, however, in the latter stages of dementia præcox is, to say the least, very suggestive, and the question occurs as to whether these patients do not suffer from dementia præcox for the same reason that they eventually suffer from tuberculosis.

It is with much hesitation that I have ventured to bring this subject before the Psychiatric Society. After all is said and done, we can speak only in general terms. Each individual case must be studied by itself. The problems of diagnosis are great, but those of prognosis are even greater, and yet how often we wish that we could forecast the outcome in a given case. Bare outlines only, I believe, can be drawn, and if this paper results in a discussion of this interesting subject, my object will have been accomplished.

1719 Walnut Street.

THE DIAGNOSTICIAN.

An American Specialist Who Will Come. A Plea for His Establishment Now, and the Elevation of Diagnosis.

By Anthony Bassler, M. D.,
New York,
Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital; Chief Gastroenterologist, German Poliklinik.

"The World is Becoming Americanized," said Gerhart Hauptmann, this year's winner of the Nobel prize for literature. What does this mean? To an American who has lived abroad, particularly studied as a postgraduate student in one of the foreign universities, the contrast of what America represents compared to what Europe represented is plain. This Americanism is a moving force of progress, but with it there are restlessness, incompleteness, and more or less hysterical development. It is a sort of revolution in the work and thoughts of individuals who enjoy a free leash. In all of the governmental works, arts, and sciences, these individuals are bobbing up and down in a tremendous sea of activity.

The analysis of what this progress means in medicine is not without its points of interest and prophecy for the future. Not many years ago there were only a few clinicians, surgeons, and specialists. The same was true of hospitals and places of learning and research. To-day there are many surgeons, specialists, and research workers and, with the exception of the undergraduate schools, institutions for the progress of medical knowledge have multiplied. The undergraduate schools have diminished in number and, thanks to the activities of the American Medical Association and the Carnegie Foundation Fund, a conscience has awakened in which, while they have diminished in numbers, they have multiplied in their power and scope of teaching medicine. In this, it appears to me, the three most notable advances of recent times in medicine are those which have to do with surgery, the research laboratory, and Röntgenology. There is no question that progress made along these three lines has changed our ideas considerably, but while in former days medicine was as to the personality of each man unto himself and one thus somewhat one sided to the student of medicine, to-day it is distinctly more one sided in a general way than our forefathers had ever had it. We have just gone through an era of shattered doctrines and broken idols, done so by the modern outburst of science and democracy of thought, and to-day, on all sides, the work is uneven and plainly shows gaps in consecutive and cooperative effort, and unpreparedness and inaptness.

The feature which awakens criticism on the part of the laity and the general practitioner in this day of modern times, is the divergence in point of view, a dissociated inimical, almost hostile attitude with which the surgeon, the internist, and the specialist respectively regards the aspects of a given case. As Stockton has so well stated:

> Surely, all cannot be right. Where lies the truth? What blindness, what vision, what purpose underlies these several views? The judgment of men disagrees as to questions of politics, of investments, and of medicine. In none of these can the element of purpose, of motive, pass without scrutiny. The general practitioner bearing the responsibility of selection, and not bearing a just proportion of remuneration, occupies a place that begets suspicion, that suggests delay, that leads him to misinterpret candor and baffles his discrimination. The consulting physicians, the men strictly surgeons (and there are such), the specialists, and the general practitioners, severally, are jealous for their own ideals of truth, for their own group, their own interest. Meanwhile the democracy of science, the equality of privilege and of social rights, lead men to emphasize individual importance and the individual advantage. Just to that extent they are blinded as to some aspects of the truth, the home trail, that which leads to the largest advantage of the patient, is obscured. From such divergence there must come a reaction. For the stimulation of initiative, for the development of self-reliance, and the fresh kindling of the torch of knowledge, we should rejoice; but from the egoism that is engendered, from the incompetence that passes at par value, from the corroding selfishness of our nature, we should be delivered. In the awakening of a professional conscience it is plain that arbitration cannot come from the surgeon, the average type of internist, the specialist, or even be made by the general practitioner who should.

With the advance of surgery in America, there are too many men who disregard the opinions of internists, criticise the laboratory, hesitate with the x ray, have not a fair receptive attitude to the specialist, and who depend upon what they call "surgical diagnosis"—a development of America which is as absurd as it is ridiculous. Such men, taking advantage of the lack of danger in exploratory incision, depend too much upon this to make diagnoses for them. This unfortunate development of surgery is greatly due to the teachings of the master minds in it, notably the two best known in America, who teach "a wide incision, expose the parts well, and visually examine."

It must said in fairness to the advance of surgery, that surgeons have met with many deficiencies on the part of men in the other branches. While surgeons deserve a great credit for what has been accomplished in a therapeutic sense and in showing up the deficiencies of their allied colleagues, it can never be an American standard of surgery that exploratory incisions must be made for the purpose of diagnosis. There are two main reasons why: First, the average patient believes that we know more of diagnosis than we do and will not submit to surgical exploration to make a diagnosis in the average chronic and obscure case, and, secondly, that while this may be safe in the hands of the main exponents of it, it is an unsafe doctrine to spread broadcast because it leads to surgical exploitation and lack of interest on the part of surgeons in becoming better diagnosticians. There is no doubt that the average internist in the past and present has been short in coping with cases from a diagnostic standpoint. But, this is also true, wherever an internist exists whose judgment is ripened by ample experience, and who uses the x rays, the laboratory, and has knowledge of the specialties, this man, providing he works hard with each individual case and takes his time in arriving at a diagnosis, answers to full purpose in a general way, and very nearly in all. But that type of man is to-day far too rare, because such as he must have had such a deep interest in medicine in all that pertains to diagnosis, and have had so many years of the hardest kind of work and experience that the average man becomes tired before this perfection arrives. To him, however, who has held his interest and worked, more than to the surgeon, the specialist, or the general practitioner, belongs the field of diagnosis and all should acknowledge his right to accept the full responsibility for it. Whether he is classified as an internist or as a diagnostician makes but little difference so long as the proper diagnoses are made. But this much can be said, that since the scope of man is limited and time is such a fleeting factor, if he engages in work in diagnosis thoroughly, such a man cannot also encompass the entire therapeutic field unless he is a phenomenon in the art.

It is not transcending the fact that criticism of the literature of medicine may in part help to this desired direction. For instance, the works on physical diagnosis are given over mainly to text pertaining to diseases of the chest and are short in matters dealing with the abdomen from what may be stated as the gastroenterologist's standpoint. They usually include such of the abdomen conditions as are covered by the general hospital clinician, which comprise really the grosser findings, those dealing with enlargements of the liver, spleen, ascites, new growths, etc. Of the works on medicine proper, much can be said in commendation of the excellent ones that have appeared, but they are altogether too voluminous for instruction in diagnosis. The men who have written works on internal medicine are short in knowledge of the x rays and of the laboratory; these being left for special works to cover. This is so because most of these men have radiographers and pathologists in the hospitals to do the work for them. It was this gap between the clinic and the laboratory that brought opprobrium upon the latter, a criticism which once was general, but fortunately now is less often heard. These hospital clinicians may to-day make a defense that they accepted the laboratory diagnosis at its full value and found it deficient. In this they acknowledge their own shortcomings, because it is logical that a person who examines specimens is not as capable of interpreting the findings in a diagnostic way as he who handles the case from a clinical standpoint. The same is true of the x ray. On the one hand, it is the radiographist who, in establishing his position and trying to shorten the gaps in diagnosis, reads more in his plates than a healthy enthusiasm warrants. Why should the x ray men make diagnoses for clinicians if it is not that they are willing and because the clinicians expect and want it of them? No doubt, as mistakes here multiply, improvement will be met with also.

Take the specialty of abdominal work, namely, gastroenterology. Up to a few years ago this was entirely coached along the lines of history, physical and technical examination, and test meal work. How plainly short these have been is shown by the surgeon and the physiologist. Yet, with the advance that surgery, physiology, the x ray, more extensive work in the laboratory and elsewhere have given, how few are the gastroenterologists who cover their cases thoroughly from a diagnostic standpoint! It is not for me to criticise my colleagues and I have no rod in hand for them; on the contrary, I only speak frankly, for in candor there often comes benefit. Meeting with a considerable portion of this work, I must say my observation shows it to be true that the average stomach specialist does not attain the full heights of diagnosis. It is discouraging, in the light of one professional man's opinion and regard of another and love of his profession, to be called in consultation to see a patient dying of well advanced carcinoma when the person afflicted only a few days before had been examined by a well known gastroenterologist and the case diagnosticated as "catarrh of the stomach," this being attested to by him as being on his history files as a definite diagnosis. One could elaborate endlessly upon such unfairnesses to the laity, upon cases of pulmonary tuberculosis that are treated as achylia gastrica, the dyspepsias that are due to gallstones, chronic appendicitis, pancreatic disease, chronic excessive intestinal putrefactions, neurological conditions, and other. It must be plain to all that those who engage in gastroenterological work as a specialty must primarily be the ablest of clinicians, and have all the facilities of diagnosis at their command, and further use them actively in each instance. To show the status of affairs in this specialty, one needs only to read the various books on the subject, and while there is a little difference in the etiology, symptomatology, and differential diagnosis in all of them, basically they are all the same. The difference in the works and interests on the part of gastroenterologists is mainly in their methods of treatment, and while this is important, it is negative to the great main point of medicine, namely, diagnosis.

In the same light may be criticised the opthalmologist who treats many of the functional derangements of the eye with the stereotyped calomel, salts, and rhubarb and soda; the nose and throat man who looks upon hypertrophied turbinates as an entity in itself rather than consider the main cause, which most often is found in the intestinal canal. The same is true of the dermatologist who still treats his eczemas, erythemas, recurring urticarias, and other obscure conditions by means of the old methods rather than diagnosticate the cases properly so as to learn the primary condition of which the manifestation in the skin is only symptomatic.

Twenty-one years ago, Dr. Stephen Smith, a distinguished friend of us all, a man who added much to medicine in our country, said on the platform at a meeting in the Academy of Medicine, "I predict that in twenty-five years, the United States will be the medical Mecca of the world." We have four years left, and still it is very probable at the rate that we have gone in the last three, each successively grander, that we may yet arrive at it. Already foreigners are seeking medical knowledge within our shores, and the tide between Europe and America in this matter is certainly nearer to the ebb than ever before. All about us as individuals are the signs of Americanism in the various walks of life, and still medicine is making a flashy progress here and there, but the rank and file of the men are standing still. Excepting the successes of a few men at the top of the various specialties, there is much complaint. Absolutely apart from deficiencies that this or that man has, conditions have changed between the laity and ourselves, one specialist and another, even between one general practitioner and another, and many seem to be complaining but none reaching out to arrange for the new adjustment of all that is inevitable. As I see it, almost every one seems to be standing still, either criticising some one or thing, or complaining about himself. The ophthalmologists (and some are good ones) say there is no living to be made in this State practising the specialty since the optometry bill became a law, others say it is due to the best men working for a small fee, others to fee splitting, some to going hospitalward and clinicward, and so on. The nose, throat, and ear men, the orthopedists, dermatologists, surgeons, internists, and others, all complain along the same lines. Many of our best men do not hesitate to give information and rather hope for the publication of their bulletins of patients' conditions over their names in the lay press, and still in spirit, while not in words, the code of ethics is against their doing so. There always was a personal rivalry between men engaged actively in practising medicine, but it was mostly noticeable in former days and we have lived through it. To-day, however, such mean tricks do not do other than react against such a man in the end—why keep it up?

As the situation appeals to me, some of the great factors making gaps are the warped organizations that some have reared for their own benefit, utilizing a definite specialty that its leader may have to supply and work up the material for his own desires and subsidizing all other branches for his own benefit; too little attention to diagnosis and too much subtle advertisement in and out of the profession on the part of some for their own benefit, rather than for that of the art of medicine; too many hospitals and clinics with inferior men in them in high positions, and not enough cooperation on a case between them; too much layman influence of a business kind in the administration of our hospitals; too many rival medical schools and too many laboratories of dangerous kinds; too much enthusiasm on the part of some and not enough on that of others; too many unfair laws and not enough good ones; no health bureau at Washington; too many cults, -isms and -pathies; not enough pure brotherly love between us, since this always makes for our own and the patient's benefit; too much interference upon the rights of the practice of medicine by some local and State boards of health; and not enough commingling of the specialties so as to straighten out each on substantial lines for the future.

Drawing a many sided subject to a close it is plain that advance in medicine in America has reached the point where the gaps should be filled. This, as has been suggested, can be done by bringing all of the various kinds of men to a focus or by improving the knowledge of each of them so that there will be a broader scope—both of which under the conditions that exist in medicine to-day are seemingly impractical. Thus, one of two things is necessary, either that a combination of men interested in the various sides of medicine club together primarily to arrive at diagnoses so that any one of them can cover any scope in the therapy demanded in a case, or that we develop a new department, that, namely, of the diagnostician and consider the specialists as skilled workers in therapy. For this type of man (diagnostician), on whom the future will inevitably shower places, there is now beginning a crying demand. While one cannot be a Jack of all trades, it is possible for any young man who starts out with the ambition to become a diagnostician to arrive somewhere near the goal. This man must start young, be well grounded in learning, preferably with an academic education, and then a graduate from a good medical school and a hospital with a large and general service. After this he must engage in the work that any large city with its various clinics and constant demand for clinical assistants offers. During this time he must become familiar with all that pertains to diagnosis work in the diseases of skin, eye, ear, nose and throat, neurology, internal medicine, surgery, orthopedics, pediatrics, etc. If he is not over keen about learning all there is to therapeutics, he can in the course of a few years, learn his diagnostics well. While engaged in the various clinics in different subjects and under different men, he should be attached to some hospital where he can observe cases under bed observation. If necessary, he can engage in general practice to support himself and help to give him material to examine with all of the various means of doing so he has learned. He would be an excellent general practitioner on the way, who in the course of time will have succeeded well in family practice and will then be ripe for taking up a specialty for definite application. In the selection of this, I would suggest that some such men of to-day take up the specialty of diagnosis, so that when the time comes, as it inevitably will, such men will exist. The people have established the specialists, and the ambition of medical men has followed. In the omissions and commissions seen on the part of different men in the various branches, medicine is now calling for diagnosticians. In the future this want will become greater rather than less, and it will not be many years when the people will demand them. Let us in this instance be progressive enough to see this emergency coming, and have men capable to meet it when it arrives.

126 East Sixtieth Street.

THE HISTORY OF BLOODLETTING.*

By Fielding H. Garrison, M. D.,
Washington, D. C.

Someone has said that when prehistoric man first hit upon the expedient of picking up a stick or a stone with which to smite his fellow man, he had already made his first step in the direction of civilization. If he drew blood on that momentous occasion, in some degree short of manslaughter, we should already have an instance of bloodletting. It was in some such empirical way as this that early man first chanced upon venesection as a reliable mode of treatment in the relief of human suffering, through witnessing the revulsive effects of some accidental hemorrhage upon bodily ills. The natural and periodic process of menstruation, no doubt, directed the medical mind to the hygienic and prophylactic advantages of depletion; but we can as little credit Pliny's fable of how the Egyptians learned to open a vein from watching the clumsy hippopotamus wound itself against the reeds as that other bit of nature-fakery of the old naturalist which asserts that they assimilated the use of the enema from seeing the ibis achieve a species of autoclyster by means of its bill. Bloodletting is one of the oldest and most common of therapeutic devices and its origin is lost in antiquity. We know, from Max Bartels and other writers on primitive medicine, that savages have used sharp thorns or roots, fishes' teeth, or sharpened stones for opening abscesses, couching cataracts, or letting blood; that scarification was resorted to, that cupping was done by means of animals' horns, and that, in connection with the general idea of depletion, the North American Indians had fixed periods, such as the "green corn feast," for ritual emesis and purgation, even as our forefathers used Purgation Calendars and Bloodletting Calendars to determine the proper time and place for these operations under the signs of the Zodiac, or as those of only one generation ago went to the old country doctor every spring to have their veins opened. Of the ancient Egyptians, Herodotus says, "They purge themselves every month, three times in succession, seeking to preserve health by emetics and clysters; for they suppose that all diseases to which mankind are subject proceed from the food they use." We learn from the papyric writings that venesection was a common practice among the Egyptians, and, on account of their religious horror of mutilating the human body, was the only surgical procedure permitted by them, with the exception of circumcision. Upon the doorposts of a tomb in the cemetery near Memphis, discovered by Mr. W. Max Müller,[1] we have the earliest known pictures of surgical operations representing circumcision and two figurations of operation on the foot and neck, the attitude of the patients indicating great pain, the hieroglyphics reading "Why do you hurt me thus?" In the light of the Egyptian restrictions of surgical procedure, it is not unreasonable to suppose that these incisions in the neck and extremities may have been the earliest representations of bloodletting, of date about B. C. 2500.

The Babylonians, in keeping with the ancient passion for prediction and prognosis, tried to make special inferences from the appearance of the blood drawn in venesection, which reminds us of the common assumption in early nineteenth century practice that "buffing and cupping" of drawn blood was a sign of inflammation.

There are apparently no references to bloodletting in the Bible, but from the Talmud, the Hebrew law book, we learn that venesection, cupping, and leeching were well known among the Jews at the time of its composition, about the second century, A. D.; and it is fair to assume that they were known before that time. If bloodletting was at all practised by the ancient Hebrews, it is possible, if not probable, that it was done with the kind of sharp stone or primitive knife with which Zipporah, the wife of Moses, in the second book of Exodus, "cut off the foreskin of her son." The fact that primitive stone knives were employed by the ancient Egyptians in embalming and by the Hebrews in ritual circumcision shows the extreme veneration in which these rude objects were held, for they go back to the palæolithic period of man's development. In the Hall of Anthropology in the National Museum at Washington one may see hundreds of specimens of these leaf shaped flints, the sign and symbol of prehistoric man's uplift. In a most important contribution to American archæology, Professor William H. Holmes,[2] of the Bureau of Ethnology, has demonstrated inductively (by working out the initial methods of chipping and flaking, himself) that even among the recent American Indians of the Piney Branch or other quarries all over the United States, the process of shaping and specializing the leaf shaped celts from oval or ovoid stones was probably not different from that employed by palæolithic man or even in what seem to be the rude artefacts of eolithic man. Throughout geological space and time, the leaf shaped flint knife has remained the same in shape and intention whether as weapon, tool, or ceremonial object, but it is the rough hewn knife, sharpened as to edge and point by accidental flaking that forms the true connecting link between prehistoric man and the evolution of surgery. In the excavations of the Swiss lake dwellings, which were discovered in 1853, the different cultural objects were found in separate layers, from the Stone Age up to the Copper and Bronze Ages, and of these, the real beginnings of northern European culture are now held to be the bronze implements and objects found at La Tène. On the continent of Europe, the phrase "La Tène" has become a sort of shibboleth among anthropologists for the starting point of the north European culture which followed upon the three Ice Ages, with their two interglacial periods, and this, not because the lake dwelling finds are necessarily the earliest bronze objects known, but because they are the most representative and characteristic. The La Tène finds, of date about B. C. 300, entirely distinct from Egyptian, Greek or Indian culture, include earrings of Etruscan or West Celtic pattern and funeral urns containing human remains, showing that cremation was the rule among these people. Some time later, as, for example in the Gallo-Roman finds in France, we trace the evolution of the articulated surgical instruments, like scissors, in which cutting was done by indirect action. The interesting point is that primitive north European culture, up to the La Tène period, was discontinuous, being interrupted by the three glacial periods, while Greek culture up to the Age of Pericles, two hundred years before, was probably a continuous development, the cutting instruments of metal having been specialized in this Southern country as in Egypt or India, before the time of Hippocrates. The date of the La Tène period (B. C. 300) brings us to an interesting phase of the subject, namely, bloodletting among the ancient Hindus. It is not positively known whether the Hindus learned their practical surgery and medicine from the Greeks at the time of Alexander's Indian expedition (B. C. 327) or whether Greek travelers, possibly Hippocrates himself, learned something from them, but this is certain that the *Susruta,* the great canon of Indian surgery, reveals a wonderful knowledge of operative procedure and an extraordinary specialization in the matter of surgical instruments. Nearly all the major surgical operations were performed, except the ligation of arteries, and about 121 different surgical instruments were described, including lancets, scalpels, saws, scissors, needles, hooks, probes, directors, sounds, forceps, trocars, catheters, syringes, bougies, and a rectal speculum. The cutting instruments were of steel, sharp enough to cut a hair and kept clean by wrapping in flannel in a box. Now the remarkable thing about Hindu bloodletting was the way in which venesection or any other cutting operation was taught. Having no anesthesia, the Hindu surgeons recognized that it was necessary to be swift and sure in incision, and accordingly they first had the young student go through the motions, as it were, on plants. To this end, the veins of large leaves or the hollow stocks of water lilies were punctured and lanced, as also the veins of dead animals. Gourds, cucumbers, melons, and other soft fruits or even leather bags filled with water were tapped or incised, all with the idea of giving a fearless surety and precision in attack, after which the student could proceed to the cadavers of animals and the living subject.[3] This method of teaching surgery, which might well be adopted in our own medical schools, was actually employed to some extent in England in the first half of the nineteenth century and, like hypnotism and the "British army bamboo splint," was probably imported by the Anglo-Indian surgeons. Some readers may recall the amusing example in Captain Marryatt's *Japhet in Search of a Father,* in which Mr. Cophagus, the apothecary, teaches the fatherless Japhet to do venesection by the Indian method. "He also taught me how to bleed by making me, in the first instance, puncture very scientifically all the larger veins of a cabbage leaf, until, well satisfied with the delicacy of my hand and the precision of my eye, he wound up his instructions by permitting me to breathe a vein in his own arm."

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*Read before the Medical History Club of Washington, D. C., December 30, 1911.

[1] Described by Dr. James J. Walsh in *Journal of the American Medical Association*, xlix, 1593, 1907.

Medicine as a science began among the eager, imaginative, quickminded peoples of Ionia and the islands, and the first textual record of bloodletting in European practice is to be found in the work of Hippocrates. The Hippocratic writings, as we know, are not an individualized treatise on medicine and surgery, like the works of Galen or Celsus, but a scripture or canon, not unlike the books of the Old Testament, the work of several writers, some of whom lived before the Father of Medicine, some after him. The genuine writings of Hippocrates were all written in Ionic Greek, and, in the opinion of great scholars like Littré, the treatises on Regimen in Acute Diseases, and Ulcers, our principal sources for Hippocratic bloodletting, are beyond question authentic. Hippocrates was undoubtedly a far greater surgeon than Galen, but in clinical medicine his principal business was the portrayal of the signs and symptoms of important diseases, and for this reason it is customary to slur him over as a therapeutist, more especially by comparison with Galen. The latter, with the experience of centuries to draw upon, was naturally far more clever in getting his patients well, but that Hippocrates was no laggard in the treatment of disease is evident from the large number of drugs mentioned in the canon, nearly 200 in all, from his careful dietetic scheme, and especially from the fact that his principal service to therapeutics was just along the lines for which the selective, discriminating power of Greek intelligence has been justly famous, namely, in fastening upon what is essential and in throwing out the superfluous. This is precisely the object of the treaties on Regimen in Acute Diseases and what Hippocrates has to say about bloodletting goes straight to the point:

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[2] W. H. Holmes, Stone Implements of the Potomac-Chesapeake Tidewater Province, *Report of Bureau of Ethnology,* 1893-4, Washington, xvi, 1-152, 1897.

[3] *Encyclopædia Britannica,* 11th edition, xxvi, p. 125.

> Bleed[4] in the acute affections, if the disease appears strong, and the patients be in the vigor of life, and if they have strength. . . . Hypochondria when not due to retention of gas, tension of the diaphragm, checked respiration, with dry orthopnea and no formation of pus; more especially intense pains in the liver, heaviness of the spleen, and other phlegmasiæ and intense pains above the diaphragm, diseases connected with collections of humors—none of these diseases admit of resolution if treated at first by medicines, but venesection holds the first place in conducting the treatment. . . . When a person suddenly loses his speech, in connection with obstruction of the veins, if this happen without warning or any other good reason, one should open the internal veins of the right arm and abstract blood more or less according to the habit and age of the patient. Such cases are mostly attended with the following symptoms: Redness of the face, eyes fixed, hands distended, grinding of the teeth, palpitations, jaws fixed, coldness of the extremities, retention of air in the veins [congestion of the brain preceding apoplexy or epilepsy]. . . . In epilepsy or apoplexy, the patients having been first fomented are immediately to be bled at the start while all the peccant vapors and humors are buoyant, for then the cases more easily admit of a cure. In quinsy with convulsive suffocation, the tongue turning livid and hard, bleed in the arm and open the sublingual vein and purge with electuaries and give warm gargles. Peripneumonia and pleuritic affections are thus to be observed: If the fever be acute with pains on either side or both, if expiration be painful, if cough be present and the sputa yellow or livid in color or otherwise thin, frothy, and florid, let the physician proceed thus: If the pain pass upward to the clavicle, the breast, or the arm, the inner vein in the arm should be opened on the affected side and blood abstracted according to the habit, age, and complexion of the patient and the season of the year, and that largely and boldly, if the pain be acute, so as to bring on fainting, after which a clyster is to be given. But if the pain be below the chest and very intense, purge the bowels gently and during the act of purging give nothing.

In his treatise on ulcers, Hippocrates shows how to check accidental hemorrhage after venesection or cupping; how to relieve the soreness after scarification, and points out the most common accident of venesection, namely phlebitis. He adds that "Venesection is to be practised when the person has dined or drunk more or less freely and when somewhat heated and rather in hot weather than in cold"; also, "When the cupping instrument is to be applied below the knee, or at the knee, it should be done, if possible, while the man stands erect.[5] It is a matter of comment that there is no mention of bloodletting in the famous surgical treatise on Wounds of the Head, but one of the aphorisms says, "When a man has pain in the back part of the head, he will be benefited by having the straight vein in the forehead opened." And we know that Ambroise Paré practised venesection in head injuries on the authority of the Father of Medicine. Such are the Hippocratic rules for bloodletting which became the basic principles for its practice in aftertime.

Greek medicine was established in Rome by Asclepiades of Prusa, who opposed the humoral pathology of Hippocrates and his ideas about the healing power of Nature. Professor Huxley relates that he was once talking with an eminent, fashionable physician about the *vis medicatrix naturæ*, when the latter replied: "Stuff! nine times out of ten Nature does not want to cure the man; she wants to put him in his coffin!" Asclepiades was a fashionable physician of this kind. He believed in systematic interference with morbid processes, and, in a well worn phrase, referred to the clinical observations of Hippocrates as "A meditation on death." Yet his actual therapy, when he came down to cases, was not very different from that of the Coan physician, and was limited to such strenuous expedients as diet, massage, hydrotherapy, gymnastics, and a little wine, in short, what we now call physiological therapeutics. He was opposed to drastic purgation and emesis, but favored bloodletting, the principal indication being the relief of pain.

Celsus regarded bloodletting as a principal means of extracting morbid material from the body, and he begins his very concise chapter on venesection[6] with the following sentence: "It is not a new practice to let blood by the incision of a vein, but it is new to embrace this remedy in almost every disease." This statement shows the direction in which things were moving at the time of Celsus and, having made it, he advances at once to the common sense standpoint that the true indication is not the disease or condition of the patient, but whether the patient is strong enough to be bled. In all doubtful cases where there is no time for hesitation, as "in paralysis, loss of speech, suffocative angina, or between two violent febrile paroxysms," it is better to try a doubtful remedy than none at all, but to let blood during the violence of a fever, in the acme of its paroxysm, is deliberate homicide. Wait for a remission, yet, failing this, the last resort is still not to be omitted. Celsus follows Hippocrates in recommending that the vein be opened on the same side as the lesion, but he intimates that the other method, the so called derivative bleeding, on the opposite side or as far away as possible from the lesion, was already coming into vogue. This was to be the special feature of Arabian practice in later centuries and may have come originally from the East. Celsus is also at one with Hippocrates in the idea that bloodletting is good if the drawn blood is thick and dark—the buffy coat idea—but, if it is red and clear, it is a sign that the bleeding should be stopped immediately. Finally, what Celsus says about the necessity of proper instruction in bloodletting shows the wisdom of the ancient Hindus in practising upon the veins of plants.

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[4] Hippocrates, *Genuine Works.* Translated by Francis Adams, New York, 1886, i, 261, 262, 269.

[5] *Ibidem*, ii, 306.

[6] Celsus, *On Medicine.* Translated by Alex. Lee, London, pp. 99-106, 1831.

> Although venesection be very easy to a practised man, yet to the unskillful it is most difficult. For the vein being joined to the arteries, and the nerves to these, wherefore if the lancet should touch the nerve, convulsions ensue, and that cruelly destroys the man. But a wounded artery neither unites nor heals, sometimes it causes profuse hemorrhage. Also if the vein itself happen to be divided and the extremities by chance compressed, no blood is emitted. But if the lancet be thrust timidly, it lacerates the skin without opening the vein. Also the vein sometimes lies hidden, neither is it easily discovered. Thus many things concur to render this a difficult operation to the tyro, which is very easy to a scientific physician.[7]

Galen was a great and resourceful practitioner, noted for the extreme cleverness of his prescriptions and his remarkable originality in treatment, as where he recommends, for the first time in medical history, the milk diet and sea voyages for phthisis. As the archcommentator on Hippocrates, it was natural that he should be very expansive on the subject of venesection, to which, in fact, he devoted an elaborate treatise. He was the first to introduce the quantitative idea in bloodletting, recommending from seven ounces to one and a half pound as a normal quantity to be extracted in the average case. Like all the Greeks, he was opposed to derivative bleeding and sometimes even opened an artery. He carried bloodletting into a great variety of conditions, among them diseases of the liver and spleen, sciatica and coxalgia, insanity and melancholia, rheumatism, fractures, hemorrhages, and cerebral irritation, and it was probably upon Galenical authority that the practice was extended to almost every ailment in later times.

Rufus of Ephesus, who was the first to describe bubonic plague, employed bloodletting in his treatment of the disease.

Aretæus the Cappadocian is usually supposed to have lived about the same time as Galen, or perhaps even later, because his descriptions of disease are the most complete and graphic of all the Greek writers, and his literary style has that ornate, elaborated character which is usually regarded as the sign of a period of social decadence. At all events, he wrote the best treatise on practice of medicine in antiquity, and his wonderful clinical pictures bring the Greek period to a splendid close. Aretæus, like Galen, recommends bleeding in a long array of diseases, not only in epilepsy, pleurisy, and the anginas, but in intestinal obstruction, tetanus, diseases of the bladder, satyriasis, suppression of the urine, hemicrania, and hemoptysis; and, with him, venesection is highly specialized, the blood being drawn from the frontal vein in headache, epilepsy, and vertigo, from the veins of the tongue in throat affections, from the nasal veins in hemoptysis and headaches, with scarification at the pubes or venesection of the ankle in cases of hysteria. This was the beginning of the complex system of "points of election" which was afterward a special feature of the bloodletting calendars. Aretæus, like Galen, also indicates the quantity of blood to be let, about half a pint or more in headaches, for instance.

During the Dark Ages, which for medicine we call the Byzantine period, the science of physic was put into very cold storage. As Sir Clifford Allbutt says: "The chief monuments of learning were stored in Byzantium until Western Europe was fit to take care of them." The most important writer who has been preserved in the Byzantine texts was the great surgeon Antyllus, who gives most careful directions as to the technic of venesection and himself sometimes opened the occipital, auricular, frontal, and temporal arteries. The famous Antyllus operation for aneurysm, which consisted in ligating above and below the sac and then cutting down and evacuating its contents, was, in reality, a mode or subvariety of bloodletting.

The Arabians, as devout followers of Galen, were enthusiastic bloodletters, whether on the battlefield or at the bedside, but their clinical practice had the novel feature that venesection was required to be derivative, on the opposite side from the lesion, against the old Hippocratic rule of revulsion. This opposition between derivative and revulsive bleeding let, as we shall see, to a controversy of phenomenal dimensions in the sixteenth century.

Medieval medicine—medicine under the Christian church—had its origins in the School of Salernum, the earliest literary production of which was the *Regimen sanitatis,* or Code of Health, a twelfth century poem, composed for the benefit of King Robert of Normandy, who was cured of a wound at Salerno in 1101. The *Regimen sanitatis* consists of a number of wise laws relating to diet and personal hygiene, written in Latin hexameter verses with concealed rhymes (the so called leonine verse), each stanza being detached from and independent of the others, like so many beads upon a string. This poem, which passed through some 240 different editions and was translated into the known languages, winds up with a special section on bloodletting, illustrating the Salernitan practice, largely derived from the Arabic writers. The Latin poem itself is by no means what the Germans would call a "right royally pitiful rhyme," for the diction is elegant. It was translated into English five times and the subjoined quotation is from the amiable version of Professor John Ordronaux:

93.

Of Bleeding and of the Age of Bleeding.
Ere seventeen years we scarce need drawing blood;
High spirits fall by tapping life's own flood.
Wine may restore a wanted joyous mood,
But loss of blood is late repaired by food.
Bleeding the body purges in disguise,
For it excites the nerves, improves the eyes
And mind, and gives the bowels exercise.
Brings sleep, clear thoughts, and sadness drives away,
And hearing, strength, and voice augments each day.

94.

In what Months it is Proper, and what Improper to Bleed.
Called lunar, are September, April, May,
Because they move beneath the Hydra's sway.
Two days—September first, May thirty-first—
For bleeding and for eating goose are cursed.

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[7] *Ibidem*, 104-105.

When blood abounds in full age or in youth,
May'st bleed in any lunar month, forsooth;
Yet chiefly in September, April, May,
Bleed freely, if you would prolong life's day.

95.

Of Obstacles to Bleeding.
Cold nature, clime, or when some sharp pain laces;
And after baths that follow love's embraces;
In youth, old age, amid disease's traces;
Or when of food a surfeit overplies
The stomach, and to constant qualms give rise,
Then letting blood is truly most unwise.

96.

Circumstances Relating to Bloodletting.
Whatever amount of blood you wish to let,
Or great, or small, these rules do not forget:
A bath, inunction, cord, the arm to bind,
Some wine, a stroll; lose never these from mind.

97.

Of Some Effects of Bloodletting.
Bleeding soothes rage, brings joy unto the sad,
And saves all lovesick swains from going mad.

98.

Of the Size of the Wound in Bloodletting.
A medium sized incision always make,
Whate'er amount of blood you wish to take;
The copious vapor rising sudden, flees,
And thus the blood escapes with greater ease.

99

Things to Be Considered in Bloodletting.
When one is bled he should for full six hours
Most vigilant maintain his mental powers,
Lest fumes of artful slumber too profound
Should all his mortal nature sadly wound
For fear that thou some slender nerve shouldst mar,
Conduct not the incision deep nor far:
And being purged through blood, and thus renewed,
Haste not at once to sate thyself with food.

100.

Things to Be Avoided after Bleeding.
All things from milk as are in gen'ral made,
And draughts of wine, of whatsoever grade.
Should every one dismissed, avoided be
By recent subjects of phlebotomy.
Cold things are also hurtful to the weak,
Nor let them, dauntless, brave damp skies or bleak;
For vigor only comes once more to these
From sunshine mingled with the passing breeze.
To all rest proves an everlasting gain,
While exercise occasions certain pain.

101.

In what Diseases, Ages and Quantities Bloodletting Should Occur.
Acute disease, or only so in part,
Demands bloodletting freely from the start.
In middle age, bleed largely without fear,
But treat old age like tender childhood here.
In spring you may bleed doubly at your pleasure—
In other times alone in single measure.

102.

What Parts Are to Be Depleted and at What Seasons.
In spring and likewise in the summer tide,
Blood should be drawn alone from the side.
In autumn sere, or on cold winter's day,
Take from the left in corresponding way.
Four parts distinct we must in turn deplete—
The liver, heart, the head, and last the feet.
In spring the heart—liver when heats abound.
The head or feet, when'er their turn comes round.

103.

Of the Benefit of Bleeding from the Salvatella vein.[8]
To mortals there will come superior gain,
From tapping off the Salvatella vein;
It frees the voice, spleen, liver and the chest,
And heart, where'er abnormally distressed.

It is clear from these Salernitan precepts that bloodletting had already become a prophylactic as well as therapeutic device, and, as a definite part of personal hygiene, it became, in due course, immensely popular with the masses. Astrological influences were already creeping in and the time for venesection was soon to be set by the conjunctions of the planets. But the most interesting feature of bloodletting in this period was the evolution of an entirely new figure in the history of medicine—the barber surgeon. There were great surgeons in the Middle Ages, such as Hugh of Lucca and Theodoric, the pioneers of anesthesia and asepsis, Saliceto, Lanfranc, Guy de Chauliac, Mondeville, yet it cannot be denied that the general practice of surgery, and consequently of internal medicine, fell into what Allbutt styles "unexampled and even odious degradation," partly through the medieval schism between medicine and surgery which had obtained since Avicenna's time, partly on account of certain restrictions which the church had to put upon surgical practice by priests and clerics, partly by reason of the many social and legal restrictions which feudal authority put upon both physician and surgeon,[9] partly because the feudal lords of earth were in position to kill if the surgeon failed to cure, and largely, no doubt, on account of the almost stationary cast of the medieval mind, not to mention the ignorance and incompetence of many of the surgeons themselves. Among the Greeks, the surgeon was held in highest honor. In medieval times, Church and State were not specially enthusiastic about him, and the medical scholastics, those amazing examples of the "discontinuous mind," affected to look down upon him, although far inferior in first hand knowledge of their profession. It was a case of "give a dog a bad name," with the result that the general practice of surgery fell into the hands of barbers, bath keepers, sow gelders, and the strolling "incisors," who, as like as not, put out an eye in couching for cataract, butchered the viscera in cutting for stone, or in attempting to effect a radical cure for hernia, often, as Baas puts it, excised "the radix of humanity itself." No doubt the self made, outcast surgeon, not properly bred up and educated to his calling, must bear his part of the blame. We find all the leading surgeons of the period—Lanfranc, Guy de Chauliac, Mondeville—giving very shrewd and straightforward advice to their professional brethren as to the necessity of dignified and straightlaced moral conduct in private houses. They were not to flirt with the lady of the house or to ogle the maidservants, under pain of losing several cubits from their professional stature and possibly their practice. Again, the laws of the Visigoths, the basis of the old Spanish medieval law, state explicitly that "No physician may undertake to bleed a woman in the absence of her relatives; that whoever touched the hand, arm, or breast of a maiden was to be fined; and that if a physician injured a nobleman in bloodletting, he was to be fined." It is plain that immorality and incompetence were common enough among the medieval surgeons of lower caste. The deplorable thing about the whole matter was that, for centuries, the rank and file of surgeons were under a sort of social ostracism. An English surgeon once said of John Hunter that "He alone made us gentlemen," and, even in protestant Prussia, up to the time of Frederick the Great, it was the duty of the army surgeon to shave the officers of the line. In medieval times, the barber surgeon attended only to bleeding, cupping, and the dressing of wounds. Medieval surgery was, in fact, merely "wound surgery," and even in such a slight solution of continuity as bloodletting, it was the practice to give a "wound-drink" to strengthen the patient. The major operations were in the hands of specialists, often hereditary in certain families. Internal medicine was in the hands of scholastics, whose knowledge of Greek medicine was derived almost entirely from translations into Arabic, Hebrew, or other Oriental languages. Renan, as cited by Allbutt, speaks of a medieval university text book, an edition of Aristotle, which consisted of a Latin translation of a Hebrew translation of an Arab commentary upon an Arab translation of a Syriac translation of the Greek text.[10] It was under such influences as these that the medieval physicians began to give up the old Greek practice of bleeding upon the affected side in favor of the Arabic method of derivative bleeding upon the opposite side. All the clinical writers of the period, the so called Arabists, Gilbert of England, Peter of Abano, Arnold of Villanova, Gentilis of Foligno, Bernard de Gordon, Valescus of Taranta, even Savonarola, speak in favor of derivative bleeding, and, in connection with the University of Montpellier, which was always under Arabic influences, the practice became common in France and was duly approved by the Paris Faculty. How powerful the Paris Faculty was in the sixteenth century, how it made surgeons and barber surgeons crawl and knuckle under, how it called down curses upon heretic physicians which sounded like the anathemas and excommunications of religion, we all know. There is always a lingering suspicion that the general medical profession of these times needed stirring up with a pole, and they got it in some measure from Vesalius and the Greek scholars who poured into Europe after the destruction of Constantinople in 1453, shortly after the invention of printing. These men, in the words of Knott, were literally "sowers of dragon's teeth," and the new ideas they introduced caused a great fermentation of medical heresies and the inevitable persecution of heretics. It is said that there are always three stages in the introduction of a new idea: First of all, people say, "It is not true"; second, "It is contrary to religion"; finally, "We knew it all before." And so it happened that in the year 1514, one Pierre Brissot, a learned physician of Paris, who was deeply read in the Hippocratic writings, came out in defense of the old Greek practice of bleeding on the same side as the lesion, because, from his own experience, revulsive bleeding did most good, since it removed the bad blood in a more direct manner. Immediately upon this pronouncement a storm of controversy broke loose over Brissot's head. The Paris faculty, as usual, declared him to be a medical heretic, revulsive bleeding was forbidden by act of Parliament, and three years later (1518) Brissot was induced to take a little journey into Spain and Portugal, ostensibly to study the strange and rare properties of medicinal herbs of the New World, but, in reality, because it was in his interest to come off with a whole skin. As in the case of Vesalius, Spain was a genial clime for heretics in those early years. The faculty of Salamanca declared in favor of Brissot, but in Paris the controversy raged fiercely long after his death, in 1522, and even the Pope and the Emperor (Charles V) were dragged into it. Then came the anticlimax of this teapot tempest. A relative of the Emperor's, who had been bled by the Arabic method, during an attack of pleuropneumonia, suddenly died. Confusion reigned in the Arabic camp and the whole edifice of controversy collapsed like a puff ball. The Brissot affair illustrates how purely theoretical was the practice of medicine in the sixteenth century, and for sheer absurdity might be paralleled by an occurrence in the seventeenth century which is related by that jovial historian of medicine, Johann Hermann Baas:

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[8] In the little finger.

[9] These have been carefully studied by Sir John Tweedy in *Medical Magazine*, London, xix, 701-706, 1911.

> In Heidelberg, about the middle of the century, there arose at the bedside of the Margrave of Baden a difference of opinion between two learned professors and the ordinary physician—at all events also a *medicus purus*—whether a plaster for the illustrious Margravian heart, in order to cover that organ, should be placed in the middle of the chest, according to Galen, or upon the left side. The dispute was settled by opening before the eyes of the noble patient—a hog—by means of which it was demonstrated that, as a matter of fact, the heart of the hog lay on the left side. This evidence so firmly convinced His Excellency that his own internal arrangements were quite the same as those of a hog, that he at once dismissed his private medical attendant for daring to hold a contrary opinion as to the position of a nobleman's heart.

(*To be concluded.*)

NEWER TEACHINGS OF DISEASES OF GASTROINTESTINAL CANAL.

By Mark I. Knapp, M. D., LL. M.,
New York.

VI.

Examination of the Stomach Contents.

We are now ready to enter upon the discussion of the examination of the functions of the stomach. As already mentioned, the two chief coats of the stomach have each a different and distinct function. The function of the muscular coat is to perform muscular work; the muscular coat, therefore, has a mechanical, a dynamic function. The function of the mucous coat is to secrete the several juices which act on the food introduced into the stomach; consequently the function of this structure is of a chemical nature. It is our aim to get the evidence as to the working of these two coats and we accomplish this by means of what is called the test meal. The test meal must have all the qualifications of a test, that is, the parts which enter into the performing of the test must all be of definite and known quantity. Otherwise the entire test meal fails of its purpose. Unfortunately, this diagnostic means is handled not only by the profession, in general, but even by those who profess to be specialists, in a rather slipshod manner. If we are to deserve the respect of our colleagues and of the public, we must attempt to be as nearly perfect as possible in accordance with all sciences applicable in this special branch; and the sciences most pertinent in the examination of the test meal are the sciences of physics and of chemistry. It would be well and most useful to all concerned to impress upon our minds, that these sciences demand the most rigorous exactness in all procedures, and that guesswork is never permitted in the solving of any problem in physics or chemistry. It would seem that this admonition were superfluous, yet it is a fact that the physician very soon forgets to apply the principles of physics and chemistry which he once learned. In the test meal examination we must proceed from a more solid basis. The several steps in our examination must each and all be subjected to the exactest scrutiny and each of the component steps must itself comply with the severest test of science.

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[10] Sir T. C. Allbutt, Science and Mediaeval Thought, p. 69, London, 1901.

The component parts which are necessary for the examination of the function of the stomach, are the test meal and the reagents. There are several test meals proposed, varying with the vanity of the proposer, who wishes to have his name immortalized, but the Ewald-Boas test breakfast answers all purposes. This test meal consists of thirty-five grammes of white bread and three hundred c. c. of pure water. To be sure, this test meal is a very arbitrary one and anything else might be chosen; but it is certainly desirable that there be uniformity in the selection of a test meal. Let us adhere to this test meal until weighty reasons be advanced in favor of another meal; so far none have appeared. Let us be sure of the quantity of the roll and of the water. As we are to draw definite conclusions from the quantity of chyme which we aspirate from the stomach after the test meal has been taken, therefore, in order that we be correct in our diagnosis, we must be absolutely exact in the quantities which we have the patient take.

It is inexcusable negligence to tell a patient to "take a slice of bread and two glasses of water." A slice of bread varies with the size of the loaf, with the custom of a particular family, and with the appetite of the one who is to get the bread. What may weigh thirty-five grammes in one case, may be much less or much more in another. And, naturally, the quantity of aspirated contents will vary with the quantity which the patient eats; the more he eats, the more will be aspirated, and the less he eats, the less will be aspirated. Again, a glass of water may hold any number of cubic centimetres, and the glass which is used in one household may often vary in size from the glass which is used in another. We, therefore, must see the fallacy in employing indefinite quantities as a test meal, when our diagnoses are to be gauged by the quantity which we aspirate after the test meal. Again, according to the old and faulty conception, it is permissive to use black tea instead of water with the bread. The use of black tea is to be condemned for more than one reason. What is black tea? Teas vary very much in chemical constitution, in quality, in the extractives which they contain. Which special tea is to be employed? Shall it be a decoction or an infusion? What shall be the relative quantities of tea and water to be used in the preparation of the tea? How long shall the tea leaves be permitted to remain in contact with the water? Those are all vital questions to a scientific man, and must not be ignored if a standard potion is to be used. And, if we are not to use a tea of a standard type, why use it at all? It is nothing new and has long been known, that tea has a certain stimulating, exhilarating influence upon the body in general,—such is the teaching,—therefore tea is not plain water. Has it been demonstrated to a certainty, that tea has no influence upon the stomach? My researches have taught me that tea has a decided influence upon the stomach; it certainly contains organic acids, and by taking tea we introduce organic acids into the stomach. We shall subsequently learn of the great influence of the organic acids in the alimentary canal. We shall learn that the presence of organic acids in the alimentary canal, in certain conditions, plays a very great rôle and we must therefore avoid the introduction of organic acids with our test meal. In my practice I have used no other than the bread and water test meal, except as will be mentioned further on. I myself weigh off the bread and measure off the water and the patient eats in my presence, or in a room adjoining my consultation room. The very eating of the test meal often offers mute evidence. Some patients take but a minute or so, while others consume ten to twenty minutes to get through with the test breakfast. We are thus enabled to learn the disposition of the patient. After the patient has finished his test meal he waits one hour. Here again absolute exactness as to the time the patient has to wait is most urgently needed. The longer the patient waits, the less chyme will the stomach yield on aspiration, and conversely, the less the patient waits after the test meal, the more chyme will be aspirated. Also, the patient should be at rest after eating the test meal. The body at rest and in motion has a different influence upon peristalsis. Therefore I have the patient remain in my waiting room perfectly at rest for one hour. This explains another grave fallacy which permits the patient to have his test meal at his home and then come to the physician's office to await his turn, which again might protract the waiting time beyond the hour.

One hour after the test meal has been taken, we introduce the stomach tube and attempt to aspirate the stomach. This presupposes our ability to introduce the tube and not to have the tube clogged up by chyme. If the tube is clogged up, we will notice that the aspirating bulb fails to distend; no contents can then be removed from the stomach. The aspirator is then removed from the tube and the fully distended aspirator is connected again with the tube. The aspirator is now compressed, which blows out the obstruction in the tube. After the tube has thus been cleared the aspirator is used as at the beginning. Having succeeded in aspirating some contents, we note the quantity, the physical appearance, and the quality. Normally about forty c. c. are aspirated. Of very great importance is to note the state of subdivision of the roll; is it coarse or is it very thinly ground up? The relative state of the subdivision of the roll indicates the relative state of the muscular activity of the stomach. The greater and finer the subdivision of the bread, the greater was the activity of the muscularis of the stomach, and vice versa. The coarser the chyme, the less active was the muscularis of the stomach. We at once see the great distinction in this teaching, which I have advocated since 1902, from the teaching generally approved. The general but fatal view is, that the activity of the muscular coat of the stomach is to be deduced from the quantity of chyme which is aspirated; that is, where a large quantity of chyme is aspirated we are very falsely taught that we are to deduce that the stomach was lazy. Our books, for centuries past, the one thoughtlessly copying from the other, have been telling us that where a large quantity of chyme is found we are dealing with a case of atony of the stomach. Far from it; it is just the exact contrary. In the chapter on the physiology I attempted to prove the intimate relation between the gastric peristalsis and the closure of the pylorus. I there expressed my conviction, that the greater the peristalsis, the more prolonged is the pyloric contraction; that therefore the chyme, the chyme inclosed within the gastric cavity, will be subjected to more forceful grinding for the reason that it cannot leave the stomach so long as the door, the pylorus, remains closed. A protracted closure of the pylorus means, that within a given time less chyme will leave the stomach, therefore more chyme will be aspirated, and such chyme will be finely macerated. On the other hand, where the pylorus is relaxed, for reasons which we shall find in a subsequent chapter, there the pieces of the bread which have been swallowed cannot be subjected to a thorough maceration, or perhaps to any maceration at all, and therefore whatever little is aspirated is very coarse. In many of my previous publications I have drawn attention to experiments which proved that the maceration of the roll into, what appears as a layer of flour, which I also termed the "floury layer" is a purely mechanical, dynamical act and has nothing to do with the chemical capability of the gastric mucosa.

Thus I have proved to my entire satisfaction, that in the artificial digestion tests, I obtained all the chemical results of digestion, yet the bread remained just as coarse as when I put it into the beaker before beginning the experiment. Only after moving around a glass rod, more or less vigorously, did the artificial chyme resolve into the "floury layer," thus proving the mechanical element, which is necessary to produce the "floury layer." I have also repeatedly aspirated a chyme which gave the floury layer, yet was devoid of any evidence of chemical activity, again proving that the maceration of the roll into the very fine state is purely a dynamical, a mechanical, and not a chemical act. Thus the state of the maceration of the chyme indicates the muscular activity of the chyme and, coincident with this, the relative state of the closure of the pylorus. In the state of normal digestion the aspirated chyme settles on the bottom of the beaker as a layer of flour. As the pylorus weakens, the ingested bread becomes coarser. The state of the fineness of the chyme denotes the respective state of contractility of the pylorus, and therefore the state of the gastric peristalsis. Between the very finely macerated chyme and the very coarse one there are to be noted many gradations. When we observe the aspirated chyme in the beaker we may find that there is comparatively little solids on the bottom, with a comparatively large quantity of supernatant fluid, the solids being of the floury variety. In another case we find the floury solids intimately mixed with the fluid, seeming to be of "creamy" consistence. Here the fluids are diminished. Again the solid in the chyme appears suspended in a semifine condition; the whole appearing as "spongy." Here we find evidence of the beginning weakening of the pylorus, and the total quantity which is aspirated is usually small. Mucus may be present in varying quantities.

The color of the chyme has its own signification. The fluid part of the chyme may have a somewhat bluish green, or a yellowish brown tinge. The former is characteristic of a good diastatic digestion, that is, there is indication of good saccharification; the latter shows good peptic digestion. The aspirated chyme may be of a decided green, or of a red color. A grass green color shows the presence of mould; a dark olive green is suggestive of bile. The red color may be due either to blood or to the dark red mould. Blood tinges the entire chyme red; mould does not. A black, coffee ground appearance shows blood which has undergone changes in the stomach. Very often the aspirator brings forth a chyme which is of a decided yellow color, the solids being more or less well macerated. Such chyme is not aspirated from the stomach, but from the duodenum, and the pathological condition with which we are dealing here is a relaxed pylorus associated with an obstruction somewhere of the duodenum, the obstruction not necessarily being of an organic nature, but possibly due to a spasm or adhesion.

The normal odor of the aspirated test meal is rather pleasant; it is a sweetish sour. The pathological odor varies with the character of the contents. Thus the contents may have a decided sour or acrid or pungent odor; it may have a rancid odor, due to butyric acid; the odor may be foul, musty, or even fetid. On standing, the chyme may also show fermentation, which is recognized not only by the peculiar odor, but also by the rising air bubbles.

Occasionally it becomes important to ascertain the exact quantity of chyme which was present in the stomach. To determine the absolute quantity of chyme, I use the very simple method of Mathieu and Remond. According to this method there are to be determined: v, the quantity actually aspirated; A, the general acidity of the chyme; W, the quantity of water which is to be introduced into the stomach after the stomach contents have been aspirated and, a, the acidity of the wash water. If V represents the absolute quantity to be determined, the formula for carrying out the problem is:

$$V = v + \frac{W.a}{A\text{-}a}$$

To determine the absolute quantity of the gastric contents after this method, we first aspirate the stomach, note the exact quantity of aspirated chyme, and determine its general acidity. Then a given quantity of water is introduced into the stomach, which is siphoned out and reintroduced into the stomach a few times so as to have this water well saturated with the acid elements of the retained chyme, after which the water is siphoned out altogether. and its acidity is ascertained. There is no absolute necessity to siphon out all this wash water, as the only purpose it serves is to enable us to determine its acidity. According to the foregoing formula, the exact quantity of the stomach contents equals the sum of the aspirated chyme, plus the quotient obtained by dividing the product of the quantity of the wash water introduced, after the aspiration, multiplied by the acidity of this wash water; by the difference between the general acidity of the chyme and the acidity of the wash water.

After all the chyme is aspirated, about 500 c. c. of warm water is introduced into the stomach through a stomach tube to which a large glass funnel of 500 c. c. capacity is attached. The water so introduced is siphoned back into the funnel a few times in order to allow the water thoroughly to mix with any contents which may have remained in the stomach. Then the acidity of this wash water is ascertained with phenolphthalein as an indicator.

VII.

The Stomach Secretions.

The treatise which now follows deals with the chemical examination of the test meal, that is, with the determination of the presence and relative quantities of the secretions, which are essential and necessary for gastric digestion. First of all, we will speak of the acids. According to the textbooks, we are to find acid phosphates, hydrochloric acid, and, at the beginning of digestion, also lactic acid. My numerous experiments have taught me that the normal chyme does have hydrochloric acid, both free and in combination, but that it does not have any acid phosphates, nor lactic acid at any period of the normal digestion. I fear that the finding of the latter acid is due to a faulty interpretation of the indicator then used. It is held that the acid, which enters into the formation of the gastric juice, is the hydrochloric acid; but, it is to be remembered that proteolysis does not depend upon hydrochloric acid alone. All free acids, mineral and organic, digest albumen when combined with pepsin.

Quite early in my career of the special practice of gastrology, in fact in the very first year, doubts had arisen in my mind as to the identity of the free acid, which I had been taught was all free hydrochloric acid. Somehow or other I often perceived an odor, pungent, acrid, which, I was sure, was not due to hydrochloric acid. What was it? According to the indicators which I was taught to use, namely, Congo red and dimethylamidoazobenzol, I had to call the acid, proved to exist with such reagents, hydrochloric acid. With increasing restlessness concerning this matter, I resolved to go to the bottom of this question and, for that purpose, I purchased all acids that were ever found in the stomach, and also the several indicators which have been recommended for the chyme analysis. I made solutions of the acids of a strength to correspond with the acidities usually found in the stomach, that is, acidities varying from twenty to eighty. Each indicator was tested with all the acids. The following acids were employed: Hydrochloric, sulphuric, nitric, and phosphoric, these representing the mineral acids. Of the organic acids were employed: Acetic, butyric, citric, formic, lactic, malic, oxalic, propionic, succinic, and tartaric; of the acid salts were tested, the acid phosphates of calcium, magnesium, potassium, and sodium. As indicators I used: Benzopurpurin, methyl violet, congo red, dimethylamidoazobenzol, tropeolin oo, and the Guinzburg's and Boas's reagents. The assertions concerning these indicators are, that the free mineral acids turn the dark red solution of the benzopurpurin into violet; that methyl violet and Congo red turn blue with the free inorganic acids; that the indicator dimethyl turns a solution of free mineral acids into a carmine red and, that the tropeolin gives a dark cherry red color to such free mineral acids; while the Guinzburg and the Boas reagents give a pink peripheral ring when a solution which contains a free mineral acid is heated over a flame in a white porcelain receptable. These statements are all true. But, what is not true is that these reactions take place with the free mineral acids only. My repeated experiments have proved that the first four indicators, the benzopurpurin, the methyl violet, the Congo, and the dimethyl react as well on the free organic acids, in acidities which do not exceed the normal, and not, as is wrongly thought, in only high acidities. The Guinzburg and the Boas reagents deserve the highest confidence for their accuracy as indicators for free mineral acids, and next comes the tropeolin oo.

It was this chapter, the question of the proper determination of the quality and quantity of the acids which finally gave birth to my newer teachings, the old teachings, in very many instances proving fatally defective and misleading. In the old teachings the vivid imaginations of the investigator were permitted full sway, and conditions were assumed to exist which had their being only in the hallucinations and illusions of an overzealous experimenter. Therefore, the first question to hold our attention is the matter of a proper reagent which is to be used as an indicator, as upon it depends our diagnosis. Here we must be cognizant of the fact that, in answering this question, we enter the domain of chemistry, which permits of no sophistication and of no unwarranted assumptions. In a given specimen of chyme the question is first, is it acid and, if so, what acids are there present and how much of each acid does that chyme contain? We are still shackled with the baneful inheritance, seen in our textbooks, the one copying thoughtlessly from the other, that in the presence of free hydrochloric acid there can be no other acid present, or, if there be any, such other acid is present in a negligible quantity. Our textbooks do, very wrongfully, teach that the presence of free hydrochloric acid precludes the presence of organic acids. Another unfortunate and undeserved attribute is imputed to the free hydrochloric—such as we find in the stomach—that it acts as an antiseptic and that, therefore, no bacteria can be found in a stomach where there is a sufficient amount of free hydrochloric acid. This is not true. In zymosia gastrica and fermentations both free acid and bacteria do exist together, side by side, in the same chyme.

The methyl violet (0.01 gramme, water 50 c. c.) did not give a blue color with acetic acid (acidity 50), butyric acid (acidity 40), citric, formic, lactic, malic, propionic, and succinic acids, but did give the reaction with oxalic and tartaric acids. However, this indicator is not readily suited for volumetric analysis. Congo paper reacted more or less on all these acids and, when a deeper colored paper was used, the reaction on all the acids became convincingly positive. Concerning the dimethylamidoazobenzol, it reacted, not only on all these organic acids, but also on the acid phosphates of magnesium (acidity 40) and of calcium (acidity 50).

Of greatest value I have found the saturated alcoholic solution of tropeolin 00, which gives a cherry red color with the mineral acids. This indicator failed to react with the following organic acids: Acetic, butyric, citric, formic, lactic, malic, propionic, succinic, and tartaric, but it did react with oxalic acid. My repeated, painstaking, and successful experiments with this tropeolin solution, and my twelve years' practice with it, justify me in recommending this indicator for the qualitative and quantitative analysis of free hydrochloric acid in chyme.

I have tested the correctness of the tropeolin as follows: First, I have taken a mixture of inorganic and organic acids, the acidities of each of which I previously ascertained thus: I mixed together five c. c. of a hydrochloric acid solution of an acidity of about twenty, with five c. c. of acetic acid solution, the acidity of which was thirty. I therefore knew that this mixture contained twenty hydrochloric acidity. Of this hydrochloric and acetic acid mixture I took five c. c., and titrated first with tropeolin as indicator. The end reaction of this titration was reached when the burette indicated an acidity of twenty, although the total acidity of the entire mixture was fifty. I now added Topfer's solution. The mixture instantly turned a carmine red owing to the presence therein of the acetic acid.

Another method: Chyme was titrated with the tropeolin as indicator and the end reaction of the tropeolin showed an acidity of fifteen. I then took another specimen of the same chyme and added decinormal sodium hydrate from the burette to correspond to an acidity of only twelve. The chyme, now tested with Guinzburg's reagent, proved the presence of free hydrochloric acid. I then added some more of the decinormal soda solution to correspond to an acidity of eighteen and again tested with Guinzburg's reagent for free hydrochloric acid. This time Guinzburg's reagent failed to prove the presence of free hydrochloric acid.

But the most positive, corroborative proof of the absolute correctness of the tropeolin 00 as the indicator for free hydrochloric acid, I obtained by resorting to the determination of all the chlorides and of the free hydrochloric acid, according to the method of Martius and Lüttke, which I slightly modified. This method is the most exact for the quantitative, volumetric analysis of the chlorides; the only drawback to this method is the quantity of chyme necessary, and the time it requires. My modification of this method consisted in not using a decinormal silver solution, but a solution which contained 29.075 grammes of silver nitrate to one litre of distilled water. One c. c. of this solution equals 0.1 gramme sodium chloride, or 0.00607 of chlorine. The titrating reagent was a solution of seven grammes of rhodan ammonium (ammonium sulphocyanide) to 975.6 c. c. distilled water. These two solutions are so proportioned that two c. c. of the rhodan solution neutralize one c. c. of the silver solution.

The exact method of the analysis is as follows: To forty-six c. c. distilled water are added four c. c. nitric acid (specific gravity 1.2), then are added ten c. c. of the filtered chyme, ten c. c. of the silver solution, five c. c. of a saturated solution of ferric sulphate—the indicator—or any other salt of iron, ferric chloride excepted, and then distilled water is added to make 100 c. c. After the precipitate has settled we filter. When this is done. fifty c. c. of the filtrate are very carefully titrated with the rhodan solution from the burette, until the filtrate just turns from white to a yellowish pink. This is the end of the first titration and the buret reading is taken. This titration determines all the chlorides present. The second determination consists in taking ten c. c. of the filtered chyme, which is evaporated in a platinum crucible over a Bunsen flame, between which and the crucible a sheet of asbestos is placed to prevent any loss of the chyme by spattering. When completely evaporated, the asbestos is removed and the platinum crucible comes in direct contact with the flame. The contents in the crucible ignite and, just so soon as no more flame issues from the crucible, it is removed. Too long glowing of the ashes will cause loss of the chlorine by volatilization. The ashes are now rubbed with a glass rod, a little warm distilled water having been added. The complete extraction of the chlorine of the ashes is done by means of about 100 c. c. of warm distilled water. This chlorine containing water is passed through a filter. To make sure that all chlorine has been extracted, the last drop from the funnel is tested, in a test tube, with silver nitrate; the absence of a white precipitate proves the absence of chlorine. The warm filtrate is cooled and, for the estimation of the chlorine which it contains, ten c. c. of the silver solution, four c. c. nitric acid, and five c. c. ferric sulphate solution are added, and the whole titrated with the rhodan solution until the white turns to a yellow pink. The burette is now read. The calculations are made as follows: Every two c. c. of the rhodan solution used corresponds to one c. c. silver nitrate solution, so that, if 5.5 c. c. of rhodan has been used for the first titration, it would mean that just so much of the ten c. c. silver nitrate solution was added in excess. Consequently, only the difference between the ten c. c. silver nitrate added and the 5.5 c. c. found as excess (4.5 silver nitrate) was required to bind all the chlorine of the chyme. (In order that these figures be not improperly interpreted, or be misread, it will be remembered that only fifty c. c. instead of 100 c. c. were used, consequently the 5.5 of the rhodan solution used in this titration are equivalent to double the quantity, i. e., eleven c. c. for 100 c. c. Since two c. c. of the rhodan solution neutralize one c. c. of the silver solution, and since there were used 5.5 c. c. of the rhodan, which is here equivalent to eleven c. c., calculated for 100, and since two c. c. of the rhodan neutralize one c. c. of the silver, therefore the 5.5 c. c. of the rhodan used equals half that quantity of the silver solution, i. e., it equals 2.75 of silver solution in fifty c. c., or double that quantity in 100 c. c.) If now the second titration showed that 17.7 c. c. of rhodan solution were used, that would correspond to 8.85 c. c. $AgNO_3$ used in excess. Consequently, of the ten c. c. $AgNO_3$, added the second time, only the difference between ten and 8.85, that is, 1.15 c. c. of the silver nitrate were actually required to bind all the chlorine of the ashes. The difference of the 4.5 of the first titration and 1.15 of the second titration, gives the number of c. c. $AgNO_3$ required to bind the chlorine present in the chyme as free hydrochloric acid. In this example the difference is 3.35. As one c. c. of the $AgNO_3$ solution equals 0.00607 chlorine, this number is multiplied by 3.35, which gives 0.0203345 chlorine present as free hydrochloric acid in the ten c. c. of the chyme. As 36.5 c. c. hydrochloric acid equals 35.5 chlorine, the 0.0203345 will equal 0.0209073 hydrochloric acid. From this last number the acidity of the chyme can be calculated, inasmuch as 0.3 hydrochloric acid to 100 c. c. water gives an acidity of forty.

According to this method I ascertained the free hydrochloric acid in three specimens of chyme. In the first specimen the tropeolin gave free hydrochloric acid twenty-two and 26.6, according to Mathieu and Remond. The second specimen gave with tropeolin free hydrochloric acid thirty and 30.26, according to Mathieu and Remond. And the third experiment yielded free hydrochloric acid thirty-four, with tropeolin and thirty-seven, according to Mathieu and Remond. The slight differences are negligible. These experiments certainly qualify the saturated alcoholic solution of tropeolin 00 as the most excellent indicator for the determination of the free hydrochloric acid, standing in no way behind the Guinzburg reagent, which latter is more expensive and has no superior qualities over the tropeolin. On the other hand, the tropeolin is superior to both Boas's and Guinzburg's reagents, in so far as these cannot be used for the quantitative analysis, while the tropeolin can.

The tropeolin 00 solution is prepared by putting an excess of the tropeolin 00 into absolute alcohol. The bottle is shaken up a few times for the next two or three days, and a small additional quantity of tropeolin is added. Again the bottle is left for two or three days and shaken up a few times. This adding of tropeolin is repeated a few times, until the solution is of the color of the tincture of iodine. In order fully to familiarize oneself with the proper color reaction of the tropeolin, a drop or two are added, in a beaker, to a small quantity of a hydrochloric acid solution and the resulting color is well noted. Again, one or two drops of the tropeolin are added, in a beaker, to plain water and the resulting color here is also noted. With the mineral acids tropeolin gives a somewhat cherry red color, and with plain water an amber color. In the chyme analysis the titration is continued until the end reaction of the tropeolin, i. e., the amber color is reached.

The Guinzburg reagent consists of:

Phloroglucin,	2 grammes;
Vanillin,	1 gramme;
Absolute alcohol,	30 grammes.

The solution is to be kept in a dark bottle and must be freshly made.

A few drops of the chyme are put into a white porcelain spoon or dish, a drop of the Guinzburg reagent is added and heated over a Bunsen burner. At the periphery of the heated liquid appears a beautiful pink ring. This ring is occasionally better noticed when the dish or spoon is removed from the flame and blown upon. In observing the color, we must be sure that the color is a decided pink and not something which looks like pink. The drawback to this solution is that it is comparatively dear and cannot keep very long. Boas's reagent consists of:

Resorcin,	5 grammes;
Sugar,	3 grammes;
Dilute alcohol,	100 grammes.

Also this solution must be kept in a dark bottle; but it can keep for years and is cheaper than the Guinzburg solution. This reagent is used in the same way as the Guinzburg reagent and also gives a pink ring on heating. There is no criticism as to the reliability of these two reagents; they are both perfect.

The dimethylamidoazobenzol solution, better known as Töpfer's solution, is used in a half per cent. alcoholic solution. It gives a carmine red color with free acids, mineral and organic, and its end reaction is recognized by the solution turning a lemon yellow color. The fact that this solution also reacts with the free organic acids, caused me to employ this reagent just for the determination of the free organic acids, while I use the tropeolin for the determination of the free hydrochloric acid.

The phenolphthalein is used in a one per cent. alcoholic solution and has the property of turning an alkaline solution to deep carmine red. In the chyme analysis it is used to indicate when the chyme ceases to be acid and turns alkaline, which is recognized by the chyme taking on a carmine red color. Occasionally a bare trace of chyme is aspirated, or only a small quantity over which a dense layer of mucus lies. My practice under such conditions is, in order to ascertain, qualitatively, the presence of free hydrochloric acid and free organic acids, to wet a small strip of filter paper with the chyme and then drop a drop of tropeolin or Töpfer's solution on the wet filter paper. In the presence of the free acids, the characteristic reaction takes place on the filter paper. Where there is a good deal of mucus I always wait a little while and then pour out the chyme from the first beaker into another; there is always a drop or two left in the first beaker which is free from mucus, and I dip the strip of filter paper in this drop of chyme and then test with the indicators.

616 MADISON AVENUE.

FAMILY INCIDENCE OF MALIGNANT TUMORS.

By G. L. Rohdenburg, M. D.,
New York.

Until such time as the etiological agent of malignant tumors shall be definitely established, the collection of data on various phases of the problem is of value. It is not our intention to discuss or to attempt to explain the occurrence of several cases of malignant tumors in the one family, but simply to place on record additional cases.

The first of the series of families observed was family A. Mrs. A., aged fifty years, lived in New York in the winter, and at a little town of 500 inhabitants in the southern portion of the State, in the summer. Five years before her present trouble her husband had purchased their country home from an estate. The previous owner of the property had died of a carcinoma of the stomach, six months after the death of his wife; and she had died of a cancer of the uterus. The clinical history of these two cases is not obtainable, the family physician having died shortly before Mr. A. bought the property. Five years after Mr. A. had purchased this house as his summer home, his wife, while in a runaway accident, was struck on the left breast. Four months after this accident a carcinoma developed at the site of this bruise. This was followed in three months by another carcinoma of the same type in the opposite breast. Both breasts were amputated. The patient died of a general carcinomatosis three years after the accident.

During the last six months of Mrs. A.'s illness, an epithelioma of the cervix uteri developed in her mother, Mrs. Z., aged eighty years. From this she died in six months, the immediate cause of death being a profuse hemorrhage. Mrs. Z. had had a severe bilateral laceration of the cervix for over forty years.

Shortly after Mrs. A. was operated upon for carcinoma of the breast, two of her sons married two sisters of the family H. The H.'s lived seven miles from the A.'s. Four months after the death of Mrs. A., in the father of the H. sisters, developed a sarcoma of the large intestine, in the region of the splenic flexure. Mr. H. had suffered for over fifteen years with obstinate constipation, due in all probability to adhesions following general peritonitis, the peritonitis, in turn, being caused by a perforated appendix.

Mrs. Z. lived with Mrs. A., and Mr. H. had frequently been to see both while Mrs. A. was sick. All the patients were at the onset of the illness exceptionally well nourished.

The family W. furnishes the second series of cases. In Mr. W., aged fifty-two years, developed a carcinoma of the large intestine. Previous to this time he had suffered for years from what was termed a "nervous diarrhea." He died one year after a palliative operation. Four months after his death, Mrs. W. had an epithelioma of the breast. For fifteen years she had at the site of the malignant tumor formation a small wart. As soon as she heard the diagnosis in the case of her husband, on the advice of a nurse, she applied sodium ethylate to the wart. Instead of disappearing the wart commenced to grow, at first slowly, and then more rapidly. The affected area was excised and the diagnosis confirmed microscopically.

The third series of cases occurred in family P. Mr. P., aged forty-five years, furnished the following history: He married at the age of twenty years. Two years after marriage his wife showed cancer of the breast, from which she subsequently died. He then married his wife's sister, and she, five years after her marriage, also had a cancer of the breast. After the death of his second wife he remained single for seven years and two years ago married for the third time a widow, aged forty-two years. The present Mrs. P. presented what was clinically a carcinoma of the breast. This diagnosis was latter confirmed by operation and microscopical examination. On very close questioning Mr. P. admitted sexual abnormities. He stated that he could obtain sexual gratification only by biting his partner and that the site of election was the breast. He seldom bit so as to draw blood, but often caused subcutaneous hemorrhages, slight in amount. In brief he repeatedly contused the breast tissues.

In this series of cases we have typical examples of the types described by Behla and others. *Cancer à deux,* so called house infections, and family transmission are all represented. It is singular that in these cases where the clinical history as to previous sources of irritation has been carefully inquired for, it has been found. It is known that irritation of various types has a powerful influence on malignant tumor incidence. These three families have been observed during the last six years. It is probable that every physician can recall similar instances. Viewed casually the cases apparently furnish evidence supporting the viewpoint of a parasitic etiology. Closer examination shows that irritation is the predominant element, and that combination in family groups and houses is incidental.

222 West 136th Street.

OTOLOGY FROM A MEDICAL POINT OF VIEW.

By H. N. Spencer, M. D., LL. D.,
St. Louis.

Such an advance has been made in the surgery of otology during the more recent decades that it places this department in the very forefront of modern surgery. In no department has there been progress more beneficial to humanity. The progress made bespeaks the character of the workers in the field. Without suggesting that the present system is in any measure imperfect or that any other methods might be pursued which would further serve to establish in the sphere of medical thought and science the present advantageous position of the otologist, I would, however, present a phase of the subject which may serve to increase our interest and quicken our energy.

Aural and nasal practice is to be considered from two points of view—the surgical and the medical. Enthusiasm for the one should not cause us to lose sight of the other; neither should the brilliant results which frequently follow in the practice of the one occasion disparagement of the more tardy results in the other. Often the conscientious therapeutist is rewarded by recoveries as real and as permanent as those which are secured by the surgeon.

How are the best results obtained in medical practice? What affections of the ear and of the nose are amenable to medical treatment? What are the remedies? These and similar questions naturally arise in view of the foregoing statement.

The ideal specialist in this department, as in other departments of scientific medicine, is the man who establishes a close connection between his routine work and his laboratory. He divorces, so far as possible, practice from empiricism, and in doing so endeavors to establish the rationale of the pathological finding and of the treatment instituted. I am of the opinion that, in this country at least, conditions of practice support these observations. Possibly the consciousness of limitations may unduly emphasize in my own mind this opinion; but that this opinion is based on existing conditions, all too general, cannot be questioned.

Here the question naturally arises: How are we to adjust the requirements of investigation with the duties of active practice? One method of procedure would be to weigh connectedly conditions with which we are familiar with the remedies which our clinical experience has, in such cases, taught us to employ, and thus discover, if possible, the reason for the treatment which we have set up. For example: We know that alcohol is a specific remedy for aspergillus; we know the effect of silver nitrate in certain diseases of the ear and of the nose, and we know the value of ethyl morphine hydrochloride in atrophic rhinitis, but we do not always stop to consider the rationale of such remedies. I am persuaded that if we should acquire this habit it would be most natural for us to proceed a step further than we are accustomed, and show the relation which evidently exists between many diseases of the ear and nose and processes of disease elsewhere. To me it is most apparent that wholly inadequate consideration is given to the efficiency of internal medicine in the treatment of diseases of the ear and of the nose. We are too apt to see merely the local manifestation of disease and in dealing with it to rely entirely on our acquired technical skill, shutting our eyes to the existence of the remote cause. It matters not how skillful we may be in surgical procedure or topical treatment, I am convinced that the most favorable results are frequently delayed, sometimes permanently, by failure to resort to internal treatment.

I know that I address men of liberal education and I am sure that dereliction on the part of these is not due to lack of knowledge of general disease or of general practice. It may be that the specialist is deterred from taking this wider view in deference to the internist, who may contend that such care of his patient should be referred to him, nor would I undervalue the importance of such cooperation. Nevertheless, I would emphasize the fact that the aurist and rhinologist must recognize the necessity for such treatment and that the responsibility is his. Neither the imperative necessity for local treatment, nor the interest which centres in the local lesion, nor yet the confidence which we may feel in our ability to deal with it should cause us to limit, or permit to be obscured this wider view. If we made more frequent examination of the urine; took cognizance of the blood pressure; understood the heart conditions; examined abnormities of digestion, I am satisfied that we should be in position to deal with many perplexing symptoms and persistences of disease.

Many cases of distressing tinnitus aurium might be relieved or cured by constitutional treatment—cases in which local treatment, however persistent, would not have the slightest effect. Frequently, cases of persistent otorrhea are materially helped and resolution is hastened by means of remedies directed to the general condition of the patient. The same may be said of chronic nonsuppurative inflammation of the middle ear. Attention to the patient's general condition; correct manner of living; proper sanitation; and the correction by internal treatment of systemic disorders will often accomplish more than local applications or operative procedures.

The point which I make might be illustrated by a narration of cases, but I am confident that illustration is unnecessary to establish the statement submitted—a statement which may well be deemed selfevident.

I am aware that this matter of careful laboratory investigation is quite uniformly practised prior to surgical measures and that the surgical procedure is determined by the result of such examination. When the same painstaking work is done prior to undertaking the nonsurgical case; when the local and constitutional treatment is formulated to accord with conditions disclosed in the laboratory work, as well as by the objective examination, otology will have made a material advance.

Of course it is understood that the foregoing measures are not offered as a substitute for local treatment or operative procedure, but for use concurrently therewith.

2725 WASHINGTON AVENUE.

INTRAMURAL ABSCESS OF THE PUERPERAL UTERUS.

By Anthony H. Harrigan, M. D.,
New York,
Assistant Visiting Surgeon, Fordham Hospital; Chief of Gynecological Clinic, St. Vincent's Hospital.

The subject of intramural abscess of the puerperal uterus has hitherto obtained but meagre consideration. Even as late as 1906, so distinguished a gynecologist as Pozzi denied its existence, and at the present time many authoritative textbooks fail either to mention its occurrence or to emphasize its clinical import and significance. The recognition and acceptance of this condition as a distinct type of pelvic infection doubtless has been hindered by the difficulties in diagnosis and hampered by the obscurity and complexity of its complications.

The following case is reported to direct attention to this lesion. The patient was admitted to the second surgical division of Fordham Hospital in the service of Dr. Alfred S. Taylor, to whom the writer is indebted for the privilege of operating on and reporting the case.

CASE. F. J., aged thirty-six years, admitted January 15, 1912, IV para. Family and personal history negative.

Present illness: Four days before admission gave birth to a male child. She was attended by a midwife and the delivery was noninstrumental. At the time of admission, she complained of abdominal pains. There was a foul lochial discharge. Temperature 104° F., pulse 114, respiration 32. Leucocytosis 9,200. Polymorphonuclears 76 per cent. The following day, the uterus was curetted by the house physician. A fair amount of necrotic placental tissue was removed. The next day the temperature was 98° F., but soon reached 103.4° F. Whiskey, strychnine, and saline douches were ordered.

January 17th. Complained of abdominal pain. Vomited. Temperature 104° F., pulse 108, respiration 32. January 20th: Profuse yellowish vaginal discharge. Temperature 102° F., pulse 96, respiration 26. January 21st: Blood culture showed no growth. Temperature 99° to 101.2° F., pulse 108, respiration 24. January 22d: Complained of headache and nausea. Temperature 100.4° to 102.6° F., pulse 120, respiration 36. Condition was somewhat improved; vaginal discharge still profuse.

February 4th: Leucocytosis 9,200. Polymorphonuclears 76 per cent. February 6th: Leucocytosis 6,500. Polymorphonuclears 78 per cent. February 8th: Slight abdominal pain and bloody vaginal discharge. Temperature 102° F., pulse 100. February 16th: Widal negative. Temperature 103.4° F., pulse 108 to 112.

February 24th, forty days after admission, patient was transferred to the second surgical division. During her stay in the medical ward, the temperature had ranged from 99° to 103.4° F., with a corresponding change in the pulse rate. A Widal test was negative and a blood culture failed to show any growth. February 25th: Abdominal pain. Temperature 100.4° F., pulse 110. February 26th: Irrational at times. Abdominal pain continued. Vaginal examination by Doctor Taylor showed uterus to be enlarged. The cervix was patulous and to the left of the uterus was a mass. Doctor Taylor believed the condition to be one of septic salpingitis associated with a certain amount of pelvic cellulitis. February 27th: Very restless. Abdominal pain. Temperature 100.4° to 103° F.. pulse 114 to 120.

March 4th: At 11 a. m. the patient complained of abdominal pain, had a severe chill, and vomited. General abdominal rigidity. Leucocytosis 29,000. Polymorphonuclears 88 per cent. Temperature 105° F., pulse 112, respiration 34. Vaginal examination revealed a sensitive mass in the left side of the pelvis. As the symptoms pointed toward an acute intraperitoneal complication, operation was decided upon.

OPERATION.

Ether narcosis was induced and a median hypogastric incision was made. A mass consisting of uterus, sigmoid flexure, and omentum presented in the pelvis. The omentum was adherent to the parietal peritoneum in front of the right broad ligament. When this adhesion was separated, a pocket of pus was found in front of the right broad ligament. The sigmoid flexure was adherent to the fundus of the uterus and to the parietal peritoneum in front of the left broad ligament. After the adhesion of the sigmoid to the parietal peritoneum was freed, a second pocket of pus was discovered anterior to the left broad ligament. The union of the sigmoid flexure to the uterus was very firm; an attempt to free the sigmoid was soon given up owing to fear of injury to the vessels of the mesosigmoid. The separation was finally effected by incising the uterine peritoneum in front of the line of adherence and by stripping back the uterine peritoneal covering with the attached sigmoid. When the intestine was lifted up, a perforation was seen on the anterior surface of the left cornu. It was about three quarters of an inch in diameter. Creamy, yellow pus exuded through the opening. The adjacent portion of the uterus was necrotic. It was apparent that a hysterectomy was indicated. This was done in the usual manner, leaving a small segment of the cervix. The pedicles were transfixed and ligated with chromic catgut and the stumps covered with a peritoneal flap separated from the anterior surface of the uterus. The pelvis was wiped dry and the abdominal wall sutured in layers. No drainage.

During the course of the operation, the patient went into collapse. After vigorous hypodermic stimulation and an intravenous infusion of saline, the pulse became barely perceptible at the conclusion of the operation.

During the first four days following operation the patient's condition was extremely critical. On the fifth day the wound was inspected. There was profuse suppuration, superficial to the fascial sutures. A staphylococcus was isolated from the discharge. A bronchopneumonia of the right lung was detected on the seventh day.

The patient was put in the open air. On April 20th, forty-seven days after operation, the temperature reached normal. The patient was discharged from the hospital, April 26th, with the wound closed save for a granulating area flush with the skin in the lower one quarter of the incision.

PATHOLOGICAL REPORT.

(Dr. J. E. Welch and Dr. M. Grossman.)

Macroscopical: Uterus 6x8x13 cm. Weight 250 grammes. Walls thickened. On anterior surface, entire left side replaced by a large necrotic mass. Left ovary and tube adherent to mass posteriorly. Mass does not show any connection with endometrium.

Microscopical: Section shows a large area of complete necrosis. Muscle cells show extensive round cell infiltration and well marked cloudy swelling. Two small areas of focal necrosis between muscle fibres. Bloodvessels are markedly congested. Moderate amount of new formed fibrous tissue throughout section.

Diagnosis: Abscess of uterus.

A comprehensive description of abscess of the uterus is provided in a monograph written by O. von Franqué, and which appeared in 1901 in the *Sammlung klinischer Vorträge.* Von Franqué was aided in researches by the concerted and helpful endeavors of various colleagues in several countries. Hence the bibliography is extensive. He includes within the scope of his study all classes of uterine abscesses regardless of their source. His personal case is detailed under the name *metritis dissecans.* He employs this term to signify the extrusion per vaginam of a fragment of uterine parenchyma separated and detached by necrosis. As this expression implies only a pathological process and does not indicate its causation, it is not explicit. Von Franqué collected fifty authentic cases, of which seven were puerperal in origin, and the remainder gonorrheal, traumatic, or tuberculous. A number of cases were classified as unauthentic, because they were secondary to primary tubal or parametric suppurations or owing to their development in the necrotic and degenerative residual products of benign and malignant tumors.

Another critical contribution to the topic is contained in a Paris thesis, written by Mercade and

	Name.	Bibliography.	Location.	Appendages.	Period of injection.	Operation.	Remarks.
1	Van Courtland......	*Canada Medical Journal*, 1852-53	Fundus	....	......	Found half teacup of pus	Symptoms of pneumonia.
2	Storer	*Boston Medical and Surgical Journal*, 1864	Posterior wall of cervix	Normal	......	....	Specimen presented.
3	Saxinger	Abstracted by von Franqué	Posterior wall of fundus	....	3 months	....	Perforation of abscess; peritonitis.
4	Lucas Championniere	*Bulletin de la Société d'anatomie de Paris*, 1869	Posterior wall of fundus	Normal	......	....	Peritonitis
5	Lucas Championniere	*Thèse de Paris*, 1870	Fundus	....	......	....	Peritonitis; abscess of broad ligament.
6	Finnell	*Medical Record*, 1871-72	Anterior wall of fundus	....	......	....	
7	Boldt	*Proceedings of the New York Pathological Society*, 1888	Anterior wall of fundus	Right pyosalpinx	4 weeks	Abdominal section	
8	Augustyn	Inaugural Dissertation, Leiden, 1893	Right cornu	....	4 weeks	Abdominal section	Abscess incised and drained.
9	Jonas	*American Journal of Obstetrics*, 1895	Fundus	....	......	Extraperitoneal drainage	
10	Davis	*Ibidem*, 1895	Right and left cornua	Subacute salpingitis	8 weeks	Supravaginal hysterectomy	Abscess in left horn communicated with one in left broad ligament.
11	Penrose	*American Journal of Obstetrics*, 1895	Right and left cornua	Subacute salpingitis	8 weeks	Supravaginal hysterectomy	Abscess in left horn communicated with one in left broad ligament.
12	Noble	*Transactions of the Southern Surgical and Gynecological Association*, 1895	Fundus	....	2 weeks	Drainage	
13	Noble	*Ibidem*	Fundus	Normal	2 weeks	Drainage	
14	Noble	*Ibidem*	Fundus	Normal	18 days	Drainage	
15	Noble	*Ibidem*	Fundus	Left salpingitis	......	Drainage	
16	Noble	Grady Hospital	Fundus	Normal	......	Drainage	
17	Noble	*Ibidem*	Fundus	Normal	......	Drainage	
18	Noble	Private Infirmary	Fundus	Normal	......	Drainage	
19	Turenne	*Gynécologie*, 1898	Fundus	....	......	Vaginal hysterectomy	Small abscess in broad ligament.
20	Ricketts	*Lancet-Clinic*, 1898	Cornu	....	8 days	Abdominal section	Abscess drained.
21	Brindeau	*Bulletin de la Société d'obstétrique de Paris*, 1901	Fundus	....	......	....	Intraperitoneal rupture.
22	Von Franqué.......	*Sammlung klinischer Vorträge*, 1901	....	....	......	....	
23	Lepage	*Comptes rendus de la Société d'obstétrique de gynecologie, et de pediatrie*, 1903	Right cornu	....	3 days	Abdominal section, abscess drained	Diffuse peritonitis; appendicitis was suspected.
24	Champetier de Ribes	*Ibidem*	Fundus	....	8 days	....	Intraperitoneal rupture.
25	Cerné	*Normandie médicale*, Rouen, 1908	Left cornu	....	19 days	Supravaginal hysterectomy	
26	Sampsom	*American Journal of Obstetrics*, 1910	Left cornu	Normal	6 weeks	Drainage	Instrumental delivery; streptococcus injection.
27	Sampsom	*Ibidem*	Right cornu	Normal	4 weeks	Drainage	Subsequent pregnancy normal.
28	Beyer	*Monatsschrift für Geburtshilfe und Gynäkologie*, 1910	....	....	4½ weeks	Hysterectomy	A hemolytic streptococcus was isolated from peritoneal cavity.
29	Barrows	*American Journal of Obstetrics*, 1911	Right cornu	Right salpingitis	3 months	Transperitoneal suprapubic drainage	Streptococcus injection.
30	Barrows	*Ibidem*	Right cornu	....	6 weeks	Transperitoneal suprapubic drainage	Normal delivery; streptococcus injection.
31	Barrows	*Ibidem*	Left cornu	....	6 weeks	Transperitoneal suprapubic drainage	Instrumental delivery; streptococcus injection.
32	Barrows	*Ibidem*	Anterior wall	....	4 weeks	Anterior colpotomy	Prolonged labor; streptococcus injection.
33	Barrows	*Ibidem*	Body	Left salpingitis	2 weeks	Transperitoneal suprapubic drainage	Delivered by midwife; streptococcus injection.
34	Barrows	*Ibidem*	Anterior wall	....	2 months	Transperitoneal suprapubic drainage	Streptococcus injection.

published in 1906. Mercade supplements the bibliography and repeats the plan of including all varieties of abscesses and of recording the unauthentic cases. The papers of Sampson and Barrows are recent, and treat of abscess of the uterus solely as it occurs during the puerperium.

It seems essential, in order to form a correct conception of intramural abscess of the uterus and to retain its clinical entity, that a rigid distinction be maintained between it and the uterine lesions occasionally seen during the progress of a pelvic thrombophlebitis. In the latter instance, the abscesses are small, multiple, and result from the disintegration of venous clots, while in the condition under consideration the abscesses are usually single in number, lymphatic in origin, and mostly situated in one of the uterine cornua. Two explanations are offered for this predilection. According to Championnière, the intrauterine lymphatics converge toward the cornua. Also, as pointed out by Mercade, the embryonal prototypes of the uterus, the Müllerian ducts, occasionally persist in the cornual regions as vestigial structures. Possibly these two factors, the richness of the lymphatic vessels plus the presence of fetal structures of diminished resistance, conduce to make this region additionally susceptible.

It is conceivable that the barrier of leucocytic infiltration which surrounds the abscess cavity might become so rigid and organized as to lead to encapsulation of the abscess, with subsequent latency and possibly ultimate innocuousness. Such a result, however, is extremely unlikely. The usual sequence is extension of the inflammatory process to the endometrium or to the peritoneal surface with subsequent perforation. Another possible termination is suppurative metritis, with necrosis and gangrene succeeding, and it is here that the term *metritis dissecans,* employed by von Franqué, is particularly applicable. In the case of intraperitoneal perforation the rapid escape and diffusion of pus cause a peritonitis, general or local, depending on the degree and extent of the limiting adhesions. Secondary rupture into the bladder and rectum are possible sequelæ.

The symptomatology is in no way special or peculiar. The indefiniteness and vagueness make the diagnosis difficult if not impossible. The general symptoms of pelvic infection, fever, chill, abdominal pain, prostration, and leucocytosis, are present. The local signs elicited by bimanual examination are not specific or significant. Careful examination under narcosis may be unavailing, as is illustrated in the cases of Augustyn, Ricketts, and the author.

Generally, palpation discloses a mass, found laterally to the uterus. This mass, which is the enlarged and swollen cornu, simulates consummately a pyosalpynx or a parametric abscess. Theoretically, this mass should possess lateral mobility and recession in conjunction with the uterus, in contradistinction to the immobility and fixity of tubal and circumuterine swellings of inflammatory origin. However, owing to the formation of adhesion, the displacement of the uterus may be restricted or even restrained. Moreover, a parametric abscess may occasionally be displaced.

If the condition is suspected, the abdomen should be opened immediately. The vaginal route should not be chosen. When the abdomen is opened and the lesion located, the procedure to be employed varies according to the size and extent of the abscess and variety of complication. If the abscess is small and intact, the uterus may be brought forward toward the abdominal incision, surrounded with gauze packing, and the abscess incised, cauterized, and drained. Bovee objects to this procedure, on the ground of possible rupture of the uterus in a subsequent pregnancy from yielding of the cicatrix. When the abscess is large, perforated, and gangrene of the uterus is imminent, as in the author's case, supravaginal hysterectomy is indicated.

The writer has collected the cases shown in the table from the literature. The paradigm used is a slight modification of that employed by Noble.

Of the thirty-four cases in the paradigm, all were puerperal, and all save Cases III, IV, VI, VII, XXI, XXII, and XXVIII were at term. There was only one abscess in each case, except in Cases X, XI, XIII, XIV, and XXI, in which there were two, and in Cases XIX, XXVIII, and XXXIII, where the abscesses were multiple. An autopsy took place in Cases III, IV, V, VI, XXI, and XXIV. Recovery took place in all except in Cases II, III, IV, V, VI, VII, XXI, XXIII, and XXIV.

249 West One Hundred and Second Street.

STRANGULATED HERNIA.*

A Clinical Case.

By Hyman Goldstein, M. D.,
New York.

The case in question presents a clinical picture of strangulated hernia rather atypical in aspect, that is, not as described in textbooks. There are many points of interest which make this case very instructive and justify study in detail. But before entering into the description of the case proper and its general discussion, I will make several preliminary remarks and observations that may prove of diagnostic value, upon which rational treatment is dependent.

Many students and practitioners are misled by textbook descriptions of a disease in a so called typical case, not because the author is vague in his description of the disease, but for the reason that the careless student or practitioner misinterprets that which the author intends to convey. Thus, strangulated hernia, like every other medical and surgical condition, is described in textbooks as if a typical case only was concerned. What is an author's typical case? What is its analysis, and why does it mislead us?

We should bear in mind that the author combines knowledge and experience in the description of a typical case; that each typical case has a lengthy description of its literary and clinical history made from a summary, after the author has observed perhaps a few thousand cases of its class, and beside this, has collected data from the world's medical literature. There are also some authors who possess an elegant literary style and synthetize the composition of their theoretical typical cases from accumulated literature of other authors, with the assumption that the reasoning, logic, and correctness of the statements of the other authors are exact, with perhaps some cases of their own experience. In both classes of authors, we find almost the same lengthy items of causes, symptoms, diagnosis, complications, prognosis, and treatment ascribed to the typical case. For instance, should you observe ten cases of strangulated hernia or any other disease, you will note that one or more typical symptoms of one kind will manifest themselves in one patient, and symptoms of a different kind be present in the others. In still another case the constitutional symptoms may predominate out of all proportion to the physical signs and vice versa in other cases. In other words, each case presents different characteristic symptoms peculiar to the individual. The aggregate of all the prominent symptoms predominating in each of the cases collected, of which a summary is made, constitutes the description of a typical case. This is also true of the causes, diagnosis, complications, prognosis, and treatment of the typical case described in the textbook. It would therefore be impossible for an author to describe the individual characteristics of each and every case, because this would fill volumes. Hence, the author is compelled to describe typical cases, with the idea that the cautious reader will *generalize the disease and individualize the patient.* The careless practitioner, who, after finding certain symptoms and physical signs after examination of the patient, concludes that this is a disease mentioned in one of the textbooks, instead of taking it to be one of a type belonging to a general class of diseases, that is, one who individualizes the disease instead of individualizing the patient, will ultimately fail in his purpose.

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*A prize essay, awarded the Dudley Memorial Medal, at the Long Island College Hospital, June, 1910.

Other important requisites to be kept in mind, are the fundamental principles of medicine and surgery, without which no intelligent understanding and rational treatment of a case is possible. Such principles are: The relations of the organs as they are situated in the body and their histological structure; their physiological functions; associated functions of organic systems, i. e., alimentary tract, genitourinary, circulatory, cutaneous, and nervous systems; also compensatory functions of one organ or system for another.

Deviation of any of these normal functions gives rise to characteristic symptoms. These characteristic symptoms are dependent upon a perverted physiology which may be consequent upon the following:

First: Structural changes.

Second: Functional changes dependent upon nervous irritability or depression or mental influence.

Third: Compensatory overactivity of one set of organs for other diseased organs, for example, cutaneous system for the alimentary or genitourinary tracts; the liver, heart, and lung "tripod" and vice versa; disease in one will cause inhibition in function of that organ, and overactivity in the other to relieve the burden.

With these precautions, bearing the foregoing requisites in mind when at the bedside, it is my opinion that most symptoms can be traced back to physiological disturbance or structural changes, and with the axiom "to individualize the patient and generalize the disease," an accurate diagnosis ought to be possible, except in few complex cases where some factors of the symptom complex cannot be explained and demand x ray examination or exploratory incision. To make an accurate diagnosis means the difference between life and death in many cases, e. g., a case of uremic coma treated for opium coma by the administration of atropine with the result that the patient dies. What happened? All secretions were blocked up, which instead of improving the condition aggravated it, causing the fatal termination. Some of these cases are operated in for extradural or subdural blood clot with the same result. So I can enumerate hundreds of instances where negligence or ignorance of the fundamental principles caused the fatal outcome. In general, every disease means a disturbed equilibrium between the external and the internal relations. Man is daily subjected to harmful physical influences, such as germs, trauma, temperature variations, chemicals, and irritant vapors and particles; these irritants constitute the external relations.

Normally, our resistance is enough to withstand all these influences without any deterioration in our general system, on account of various definite processes going on in our bodies—the internal relations. The constant adjustment of these constitutes health. Upon the gravity of the predominance of either the external element, whether germ or irritant, and internal element, the resistance or soil, does the prognosis depend.

These general preliminary remarks plant their footprints of necessity and importance in this particular case, as well as any other, and for this reason I have dwelt somewhat at length on the fundamental principles. I will now proceed with the case proper.

CASE. Mr. M. K., aged thirty-eight years; married; nationality, Russian (Hebrew). Previous occupation, instructor in languages in Russia; came to United States twelve years ago. Present occupation, tailor.

Family history: Father suffered for a number of years of chronic bronchitis and asthma, and died at the age of seventy-eight years, as, the patient says, from exhaustion of the asthma. Mother died at about the age of forty years, from unknown causes. Had five brothers and four sisters, all living and well. No history of hernia, lues, or cancer. Tuberculosis, doubtful.

Personal history: During childhood the patient suffered from yearly attacks of bronchitis every winter. Had measles when five years of age and made good recovery. Typhoid at eight years of age; was ill for a period of six weeks and recovered, but since then his bronchial attacks had been aggravated, he suffered more severe coughs and also attacks of asthma. For the past twenty years he had been suffering from so called dyspeptic symptoms, feeling of epigastric heaviness and pain after meals, constipation, eructations of gas, coated tongue, dry throat, and sour taste in the mouth every morning. Had small, external hemorrhoids seven years ago which passed away spontaneously.

He stated also that about fifteen years ago, while in Russia, during an unusually severe attack of bronchitis, he coughed heavily for some time, after which he felt a dull pain in the right inguinal region, and on inspection noticed a small lump there. His description was, that while straining during the heavy cough, he felt a wavelike movement of the lump, had severe pain, and was unable to walk.

But he was able to push the lump back with ease, which he did and went to bed. This relieved him of all symptoms. Afterward he noticed relapses of the same small lump once every two or three months, reducing it to a normal state each time with subsequent relief. For the past three years he noticed its return every month, but reduced it after each recurrence and protected the tumor site by placing a bandage over it, but there was a tendency for the tumor to become larger at each recurrence. No truss was used, nor had he consulted a physician up to the time when the present trouble began.

Appetite was poor; bowels constipated, urination normal, drank stimulating fluids such as tea, coffee, and alcohol moderately; smoked cigarettes occasionally but did not chew tobacco; slept well. Venereal infection was denied.

Present complaint: He attended a ball or dance on the evening of December 25, 1909, and remained till 2 a. m. The weather was cold and stormy when he started for the elevated station on his way home. On arriving at the station he felt a slight pain in the right inguinal region, and as he sat down in the elevated train he was suddenly seized with excruciating pain over the same site, felt nauseated, retched but could not vomit. He stated that he found recurrence of the tumor and it could not be pushed back. In the meantime he was restless and kept swaying in various positions and expressed a feeling of discomfort. He finally reached the Bronx station, where he alighted, and being unable to walk, he succeeded in getting home with the assistance of two men. The time being late, he did not call a physician, but went to bed, where he felt partially relieved. The tumor was still down. He remained unattended by a physician till 7 o'clock the next morning, when he summoned the truss man who succeeded in reducing the tumor, which was as large as a moderate sized fist. A binder was placed over the tumor site to prevent its recurrence. In the meantime, proper measurements were made for a truss. The truss man returned at about 6 o'clock that evening with the truss. During all this time the patient was kept in bed. The binder was removed and the truss applied for the purpose of fitting it. All the symptoms abated when the tumor was reduced and held protected by the truss. The patient then got out of bed, went about his daily business, and felt quite relieved and comfortable. He felt well for about fourteen days when, while sitting at the supper table one evening, he was suddenly seized with acute tearing pain at the site of the tumor, whence the pain radiated to the sides and loins up to the umbilicus and down to the scrotum and thigh. He felt nauseated and retched a good deal when he sat, and was unable to continue his meal. Believing the pain to be due to pressure of the truss, he removed it. This was immediately followed by the protrusion of the tumor, which was larger than ever before. He immediately went to bed and a physician was summoned, who arrived at 12 p. m., January 8, 1910. After examination, the physician told him that there was a complete right oblique inguinal hernia. The doctor attempted to reduce it, and after manipulating for about an hour, as the patient stated, he failed. The doctor then injected morphine in the patient's arm and went away. The patient slept for about two hours, but was restless, experienced pain, nausea, retching, and insomnia for the rest of the night, and next morning, till the doctor arrived at or about 12 noon. He tried taxis again, but failed. An assistant was called in. The patient was then placed on a table in Trendelenburg posture and anesthetized with chloroform. Under these conditions they succeeded in reducing the hernia. The truss was reapplied to protect against recurrence and the patient was put to bed. The symptoms subsided and the patient got out of bed the next morning feeling quite comfortable. He went about his work as usual for about another week, till Sunday, January 16, 1910. On that day, while sitting at the table, he was once more suddenly seized with the same symptoms as described in the previous attack, but had retching and could not vomit, as he expressed himself, he had not the habit of vomiting and could not if he tried to. He removed the truss and the entire hernia came down much more than previously and enlarged the scrotum a good deal. The patient stated that the size of the hernia was double that of a moderately sized fist. The patient went to bed and immediately sent for his physician, who called the next morning at about 11 o'clock. In the meantime no one was called and the patient suffered great pain and from the other symptoms mentioned, making him very restless during the entire night. The physician summoned an assistant and taxis was tried but failed. The patient was then placed in the Trendelenburg posture under anesthesia by the physician's assistant and taxis tried again, but reduction was impossible. After manipulating for some time they gave it up and the doctor telephoned Professor J. D. Rushmore and consulted him about the case. In accordance with his advice the patient was immediately removed to the Long Island College Hospital, arriving there at about 9:20 p. m. the evening of January 17, 1910.

Examination of patient at the hospital: General condition of patient was apparently fair, temperature 100.8° F., pulse 110, respiration 25. On inspection and palpation a large complete right oblique inguinal hernia was discerned. Whether percussion note was dull, tympanitic, or both I do not know. It may have been dull since the patient presented symptoms of strangulation, namely, nausea, retching, much pain over site of hernia, and obstipation. These findings were corroborated by the history of the patient, previous attacks, the last one being irreducible even under a general anesthetic. It was therefore decided to prepare the patient for immediate operation, which was done in the following manner: The field for operation was shaved and the surface cleansed with tincture of green soap and sterile water. A compress of bichloride of mercury one to 10,000 was applied. Bladder and rectum were emptied. The patient was brought into the operation room at 10:30 p. m.

Operation: An incision of about four and a half inches was made, extending from a little beyond the centre of, and three fourths of an inch above Poupart's ligament to the pubic spine, parallel to the ligament. This incision divided the superficial structures down to the sac, and the constriction ring was nicked upward. The sac was identified by its silvery polish, the aborescent arrangement of its vessels, fat, and areolar tissue, and by some fluid existing within the sac. The cord was separated from the sac and held to one side. The roof of the inguinal canal was split over a grooved director, and all bleeding vessels throughout the operation were controlled. Then the sac was carefully cleared of its areolar tissue, held up by two clamps, and thus made tense. The fundus of the sac was nicked upward and the opening enlarged with the fingers. About three or four ounces of yellow, serous fluid, slightly tinged with blood, came out and the rest was sponged dry. The contents were examined. There were no adhesions nor inflammation present. There were six coils of intestine which were somewhat of a mahogany color, with its polish, and retained their natural folds. There was also some omentum present. The findings were sufficient to indicate a healthy gut, and there being no foul odor the contents were reduced into the abdomen. The sac being thick, it was therefore transfixed by a needle with suture and tied near its base. Then a pursestring suture was made through the redundant sac and sutured in the upper angle of the wound, including fibres of the internal oblique. The rest of the operation was completed as an ordinary Bassini. A new floor was made for the cord which was now covered by the external oblique, fascia, and skin. Patient was removed from the operating room at 11:30 p. m.[1]

A physical examination of the patient was made by me on January 25, 1910. His general condition was somewhat anemic, muscles were of poor tone, general nutrition below par, and tissues relaxed. He had seborrhœa sicca and dry hair. Lips were pale and conjunctiva was anemic. The pupils were equal, regular border, reactions to light and accommodation and the consensual test were normal. No icterus, palsies, nor petechiæ. Eyes were somewhat sunken, probably due to absorption of some of the postocular fat consequent upon general poor nutrition. There was a little spur on the left side of the nose and an enlarged inferior turbinate on right side. Mucus was seen collected in few scattered areas on posterior pharyngeal wall. Uvula was long and of an angry red color; tonsils somewhat enlarged. Teeth and gums were in poor condition The tongue was large, flabby, coated, and moist. Anterior cervical glands were enlarged. Skin was relaxed and poorly nourished and of poor tone, otherwise negative.

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[1] This description of the operation is that of Professor J D. Rushmore.

Few sibilant and sonorous râles were heard on inspiration and expiration over the bronchial region, otherwise the chest was negative. The heart on inspection showed palpitation, and the apex beat in the fifth interspace near the sixth rib in mammary line. Palpation disclosed heaving impulse at apex, but no thrill. Percussion showed the upper border to be at the second interspace. The right border at the right parasternal line, the left border at the mammary line. At the apex, the first sound was accented, both sounds regular, good rhythm, and force, no murmurs. Basic auscultation showed second sounds accented, but no murmurs. The radial pulses were equal, regular, of good rhythm, good force, and tension and vessel walls were soft and elastic. As to the posterior chest, sibilant and sonorous râles were heard in the interscapular region, otherwise negative.

The abdomen was somewhat protuberant in contour, and tympanitic in upper portion; the rest of the abdomen was covered with bandage and could not be examined. In part of abdomen exposed I could not elicit any mass, fluid, tumor, nor tenderness. The edge of the liver was felt at the free edge of ribs. The edge of the spleen was impalpable. The kidneys were also impalpable. Knee reflexes were normal, the Babinski was negative, clonus was absent, otherwise extremities were negative. As to the genitals, the parts exposed appeared to be normal, except the right side of the scrotum, which appeared larger, more relaxed, and reddened than left.

January 27, 1910.	Medication.	Nutrition.	Temp.	P.	Resp.	U.	D.	Remarks.
8 a. m.	None	Full diet	99° F.	82	22	Q. S.	X	Slept well. Stitches were removed by Dr. Knoller and patient was redressed.
12 a. m.			99.2° F.	80	20			
4 p. m.			99.2° F.	80	22			
8 p. m.			99° F.	78	20			
12 p. m.			98.8° F.	80	20			
Jan. 28, 29, 30 and 31...	None	Full diet	Normal	Normal	Normal	Q. S.	X	Good recovery.

January 27, 1910, another physical examination was made and the findings were the same except that the patient appeared better nourished. The abdominal dressing was later removed in my presence by Doctor Knoller. The wound appeared clean, no stitch abscess being present. The stitches were removed and patient redressed.

GENERAL DISCUSSION.

This case is of especial interest because it presents to us two important etiological factors, one of which predisposed to the occurrence of hernia, on account of the neglect to mitigate or remove the cause, and the other caused strangulation.

The family history shows that there existed an hereditary tendency which rendered the patient susceptible to attacks of bronchitis, thereby increasing intraabdominal pressure. Furthermore, the diseases of the patient's childhood had aggravated his bronchitis, and his cough was intensified, in addition to which asthma was present, thereby further increasing the intraabdominal pressure. This in turn had exerted a downward expelling force upon the visceral contents in the line of gravity against the hernial rings, weakening the latter. The patient had neglected his bronchitis, which predisposing factor exaggerated the anatomical weak point at the hernial ring. After this, it became an exciting cause instead of a predisposing factor, finally giving rise to a small tumor in the right inguinal region, first noticed fifteen years ago. The habits of the patient, constipation, and gastric symptoms may be added as additional predisposing conditions.

Such history as in a case like this, if it comes to us early, should immediately cause us to examine the hernial rings, and if hernia is not present we should bear in mind the possibility of its probable future occurrence, and hence devote our attention to prophylaxis by mitigating the predisposing cause or condition as follows: Treat the bronchitis, regulate the patient's habits with regard to diet, as to time to eat his meals, and the proper manner of mastication, proper attention to his bowels, and warn him against unnecessary strain. Support the hernial rings with bandages during hours of physical labor. A grain of prophylaxis more than balances an ounce of cure.

The other factor of importance to be explained is the cause of strangulation in this particular case. In addition to the patient having repeated attacks of hernia for fifteen years, he was stricken with three severe recurrences of complete right oblique inguinal hernia December 25, 1909, January 8 and 16, 1910, respectively. With each of the latter attacks he was suddenly seized with symptoms of intestinal obstruction and the tumor was proportionately larger in each succeeding attack. It appears that the first two attacks were of incarcerated hernia, which were reducible, but finally led to strangulation of the gut in the third attack, possibly in the following way: During the first attack about two or three coils of intestine came down and simply blocked the fecal current and not the circulation of the intestinal wall, but was reducible; in the second attack possibly four or five coils were forced down, which gave rise to more intense symptoms and difficulty in reduction, but still it was reducible under anesthesia and the Trendelenburg posture. During the third attack six coils of intestine and little omentum was forced into the hernial tumor (this fact was confirmed in the finding of the sac contents at the operation), thereby causing the additional coils that descended and enlarged the hernial tumor to act as a core obstructing the ring orifice and preventing the reduction of the hernia; beside this, the thickened sac added to the difficulty. All this led to interference of the circulation in the intestinal walls, retarding its current, and giving rise to such changes in the gut as were described in the operation findings.

While the immediate cause was the constriction by the increased number of coils that came down, the predisposing cause was constitutional in origin, namely, cough and constipation, causing increased intraabdominal pressure; on account of this continued pressure the elasticity of the ring had become diminished and the tissues were more yielding. It is also possible that there had been a congenital weakness of the ring aggravated by the pressure as described above.

It is rare, as already stated, that a case has all the symptoms of a typical case as outlined in the textbooks. This case was atypical in the following respects: Compared with the history of previous attacks, as given here, it seems that the symptoms the patient experienced in this attack of strangulated hernia were relatively mild. The patient did not vomit, but retched, which he complained of only when he attempted to sit up, otherwise it proved of very little discomfort to him, save as to nausea. The more severe symptoms, such as collapse from exhaustion and marked thirst which occur in most cases, were missing here; the explanation of which we can easily discover by referring to the sac contents at the time of the operation. These were few, and are exceptional in cases where we have a history of previous attacks as in this particular case. Regarding the variations in temperature, whether normal, supernormal, or subnormal, character of pulse, whether regular, intermittent, rapid, or easily compressible, character of respiration, appearance of facies, reference to the tumor proper, as to size, shape, whether tense or doughy, relating to change of position of patient, tenderness, percussion note, condition of skin over it, and impulse on coughing (unreliable sign), I am forced to rely solely upon the statements of the patient, not having seen him prior to January 25, 1910. The report on the hospital chart shows that the patient's general condition was fair, temperature being 100.5° F., pulse 110, respiration 25, thereby indicating a mild case out of all proportion to the physical signs.

DIAGNOSIS.

It is evident that the diagnosis of this case was quite simple from the data collected from the patient's history and the visible hernia that had been irreducible, even under general anesthesia. However, we get other cases of strangulated hernia, the tumor of which is not prominent and may be mistaken for other conditions, such as *aneurysm,* where we get the expansive pulsation of the tumor and the bruit on auscultation; the intense symptoms of intestinal obstruction with obstipation are missing.

Enlarged inguinal glands, where we feel the hard nodular glands, usually not tender, no impulse on coughing; the causes being syphilis, urethritis, perineal infection; enlarged glands may be detected elsewhere; obstipation is not present.

Undescended testicle usually occurs early, about the first year; and if it remains till puberty, it is inactive. Few cases have been reported where it existed in individuals fifty years of age. The tumor is tender, and there is absence of testicle in the scrotum of the same side.

Lipoma and *new growths* are moved with the skin, due to their attachment thereto.

Encysted hydrocele of spermatic cord gives a uniform fluctuation, the skin may be edematous above the location, and then the cause for venous obstruction may be looked for with the appearance of superficial varicose veins. In all of these conditions the marked symptoms of intestinal obstruction, with more or less collapse and subsequent reaction with obstipation, is missing.

Strangulation of the cord by axial rotation is manifested by sudden intense symptoms, pain, vomiting, moderate shock, swelling in groin, because the testicle is usually undescended or half way attached to a long mesorrchium; swelling may be in scrotum. If the testicle has descended the epididymis will be anterior, but as a rule the general symptoms are milder and the bowels not obstructed.

A safe and cautious procedure to follow in every case where the patient is suffering from severe abdominal pain, retching, or vomiting and constipation, is to immediately examine all the hernial outlets for possible strangulation. The *gastric crises* of tabes dorsalis may give conflicting symptoms, but it is distinguished by lost reflexes, history of syphilis, Romberg's sign, and Argyll Robertson pupil, etc., common in tabes. *Biliary* or *renal colic* has its characteristic pain, radiating in the latter downward to the scrotum, and constipation is not present, or if so, flatus is usually also present. In *acute pancreatitis* we have sudden onset of pain, vomiting, constipation, and epigastric tumor and tenderness, rapid and weak pulse, but flatus is present and sometimes a fecal mass. Cammidge's test of the urine may be obtained, still, in most cases, exploratory laparotomy is essential. Intestinal obstruction occurs, due to bands or apertures of omentum or mesentery, or from adhesions due to previous abdominal operations; stricture of bowel, strangulation of the diverticulum beneath the adhesions of appendix, portion of mesentery or pedicle of ovarian cyst or tumor; intussusception and volvulus; as a rule all these conditions require laparotomy; and in my opinion, the common symptoms are very similar to each other and the diffential symptoms too fine and delicate to make a differential diagnosis. Since these cases are operative, the abnormal conditions can be corrected at the same time without undue delay and jeopardy of the patient's life. Impacted feces can usually be felt, as a soft, doughy mass over the region of the colon. Special reference is made to the foregoing conditions because they are common in emergency cases, simulate strangulated hernia, and are mistaken for such.

COMPLICATIONS.

The operation revealed no complications in this particular case. This should not deceive us and make us feel satisfied that this case has received the ideal treatment prior to the patient's entrance to the hospital. The same treatment in other cases may have caused inflamed adherent hernia and possibly gangrenous gut. Had the latter condition occurred when the patient was given a hypodermic injection of morphine on the evening of January 8th, we could never have known the true condition, because the patient would feel relieved of his symptoms, have a "delusive calm," and probably die in that condition from collapse. But more important than that, experience teaches us that no hernia has ever been cured by support of a truss, but will return and become much larger at each recurrence, because the abdominal weak spot and the exciting factor are present. This invites complications, such as incarceration, strangulation, and their results, inflamed and gangrenous gut or omentum. I believe it is therefore proper to suggest to the patient and impress him with the necessity of an operation for the radical cure of the hernia without delay so as to prevent the complications. I also believe that most cases of recurrence of hernia after operation are found in those patients who suffer for years from hernia, and keep supporting it by a truss. Each time the hernia comes down, they reduce it manually, thus constantly weakening the tissues in front of it, also weakening the tissues by pressure of the truss, so much so that after radical cure of hernia, there is in some cases a special tendency to recurrence after operation, for which, in many instances, the skilled surgeon is blamed. It is probable that early operation will prevent this tendency.

PROGNOSIS.

The prognosis in this case was good because of the following factors: 1. The constitutional condition of the patient was good as there seemed to be fair resistance and comparatively good nutrition due to the absence of other allied diseases, renal or cardiac, and cancer or other cachexiæ. 2. The time of operation and complications present influence the prognosis a good deal. The patient was fortunate in this case in having a timely interference before any complications developed. Present statistics show that the mortality in those cases operated in the first day of their occurrence is eight per cent.; in cases operated in on the second day, twenty-two per cent., and forty-five per cent. in cases operated in on the third day. A striking example, showing what an important factor time is in influencing the prognosis, is found in the statistics of intussusception where the mortality is but eight per cent. in cases operated in during the first twenty-four hours, and fifty per cent. after that time. We must also consider another factor, the complications present at the time of operation, such as inflamed hernia, with many adhesions, gangrene of the gut or omentum or both. Fortunately this case was void of complications, because of the general fair condition of the patient and the timely operation, therefore the prognosis was very good and the patient made a good recovery. I would suggest that several urinary specimens should have been examined before and after operation, to determine the condition of the kidney as a precaution in the prognosis and treatment.

TREATMENT.

It is very unfortunate that in such cases as this, most patients do not appreciate that time is frequently the deciding factor between life and death. The patient in discussion was very fortunate in having the truss man arrive and reduce the hernia before any complications set in, so that a healthy instead of a gangrenous gut was reduced, as a truss man could not differentiate between the two conditions. The proper thing for the truss man to do under such circumstances was to consult a physician, which he neglected to do. This unfortunately is the practice of most laymen connected in some way or other with the medical profession.

I differ with the physician's treatment of this case when he came to the patient for the first time, during the second attack, on January 8th, at 12 o'clock p. m. To administer morphine under such circumstances, where he was unable to reduce the hernia, simply masks the symptoms, and there was danger of the bowel suddenly becoming strangulated and gangrenous with fatal results. As is the rule in such cases, the so called inflammatory symptoms apparently abate when gangrene sets in and the patient feels relieved temporarily. Such treatment means the neglect of the very ideal of the present day in the practice of medicine and surgery, which is *prevention*. If a disease had not occurred before we are called, we try to prevent any occurrence, as in infectious disease, or even surgical cases, such as hernia, when the patient has a difficult occupation or suffers from bronchitis with severe cough. It should be our duty to mitigate the cough and support the hernial ring sites with bandage or abdominal binder during the straining hours of heavy work, or order a change of the occupation of the patient, if possible. Then, again, once a disease has established itself in a patient, we must prevent complications. In hernia we must guard against strangulation.

Another factor of the physician's treatment at that time was taxis, which, however, was unsuccessful. Unsuccessful taxis does not necessarily indicate strangulation of the gut, but it should always arouse our suspicions. To make certain upon this point, taxis ought to be tried under anesthesia, and if unsuccessful when properly done, it indicates incarceration or strangulation. This is what ought to have been done in this case, and if strangulation were found, immediate operation would have been the only treatment.

It is my firm belief that after such history of two similar attacks described before, occurring one after the other with an interval of only fourteen days, associated with symptoms of intestinal obstruction, and the second attack occurring even though a proper fitting truss was worn, suggests a predisposition to another attack. Furthermore, it elicits the facts that the predisposing causes and favorable conditions such as the yielding hernial rings with the increased abdominal pressure were present and the cause of the latter, bronchitis, was left untreated and intensified by the exposure to the damp and cold weather. Hence the liability of another recurrence and probably with serious complications. This patient escaped complications, but this does not mean that other cases under similar conditions will terminate so fortunately. This case is an exception.

While I should be satisfied with successful reduction of hernia as a temporary relief, I would very strongly urge the patient to give his consent to be operated upon after the symptoms subsided, the next day, and warn him of what might happen should he refuse. This would give ample time to prepare the patient properly for operation, and allow the surgeon to work with less haste and less apprehension than he would otherwise.

The operative treatment of a modified Bassini operation for radical cure of the hernia in this case, I believe, was unique, inasmuch as a strong wall was reenforced by strengthening the weak point at the internal abdominal ring, by suturing the thick sac with pursestring suture and then with mattress suture buried in the upper angle of the wound; the operation being completed by the Bassini method, formed a new floor for the cord covered by the external oblique, fascia, and skin. Such operation affords an excellent protection against recurrence.

The postoperative treatment requires no comment; the patient made an uneventful recovery and was discharged from the hospital, February 1, 1910.

104 Second Street.

CHOREA.*

History of a Case, and Remarks.

By P. H. Markley, M. D.,
Camden, N. J.,
Visiting Physician to Cooper Hospital.

Chorea is divided typically into two forms, the acute and the chronic. The acute is also known as Sydenham's chorea, and is subdivided into the minor, the severe, including *chorea insaniens* or *status choreicus;* the gestational form and the paralytic chorea minor, or as it is frequently called Saint Vitus's dance, is the most common form, occurring during the middle and later periods of childhood, rarely before the age of five years, nor after puberty, largely predominant in female children, and is the form with which we are all more or less familiar.

There are various other forms described and classified as minor, such as the habit spasm, the so called convulsive tic of the French, sometimes termed Tanelli's disease, consisting of involuntary movements and explosive utterances, frequently profane or vulgar. Then there is a form known as rhythmic or hysterical chorea. It not infrequently involves the sternomastoid, causing rhythmic movements of the head; and Dubibi, of Naples, has described a disease which bears his name, consisting of electriclike movements, and also known as electric chorea; strange to say, it has never been seen outside of Italy.

The second grade of Sydenham's chorea, the severe form, consists in a marked exaggeration of all of the symptoms of the mild form, to the degree, in many cases, of the patient becoming speechless as well as helpless, and the still more aggravated form, with mental symptoms added, of a maniacal character. It then becomes, as Osler describes it, "a terrible ordeal." This is the form known as chorea insaniens or status choreicus. Such conditions, it should be borne in mind, may develop from an ordinary, apparently mild case, and are usually fatal. The gestational form may occur during pregnancy, or not until post partum. It is usually of much shorter duration than the ordinary form, and when occurring ante partum is very liable to induce abortion, in which event the movements cease as soon as the uterus is emptied. The mortality is quite high in this form, being estimated at about thirty per cent.

The paralytic form is not infrequently seen, the paralysis consisting generally of a hemiplegia. The prognosis is favorable in these cases, which end in complete recovery. There are also described posthemiplegic chorea, and senile chorea, their titles indicating the conditions in which they are met. Chronic chorea is known as Huntington's disease and differs radically from the acute or Sydenham's in that there is an organic origin, the lesion being in the central nervous system, a chronic diffuse cortical encephalitis, and not unlike the condition often found in general paralysis. In fact, it differs so radically, not only pathologically, but clinically, that it really has no connection with the Sydenham's variety.

The chief etiological factor in Huntington's disease is heredity, having in one notable instance been traced through five generations. Also, unlike ordinary chorea, it is essentially a disease of adult life, rarely occurring before from the thirtieth to the forty-fifth year, developing insidiously and without intermission, until it terminates in marked spastic paralysis, with pronounced dementia. Though patients with this disease generally live from ten to twenty years, it is invariably fatal.

To attempt to study the etiology of chorea would involve a multitude of detail, without arriving, I fear, at any clearly definite ideas and quite as various are the numerous supposed pathological findings. The condition is best expressed by Osler, in these words, "Nothing definite has as yet been determined." In the study of the etiology, however, the supposed close association of chorea with rheumatism seems to have been disproved, as a recently carefully prepared table of a large number of cases shows the rheumatic diathesis to have been present in but twenty-one per cent. of the cases. Certain it is, however, that the most feared complications of chorea are the usual complications of rheumatism, namely, heart conditions, especially endocarditis. Per contra it is equally true that the remedies that are almost specific in the treatment of rheumatism, the salicylates, have but little if any effect in controlling chorea. During my term of service last winter, a case occurred that seemed to me to be of special interest:

A young woman, aged twenty years, of medium height, stout, almost masculine in appearance, was admitted, suffering from a moderately severe attack of chorea. As she was a foreigner (Austrian), and could speak no English, nor could her friends, we were unable to elicit any detailed history. As near as could be ascertained, her father and mother were living and in good health. She had never had a prior attack of chorea. One year previously she was married, her age then being nineteen, and had been delivered, after a normal labor, just one week before her admission. At that time, she was suffering from a severe suppurating mastitis, the abscess having been incised the day before admission. The baby was not with her. It was said to be of the average size and healthy. Other than the mastitis, no other symptoms were apparent that might be considered sequelæ of the labor, the lochia being apparently normal for that period.

We understood with difficulty that the choreic symptoms were not manifest until after the breast had become inflamed. The day of her admission she had driven from Riverside in a wagon, and upon arrival was said to be having almost constant, convulsive movements, which were controlled only by hypodermic injections of one quarter grain of morphine.

The following morning, while the choreic movements were general, yet one side seemd to participate more than the other, though from that time the disease ran an uneventful course, showing marked improvement each day, until by the end of one week, the patient had practically recovered, being free from any convulsive movements and eating and sleeping fairly well. During this period the breast received careful attention, and though still suppurating at the time of her discharge, yet was very much improved. At the earnest solicitation of her husband, in which she participated, she was discharged upon the eighth day, being able to proceed home with him on the train.

Just two weeks later she was readmitted, with all of the choreic symptoms intensified, convulsions, and wild delirium. At the end of twenty-four hours she was moribund, dying a short time later. During the original attack her temperature ranged from 100° to 102° F., which was thought to be largely due to the breast condition. Upon readmission the temperature was 104° F., continuing to rise until the time of her death. The breast was more swollen and suppurating freely.

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*Read before Cooper Hospital Clinical Society, October 16, 1912.

As this was the first fatal case of chorea that had ever occurred under my observation, and other than Huntington's chorea, not having any knowledge of any fatal case, I began to review the literature of the disease more carefully than ever before, arriving at the following conclusions:

It was, I believe, a case of the gestational form, occurring post partum, as the ordinary form is rare after puberty. I do not recall having seen a primary case occurring at that age, although I do recall one recurrent case. Then, again, the duration is much shorter in the gestational form. It will be recalled how the woman improved the first week in the hospital, and in the light of our later knowledge, it would have no doubt have been much wiser had she been detained for a somewhat longer period, and this brings to mind another thought, and that is, to what extent did the large infected, suppurating area which she had intensify the condition, or even act as a causative factor? Bearing upon this phase I have been able to find some references in the literature.

Berkley, of Johns Hopkins Hospital, reports a case of chorea insaniens in a woman of twenty-seven years; the autopsy showed a suppurating parotid gland and catarrhal pneumonia. Dr. J. M. Miller, commenting upon a fatal case of chorea before the Philadelphia Pediatric Society, said: "The boy had a very septic appearance, and he thought that some infection apart from the chorea might have been a contributary factor in his death." The following, by a Russian investigator, is taken from Sajous's *Cyclopædia of Practical Medicine:* "Recent investigations go to show that chorea is of pyogenic origin, staphylococci having been found in the blood, in two personal cases." And in the same volume another author says, "Not rarely the disease is of streptococcic origin."

However, there are but a few isolated cases and do not by any means establish the pathology, though of sufficient significance perhaps to indicate the infectious nature of chorea, and the day may not be far distant when the particular germ will be isolated.

The symptoms accompanying the last few hours of the case under consideration, were highly suggestive of meningeal involvement, on account of which an autopsy was asked for, but refused; though, in the light of our present knowledge, we may, I think, regard it as a case beginning in the ordinary manner, and developing the status choreicus or chorea insaniens which, as before stated, is said to be nearly always fatal, and without any definite pathological lesions, and I presume until the pathologist points out some definite, fixed and permanent lesion, chorea will continue to be considered a neurosis. Nor is the etiology any more definitely determined, though I believe that the profession would have a clearer idea of both if the word chorea were limited in application to the Sydenham's variety, giving Huntington's chorea, which is, as we have seen, an entirely different affection, its proper classification under organic diseases of the nervous system.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXI.—How do you treat psoriasis, and with what success? (Closed February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Answers due not later than April 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXX has been awarded to Dr. Arthur L. Fuller, of Colorado City, Texas, whose article appears below.

PRIZE QUESTION CXXX.

THE TREATMENT OF SUBACUTE AND CHRONIC LARYNGITIS.

By Arthur L. Fuller, M. D.,

Colorado City, Texas.

The successful treatment of these laryngeal inflammations depends almost entirely on the recognition of the fact that in the large majority of cases they are but local evidences of some systematic derangement, or results of some abnormality of neighboring structures; for, while chronic laryngitis may occasionally occur from excessive or improper use of the voice alone, it rarely does so in the absence of some systemic predisposing cause. While chronic laryngitis frequently begins as a chronic process, subacute laryngitis is either a misnomer for a very mild case of acute laryngitis, or an intermediate condition between acute and chronic laryngitis; the acute laryngitis being due to some exciting factor occurring to a patient predisposed by one of the above mentioned conditions, and failing to end in resolution because of that condition, passing into the chronic form through the intermediate one of subacute laryngitis. Hence we must recognize the etiological importance of other conditions outside the larynx in treating these laryngeal diseases; for whether they begin in the acute or chronic form, systemic derangements, or abnormalities of nearby structures play an important part, if not strictly causative, certainly one hostile to cure.

There are several conditions outside of the larynx which tend to prevent recovery, and the treatment of which is as fully essential to cure as any treatment directed to the local condition. They may be divided into three classes:

1. Abnormalities of neighboring structures;
2. Derangements of the general system;
3. Improper habits, surroundings, etc.;

and any or all of these must be corrected as far as possible before we can expect any good results from local treatment, indeed in many cases the correction of these will bring on a cure without local treatment.

The abnormalities of neighboring structures produce their effects by causing defective breathing, irritation from constant coughing and hawking, and by direct extension or infection from their discharges; and the existence of any such conditions will alone prevent successful treatment. Hence nasal defects must be remedied and proper nasal respiration secured that the air may be moistened and warmed before reaching the larynx; any cause of constant or frequent coughing, such as elongated uvula, wax in the ears, etc. I had one case in which the removal of wax from one ear relieved a constant cough of some months' duration, and the relief of cough was followed by the disappearance of hoarseness and laryngeal discomfort. Infective processes in the mouth, such as dental caries and pyorrhœa alveolaris, should receive attention.

Any general systemic derangement, such as rheumatism, gout, or anemia, disturbances of the gastrointestinal, hepatic, renal, or circulatory systems, must receive the most careful attention; for it is folly to expect results from local treatment as long as the blood supply is loaded with the deleterious products due to imperfect metabolism of indigestion, hepatic deficiency, or the toxic substances present in renal insufficiency, or if the supply of nutriment to the part is lessened owing to lack of oxygen carriers in the blood, or by sluggish flow due to circulatory disturbances. The toxines of rheumatism, gout, or overloaded intestines must also be removed. The presence of tuberculosis or syphilis affords special indications for general treatment, for a chronic laryngitis is often present in these diseases, which, while not presenting the granulomatous features or ulcerations characteristic of local tuberculosis or syphilis, will fail to improve in the absence of suitable constitutional treatment.

Improper habits, surroundings, etc., include all errors of diet, drinking, smoking, atmospheric and occupational surroundings, and improper or excessive use of the voice. The existence of any of these must be remedied. Alcohol, tobacco, and improper or highly flavored foods have an injurious influence on these laryngeal conditions, not only by toxic substances in the blood supply which are due to their use, but by their direct irritating effects on the larynx; and dustladen or impure overdry air, and excessive or improper use of the voice have an equally malign influence in the local irritation they produce. These habits and surroundings must therefore be changed; alcohol and tobacco must be strictly prohibited, also the use of highly spiced food, and the patient removed to surroundings in which the air is as pure and as free from dust as possible. Generally speaking, the moist, balmy air of the southern seacoast is best in these cases, but every patient is a law unto himself in this respect, and experience is the only true guide in each case. Rest is one of the most important elements in these as in all other irritative conditions, and the use of the voice should be prohibited or limited to low tones or a whisper and to infrequent occasions.

A discussion of the details of carrying out this treatment, especially as regards neighboring structures and general systemic derangements, would be out of place here; covering, as it would, more than half the field of internal medicine, rhinolaryngology, and straying into dentistry. But, if this general treatment is instituted, many cases will improve or end in recovery without local treatment, since the cause is removed.

The local treatment of subacute and chronic laryngitis varies with the stage of the disease; the earlier stages of the former being more related to acute than to chronic laryngitis. It consists of measures for the relief of cough, hoarseness, and local discomfort, and those which have for their object the absorption of products of inflammation, and restoration of the local circulation to its normal condition.

For the relief of cough, hoarseness, and local discomfort, I have found nothing to equal steam inhalations, medicated or otherwise; therefore I keep the patient, when possible, in a room whose atmosphere is impregnated with steam; in addition to which I prescribe direct inhalations of medicated steam from two to four times daily, the drugs added being menthol, guaiacol, terebene, camphorated tincture of opium, or compound tincture of benzoin, either singly or in various combinations. I feel sure that, in addition to the temporary relief, these inhalations have a beneficial effect on the course of the disease by increasing the local circulation and in this way assisting absorption of inflammatory deposits. As local applications I use some astringent, applied to the larynx with a swab, after cleansing the parts with an alkaline spray to get rid of any excessive or tenacious secretion which may be present. The solutions I use are silver nitrate, from two to ten per cent.; zinc chloride, from two to five per cent.; and aluminum naphtholsulphonate, from two to five per cent., varying the strength according to the stage of the disease and the reaction produced, and changing from one to another. I make these applications daily or every other day.

CONCLUSIONS.

In treating these cases, I, 1, give a good cholagogue cathartic, followed by daily salines, partially to deplete the bloodvessels and remove the products of intestinal sluggishness; 2, correct any derangements of the general system, gastrointestinal, hepatic, renal, circulatory, gouty, rheumatic, syphilitic, or tuberculous, as far as possible; 3, remove any abnormal conditions of mouth, nose, nasopharynx, or other neighboring organs; 4, place the patient in favorable surroundings, climatic, atmospheric, etc.; 5, interdict tobacco, alcohol, improper food; and, 6, prohibit as far as possible the use of the voice, restricting it to low tones or a whisper and to as few occasions as possible.

These measures for systemic treatment and corrections of defects of near by structures are of course used at the same time; and coincidentally I use the following local methods, as described above:

1. Steam inhalations, a good combination being

℞ Menthol,	gr. xx;
Guaiacol,	♏xxx;
Paregoric	℥ii;
Friar's balsam, q. s.	℥iv.

M. Fiat inhalatio. Sig.: Use two teaspoonfuls to a quart of boiling water, the steam to be inhaled 10 minutes two to four times daily.

If secretion is deficient, I add terebene, thirty minims.

2. Cleansing with alkaline spray.
3. Local applications with swab, silver nitrate, zinc chloride, or aluminum naphtholsulphonate, used in varying strengths and changed from time to time, as indicated above.

Finally, before discharging the patient, I give instructions for the future, calling his attention to any systemic derangement present or likely to return, and advising him to keep his whole system under watch and in good shape; and in those cases which occur as a result of excessive or improper use of the voice, in singers or public speakers, I strongly urge a course of instruction in the proper methods of voice production as the only chance of preventing a return of the laryngitis, for I feel sure it is faulty methods rather than excessive use which is the etiological factor in these cases, as is shown by its rarity in well trained singers compared with public speakers, who have rarely had training in voice production.

(*To be concluded.*)

Therapeutical Notes.

Paraspecific Serum Therapy.—Darier, at a meeting of the Society of Therapeutics, Paris (*Revue de thérapeutique médico-chirurgicale,* June 15, 1912), recommended the administration of antidiphtheritic serum by mouth at the beginning of various infectious diseases. All infections start with a condition of general prostration, due to acute intoxication, which interferes with the defensive reactions of the organism. The chief desideratum is therefore to reinforce the resisting power of the body at this particular time by the introduction of some appropriate agent from the exterior. It has been shown experimentally that normal blood serum contains protective antibodies; but immunizing sera are unmistakably better still. Ten grammes of antidiphtheritic serum, taken in the twenty-four hours in any desired flavored preparation, will, if in continued for three or four consecutive days, often bring the organism back to normal; if not, a bacteriological diagnosis in the meantime will probably have furnished more precise indications for specific treatment, and no harm will have been done. By this form of paraspecific serum therapy, the author asserts, the great majority of infectious disorders of the eye, even acute endogenous infections such as iritis, iridochorioiditis (whether rheumatic, gonorrheal, syphilitic, or other) can be allayed or entirely arrested by a few doses of serum. In all these cases, pain ceases six or eight hours after the treatment is begun, sleep is more prolonged and quiet, and on the following day a distinct euphoria is manifest. The same effects are noted in many other acute conditions, e. g., influenza, herpes zoster, erysipelas, acute bronchitis or bronchopenumonia, phlegmonous inflammations, etc., provided the treatment is begun at the outset. In some cases of influenza with intense rhinitis, the discharge and headache were observed to disappear in a few hours, and did not return subsequently. The advantage of administration of serum by mouth is that all danger of serum intoxication is thereby avoided. While the digestive juices partially destroy the serum, it is mainly the albumoses which are thus acted on. The antitoxines are only in part broken down, while the hormones, or internal secretions, are absorbed *in toto,* and play an important rôle in the benefit produced. Antistreptococcic and other sera were also tried by the author, but the antidiphtheritic serum alone gave trustworthy results.

Enucleation of Tonsils.—Lindley Sewell, in the *Practitioner* for September, 1912, enumerates the pathological conditions indicating removal of the tonsils as follows: 1. Sepsis, as shown by recurring attacks of tonsillitis and by a pale, sodden, or grayish appearance of the organ, with exudation of cheesy débris from the crypts and usually enlargement, so that the tonsil projects inward, beyond the level of the faucial pillars. 2. Enlargement of cervical glands. This the author regards as one of the strongest indications for enucleation, since it is proved thereby that there are pathological changes situated deeply in the tonsil, up to its capsule. Use of the guillotine will not suffice, as the tonsil is completely removed by it only in a small percentage of cases. 3. Simple chronic hypertrophy, with obstruction to breathing. Although the guillotine frequently gives good results in this class of cases, recurrence sometimes follows, and moreover, if the removed tonsil is examined it is often found to present evidences of disease at the bottom of the crypts; enucleation is therefore preferable.

A mere slight enlargement of the tonsils does not indicate operation, and if the organ still appears healthy, pink, and clean, attention to the nasopharynx by removal of adenoids, and to the teeth, is all that is required.

Treatment of Exfoliative Dermatitis.—E. H. Molesworth and A. Verge, in the *Australasian Medical Gazette* for August 31, 1912, report the case of a man, aged twenty-five years, who had had psoriasis from childhood until two years before, where, after a severe course of chrysarobin treatment, the condition changed to one of exfoliative dermatitis. The entire body surface was red and covered with large, regular scales which were produced in great profusion. Four doses of salvarsan were given intravenously, but this did not do as much good as thyroid extract, which was begun in doses of two grains (0.12 gramme) and gradually increased up to fifteen grains (one gramme), three times daily. This was taken for a fortnight without any pulse acceleration or mental disturbance, the patient being kept in bed. The dose was later reduced to five grains (0.3 gramme). Locally, a zinc oxide ointment with two to three per cent. of salicylic acid was used. Marked improvement occurred, all tendency to scaling disappearing, though slight redness remained for a time.

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CHARLES E. DE M. SAJOUS, M.D., LL.D.,
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NEW YORK, SATURDAY, MARCH 1, 1913.

REPORT OF THE COMMISSIONER OF IMMIGRATION.

The annual report of the commissioner of immigration at the port of New York in reference to Ellis Island affairs, for the year ending June 30, 1912, has just been issued. We regret that we have not space even to abstract this valuable document, but we may direct our colleagues' attention to the able discussion of such matters as the admission of the feeble minded and of alien criminals, and of important defects in the law as it stands at present. The insufficiency of our regulations and personnel to control the entry of the feeble minded is an enormous source of expense to the taxpayers, and one important suggestion in this report is that surgeons should be placed on immigrant vessels in order that they may inspect the passengers during the voyage. The menace of the offspring of the feeble minded who are permitted to land should be borne in mind.

As to alien criminals, it is not generally understood that only those who have been convicted may be excluded under our laws; the government makes no attempt to obtain the valuable information contained in foreign criminal records. Furthermore, aliens are not deported who commit crime within a given period of landing, an omission that should be rectified at once.

Some of the defects mentioned and suggestions made by Commissioner Williams are: The fact that steamship companies bringing in insane persons are subject to no fine; these companies should also be made to pay the cost of maintaining immigrants pending examination, even if the latter are eventually admitted; no fine can be imposed for the frequently inaccurate information in the ships' manifests concerning aliens; it is not possible adequately to punish those responsible for the escape of aliens from vessels; it should be made a penal offense to interfere with an immigration officer while performing his duties under the law; the immigration authorities should be clothed with power to search vessels to determine whether aliens are concealed on board whom it is intended to land at a favorable opportunity; the law concerning contract labor is frequently violated, and thousands of aliens come here annually as a result of encouragement and solicitation; an alien may be refused at one port, after great trouble in reaching a conclusion as to his ineligibility, yet through oversight he may secure admission at another port; paupers and sufferers from physical defects should be strictly forbidden to return within a stated period.

We commend the report itself to our friends, for we have merely sketched one or two points discussed therein and the entire question is of great moment to every thinking citizen, while it is of practical as well as academic interest to physicians.

NORMAL HEART SIGNS AND THEIR UNNECESSARY TREATMENT.

Clinicians who have had any considerable experience in the treatment of heart disease sooner or later ascertain that, in young people especially, certain abnormal signs resist all measures and that such signs are quite compatible with normal health. In a recent paper before the Royal Society of Medicine (*Proceedings,* January 13, 1913) James Mackenzie, whose special competence in cardiac disorders is well known, reaches the conclusion, after a special study of the subject in a large number of young people and after taking "tens of thousands" of tracings, that many such people have been and are being subjected to various forms of active treatment for phenomena deemed morbid, which experience has taught him to be signs neither of disease nor of impairment. Candidates for insurance and for the Government services are rejected if they show any intermission of the pulse at rare intervals, even though such irregularity is of little or no importance. A mitral murmur, systolic in time, is dubbed "mitral disease with good compensation" if there are no signs of heart failure, although certain functional murmurs, systolic in time, with their position of maximal intensity at the apex, base, or midsternum, not only are consistent with perfect health, but never lead to the slightest sign of heart failure. Briefly, functional murmurs and irregularities may, in the young, according to Mackenzie, be manifestations of a perfectly healthy heart, and are of significance only when associated with impairment of the heart muscle.

As to the evidences by which impairment of the heart muscle may be recognized, Mackenzie attaches importance to a change in the size of the heart due either to dilatation or hypertrophy of its walls. Yet there being no standard size, shape, or position of the organ, especially in young subjects, it is only where the morbid changes are very marked that little difficulty is experienced in recognizing them. If this is associated, in a functional disorder, with a persistent increase in the rate of the heart and marked loss of power, a valuable indication of muscular lesions is formed. In this connection, however, it is well to bear in mind that impairment of the heart muscle sufficient to endanger life may be present without increase in the size of the organ. A systolic functional murmur should not be considered to be due to dilatation; it may appear in hearts normal as to size and may be evanescent, occurring in some only when they are lying down, in others only when standing, or during excitement, or even while the heart is beating slowly and quietly. Here again, however, we may have marked dilatation with considerable heart failure and with no functional murmurs present. The view so widely held that functional systolic murmurs indicate regurgitation, and that in consequence there is danger of this regurgitation embarrassing the heart and leading to heart failure is regarded by Mackenzie as having no existence in fact. He aims to ascertain also how the heart responds to effort by studying the effects of exhaustion through subjective symptoms.

On the whole, reserve in diagnosis, particularly if the interests of the patient are harmed by a pessimistic estimate of his condition, is in order. We might add that the whole field of physical diagnosis concerning cardiac disorders seems to require a searching analysis with the view to the elimination of what erroneous conceptions it may contain.

AS TO ANTINARCOTIC LEGISLATION.

It is not without significance as to how legislation is managed too often in this State that the bill concerning the sale of cocaine now under legislative consideration has been fathered and fostered solely by laymen. No one doubts the purity of motive of these gentlemen, which is to save countless victims from a fatal habit, but their methods are open to criticism. Has any of these men investigated the characteristics of this drug, its source, its method of preparation, its dose, its indispensable uses in medicine? In reducing medical men to the level of peddlers, have they taken any trouble to find out how they use cocaine, to ascertain if the proposed law will interfere with the proper practice of rhinology or ophthalmology for example? Have they, perchance, learned how welcome a handicap they would lay on the oculist from the standpoint of the irregular "optometrist"? In the country districts the lack of a newly made solution of cocaine might lead to grave results in the case of a finger damaged by machinery on the farm or in the factory.

The forces behind another bill concerning narcotics are also nonprofessional, but its sponsors seem to be singularly well informed, and are also remarkably ready for a long procession of habitués toward a certain sanatorium—or is it to be a chain of sanatoriums? There are unfortunately many hundred constant users of opium or its derivatives who are perfectly justified, such as sufferers from malignant neoplasms, chronic articular rheumatism, diabetes, and other chronic and painful diseases. Are these men to be subjected to an examination every three weeks by specially authorized physicians—authorized by whom?—or is it not sufficient that their regular medical advisers are satisfied that opium is being ethically exhibited? There are undoubtedly dyscrasias which offer only a dilemma to the unfortunate victims; unceasing pain or narcotism. We hear nothing of these subjects from the sponsors of the present bill.

We hope the legislature will promptly throw out all bills for the regulation of the sale or prescription of drugs that do not bear evidence of careful drafting by fully informed medical men. We exclude from this class physicians connected directly or indirectly with homes or sanatoria for the treatment of narcotism; they never see what we may call the justifiable cases of drug habit, their experience being limited mainly to the irresponsible wealthy addicts, a fact which gives them inevitably a distorted view of the entire narcotic question. The every day general practitioner, as well as the specialist, should be on his guard against legislation of this class, which will not only hamper and degrade him, but form a precedent for heaven knows what further sumptuary lawmaking.

The growth in the illegitimate use of narcotic drugs undoubtedly proves the necessity for some additional restrictions on their sale, but no merely local regulations can be entirely effective. The least objectionable proposals yet made are those contained in the Harrison bill now before Congress. As has already been stated, this bill provides for the registration of every retail dealer in opium, coca, and their derivatives, and includes physicians as retailers. All retailers will be required to keep records of their purchases, which can be checked off by the records which wholesalers are required under the law to keep of their sales. In this way the local authorities will be able to trace supplies and secure convictions under local laws where an illicit use is made of these supplies. While the Harrison bill subjects the physician to a disagreeable espionage, we believe that the medical profession as a whole will be willing to submit to this, provided it enables the authorities to prevent the illegitimate sale of narcotics and is not supplemented by ridiculous or suspicious local laws.

FRIEDMANN'S PREPARATION.

Dr. F. F. Friedmann of Berlin, who has become rather unpleasantly well known through the advertisements he received in the American press with his so called remedy for tuberculosis, has arrived in New York.

In our issue for February 15th we spoke editorially of his preparation, and an article on this subject by H. J. Achard, of Chicago, appears in the same issue. As our readers will remember Doctor Friedmann's assertions are based upon a paper read before the Berliner medizinische Gesellschaft, with clinical demonstrations, a report of which appeared in the *Berliner klinische Wochenschrift* for November 18, 1912. After that date, the German medical journals made no mention of this so called remedy, until, at a meeting of the Berlin society on January 29th, Professor Bier made a statement disclaiming any approval of Friedmann's statements, saying that, on the contrary, he was very doubtful of its beneficial effects. He remarked significantly: *"So far, the discovery has not stood the test, especially as it has been in the hands of only one physician, and a careful investigation has not been possible."* This statement of the well known Berlin surgeon was fully approved by the four leading German weeklies.

ANNUAL REPORT OF THE NEW YORK STATE DEPARTMENT OF HEALTH.

The thirty-second annual report of the State Department of Health of New York for the year ending December 31, 1911, has appeared. It is a voluminous book, containing 1,232 pages and giving a wealth of information. We note that the death rate at all ages per mille was for 1911 15.5 while for 1910 it was 16.1. The only two age periods in which the death rate has increased were from forty to fifty-nine years and sixty to seventy-nine years. The communicable diseases which must be reported by the physician are diphtheria, measles, cancer, smallpox, tetanus, whooping cough, laryngeal and pulmonary tuberculosis, lobar pneumonia and bronchopneumonia, typhoid fever, cerebrospinal meningitis, scarlet fever, epidemic poliomyelitis, and hydrophobia; the cards furnished free to the physician are distinguished by different colors. A great amount of public educational work has been done with the intention to improve the health of the inhabitants of our State. The report of the chief engineer referring to sewage and sewage disposal shows the indefatigable watchfulness in this respect. Other items of interest are the special investigations of public water supplies and of the sanitary conditions of cities and villages. The book concludes with the proceedings of the Eleventh Conference of the Sanitary Officers of the State, in which many interesting articles are to be found.

DISEASE IN JERUSALEM.

At a meeting of the Société de médecine et d'hygiène tropicales in Paris, on January 30th, Segal presented, according to *Presse médicale* for February 12, 1913, the result of his studies of disease at Jerusalem. He had found a strong disposition on the part of the local physicians to attribute the majority of fevers to malaria, and in several cases of undoubted typhoid he had had difficulty in securing acceptance of his diagnosis. Hemoglobinuric bilious fever, which had been unknown for nearly three years, was now rapidly increasing in the city. After malaria trachoma occupied the second rank as to prevalence, preventive measures being extremely difficult to enforce on account of nearly every child in the public schools being infected. Oriental boil, known in Jerusalem as the Jericho boil, was by no means rare, but, contrary to the general rule, the skin lesions were multiple.

RADIUM IN MALIGNANT DISEASE.

According to *Semaine médicale* for February 12, 1913, Dominici communicated to the Académie de médecine on the previous evening, in his own name and in the names of H. Cheron and Rubens Duval, the result of a series of researches into the treatment with radium of tumors of grave prognosis. He stated that results had been encouraging in deep angiomata of the face and neck, also in superficial epitheliomata. He and his colleagues had used the agent in deep tumors only as a palliative and had obtained mainly temporary effects, save in some profound affections of the parotid, of the neck, and of the uterus, where there had been no recurrence from the clinical viewpoint for some four years. Notwithstanding this encouraging report, Dominici averred that it would be best always to use radium in conjunction with appropriate surgical measures.

ANTITYPHOID INOCULATION IN THE FRENCH NAVY.

Chantemesse reported to the Académie des sciences in Paris on January 20th, according to *Presse médicale* for February 5, 1913, on the sterile vaccine which in conjunction with Widal he produced in 1887, and after successful experiments on animals, used in 1896 on human beings with equally happy results, which had since been repeated in all parts of the world. Recent trials had been made, by direction of the minister of war, on the troops in Algiers, and last April the minister of marine ordered vaccination of all the crews in the navy as well as of the workmen in the various ports. Out of 3,107 men inoculated, in none had typhoid fever developed, while there was a steady morbidity of one per cent. among the uninoculated.

Obituary.

WILLIAM CONRAD WILE, M. D.,

of Danbury, Conn.

Doctor Wile died at his home in Danbury, on February 21st, in his sixty-seventh year. He was born at Pleasant Valley, N. Y., January 23, 1847, his father being a clergyman, and at the age of fifteen years enlisted in the Union army, serving two years as hospital steward, being present at the battle of Gettysburg, and taking part in the march to the sea. He graduated in medicine from the University of New York in 1870 and subsequently practised at New Brunswick, N. J., Highland, N. Y., and Newtown, Conn., finally making his home at Danbury; in 1886 he was appointed professor of diseases of the nervous system and of electrotherapeutics in the Medico-Chirurgical College of Philadelphia. Central College of Kentucky conferred upon him the degree of A. M. and Rutherford College of North Carolina that of LL. D. He was married twice, his second wife surviving him. He founded and edited the *New England Medical Monthly,* ultimately merged in another publication, and was a voluminous writer on medical, particularly therauepeutical subjects.

News Items.

New York Psychoanalytic Society.—At the annual meeting of this society, held in January, the following officers were elected: President, Dr. H. W. Frink; vice-president, Dr. B. Onuf; secretary, Dr. A. A. Brill.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on March 22d are the following: Chief medical office, health officer's department, Port of New York, $2,000 (for men only); dietetian, health officer's department, Port of New York, $900 and maintenance (for women only); assistant physician, Iola Sanatorium, West Brighton, Monroe County, $300 to $600 (for men only). Application blanks must be filed on or before March 14.

A Distinguished Dinner Party at Norfolk, Va.—On February 21st, Dr. Wilson E. Driver gave a dinner at the Monticello Hotel, Norfolk, Va., to which were invited, among others, the Honorable Messrs. Phillips L. Goldsborough, governor of Maryland, Locke Craig, governor of North Carolina, Cole L. Blease, governor of South Carolina, William Hodges Mann, governor of Virginia, Joseph M. Brown, governor of Georgia, Emmet O'Neal, governor of Alabama, Park Trammel, governor of Florida, Luther E. Hall, governor of Louisiana, Oscar B. Colquitt, governor of Texas, Earl Brewer, governor of Mississippi, Joseph T. Robinson, governor of Arkansas; Surgeon General Rupert Blue, of the United States Public Health Service; Dr. W. S. Thayer, Dr. C. F. Craig, Dr. C. C. Bass; the editor of the NEW YORK MEDICAL JOURNAL. At the conclusion of the dinner there was a symposium on Malaria of the Atlantic Seaboard.

Academy of Medicine and Cocaine Legislature.—We hear from an authoritative source that the Section in Laryngology of the New York Academy of Medicine, at a special meeting held on February 26th, strongly condemned the proposed action on the sale of cocaine by the New York Legislature; at this meeting a resolution was passed to that effect. The committee on legislation of the New York Academy of Medicine has also taken up the matter. Furthermore, the same authority has informed us that the Medical Society of the County of New York has also strongly condemned the proposed legislation.

Corrected Schedule of Harvey Lectures for March.—The following lectures will be given during March instead of those originally announced: March 8th, Professor Edward G. Conklin, of Princeton University, on the Size of Organisms and Their Constituent Parts in Relation to Longevity, Senescence, and Rejuvenescence; March 22d, Professor Franz Knoop, of the University of Freiburg, on Modern Problems of Nutrition; March 29th, Professor John Howland, of Johns Hopkins University, on the Scientific Basis for the Artificial Feeding of Infants.

Autopsies at the Children's Hospital.—An act has been introduced in the Senate of the State of New York providing for an amendment of the greater New York charter in relation to autopsies at the New York city children's hospitals and schools on Randell's Island. The amendment reads as follows:

> §681. Upon the death of any patient in the custodial part of the New York city hospital and schools at Randall's Island, who shall be maintained therein wholly at public expense, the commissioner of charities may, in his discretion, issue a permit for an autopsy on the body of such patient, to be made by a member or members of the medical staff of such institution; but such autopsy shall be made not later than twelve hours after the death of such patient. The commissioner of charities shall cause to be printed conspicuously upon the application blanks used in admitting patients to such institution the fact that he is authorized to issue permits for making such autopsies.
>
> This act shall take effect immediately.

Philadelphia Civil Service Commission Examinations.—On March 21st an examination will be held by the Philadelphia Civil Service Commission for the position of physician in the Bureau of Police Department of Public Safety, with a salary of $4,000 a year. Applicants must be graduates of a recognized medical school and must have been actually in the practice of medicine for at least five years. The duties are to examine and prescribe treatment for sick or disabled members of the police and fire departments; to attend large fires and large assemblages of the public, and assume charge of the physicians present, and of the arrangement of ambulances and patrol wagons; to instruct the officers of these bureaus in the principles of first aid to the injured. Applicants must have ability to manage, control, and direct the district surgeons of the bureaus. On March 25th the commission will hold an examination for the position of assistant resident physician, Department of Public Health and Charities, with a salary of $600 to $900 a year. Applicants must be graduates of a recognized medical college and registered in the State of Pennsylvania. Institutional experience is desirable, but not necessary. Residence at the hospital will be required in case of appointment.

Personal.—Dr. Charles Lewis Gandy, of Ocean View, N. J., Dr. Robert Henry Wilds, of Columbia, S. C., and Dr. George Henry Buck, of Portland, Ore., have successfully passed the January examination for commissions in the Army Medical Corps. They will be ordered to the next session of the Army Medical School, Washington, D. C., beginning October 1, 1913.

Dr. Friedrich Franz Friedmann, of Berlin, arrived in New York on February 25th. The object of his visit to the United States is to demonstrate his new treatment for tuberculosis.

Dr. I. L. Nascher, of New York, has been appointed professor of geriatrics in the College of Physicians and Surgeons, Boston.

The trustees at the National University of Arts and Sciences of St. Louis announce that a contract was signed February 21, 1913, for the building of $5,000 worth of apparatus for use in the physiology laboratory of the medical department (American Medical College) of the university. Dr. Bernard Blass, formerly of New York, has been elected professor and head of the department of physiology, and will assume this position with the opening of the session of 1913-1914.

Medicine and Surgery Exhibit at the Panama-Pacific International Exposition.—At this exposition at San Francisco in 1915 there will be displayed in a comprehensive manner the achievements and activities of mankind during the last decade. In the domain of liberal arts the exhibits will be particularly interesting and significant, and the wonderful developments in medicine and surgery make certain a display of the highest importance. The mechanical side of surgery will be represented by a complete collection of instruments and appliances used in this field of medicine, and there will be shown the most intelligent modern methods employed in the prevention and mitigation of human ills. The ground plant for the Palace of Liberal Arts is already arranged, and on account of the limitations of space, the exhibits must be selective in character. Mr. Theodore Hardee has been appointed chief of the Liberal Arts Department of the Exposition.

Memorials to Lord Lister.—Dr. W. W. Keen, of Philadelphia, has made known to the general public, in a letter to the Philadelphia *Public Ledger*, the plans which are being made to honor the great pioneer in antiseptic surgery. He writes: "There is an active movement on foot in Great Britain to establish several different kinds of memorials to the memory of Lord Lister. One is to preserve his ward in the Glasgow Royal Infirmary, in which he did his earliest work in developing antiseptic surgery, just as it stood in his day. This infirmary is now rebuilding, but they propose to keep this ward as a relic and install there a museum for everything connected with his work. In addition to this there will be a Lister International Memorial Fund to support fellowships and studentships in surgical research, a monument in London and a memorial tablet in Westminster Abbey." The letter goes on to say that while American surgeons are subscribing liberally to the fund, and it is expected that the American Surgical Association will do the same at its meeting in May, Doctor Keen believes that Lord Lister's work in greatly diminishing the mortality from surgical operations and rendering recovery more prompt and painless, appeals even more to the general community than to surgeons. Contributions can be made direct to John S. Samuel, Esq., honorary treasurer of the memorial fund, City Chambers, Glasgow, or to Doctor Keen, whose address is 1729 Chestnut Street, Philadelphia. In sending contributions it should be stated to which of these several memorials the donors wish to contribute.

Governor Sulzer's Commission Continues Its Investigations.—On February 19th Governor Sulzer sent to the Legislature a message recommending certain changes in the sanitary system of New York, which were suggested to him by the special commission he appointed to investigate health conditions in the State. Among the recommendations suggested by the commission are the following: The abolition of town and village health boards and the substitution of a State system of district sanitary supervision; the extension of the term of office of the State Commissioner of Health to six years and the increasing of his salary from $5,000 to $10,000 a year, with the understanding that he must not engage in any outside occupation; the creation of a Public Health Council of seven members, with power to adopt public health regulations; the division of the State, outside of New York city, into twenty sanitary districts, with an expert sanitary supervisor in each devoting his full time to sanitary work; the addition of a Bureau of Child Hygiene and a Bureau of Public Health Nursing to the State Department of Health; the establishment of tuberculosis hospitals in all counties; the establishment of contagious disease hospitals by local authorities, to be inspected by the State Department of Health; the extension of educational work in public health matters by the State Department, and the encouragement of courses in sanitary science in educational institutions. Governor Sulzer has asked the commission to continue its work, the subjects to be investigated to include the following: Establishment in medical colleges of courses in sanitary science; medical examination, at least of male applicants, as a condition to obtaining a marriage license; establishment in connection with tuberculosis hospitals of industrial plants for the employment of patients with arrested cases; regulation of housing in cities of the second and third classes; better protection of water supplies. Dr. Hermann M. Biggs, of New York, heads the commission.

March Calendar of Clinics of the Department of Public Charities.—

Calendar, March, 1913.

City Hospital— Mondays.
Surgery, Dr. Dawbarn, 2:30 p. m.
Dermatology, Dr. Fordyce, 3:00 p. m.
Cumberland Street Hospital (Brooklyn)—
Surgery, Dr. Walmsey, 3:00 p. m.
Laryngology and rhinology, Dr. Stewart, 4:00 p. m.
Oral surgery, Dr. B. Shea, 4:30 p. m.

City Hospital— Tuesdays.
Ophthalmology, Dr. Gilfillan, 2:00 p. m.
Neurological Hospital—
Neurology, Dr. Byrne, 9:00 a. m.
New York City Children's Hospitals, Randall's Island—
Orthopedics, Dr. Ogilvy, 10:00 a. m.
Cumberland Street Hospital (Brooklyn)—
Ophthalmology and otology, Dr. Lloyd, 3:00 p. m.
Surgery, Dr. Iler, 3:00 p. m.
Kings County Hospital (Brooklyn)—
Obstetrics, Dr. Commiskey, 10:00 a. m.
Genitourinary surgery, Dr. Morton and Dr. Fraser, 2:00 p. m.
Surgery, Dr. Bristow, 2:00 p. m.
Coney Island Hospital—
Surgery, Dr. Fiske and Dr. Bogart, 10:30 a. m.
Surgery, Dr. Murphy and Dr. Lack, 10:30 a. m.
Medicine, Dr. Hall and Dr. Nash, 3:30 p. m.
Medicine, Dr. Hegeman and Dr. Byington, 3:30 p. m.

City Hospital— Wednesdays.
Surgery, Dr. Dawbarn, 9:00 a. m.
Medicine, Dr. Quimby, 1:30 p. m.
Genitourinary surgery, Dr. Greene, 2:00 p. m.
Obstetrics, Dr. Dorman, 2:30 p. m.
Metropolitan Hospital—
Surgery, Dr. Bogg and Dr. Honan, 2:30 p. m.
March 5th, medicine, Dr. Hathaway, 2:30 p. m.
March 12th and 26th, medicine, Dr. Moore, 2:30 p. m.
March 19th, medicine, Dr. Swift, 2:30 p. m.
March 26th, medicine, Dr. Seward, 2:30 p. m.
March 5th and 19th, neurology, Dr. Howard, 2:30 p. m.
March 5th and 19th, ophthalmology and otology, Dr. Boyle, 2:30 p. m.
March 5th and 19th, electrotherapeutics, Dr. Royle, 2:30 p. m.
March 12th, obstetrics, Dr. Storer, 2:30 p. m.
March 12th and 26th, genitourinary surgery, Dr. Carleton, 2:30 p. m.
March 12th and 26th, laryngology and rhinology, Dr. Foster, 2:30 p. m.
Neurological Hospital—
Neurology, Dr. Maloney, 10:00 a. m.
Cumberland Street Hospital (Brooklyn)—
Gynecology, Dr. Pierson, 2:30 p. m.
Kings County Hospital (Brooklyn)—
Dermatology, Dr. Winfield, 1:00 p. m.
Orthopedics, Dr. Truslow, 9:00 a. m.
Orthopedics, Dr. Napier, 2:00 p. m.
Coney Island Hospital—
Pediatrics, Dr. Beck and Dr. McQuillan, 3:30 p. m.
Pediatrics, Dr. Pendleton and Dr. Van Wart, 3:30 p. m.

City Hospital— Thursdays.
Medicine, Dr. Evans, 9:00 a. m.
Medicine, Dr. Brooks, 2:30 p. m.
Gynecology, Dr. Stearns, 2:00 p. m.
Cumberland Street Hospital (Brooklyn)—
Surgery, Dr. Walmsey, 3:00 p. m.
Laryngology and rhinology, Dr. Stewart, 4:00 p. m.
Kings County Hospital (Brooklyn)—
Obstetrics, Dr. Commiskey and Dr. Judd, 10:00 a. m.
Otology, Dr. Alderton, 1:00 p. m.
Gynecology, Dr. McNamara, 1:30 p. m.
Surgery, Dr. Bristow, 2:00 p. m.
Coney Island Hospital—
Gynecology, Dr. McEvitt and Dr. Mills, 10:30 a. m.
Gynecology, Dr. Mayne and Dr. Rankin, 10:30 a. m.
Surgery, Dr. Fisk and Dr. Bogart, 3:00 p. m.
Surgery, Dr. Murphy and Dr. Lack, 3:00 p. m.

City Hospital— Fridays.
Laryngology and rhinology, Dr. Dougherty, 2:30 p. m.
Neurological Hospital—
Neurology, Dr. Abrahamson, 9:00 a. m.
Cumberland Street Hospital (Brooklyn)—
Ophthalmology and otology, Dr. Lloyd, 3:00 p. m.
Surgery, Dr. Iler, 3:00 p. m.
Oral surgery, Dr. Shea, 4:30 p. m.

City Hospital— Saturdays.
Pathology, Dr. Larkin, 2:00 p. m.
Neurological Hospital—
Neurology, Dr. Walsh, 2:00 p. m.
Kings County Hospital—
Obstetrics, Dr. Commiskey, 10:00 a. m.
Surgery, Dr. Bristow, 2:00 p. m.
Pediatrics, Dr. Little, 3:00 p. m.
Medicine, Dr. Stivers, 3:30 p. m.

All registered physicians, visiting and resident, and medical students are cordially invited to attend these clinics. Cards of admission, valid until October 1, 1913, may be obtained at the Academy of Medicine, 17 West 43rd Street, Manhattan, and at the Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn, as well as from the secretaries of the several medical colleges.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

December 2, 1912.

Electrical Irritability of Muscle in Diseases of Various Organs.—R. Báluit and E. Egan, the former in 1903 showed that when the apex of the lung is diseased the galvanic and faradic irritability of the shoulder muscles on the same side is increased, and this fact has given rise to further experiments along this line, namely, whether a similar change of the muscle irritability is also to be found in diseases of other organs, corresponding to the distribution of Head's zones. These expected changes have been realized. One sided kidney lesions, tuberculosis, stones, are accompanied by increased irritability of the lumbar muscles. In cholelithiasis the abdominal muscles lying over the gallbladder region show greater electrical reaction than the same muscles of the corresponding side. The right shoulder muscles in most of the cases show stronger contractions than the same muscles of the other side. This accords with the usual radiation of the pains to the right shoulder. In gastric ulcer the electrical hypertonus is confined to the musculature of the upper left abdominal wall while no change in the reaction of the shoulder muscles is seen.

Action of Serum on Watery Organic Extractive Poisons.—H. Dold says the acute fatal action of the intravenous injection of watery organic extractives is checked and counteracted by the action of fresh serum. The extract and serum must be in a certain proportion and have acted upon each other for a certain period of time so that the poison is neutralized. The neutralization of the organic extractives by fresh serum is probably explained by the fact that the fibrinogen remaining in the serum unites with the fibrin ferment of the watery organic extractive and thus makes it negative.

Röntgen Therapy in Gynecology.—M. Cohen found that the treatment of hemorrhage from the pelvic organs when it is not conditioned by malignancy is satisfactorily treated by Röntgen rays. In some of the cases the results have been permanent. The effect of the rays is due to their action on the ovaries and the phenomena are never as severe in the long run as after operative castration. The experiments of the author show that the hemorrhages of the climacteric due to sclerosis of the pelvic organs are more favorably influenced than the hemorrhages from myomata. A direct influence of the rays upon the myomata has not been proved. The constant decrease in size of these myomata is probably due to a secondary process conditioned by the specific action on the ovaries.

Pituiglandol in Eclampsia. — Krakauer describes a case of a primipara twenty years old, in whom eclampsia developed in the seventh month. Since no labor pains were elicited twelve hours after induced labor one c. c. of pituiglandol was injected. Two hours later spontaneous birth took place. The patient was at this time unconscious and deeply under the influence of chloroform. Recovery took place.

December 9, 1912.

Effect of Hormones on Opsonic Index.—A. Strubell says: 1. Iodine and bromide cause acne and decrease the opsonic index long before the acne appears. 2. Arsenic is instrumental in allaying the ache and increases the opsonic index. The iodine in thyreoidine decreases the opsonic index while pancreon increases it.

Technic of Wound Suturing.—H. Oppenheim gives a technical description of a continuous intracutaneous catgut suture and Michel's clamp, the advantages of which are the attainment of a tight aseptic skin suture and the formation of a fautless, rapidly healing cosmetic scar.

Cerebellar Tumor Successfully Operated on.—H. Oppenheim reports a case which, beside the rarity of a successful result, has two other interesting features: 1. Symptomatic; in the left lateral position there was a distinct nystagmus to the right and further a double sided hyporeflex of the cornea not present when the patient assumed another position. This combination of nystagmus with weakening of the corneal reflex, points, according to this author's experience, with great certainty to a lesion near the vermis of the cerebellum, in this case in the right hemisphere. 2. Operative prognosis; to remove the tensely stretched and infiltrated tumor the larger part of the vermis and neighboring portions of the cerebellar hemispheres had to be excised. This defect had not the slightest influence upon the functions of the cerebellum.

Peritonitis Due to Bile without Perforation of the Gall Passages.—F. Wolff says that up to the present time cases of bilious peritonitis can be divided into two groups: 1. Those in which a moderate amount of slimy, green gall is found in the abdomen, and, 2, those in which the exudate is only colored by the bile. In the latter class of cases there is diffusion of bile from an uninjured gallbladder. The processes which lead to this increased permeability of the gallbladder wall are not yet understood which accords with the scarcity of this occurrence. The moderate escape of bile into the abdominal cavity is almost always due to a perforation of the stomach, duodenum, or gall passages.

December 16, 1912.

General Congenital Hydrops.—W. Fischer reports two cases. The etiology of this condition is still unsolved notwithstanding the observations that have been made. In these two cases lues could be ruled out positively.

Esophageal Stenosis.—A. Réthi's case of esophageal stenosis, following diphtheria, proves that esophagoscopy is valuable not only for diagnostic purposes but also as therapeutic aid.

Autovaccination of the Tongue.—W. Lublinski relates the case of a child who touched the seat of vaccination with his finger and carried the lymph thereon to the tongue, causing autovaccination. The rhagades which were present in this case made this process easy.

New Leg Phenomenon.—A. Piotrowski says that the tibialis anticus reflex produced by tapping the origin of the anterior tibial muscle or by percussing the belly of the muscle which causes an excessive supination of the foot in organic diseases is seldom found in a healthy individual. It is thus distinguished from the knee phenomenon which is usually present. Its diagnostic value lies in the fact that in organic lesions of the central nervous system, because of its marked abnormal tendency, variable presence, symmetrical occurrence, and excessive intensity, it has a pathognomonic significance.

December 30, 1912.

Experimental Chemotherapy of Bacterial Infection.—R. Levy's experiments on animals have shown that a fully developed infection with the streptococcus mucosus can be checked by ethylhydrocuprein and the animals cured permanently, while the untreated control animals died without exception in the manner typical of a bacteriemia. These results can be attained even though there be a decided bacteriemia present prior to treatment.

ZENTRALBLATT FÜR CHIRURGIE.

February 1, 1913.

Operation for Ptosis with Transplantation of Fascia.—Aizner reports a case operated in by connecting the tarsus of the upper lid with the frontal portion of the occipitofrontalis by means of a strip taken from the fascia lata of the thigh. The frontal muscle is laid bare by an incision above the brow, the tarsus by an incision through the skin of the lid, the skin between the two incisions is elevated, a piece of the fascia lata, two cm. broad and ten cm. long, is introduced through the tunnel thus formed, one end is sutured to the tarsus, and the other to the frontal muscle, sufficient tension being made to lift the upper lid slightly. The result was excellent in the case reported.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

January 4, 1913.

Care of the Wound in Radical Operation for Cancer of the Uterine Neck.—E. Bumm holds that the favorable course of abdominal operations depends upon the care taken in order to have an undamaged peritoneal surface preserved. At first the wounds in the pelvic tissues were tamponed with gauze. In nearly a third of his cases suppuration followed by necrosis of the overlying peritoneum. The mortality was 29.7 per cent. When the tampons and drainage were omitted the mortality in 100 radical operations was reduced to six per cent. Of these patients, two died from cardiac insufficiency, the other four from peritonitis. Bumm believes that this is due to the protection of the peritoneum. He holds that when a gauze tampon is introduced it interferes with the circulation of the parts, and that it soon becomes saturated with secretion. This undergoes chemical changes and is soon infected by the bacteria that are always present.

Acute Tuberculosis Following Gynecological Operations.—L. Prochownick reports seven cases in which death from acute miliary tuberculosis followed gynecological operations. He comes to the conclusion that one must be most guarded in the prognosis whenever tuberculosis of the genital tract is present.

January 11, 1913.

Relationship between the Formation of the Corpus luteum and Menstruation.—R. Meyer and C. Ruge made microscopical examinations of ovarian tissues and concluded that there was a definite relationship between ovulation and menstruation, also that the histological appearance of the corpus luteum indicated the time of the last menses.

Uncontrollable Vomiting due to a Puerperal Retroversion of the Uterus.—Max Sperling reports a case of a woman of twenty-three years who began to vomit severely at the end of the third month of pregnancy. This increased in gravity, and about the fifth month a spontaneous abortion occurred. The patient recovered without complications and the vomiting decreased, but did not stop completely. Three or four months after the miscarriage the vomiting increased suddenly and became uncontrollable. Examination showed hyperinvolution and retroversion of the uterus. The organ was curetted, but no portions of fetal tissue were removed. After this operation the vomiting ceased. According to Sperling this case indicates that the vomiting of pregnancy is not a manifestation of maternal intoxication by fetal material. He concludes that here it was more probably due to involvement of the sympathetic plexus setting up reflex disturbances.

January 18, 1913.

Hyperemesis gravidarum. — Max Stolz believes that this condition may be due largely to the irritation of the nervous system. He reports two cases in which the vomiting was eventually controlled by the continued administration of opium, enemas being used to keep the bowels open. In neither case did it become necessary to produce abortion, although such an outcome was feared.

Climacteric Hemorrhage and Cancer Prophylaxis.—Franz Lehmann calls attention to the importance of extensive and early operation in cancer of the uterus. The first has been developed to its utmost at present, so education along the second line is necessary. To that end he states that the term "climacteric hemorrhage" should not be employed, as there is no such thing. When bleeding occurs at that period there should be a curettage followed by a microscopical examination for possible malignancy.

January 25, 1913.

Herpes zoster Following Delivery.—Hans Kunz reports a case of extensive herpes pectoralis in an eighteen year old girl, about four days after delivery. On the third day after its appearance there was a chill followed by a rise in temperature. That herpes appears after the use of various drugs and in the course of certain infections is well known. In this particular instance uterine contractions had been stimulated by the use of pituitary extract.

Development of the Fetus in the Ninth Month.—Rolf Lutz believes that the growth of the fetus, as far as length and weight are concerned, practically ceases in the ninth month. During the tenth month the internal organs show increased development.

KLINISCHE MONATSBLÄTTER FÜR AUGENHEILKUNDE.

December, 1912.

Vision of the One Eyed.—W. P. C. Zeeman calls attention to the great amount that has been written during the past ten years on this subject and the efforts that have been made to determine the loss of earning power caused by the loss of one eye. These studies have resulted in showing that the brightness of the images is not always the same, whether the object is regarded with one eye or with two, that the distinctness of the image is not the same, that fixation of one eye alone is not as accurate, that the loss of a portion of the field of vision is of great importance in certain callings, and that the power to estimate depth, the faculty of stereoscopic vision, is the most serious deprivation suffered by the victim. Hence careful study has been made of the monocular perception of depth. Passing by the details of the investigation, Zeeman concludes that the intellect plays as great a part in adaptation to the work as habit; that uniformity of the work greatly favors a rapid adaptation, while a change of occupation is very unfavorable; that no method of measurement of the monocular perception of depth can determine the working capacity of a one eyed patient; and that there is always a considerable difference between the apparently perfect adaptation of the one eyed and that of the two eyed workman, because the gross estimate of depth which can be made by the latter in 1/200 of a second cannot be made by the former in less than half a second. Hence it is probable that the one eyed workman, although he may do as good and as much work as the two eyed, will tire sooner, as he must concentrate for a half second to do that which the other can do easily in 1/200 of a second. This may account in part for the vague asthenopic symptoms of which one eyed persons are apt to complain, but at the same time the absence of such symptoms in many of such persons shows that this increased strain does not exceed the bearing capacity of the normal man.

LYON MÉDICAL

January 19, 1913.

Ambard's Ureosecretory Coefficient and Its Clinical Applications in Urinary Surgery.—Gayet and Boulud report researches in cases of prostatic hypertrophy and cancer, renal tuberculosis, nephrolithiasis, and pyelonephritis, concerning Ambard's coefficient of renal efficiency, which is derived from measurements of the concentration of urea in the blood and in the urine. They find the coefficient a far more reliable expression of renal efficiency than the results obtained by injecting methylene blue. Ambard's procedure supplies extremely useful information from the standpoint of exact diagnosis of renal lesions, prognosis, and indications for medical or surgical treatment.

PRESSE MÉDICALE

January 25, 1913.

Cardiac Chorea.—C. Aubertin and M. Parvu assert that choreic involvement of the heart, though its occurrence is denied by a number of authors, is actually met with occasionally, but only in severe cases of chorea. It is manifested in an arrhythmia, not necessarily accompanied by endocarditis nor by functional murmurs. In a case reported by the authors, that of a little girl of nine years, free of rheumatic antecedents, but suffering from chorea so severe as to result in general bruising of the body, the pulse was neither feeble nor frequent—eighty a minute—but showed a highly irregular arrhythmia, with from twenty to twenty-five intermittences each minute. Fatigue and exertion had no influence. The most striking feature was that the heart sounds were apparently even louder than normal. There was no murmur or thrill, the heart was not dilated, the blood pressure was normal, and there was no subjective discomfort in the cardiac region. Arsenical treatment caused prompt improvement in the general choreic movements and the accompanying respiratory irregularity and difficulty of speech, but the cardiac arrhythmia, although reduced at first, then remained about the same for six months, later gradually subsiding. Cardiographic and electrocardiographic observations, made six months after the onset of chorea, showed supranodal auriculoventricular extrasystoles, isolated auricular beats, and atypical undulations in the electrocardiogram. In spite of the marked arrhythmia, there was no trace of auricular paralysis.

REVUE DE MÉDECINE

January, 1913.

Thyroid Treatment and Epilepsy.—E. Gelma lays stress on the relationship existing between disturbances of the thyroid and parathyroid secretions and certain cases of epilepsy. The results obtained with thyroid treatment and the pathological changes in the thyroid not infrequently discovered tend to justify the separation from the "idiopathic" cases of the disease a group which may be designated as "thyroid epilepsy." In two of the author's cases in which bromides had proved useless, the administration of thyroidine brought about cessation of the seizures, an improved general condition, and an awakening of the mental and moral faculties, previously considerably obtunded. He considers thyroid treatment indicated, first of all, in epileptics with goitre or myxedema,—although even in these it will not always prove effective where abnormal thyroid functioning is not the sole cause, but is combined with various forms of intoxication or with disturbances of other ductless glands. Thyroid preparations should also be given in cases presenting merely some of the minor signs of hypothyroidism, such as edema, tendency to obstruction of the nasal passages, periods of aphonia, loss of lateral portions of the eyebrows, baldness, disturbances of temperature conditions or of the digestive functions, headache, somnolence, etc. Where thyroid preparations do good, bromides should be omitted, as they frequently produce toxic phenomena and mental disorder in these patients. Infantile convulsions in those with suspected myxedema or abnormal thyroid functioning may also derive benefit from thyroid.

Treatment of Headache in Acute Infections by Lumbar Puncture.—H. Roger and J. Baumel practised lumbar puncture systematically in cases of typhoid fever, Malta fever, influenza, pneumonia, and acute tuberculosis that suffered from headache, the result being prompt and almost always complete and permanent relief after a single puncture. They attribute the benefit both to removal of cerebrospinal hypertension and to the evacuation of toxic substances which had previously been causing local irritation. Where there is a marked increase of pressure, twenty to thirty c. c. fluid, or even more, may be removed; in ordinary cases, ten c. c. is amply sufficient. No untoward results were ever witnessed.

ROUSSKY VRATCH

November 24, 1912.

Serum Anaphylaxis.—A. A. Urgelunas concludes from a series of experiments that in cases in which a repetition of antitoxine is necessary twelve to fifteen days after the first injection, antitoxic serum obtained from other animals, such as cows and asses, should be employed. The serum from such animals should also be used for prophylactic treatment.

Method of Ligation and Care of the Umbilical Cord.—K. B. Gochstein asserts superiority for the following method employed at the Moscow Lying-in Hospital. The cord is ligated as usual. After the bath the ligature is tightened and the end of the cord covered with plaster of Paris. This is covered with a layer of cotton and the whole supported by a fold of the infant's shirt.

December 22, 1912.

New Investigations on Chemotherapy of Infectious Diseases.—L. Gutman determined experimentally that ethylhydrocuprein, a derivative of quinine, is antagonistic to pneumococci whether present in the lungs or in the blood. The objection to this drug is that it may cause amblyopia even in small doses. The amblyopia, however, is temporary, disappearing upon the withdrawal of the drug. The effect on bacteriemia in man has not been investigated, but the results obtained on animals are very promising.

A Second Case of Incised Wound of the Heart Suture Recovery.—N. N. Boljarsky reports his second case of suture of a wound of the heart followed by recovery. The first case was reported in 1910.

December 29, 1912.

The Etiology and Treatment of Priapism.—I. Ph. Milenushxin discusses this affection and reports a case of priapism in a man, thirty-seven years old, without any evident cause. The affection lasted about two months and finally yielded to treatment with morphine, baths, x rays, and arsenic.

The Natural Division of Childhood into Periods Corresponding to Four Coefficients of Height and Weight.—M. E. Grusden collated a large amount of material from different sources which forms the basis for his theory that up to puberty the weight follows strictly the height. Dividing the periods according to height, he finds that beginning with 47.5 to 72.5 cm., there is an addition of 0.003 kilogrammes to each cm. From 72.5 to 107.5 cm. 0.001 kilogramme is added for each cm. From 107.5 to 142.5, 0.002 kilogramme is added From 142.5 to the maximum height 0.004 kilogramme is added for each cm. The first period corresponds to the first 1.5 year of life; the second to from 1.5 to 5.5 years; the third to from 5.5 to 12.5; and the fourth from 12.5 years to puberty.

BRITISH MEDICAL JOURNAL.

February 8, 1913.

Vaccines and Fever.—E. C. Hort seeks to prove that the commonly accepted view that fever is due to the liberation of a toxine from infecting or injected dead cultures of bacteria is incorrect and based upon fallacious observations. He shows that pathogenic bacteria can be divided into two groups with regard to their powers of producing fever when dead cultures are injected. The pyrogenetic vaccines are those from *Bacilli typhosus, coli, influenzæ, pestis, melitensis, micrococcus catarrhalis, Vibrio choleræ*, acne bacillus, and certain strains of staphylococci. The apyrogenic are *Bacilli diphtheriæ, anthracis, tuberculosis, mallei, streptococcus*, certain strains of staphylococcus aureus, and the pneumococcus. By most carefully conducted experiments Hort shows that the pyrogen, as he terms the fever producing substance, contained in vaccines from the first group is not inherent in the bacteria, but is a product of their growth on the artificial culture media; that it can in part be washed from the bacteria by which it has been absorbed; that it can be demonstrated in bacteriafree water in which these cultures have been washed; and that it is present neither in the fresh culture media nor in bacteria which have been obtained without previous growth on artificial media. The second group of bacteria do not generate or liberate any pyrogen from the ordinary culture media, though they cause fever in the infected animal. Some of these can be endowed with pyrogen producing properties by animal passage. Further, growth of air borne staphylococci in the natural media of the animal body, such as blood, brings out the fact that these bacteria cause the liberation of pyrogen from such media and that probably this is the mechanism of their production of fever in the infected animal. The pyrogen elaborated clinically in the host is indistinguishable from that produced by certain bacteria in their growth on artificial culture media. In view of experimental observations along these lines it is difficult to resist the conclusion that a rising temperature is not—as we have been paradoxically led to believe—a sign of increase of bactericidal and bacteriolytic function, but is, on the contrary, an expression of activity of living organisms. Dead organisms do not, in natural infections, give rise to fever. In the light of these findings it has become necessary to reinvestigate the very existence of bacterial endotoxines. They also necessitate the adoption of new lines in the study of immunity, the meaning of sensitization, the question of the superiority of living vaccines over dead, and the reexamination of the whole scheme of vaccine therapy.

Simple and Rapid Method for the Administration of Subcutaneous Salines.—E. M. Woodman uses a large silver cannula from a Southey's tube apparatus, which he connects with a large glass funnel by means of a tapered glass tube and a section of Southey's rubber tubing. This is all readily portable and readily sterilized by boiling. In the administration of the saline the anterior axillary fold is grasped firmly and drawn outward. The trocar with cannula is then passed into the skin in a direction perpendicular to the chest and pushed through the axillary fold so that its point emerges within the axilla. The trocar is then removed and the cannula is pushed outward until its shoulder is flush with the skin. The fluid emerging from this cannula squirts in all directions and passes into three distinct planes separated into watertight compartments by the deep fascial layers. The most superficial lies in the fatty tissue over the pectoral muscle and around the breast, beneath this the saline passes into the pectoral muscles, whence it is rapidly absorbed, and lastly it collects in the axilla. Fluid is absorbed so rapidly when introduced in this way that it is possible to inject a quart into the tissues in twenty minutes without there being any material swelling.

Adrenalin in the Emergency Treatment of Noncorrosive Poisoning by the Mouth.—J. L. Jona finds that the immediate administration of a quantity of adrenalin in the dilution of one to 10,000 will cause immediate and very marked constriction of the vessels of the mucosa of the stomach and even, in some instances, of the upper part of the duodenum. This vasoconstriction is such as materially to lessen the rate of absorption of many poisons and therefore to leave time for the institution of measures of elimination or neutralization. His conclusions are based upon experiments with rabbits, using potassium cyanide, strychnine, and aconite. He found that it required three c. c. of the one to 10,000 solution of adrenalin to produce sufficient vasoconstriction in the stomach of the rabbit, and, basing his calculations on the relative areas of the rabbit's stomach and that of man, he suggests the use of ninety c. c. or three ounces of a similar dilution for man.

LANCET.

February 8, 1913.

Etiology of Endemic Goitre (*Lectures III and IV*).—Robert McCarrison states that the blood changes found in endemic goitre suggest that perhaps the seat of the infection is to be found in the intestinal tract, since similar blood changes are met with in other intestinal infections. There is no indication of any blood infection so far discovered. The pathogenesis of the goitre consists probably in a primary stimulation of the gland by the goitrous influences, and the increased activity thus induced is early followed by damage to the secretory epithelium, and by degenerative changes which impair its functional activity. Up to the present time there is no evidence of the existence in the gland of any living excitant to which the disease can be attributed. The administration of the iodides, thymol, and lactic acid bacillary cultures internally and the injection of vaccines prepared from the organisms in the patient's own feces or of staphylococcus vaccine, all serve to check the advance of endemic goitre. On the strength of this observation McCarrison suggests that the gland is called upon in endemic goitre to overwork in the production of antibacterial and antitoxic substances for the destruction of bacteria and their toxines, the source of which is probably the intestinal tract. He has confirmed this view bv producing goitre in a large percentage of goats which drank water contaminated with the feces of human patients with goitre. He concludes with the opinion that the essential cause of endemic goitre is a microorganism living in the intestines of man and there producing a toxine which so influences the thyroid gland that it undergoes the characteristic enlargement.

A Series of Seventy-eight Cases of Streptothrix Infection.—Alexander G. R. Foulerton collates this series with three other reported series and finds that the essential facts are much the same in each, although his series is more completely analyzed than are the others. About sixty-five per cent. of the infections are in males and sixty per cent. in individuals between the ages of fifteen and thirty-five years. Occupation has a marked influence, the disease being most frequent among those whose work brings them into contact with vegetable products or with cattle or horses. Seven of the cases were in tailors or dressmakers, and the suggestion is that the infection arose from the habit of drawing the cotton thread through the mouth. Over fifty per cent. of all infections are of parts about the mouth or neck, and twenty-five per cent. more lie in the appendix or other part of the gastrointestinal tract. Treatment is very successful if undertaken early and while the infection is yet local. It consists mainly in thorough surgical removal of the infected tissue. In at least one instance the use of a vaccine prepared from the organism was successful in a case of pulmonary infection. Diagnosis is comparatively easy in many of the superficial infections by the culture of the organism, its presence in scrapings, and the fact that the lesions spread within the subcutaneous tissues with little or no involvement of the underlying structures or the overlying skin. In deep infections of internal organs diagnosis may be extremely difficult or even impossible. Isolation of the streptothrix is the only conclusive evidence.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

January, 1913.

The Standardization of Disinfectants.—J. T. Ainslie Walker says that the standardization of disinfectants may be said to be an attempt to protect the consumer from the fraudulent manufacturer, for any preparation, however useless, may be sold legally, even when bearing a false guarantee. He describes the Rideal-Walker method of expressing the germicidal efficiency of disinfectants, devised by himself and Doctor Rideal, as submitting any postulant disinfectant to direct measurement of its bactericidal strength in parallel with a dilute standard phenol solution, assigning to it a "figure of merit" based on this direct comparison. The test consists in applying the postulant and the standard disinfectants in various dilutions to equal portions of the same culture for determinate periods of exposure in identical conditions, and observing the result by subculture. The dilutions of the disinfectants which kill in the same time stand to each other in a ratio which gives numerical expression to the actual disinfectant in terms immediately comparable with any similar figures which may be obtained for the next disinfectant that is examined. He states that this method has been adopted by all government departments and public health authorities in England, but in this country by Maryland alone, and urges its general adoption.

Results of Treatment of Syphilis as Shown by the Wassermann Reaction.—George S. Strathy and Gordon Bates conclude that the Wassermann reaction is the most reliable method for the diagnosis of a cure of syphilis, but is of little value within six months of treatment, and should be repeated six months or a year later. When symptoms persist and the Wassermann reaction is negative, the reaction should be disregarded. A negative history of infection is of no value in making a diagnosis. In cases of congenital syphilis the mother is probably always diseased and should be treated. A history of freedom from symptoms for over ten years is not sufficient evidence that a patient is cured. A person with a history of syphilis is never a good insurance risk, especially for a straight life policy. When mercurial treatment is adopted it should be persisted in for at least three years after the symptoms have disappeared. Potassium iodide does not cure syphilis and is never sufficient treatment for a lesion, whether secondary or tertiary.

INDIAN MEDICAL GAZETTE.

January, 1913.

Recent Research on Cholera in India.—E. D. W. Greig finds that the cholera vibrio is not limited to the alimentary tract, as has been supposed, but that it may enter the gallbladder, where it finds ideal conditions for a prolonged life. He examined bacteriologically the bile in 271 fatal cases of cholera and cultivated the cholera vibrio from it in eighty. In twelve of these, distinct pathological changes, both macroscopic and microscopic, were found in the gallbladder. Examination of a number of patients just before they left the cholera hospital revealed that about thirty-six per cent. of them were excreting the cholera organism in their stools and were therefore "carriers." As this organism has a hard struggle for existence in the intestine, it is probable that it was present in the bile and that many will continue to be carriers for a long time. In two cases it was found in the stools thirty days and forty-four days after the acute attack. In addition, he found that many persons who are immune harbor the organism. Examination of twenty-seven persons who had been in close contact with cholera cases showed that six were excreting the cholera vibrio in their stools and were apparently quite healthy at the time. Both these "contacts" and the convalescents are important agents in transporting cholera. Bacteriological examinations of flies caught in the neighborhood of collections of cholera cases showed that the cholera vibrio was present on their external appendages and also in their alimentary tracts, thus proving the fly to be a carrier of the disease. Thus he finds that the main channels by which the infection of cholera is transmitted are by healthy "carriers" and flies.

Pyorrhœa alveolaris in Sylhet Jail.—L. Bodley Scott has studied for a year the gums of all prisoners admitted to the Sylhet jail, and presents a paper quite worthy of study. He thinks the disease seen in Bengal to be the same as that described by European writers. It is very common in that country and few natives escape it. Many have the disease in youth, many not till advanced life, but the liability steadily increases with age. There are marked fluctuations of prevalence, apparently due to the effects of seasonal influences on the general health. There is a decided correlation between unhealthy gums and a state of poor general health, of which there is some evidence to show that pyorrhea is more often the result than the cause. No definite evidence was found of any closer relation than this between pyorrhea and any particular disease, except that scurvy may aggravate the condition. There is evidence to show that dysentery acts as a cause of pyorrhea, but not vice versa. Nothing was found to support the theories which have attributed to oral sepsis such diseases as rheumatoid arthritis, appendicitis, gastric and duodenal ulcer, but it is possible that less distinctive complaints, such as chronic dyspepsia, constipation, digestive troubles, and chronic rheumatism may have some connection with oral sepsis. Pyorrhea is incurable once the earliest stages are past, but the troublesome symptoms are amenable to treatment to some extent.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 13, 1913.

Persistent Mouth Breathing Following Adenoidectomies.—Irving Sobotky emphasizes the fact that nasal breathing exercises have not proved efficient for the cure of persistent mouth breathing after adenoids have been removed, and that operative treatment appropriate for the age of the patient is indicated for the nasal condition. Adenoids should be removed before the typical high palatal arch is formed, but if the high arch is formed the treatment should be dental, spreading the arch and regulating the teeth. Cutting a slice of mucous membrane from the enlarged lower turbinates has given good results as an aid to nasal respiration. A submucous resection should not be done in children under sixteen years of age. Electrolysis, using the bipolar method, is effective in reducing the enlarged turbinates, but is not suited for children.

Progress in Surgery of the Bloodvessels.—J. C. Hubbard reviews much of the work that has been done along this line of late and concludes: 1. There is experimental evidence to show that in animals the circulation through the large veins of the extremities may be reversed, and it is possible for the normal blood pressure in the arteries to overcome the resistance of the valves of the veins. 2. Experimental and clinical evidence show that anastomotic opening is not permanent, but that gradual obliteration by intimal overgrowth takes place in event of the failure of early occlusion by thrombus. 3. There is not sufficient clinical evidence to show that the pressure of the blood in the arteries is sufficient to force the valves of the veins. 4. Early occlusion of the vessels about the anastomotic opening by a thrombus is the rule, and in many of the cases reported the opening never at any time functioned. 5. In event of the arterial blood forcing the valves near the anastomotic opening, it returns chiefly through the larger communicating veins and does not usually traverse the capillaries. 6. With a normal arterial pressure it required weeks or months for the valves in the communicating vein to be overcome, and the arterial blood supply was maintained partly through the usual collateral channels. In cases of gangrene from obliterating diseases of the arteries the collateral vessels are already occluded and immediate reversion of the circulation is imperative, but cannot be accomplished at present because of the obstruction afforded by the valves, the resistance offered by a thrombosed vein, and because the blood returns through the nearest communicating vein and does not reach the peripheral capillaries. 7. The only indication for the application of arteriovenous anastomosis in surgery is in traumatic destruction of a principal artery where an end to end union of the torn vessel is impossible. In such a case arteriovenous anastomosis might be attempted, and through it we might maintain a sufficient blood supply to preserve the integrity of the limb until an adequate collateral circulation was established.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 15, 1913.

Benzol in the Treatment of Leuchemia.—Frank Billings, following out the suggestions of Von Koranyi, used benzol (benzene, not benzin) as a drug in the treatment of five cases of leuchemia. The benzol was usually exhibited in gelatin capsules filled at the time of administration (soon after meals and at bedtime). The initial dose was seven minims, soon increased to fifteen minims. Burning in the stomach was a common symptom, and all complained of eructation of gas tasting and smelling of benzol, while in one case, where the benzol was pushed to 160 minims daily, there followed a toxic erythema and pruritus affecting the whole body, which, however, disappeared on discontinuing the drug. The appetite was not affected. The urine contained no perceptible increase of uric acid during the rapid leucocytic destruction, nor was there any general disturbance. In two cases a marked rise in the leucocytic count was observed for a few days; in three this was not observed. There was a rapid fall in the number of leucocytes which in three cases resulted in leucopenia, and a corresponding rapid decrease in the size of the spleen (much more rapid than with x ray exposures alone). There was an increase in the number of red cells and hemoglobin in all of the myelogenous types, and a rapid disappearance of the small though multiple lymph nodes in a patient with lymphoid leuchemia (in this last case the hemoglobin and red cell count remained unaffected). Stained blood specimens exhibited early and increasing degenerated leucocytes, especially of all mononuclear types, including the lymphocytes and myelocytes. The polynuclear cells showed degenerative changes, making a new and confusing blood picture. In spite of the disagreeable gastric symptoms, a notable improvement followed in all cases. As the benzol treatment was used in conjunction with the x ray treatment, all improvement cannot be due to the benzol.

Emetic Action of the Digitalis Bodies.—Cary Eggleston and Robert A. Hatcher's experiments seem to show that the nausea and vomiting following the use of therapeutic doses of the digitalis bodies is not due to their direct irritant action on the gastric mucous membrane, but to the action of the drug on the vomiting centre in the medulla, although massive doses directly applied to the gastric mucous membrane do cause irritation. On the other hand, the writers found that vastly larger doses of some of these drugs could be taken into the stomach without causing nausea or vomiting, in which case it was subsequently shown that there had been little absorption into the blood stream. Only traces of digitonin or the fixed oil of digitalis are found in the galenical preparations, and they exert no apparent effect on the stomach in therapeutic doses. True digitalin is the most actively emetic of the digitalis principles, digitoxin least, and digitalis being interdiate in this respect. The writers conclude that there is no evidence that digalen, digipuratum, digitalysatum, or the fatfree tincture of digitalis is in any degree less actively nauseant or emetic in proportion to its cardiac effect than any of the more common and less expensive galenical preparations of digitalis and strophanthus.

Medical Supervision of Factory Employees.—W. Irving Clark concludes, from the results of sixteen months' work, that the sickness and disability from accident in a large factory may be controlled by a simply equipped medical department. A thorough physical examination of all employees is possible and desirable. A system of prophylactic treatment in cases of sickness and accident will materially lessen the amount of sickness and lost time. A medical department can maintain the sanitation of a large factory and all matters pertaining to the general health, and instead of exciting distrust and antagonism will create a feeling of good will between employee and employer.

MEDICAL RECORD.

February 15, 1913.

Centenarians and Nonagenarians.—W. Gilman Thompson has found from investigation that the majority of these give a history of long lived ancestry, but this is not an essential characteristic, for a line of such ancestry may be broken by infectious diseases or by the unhygienic or irrational habits of individuals. Heredity, however, seems to be a more potent factor in producing nonagenarians than habits of diet or of hygiene, since the latter present the greatest variety in different cases; hence, the writer suggests, extreme longevity is largely a matter of natural selection. The aged often exhibit no predominating symptoms of any one disease, but become so universally sclerosed and atrophic that a general weakness is their only complaint, and in the mortality statistics where senility is given as a cause of death it is accepted without question by the health authorities. This, in fact, was the final diagnosis in twenty-six per cent. of the nonagenarians and in forty per cent. of the centenarians in the census of 1910.

Hodgkin's Disease.—J. Dudley Morgan remarks that, in the line of treatment, permanent improvement cannot be looked for either from surgery or medicine. Complete removal of the glands or their enucleation is invariably followed by recurrences either at the original location or elsewhere. Increasing doses of arsenic, though old, is still the practice at present, and is one of the very few remedies used with any benefit. The x rays should always be tried, for they reduce the swelling and retard new developments. The effect is only temporary, however, as the growths recur on cessation of the treatment, and it must sooner or later be resumed.

Scarlet Fever; Is It Contagious in the Desquamatory Stage?—Francis H. Mead concludes from a study of this question that statistics show that only in a small percentage of cases, secondary cases of scarlet fever arise from exposure of children to desquamation, and in these cases it is probable that the desquamation was infected from discharges from the nose, throat, or ears. The writer asserts that the old fashioned quarantine for scarlet fever is obsolete, and with no nasal, aural, or buccal complications, and no renal involvement, the time of quarantine for an ordinary case will be cut down to twenty-eight or thirty days.

Associated Outpatients' Clinics of the City of New York; a Social Force. — E. H. Lewinski-Corwin says the aims of this association are fourfold and include the coordination of the work of existing dispensaries and outpatient clinics, the elimination of unworthy applicants, the promotion of proper standards of treatment, and of economy and efficiency in dispensary management. The constitution is rather flexible and it is expected that the association will include all the clinics of the city.

Indicanuria and the Phosphates.—John C. Warbrick has shown that although the phosphates are increased in a number of diseases (cancer of the stomach, phthisis, inflammation of the brain), they seem to have little or no influence in the production of indican.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

January, 1913.

Theory and Treatment of Diabetes.—Carl von Noorden emphasizes the fact that diabetes is a complicated disease and that little benefit accrues to the patient if attention is fixed upon the glycosuria alone. The functional powers of all the organs must be considered, which presupposes a knowledge of physiology and pathology that the extent of the anatomical and physiological disturbances and the effect of distant organs upon the sugar production be discovered. Each case must be studied by itself for variations from type often occur. There is always present an enormous irritability of the *sugar forming apparatus of the liver.* Lack of coordination between the intensity of stimulus and extent of response is the characteristic feature of the disturbed metabolism in diabetes. The extent of difference between stimulus and response determines the severity of the case. The stimuli which act as irritants to sugar production are the instreaming of carbohydrates and the digestive products of proteins into the liver, acceleration of general metabolic processes by excessive and tiring muscular work or acute fevers, psychic and other nervous excitements, adrenalin injections, thyroid gland feeding, etc. In the matter of treatment the excessive irritability of the sugar mechanism must be calmed and every burden avoided. In slight cases a wise choice of food and the exclusion of other irritants will suffice to maintain sugar production within normal limits, and although not cured and liable to get out of order through any indiscretion, the new conditions make for healing or at least a real and persisting improvement, during which Nature can effect a cure. Carbohydrates may be given in amounts of eighty to 100 grammes in most cases, protein in lessened quantities, and an increased ration of fats. Alcohol acts as a food and appears to diminish the formation of sugar. The use of opium is limited by its many drawbacks. The value of the mineral water cures is that for a month patients live, eat, and drink rationally, in an environment free from worry and care. Overindulgence in food must always be guarded against.

Exocardiac Causes of Failure of Compensation in Valvular Diseases of the Heart.—Alfred Stengel includes among these lack of regulated exercise, habits of overeating, obesity, disturbance of the abdominal circulation, improper breathing or thoracic diseases, and certain conditions of the blood. Metabolic disorders may play a part through an unfavorable influence on the vasomotor system or on the viscosity of the blood. Arteriosclerosis and its twin supertension determine cardiac breakdown in cases of old valvular disease.

Kinetic Theory of Graves's Disease.—George W. Crile considers Graves's disease as not one of a single organ or the result of some fleeting cause, but as a disease of the motor mechanism, that which is the source of physical action and of the expression of the emotions; its origin is in phylogeny and its excitation is through either some stimulating emotion intensely or repeatedly given, or some lowering of the threshold of the nerve receptors, thus bringing about a pathological reaction between the brain and the thyroid, which may be broken by diminishing the thyroid output and thereby allowing the brain to regain normal control, or by securing physiological rest and thereby insuring normal brain control, which in turn allows the thyroid to return to normal. The benefits of the operation of excision of a lobe or ligation are striking and uniformly successful in cases beyond medical relief. Because the conception here elaborated relates wholly to the release of energy it is called the kinetic theory.

Influence of Exercise on the Heart.—R. Tait McKenzie believes that even severe athletic competition does not, as a rule, do any appreciable damage to the circulatory system, and its part in accelerating the onset of arteriosclerosis is still difficult to assign. One must look, not to athletics, but rather to the more strenuous occupations, through long hours and under unsanitary conditions (coal mining and iron working), for light on this question. Although the exhaustion of continual overstrain in the young and growing is unfavorable, still recovery is rapid and complete. The writer concludes that "anything which curtails or prevents this natural means of growth (physical activity and constant and varied movements of the heart) must result in preventing the individual from reaching his highest possibilities.

Relation of Parasitic Amœbæ to Disease.—Charles F. Craig concludes that *Entamœba coli* is a harmless commensal in the human intestine, while *Entamœba histolytica* and *Entamœba tetragena* are pathogenic species, capable of producing amœbic dysentery in man. *Entamœbæ histolytica* and *tetragena* are strictly parasitic species and have not been cultivated. All cultivated species belong to the genus *amœba*, and differ greatly in morphology and life cycle from the parasitic amebas which belong to the genus *entamœba*. It has not been proved that any of the amebas that have been cultivated are pathogenic to man.

Breast Tumors, with Special Reference to Carcinoma.—A. Primrose calls attention to the fact that nearly fifty per cent. of the patients are allowed to go untreated for a whole year before seeking operative relief. *Per contra,* only eight per cent. apply during the first month. The writer urges early application to the practitioner whenever a breast tumor appears. If cancer is thus early found, the modern radical operation can be carried out with the best prospect of saving life.

Relief of Gastric Crises in Tabes dorsalis by Rhizotomy.—Charles H. Frazer advocates in no uncertain terms rhizotomy as a means of relieving pain in suitable cases of tabes dorsalis, especially where other measures have failed, because it has a sound physiological basis and has been often followed by gratifying results. He does not advocate the performance of the operation in two sittings, as favored by the German and French surgeons. While the grosser movements entailed in the removal of the laminæ do not increase the sense of touch for the more delicate coordination required in the subsequent manipulation of the roots, the advantages of doing the operation in one sitting are so much greater that unless the patient's condition prohibits, there should be no interruption.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

January, 1913.

Effects of Industrial Strain on the Working Woman.—Slaughter calls attention to the close relationship that exists, both for men and women, between fatigue and efficiency. He cites various instances where there has been an increased output in shorter hours, the result of a proper appreciation of the necessity of adequate rest.

Diagnosis of Extrauterine Gestation.—Buckner holds that patients should be regarded as being likely to have extrauterine gestation who give a history of irregularity of menstruation, of spotting, and of abdominal pain usually of a cramplike character. The uterus also, does not usually correspond in size to the assumed length of the gestation. If, at the same time, a soft tumor is present adjacent to the uterus the diagnosis is probable. There may or may not be the concomitant signs of pregnancy. Women seen in collapse with a rapid pulse should be regarded as undergoing extrauterine gestation when other definite symptoms are clearly not responsible for the syncope.

Fistula in Ano.—Tracy describes a new method of operation, one in which the sphincter ani is not divided. The bowel is dissected free until the fistulous opening can be drawn down without tension below the sphincter muscle. The excess of tissue is dissected away and the bowel sutured to the cutaneous margin. The diseased tissue may then be dissected out.

Methods of Encouraging Breast Feeding and Contraindications to Breast Feeding.—Fussell quotes Fischer to the effect that ninety per cent. of poor mothers are able to nurse their children, while only seventeen per cent. of rich mothers are able to perform the same duty. He then reviews the conditions that are true contraindications, such as infected nipples, mastitis, failure of secretion, etc., also mentioning conditions which may be mere excuses.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

January, 1913.

Recurrent Vomiting.—J. A. Storck finds that recurrent vomiting is not infrequent, as, in a practice among children that is not large, he has met with twenty cases in the past thirty months, in patients ranging from twenty-eight months to fourteen years, the greatest number (fourteen) recurring between the ages of four and eleven years. In sixteen cases, ten of which were in girls, nervous phenomena were well marked, and all but four patients were from so called neurotic families, one or both parents being in this class. The children were for the most part well nourished, except in the very young, or, in some of the older children after prolonged attacks of vomiting. In only three was there evidence of malnutrition from other causes. The first and subsequent attacks, in a large percentage of the cases, were of sudden onset, the child being apparently in perfect health; in a small minority some slight indisposition preceded the attack. The first symptom was listlessness, noticing somewhat when aroused, but relapsing into an apathetic state. The temperature range was wide, from subnormal to 104° F. The vomiting begins without warning, at first the stomach contents (food or fluid), later gastric juice and mucus. These attacks may occur several times a year or much oftener, and may last from several hours to a few days, the vomiting occurring as often as every fifteen minutes. Constipation is the rule, with a sweetish (acetone) breath and thirst is pronounced; urine scant and of sweetish odor (due to acetone). The attacks lessen or disappear altogether at puberty. The writer emphasizes two points in these cases: The presence of diacetic and oxybutyric acids and acetone in the urine; the successful use of an alkali (sodium bicarbonate) in the treatment. Finally, he believes that the disease is probably due to some fault in digestion or metabolism.

NEW YORK STATE JOURNAL OF MEDICINE.

January, 1913.

Surgical Treatment of Prolapse of the Uterus.—C. C. Barrows believes that all the usual methods of treating this condition are based upon erroneous principles. He characterizes the operation of ventral fixation or suspension as unsurgical, unscientific, unnecessary, and unlawful, and cites the results of such procedures in substantiation of his criticism. No operative measure will be successful in the treatment of this condition which does not preserve intact the nutrition of the anatomical structures which comprise the upper pelvic floor. This calls for the preservation of both vascular and nerve supply wholly uninjured, or essentially so. An operation which does this and which in Barrows's hands has given excellent results consists of three steps, viz.: 1. Amputation of the cervix uteri; 2, anterior colporrhaphy; 3, repair of the torn or relaxed perineum by the flap splitting method with approximation of the separated perineal muscles and fascia, together with shortening of the round ligaments by Alexander's method. This plan does not endanger life and necessitates only a short period in bed—two weeks—with very little discomfort to the patient, and in properly selected cases results in a permanent cure. He regards the resort to the shortening of the round ligaments by the Alexander method as the most important part of the procedure. It essentially changes the direction of the uterine axis and makes the shortened and blunt cervix impinge upon the posterior vaginal wall above the restored perineal body instead of following the axis of the vagina. Barrows also gives a detailed description of Polk's method for restoring a uterine prolapse in cases in which the preceding method is not applicable.

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-fifth Annual Meeting, Held at Old Point Comfort, Virginia, December 17, 18, and 19, 1912.

The President, Dr. J. M. T. Finney, of Baltimore, in the Chair.

(*Concluded from page 422.*)

Unilateral Hematuria of the So Called Essential Type.—Dr. R. L. Payne, Jr., of Norfolk, and Dr. William De B. Macnider, of Chapel Hill, reviewed the literature on this subject and reported five cases of unilateral hematuria of the so called idiopathic type, which were relieved of all symptoms by nephrotomy. The authors were inclined to believe that in the majority of these cases of unilateral hematuria the condition was one of chronic inflammation of one type or another, and detailed a series of experiments which apparently excluded as a causative factor certain acutely developing, vascular changes. These experiments would, therefore, apparently contravene Klemperer's theory of angioneurotic edema, and also Albarran's idea of a slight lesion of nephritis being a sufficient cause of the unilateral hematuria.

Suppurative Pyelophlebitis.—Dr. Charles R. Robins, of Richmond, related in detail a case of suppurative pyelophlebitis which occurred in his practice in 1911. In this case Van Cott's vaccines were used. In all, twenty-eight doses were given. It seemed to him that these vaccines caused improvement for a time, but finally the patient's abdomen was opened in two places, and it was found that fluid had become purulent. The patient gradually declined and died after an illness of one hundred and fifty days. In view of the fact that this malady was usually rapidly fatal, and that no plan of treatment had yet effected a cure, he thought treatment along this line by vaccines offered the only hope, and the apparent success of these vaccines at one time in this case was encouraging.

Embryogenetic Relationships of Tumors of the Kidney, Suprarenal Gland, and Testicle.—Dr. Louis B. Wilson, of Rochester, Minnesota, said the basis of his paper consisted of a study of the pathological specimens obtained at operation and autopsy in the Mayo clinic and a study of the human and comparative embryology of the urogenital system. The writer summarized the results of his observations as follows:

Renal Tumors. 1. Of ninety-two tumors studied, there were three pelvic papillomas, four carcinomas, one squamous celled epithelioma, one adenoma, one fibroma, seven sarcomas, one Wolffian tumor, three embryomas (Wilms's tumors), and seventy-one mesotheliomas. 2. The renal pelvic papillomas and carcinomas apparently arose secondarily to chronic irritative processes of the adult pelvic epithelium. 3. The rare squamous celled epithelioma probably was a neoplastic development from the embryonic inclusion within the renal pelvis of ectoderm which had found its way into the lower end of the primitive excretory duct by way of the cloaca. 4. The embryomas of the renal cortex composed of renal and other tissues and occurring in young children were, according to Wilms, derived from inclusions of the lateral embryonic plate within the caudal portion of the nephrogenic cord in the early embryo. 5. The most numerous tumors of the renal cortex, the so called hypernephromas or Grawitzian tumors, were apparently mesotheliomas derived from nephrogenic vesicles which had failed in the early embryo to form a tubular connection with the renal pelvis. 6. Most of the few true sarcomas of the kidney developed primarily in adult tissue of the renal capsule and involved the cortex secondarily. 7. The renal cortex was also frequently the site of inclusions from the mesonephros and rarely of inclusions from the suprarenal gland. Rarely, if ever, did either of these inclusions in the renal cortex form malignant tumors.

Adrenal Tumors. 8. Of the three primary tumors of the adrenal studied, one was an adenoma, and the other two hypernephromas arising from the adrenal cortex. 9. Primary malignant tumors of the adrenal were either round celled sarcomas or more frequently hypernephromas arising from the adrenal cortex. 10 Adrenal hypernephromas frequently induced abnormalities of sex and strength. 11. Tumors of the adrenal, in whatever stage of their development, bore no histological resemblance to most mesotheliomas (so called renal hypernephromas).

Testicular Tumors. 12. Of the twenty-one tumors of the testicle, all of the ten which it was possible to study in histological detail were teratomas. 13. So far as could be determined, the history and histology in these nineteen cases were in harmony with Ewing's hypothesis that teratomas of the testicle arose from sex cells whose normal development had been suppressed. 14. The difference in time of development of the embryonic crop of genitaloid cells and the next generation which appeared at puberty might account for variations in structure and *tempo* of the testicular teratomas.

Prostatectomy, with Special Reference to the Sequels.—Dr. James E. Moore, of Minneapolis, stated that the unsuccessful results of prostatectomy had not been as faithfully reported as the successful ones. The mortality after the upper and lower operations was practically the same in good hands, but the trend of the surgical world at the present time was toward the upper operation. Every surgeon should be proficient in both. Neither operation was a fit one for novices to experiment with, because both were serious major operations accompanied by some mortality. In the upper operation, instead of cutting through the mucous membrane in the floor of the bladder, it was better to crowd the finger into the internal meatus until the mucous mebrane broke and follow through this opening with the enucleation of the prostate, as taught with the author and first published by L. L. McArthur. Conservatism should control these operations, but it was not conservative to postpone operation until organic changes had taken place in the bladder and kidneys. Every general practitioner should realize that when he was first called to relieve retention from enlarged prostate he was assuming a grave responsibility, because infection at this time might end fatally in spite of the surgeon's best efforts. Enlarged prostate was easy to diagnosticate, but an operation should never be recommended simply because there was enlargement. A patient should never be introduced into catheter life without first having had the advantages of prostatectomy urged upon him. Old age was not a contraindication to the operation.

The results following prostatectomy were not always satisfactory, even in suitable cases. Patients frequently returned to the family physician after having been operated upon, in very little better condition than before the operation and sometimes worse. Impotence followed the operation in a certain percentage of cases, and until we knew just what caused the impotence we should be unable to prevent it. It was probably due to disturbance to the nerve supply. Gangrene of the bladder was an occasional sequel, to be prevented by handling the tissues as gently as possible. Careful search for stone should be made at every operation, because many times they had been overlooked. They undoubtedly formed after the operation in some cases. This should be prevented by emptying the bladder of blood clots and all detritus. When the bladder was in a reasonably good condition the cystoscope might be used to advantage, but with a badly infected bladder it did more harm than good, and catheterization of the ureters was unwarranted.

With improvement in our technic, urinary fistulæ were much less frequent than formerly, but were still an occasional sequel in cases that required unusually prolonged drainage. In cases of atony of the bladder the patient should be told that he would probably have to continue the use of the catheter after the operation, but that catheterization would be much easier and more comfortable. Incontinence or dribbling was an occasional sequel after operations, owing to injury to the sphincters or their nerve supply. To prevent this sequel the sphincters should be entered as little as possible, and in the upper operation more careful closing of the wound should be performed. The tendency in the upper operation was toward the more complete closing of the wound. While present day prostatectomy was one of the most beneficial operations at our command, the number of failures and sequels was too numerous. Might not less radical measures be better, such as removing the third lobe and dilating the prostatic urethra through a suprapubic opening, which was accompanied by neither complications nor sequels.

Fat Hernia.—Dr. Joseph Ransohoff, of Cincinnati, remarked that, according to his conception, certain characteristics accompanied primary fat hernia: 1. A true fat hernia was a protrusion of a preperitoneal fat mass or lipoma through one of the ordinary hernial apertures. It followed the course pursued by an ordinary hernia. 2. When a peritoneal process occurred within such a hernia, it was always difficult to find it because of its small lumen. Such a process when present, in a minority of his cases, was secondary to the fat hernia and probably resulted from traction. The ordinary contents of a hernia were not found and could hardly enter into the narrow serous tube within the fat mass. 3. The onset of a fat hernia might be sudden, like that of the ordinary type of hernia with preformed sac. In three of the cases recorded the history of sudden onset was very clear and the proportion of cases too large to be charged to inaccuracy of observation on the part of the patient. 4. The diagnosis of fat hernia was far from easy. Although not reducible, they were capable of a seeming reduction in a fair proportion of cases. 5. An impulse on coughing could usually be obtained, since the hernia could receive the brunt of the increase of intraabdominal pressure like an ordinary reducible hernia. 6. In very rare instances symptoms of strangulation might result from torsion of the fat hernia. 7. The treatment of fat hernia differed in no way from that of the ordinary type. It was probable that these cases would only be recognized as fat hernias during the operation, therefore, measures for radical cure would be instituted, such as those in vogue for the ordinary forms of hernia.

Experimental Devascularization of Intestines with and without Mechanical Obstruction.—Dr. J. Shelton Horsley and Dr. C. C. Coleman, of Richmond, reported twelve joint experiments, all on dogs, done under full anesthesia in which segments of intestine from the lower ileum, varying from two to five inches, were devascularized by cutting the attachment of the mesentery close to the bowel. In all except one the omentum was wrapped around the devascularized segment. In five instances the segment was obstructed by tapes at each end. Two of these dogs died from gangrene and perforation of the loop. One died after three days without perforation; one lived thirteen days, and the other lived fourteen days. In seven dogs a loop of intestine was devascularized without being obstructed and the omentum wrapped around the segment. None of these dogs died as a result of the operation. The authors concluded that either no toxic substance was formed in the devascularized loop or segment of intestine which was unobstructed, or else this substance, if formed and excreted, was not absorbed by the normal mucosa. They emphasized the fact that in dogs at least a loop of bowel when separated from its mesentery and unobstructed might be properly nourished by wrapping the omentum around it.

Acute Hematogenous Infection of the Kidney.—Dr. J. M. Mason, of Birmingham, summarized as follows: 1. Acute hematogenous infection or septic infarct of the kidneys was of comparatively frequent occurrence and often overlooked. 2. Serious injury to or disease of one kidney acted as a predisposing cause. 3. While nephrectomy was demanded in the fulminating type, early diagnosis and operation would permit of decapsulation with incision and drainage of infarcts in certain of the milder cases, thereby saving some kidneys which would require removal if treated later. 4. The relation of the movable kidney to the development of septic infarct offered an indication for nephropexy worthy of consideration. 5. When exploration is acute supposedly abdominal conditions failed to reveal lesions sufficient to account for the symptoms present, the possibility of septic renal infarct should be borne in mind and the condition of the kidney ascertained before completing the operation.

Head Injuries.—Dr. ApMorgan Vance, of Louisville, reported eight cases: 1. Patient, twelve years before operation, was struck on the head with a shovel, followed by epilepsy. Operation twelve years later at the site of injury, consisting of the removal of a good sized button, resulting in complete recovery. There were no further epileptic seizures. The patient died of pneumonia ten years later. 2. Patient, forty-five years old, became paralyzed two days before operation, and gradually lapsed into complete coma and paralysis developed, beginning on the left side and extending to the whole body, including the face. Sensation on the left side was entirely absent, and greatly diminished on the right. Bowels and bladder paralyzed; eye reflexes absent. Operation: Upon shaving the scalp the head showed a curious condition. The whole scalp was edematous and the right half presented the appearance of angioma, the veins were so greatly dilated. A piece of bone the size of a ten cent piece was removed and the opening then enlarged to the size of half a dollar. The dura was incised, the brain explored with suction needle, and one half ounce of fluid obtained. Wound was closed without drainage. Complete recovery. This condition resembled very much what is designated by two or three authors as "wet brain." 3. Boy, aged ten years, head injury in street car accident. Scalp torn from both sides of the skull. Loss of the parietal bone. Scalp cleansed, parts adjusted, and separate dressings applied. Twelve days later, with the patient in good condition, another doctor was called to soak the dressing off, which the speaker declined to do. The uncovered meninges became infected, and the boy died three days later. 4. Injury of the skull in the right parietal region, patient being struck on the head by a baseball. Decompression operation nine weeks later, with removal of a good sized button. Complete recovery, with no recollection by the patient of the accident. 5. Boy, aged ten years, sustained extensive compound, comminuted fracture of the skull. The mastoid region and the area back of and above the ear were crushed. Operation consisted of removal of several pieces of bone, the scalp being sutured without drainage. Complete recovery. 6. Epilepsy, with loss of speech and power of locomotion following an injury to the head. Examination revealed depression over the left brow and temporal region. Operation consisted of removal of a large piece of bone without subsequent drainage, followed by complete recovery. 7. Pistol wound at the junction of the frontal with the parietal bone, large enough to admit one's thumb. Operation consisted of removal of fracture with some brain matter as well as fragments of bullet, followed by complete recovery. 8. Pistol wound through the roof of the mouth, a little anterior to the junction of the soft with the hard palates, the bullet going entirely through the brain. No operative measures were carried out at this time. Mouth sprayed with antiseptic fluids and liquid nourishment given. At the end of six weeks the bullet was removed together with several pieces of the skull. This was followed by complete recovery.

Surgery of the Single and Horseshoe Kidney.—Dr. Charles H. Mayo, of Rochester, Minnesota, stated that developmental abnormities of the genitourinary system were the most frequent. Of this group irregularities of the circulation of the kidney were the most common. Their own autopsy records had shown in a single year as high as four per cent. of cases presenting gross anomalies of the kidney and ureter of surgical importance. That it was necessary for the surgeon thoroughly to understand these anomalies was obvious, from several points of view. A knowledge of the early development of the genitourinary system made intelligible the resultant anomalies and various pathological conditions. We saw the possible development of congenital, cystic kidney resulting from a failure of certain portions of the secreting renal tissues to become united with the collecting portion. Wilson had called attention to the probable development of the so called hypernephromata as neoplastic growths from similarly unattached secreting portions of the kidney.

Among thirty-six cases of gross renal and ureteral anomalies observed in their clinic during five years, seven were found incidentally to other abdominal operations, twelve were of the horseshoe type, and six of the single or asymmetrical type. Of 649 operations on the kidneys and ureters during this period of five years, there was an average of one serious anomaly associated with disease in every twenty-six cases. In the horseshoe form ninety per cent. were fused at the lower pole. At the point of union there might be only connective tissue (in fifteen per cent of the cases). Usually the fusion consisted of renal tissue and varied from a small area to the full width and thickness of the kidney. Ninety per cent. of cases were fused in front of the great vessels. The most common disease affecting horseshoe kidney was hydronephrosis which might later become pyonephrosis. This hydronephrosis occurred in moderately young individuals, while pyonephrosis and lithiasis were usually seen in middle age or later. Tuberculosis was rarely seen. More horseshoe kidneys were found in women than in men, and more single kidneys in men than in women. When the kidneys were fused by heavy renal tissue, symptoms might undoubtedly be present. Rovsing recently published cases in which the diagnosis was confirmed at operation. Despite the diagnostic data which had been given, as a rule the condition would not be recognized before operation. Braasch indicated, in addition to the cystoscope and radiograph, the great assistance of pyelography with colloidal silver injections. The lesson to be learned, when we did not have absolute data as to the condition of both kidneys, was to always explore the other kidney, usually through a separate incision, before the removal of a tumor of the kidney or the removal of a diseased kidney. In abdominal surgery, where the type of the presenting tumor was questionable, the kidney should be palpated before removal of the tumor. In some instances transperitoneal incision was indicated. The lateral incision described by W. J. Mayo would suffice in most cases. At operation the possibility of horseshoe kidney must be kept in mind, especially whenever difficulty was experienced in delivering the lower pole. This occurred in the writer's last case, where pyonephrosis of half of the horseshoe kidney was present. The renal tissue, nearly the size of the normal kidney, passed in front of the large vessels. After examination of the blood supply, the fused portion was divided and sutured with catgut. In a case of horseshoe kidney, which was not otherwise pathological, Rovsing relieved the pain and general symptoms by division of the isthmus.

Defect in the Cheek and Its Repair by Plastic Operation.—Dr. JOHN STAIGE DAVIS, of Baltimore, reported the case of a male, aged sixteen years, in whom there was a defect, 6.3 cm. in diameter, involving the whole thickness of the right cheek, probably caused by cancrum oris, which occurred as a typhoid complication two years previously. The surrounding soft parts were infiltrated with scar tissue; the tongue was adherent to the lower border of the defect; there was inability to open the jaws. To close this defect a flap was necessary which should fulfill several conditions. It should have enough thickness to fill the defect without causing a depressed scar after healing was complete. It should be formed of tissue which would conform in appearance to the surrounding skin externally, and take the place of the mucous membrane of the mouth. A rectangular flap 7.5 by sixteen cm., of whole thickness of skin and subcutaneous fat, was raised from the right arm, the pedicle being in the middeltoid region. The flap was folded on itself and the distal end sutured to the pedicle and underlying muscle, thus bringing raw surface to raw surface and forming a flap with fat within, and the whole thickness of the skin on front and back. This was held flat on a wire frame. Two weeks later the tongue was freed, the arm was raised, and the flap was sutured into the upper two thirds of the defect. The arm was held in position by a plaster cast. The pedicle was amputated after eleven days, and eleven days later the remainder of the opening was completely closed. Several attempts were made to relieve the fibrous ankylosis of the jaws, but without success.

By this method of treatment the defect was filled by a pad of tissue with the whole thickness of the skin on both sides. The circulation of the flap was assured before transplantation was begun. Most of the shrinkage had taken place before it was transplanted. There was no unsightly scarring of the cheek or neck. The area from which the flap was secured was healed by Thiersch grafts by the time the flap was ready for transplantation. On the whole, the result was very satisfactory.

Diagnosis and Treatment of Renal and Ureteral Calculi.—Dr. JOHN B. DEAVER, of Philadelphia, reported sixty cases of renal and ureteral calculi. Attacks of typhoid had preceded the onset of symptoms of stone. A catarrhal condition of the pelvic and ureteral mucosa was the chief predisposing factor in the formation of kidney and ureteral stones. The initial symptoms were attacks of renal colic, trauma, falls, blows, or kicks over the kidney area. Repeated attacks of colic were more frequently due to stones in the ureter. Location, type, frequency of attacks, and points of reference indicated the site of the stone. Physical examination in cases of aseptic and uncomplicated renal and ureteral calculi gave no assistance in diagnosis in one half or more of the cases, but was of more assistance in renal than in ureteral cases because of the presence of a palpable mass in a percentage of cases. The diagnosis was much facilitated in difficult cases by the use of pyelographic methods. Tenderness and muscular rigidity were the most important physical signs. Microscopic hematuria immediately following a severe attack of colic was suggestive of stone. The skiagraph was the most valuable means at our disposal in the diagnosis of urinary calculi. In five of his cases the x ray failed to find the stone, which in three instances was found at operation in the ureter once, and in the kidney twice. The use of waxed tipped catheters was said to be in these rare cases the court of last appeal in diagnostic procedure, but the speaker relied entirely on the clinical history. The most frequent causes of ureteral obstruction were either physiological or anatomical. Before attempting any operation it was neecssary to be satisfied as to the functional activities of the renal tissue, to be assured that the reserve force of the healthy or, at least, diseased kidney was sufficient to sustain the renal function in the event of the necessity of nephrectomy, which could not always be foretold. Stones situated in the lower terminal (2.5 cm. of the ureter) were removed transvesically. In renal calculus the kidney was exposed and, if possible, delivered through an oblique loin incision; the stone was palpated and an incision made over it and the stone removed with forceps. In nine instances palpation failed to demonstrate the presence of stone. In five of these it was correctly located with the needle. Needling was a practical, harmless, and valuable procedure in cases in which palpation failed. The total mortality in the operated cases of this series was 6.5 per cent.

Election of Officers.—The following officers were elected: President, Dr. John Young Brown, of St. Louis; vice-presidents, Dr. ApMorgan Vance, of Louisville; Dr. Lomax Gwathmey, of Norfolk; treasurer, Dr. Le Grande Guerry, of Columbia, S. C.; secretary, Dr. William D. Haggard, of Nashville.

Atlanta, Georgia, was selected as the place for holding the next annual meeting, in December, 1913.

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Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Chloride of Lime in Sanitation. By ALBERT HOOKER. New York: John Wiley & Sons. London: Chapman & Hall, Ltd., 1913.

There are very few elements which are so widely distributed and so much used as chlorine. In its combination with sodium, we have only to think of our table salt to be convinced of the necessity of this element. In its combination with slaked lime, it has been used for over one hundred years in bleaching processes; the production of this chloride of lime dating from 1800 has been very great. We see, for example, that in 1800 there were manufactured, in Great Britain, fifty-two tons at $685 a ton; and in 1870, 925 tons at $41.50 a ton, which increased in 1910 to 110,000 tons. The estimate given for the world's production of chloride of lime is 400,000 tons. In 1880 the United States did not produce any chloride of lime, but imported 34,000 tons. Since then a great change has taken place, and in 1910 the statistics for the United States show a production of 80,000 tons. The uses for which chloride of lime is put to, have also greatly increased; it is used not only in its industrial application of bleaching, but also for deodorizing or disinfecting purposes, but it must be remembered that its action is not chlorination, but oxidation.

Mr. Albert H. Hooker deserves great credit for bringing out the importance of chloride of lime in sanitation. The book prepared by him well demonstrates the use of this chemical for water purification, sewage disinfection, street sprinkling and flushing, its use in epidemics, surgery, and general sanitation, the benefit derived from it on the farms, especially in dairies, and the great help it is in fighting the house fly.

He gives in seventy-seven pages a good synopsis of the subject and follows this up with about 150 pages of bibliography. An index divided in two parts, as subject and as name index, concludes this valuable addition to our books on hygiene.

Genitourinary Diseases and Syphilis. By HENRY H. MORTON, M. D. Third Edition. Philadelphia: F. A. Davis Company, Publishers, 1912. Pp. xiv-605. (Price, $5.)

The new edition of this work shows the same attention to detail that was the chief note of previous editions. The section on syphilis has been considerably enlarged, and an excellent description of the Wassermann reaction and technic of salvarsan administration are given. The newer diagnostic tests of renal function and operative cystoscopy, as well as the electrical treatment of bladder tumors, are described. The work is profusely illustrated, practical in its standpoint, and cannot fail to continue to please its old friends and to make new ones. It is a most excellent textbook for college work.

Diseases of Women. By THOMAS GEORGE STEVENS, M. D., (Lond.), F. R. C. S. (Eng.), M. R. C. P. (Lond.). (London Medical Publications.) London: University of London Press, 1912. American Agents, Oxford University Press, New York. Pp. xiii-431. (Price, $5.50.)

This work is one of a series of publications edited by one who includes in the volume the result of his ten years' experience in teaching gynecology. One strong point in its favor is that due consideration is given to the pathology pertaining to the subject—as is given to medicine and surgery. Certainly the diseases of women become very much simplified when the subject matter is presented on a pathological basis. There can be no doubt that the practical application of surgical principles on a sound pathological basis, has had much to do with the great improvements which have been made in the management of pelvic disorders.

The book contains 420 pages, divided into eighteen chapters, with 202 practical illustrations, drawn mostly by the author himself. Comparisons are drawn between the normal and the pathological, both in descriptions and illustrations.

Much of the subject matter is treated briefly, but clearly and concisely. The book should be well received by the profession at large, as well as for a textbook by medical students.

Sleep and the Sleepless. By JOSEPH COLLINS, M. D. New York: Sturgis & Walton Company, 1912. Pp. 129. (Price, $1.)

This book, as the author states, is written for the lay reader, and its aim is to help sleepless people to cure themselves. To this end are considered theories concerning the nature of sleep, its physiology, and the many factors which tend to cause insomnia. Many valuable suggestions are made for simple, rational measures to overcome sleeplessness, and the use of drugs is emphatically discouraged. Reading is highly recommended as a soporific, especially if the book selected be a "lulling work of ponderous philosophy or of monotonous description or soothing charm, which he may read without being compelled to understand or to become emotionally stimulated or excited."

Tuberculin in Diagnosis and Treatment. By LOUIS HAMMAN, and SAMUEL WOLMAN. New York and London: D. Appleton & Co., 1912. Pp. xvi-381.

To all physicians who are interested in tuberculosis—and who in this day is not?—this book will be more than welcome, for it gives a clear and judicial presentation of what is at present known about tuberculin in diagnosis and treatment. In reading this well written book, one quickly realizes that its authors speak from personal experience, and that they are constantly striving, and successfully, to present the truth as far as known. This is in marked, and welcome contrast to some other books on this subject. The very logical summary of the work done to elucidate the nature of the tuberculin reaction is excellent, and the same is true of the short but clear sketch of anaphylaxis. The relative value and proper place of the subcutaneous, cutaneous, percutaneous, and conjunctival methods of making the tuberculin test, as well as the significance of constitutional, local, and focal reactions is well brought out, the authors believing that in diagnosis, the subcutaneous injection should be used only when it is desired to produce a focal reaction. The remarks under the heading, Choice of Patient, will appeal to the common sense of all who have had any experience with tuberculosis. It is impossible in a short review even to mention all the excellences of this book, so we shall merely cordially recommend it to our readers.

Muscle Spasm and Degeneration in Intrathoracic Inflammations. By FRANCIS MARION POTTENGER, A. M., M. D., LL. D. St. Louis: C. V. Mosby Company, 1912. Pp. 105. (Price, $2.)

As supplemental to the older methods of examination for endothoracic disease Pottenger makes a plea for the employment of light touch palpation directed to the detection of local muscle spasm and atrophy in the superficial areas overlying visceral disease. The rigidity found is analogous to the abdominal rigidity over appendicitis and other abdominal disease, and is explained on the basis of viscеromotor reflexes. The atrophy is probably due to exhaustion of the affected muscles. As a result of an extensive experience, especially with pulmonary tuberculosis, the author feels that information as valuable, constant, and trustworthy can be obtained by this method as by percussion and auscultation.

Bacteria. By Dr. MAX SCHOTTELIUS. Second Edition. Translated by Staff Surgeon HERBERT GEOGHEGAN, R. N. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1912. Pp. xii-324. (Price, $3.50.)

For one who was particularly interested in bacteria according to their position in the scheme of nature and in regard to other forms of life this volume would be most attractive. The translation is good, the style easy and agreeable. One could absorb much valuable information in a very pleasant manner. If, however, this publication is intended as a textbook or a book of reference in regard to the study of bacterial life it would be of little value. Facts are concealed in the text without any indication of their whereabouts, and many important facts are absent. That bacteria can be stained is mentioned, but nothing is said as to how it is accomplished. The section on tuberculosis is most interesting and instructive but there is little about the bacillus *per se*. The same holds good of typhoid fever, diphtheria, etc. Phagocytosis is mentioned and so is Ehrlich's side chain theory, but neither one is very fully presented. If this book is to be considered in reference to the biological relations of bacteria it can be highly recommended; if in reference to the needs of the students, either undergraduate or postgraduate, it is not specially valuable.

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Miscellany.

Resolution, Adopted at the Regular Meeting of the Brooklyn Medical Association, February 12, 1913.—*Whereas,* with laudable intent but misguided aim, there has recently been introduced before the Assembly of the State of New York, three certain items of legislation, to wit, Assembly Bill No. 692 introduced by Mr. Walker, and now before the Committee on Codes, entitled An Act to Amend the Penal Law in Relation to the Sale or Possession of Cocaine or Eucaine, and Assembly Bill No. 53 introduced by Mr. Kerrigan and referred to the Committee on Public Health, entitled An Act to Amend the Public Health Law Generally, and, Assembly Bill No. 52 introduced by Mr. Kerrigan and entitled An Act to Amend the Public Health Law in Its Relation to the Sale of Cocaine, Eucaine, and Other Drugs, referred respectively to the Committee on Public Health and Codes, which said amendments propose further to regulate the sale, possession, and dispensing of opium, morphine, cocaine, and their derivatives and salts, and,

Whereas, the said Assembly Bill No. 692 does, in the opinion of the Brooklyn Medical Association, place unwarranted, needless, and embarrassing restrictions upon the possession, prescribing, and use of these said drugs, to wit, cocaine and eucaine, upon the medical profession, thereby greatly lessening and interfering with the lawful and proper use of such drugs by the medical profession at large and in particular with those members of the profession specializing in surgery, eye, ear, nose, and throat work, and,

Whereas, the said Bill No. 692 not only restricts to a dangerously small maximum, the quantity and strength in solution of the said cocaine, eucaine, etc., which such physicians may procure, possess, or prescribe to patients requiring, in their proper judgment, such medication, and,

Whereas, said Bill No. 692 further dictates the sole form and manner in which such cocaine and eucaine may be prescribed, and,

Whereas, said Bill No. 692 further imposes upon said physicians the onerous and practically impossible burden of maintaining a written record of all prescriptions containing said cocaine and eucaine issued, or minute doses of the same administered by him, to his various patients, and,

Whereas, said Bill No. 692 further imposes upon such physicians in disregard of all "rights of sanctuary" or confidence guaranteed to his patient by law; and all rights to the privacy of his domicile, the duty of displaying, at such domicile, to public officers and their promiscuous deputies, without limitation as to time, number, or circumstances, and for the obvious purpose of facilitating pernicious and unwarranted "fishing excursions" to bolster up weak or groundless prosecutions, with evidence so obtained, the private and hitherto considered inviolable records of his practice, and,

Whereas, said Bill No. 692 obviously and insultingly implies and imputes to said physician the deliberate intent to commit a crime and would deprive him, upon accusation, based upon the slightest discrepancy in his bookkeeping of the constitutional presumption of innocence, and compel him, *prima facie* to an affirmative defense of misdemeanors and felonies, which last being crimes involving moral turpitude, would render him liable to imprisonment, loss of citizenship, and his right to practise as a physician; and,

Whereas, the said Bill No. 692 further places dangerous and needless restrictions and hindrances upon the possession and administration of such cocaine and eucaine in hospitals and dispensaries; and,

Whereas, the foregoing restrictions are fraught with grave probabilities for danger to the successful treatment of disease and the performance of operations common to plastic, special and minor surgery; and,

Whereas, "The Bill to amend the Public Health Law," to wit, Assembly Bill No. 52 introduced by Mr. Kerrigan, like its fellow monstrosity, before mentioned, seeks to place upon duly licensed physicians unnecessary and dangerous restrictions in the prescribing of opium, morphine, cocaine, eucaine, chloral, etc., by requiring the physician to prescribe the same when required upon a peculiar and particular "blank," which in view of the remote and not always accessible source of supply, of said blank, may render compliance therewith and the obtaining of the drug in time of need impossible or dangerously delayed; and,

Whereas, the said Bill No. 52 requires that certain records be kept by the physician using the before mentioned drugs, which records without reasonable restriction to time, place, or specified authorities are to be kept by such physician at the disposal of ambiguous authorities; and,

Whereas, said Bill No. 52 would in its construction, place unwarranted and dangerous restraint upon the proper administration of said morphine, cocaine, chloral, etc., by the physician in his routine practice; and,

Whereas, said Bill No. 52 would be in the proper carrying out of its provisions require the constant attendance of the physician or a trained nurse, acting under his supervision, in the treatment of eye, ear, nose, and throat disease wherein their local application is frequently and necessarily continuous, for extended periods and would, in consequence, entail an almost impossible time and labor recording and computing the minutes quantities generally used, particularly in cases treated in hospitals; and,

Whereas, subdivision 4 of said Bill No. 52, limits the discretion of the physician, as regards the period during which he may, in his judgment continue the administration of said morphine, cocaine, eucaine, chloral, etc., and imposes upon such physician or his patient the burden and unnecessary expense of consultation, if the drug is to be continued in further use; and,

Whereas, the alternative to private consultation is a condition of paternalism and espionage degrading to the physician and one that must of necessity create hostility and doubt, in the minds of the patient and his friends, and loss of confidence in the physician as a medical adviser; and,

Whereas, the said Assembly Bill No. 53 introduced by Mr. Kerrigan seeks to limit the time that a patient may have in his possession the drugs cocaine, eucaine, etc., to ten days; and,

Whereas, certain conditions and diseases frequently require administration of these drugs for various lengthy periods, greatly in excess of ten days; and,

Whereas, all of the said bills, in so far as their provisions relate to the possession, prescribing, and administration of morphine, cocaine, chloral, etc., by the duly licensed physician in the proper performance of his duties and in the treatment of disease, and in private and hospital practice of medicine and surgery, are obviously bred in ignorance of the needs of patients and in contempt of the high moral character of the medical profession in general, and in reckless disregard of the results of such restrictions upon the physical well being of the patients requiring the proper administrations of such drugs; and,

Whereas, the conditions imposed upon duly licensed physicians, under these bills are onerous, practically impossible, and a hardship to a busy physician and revolutionary in their theory of predetermined guilt of moral turpitude; and violative of the right of privileged communication between physician and patient and of the right of "privacy of domicile" except where due process of law and proper writ is had;

Now therefore, be it resolved, that the Brooklyn Medical Association condemn and oppose these Bills Nos. 52, 53, and 692, in their provisions relating to the possession, use, and prescribing of morphine, cocaine, chloral, etc., by duly licensed physicians, in the proper treatment of disease, as unnecessary, dangerous, improper, against common sense and public policy, and gratuitously insulting to the medical profession, and, while recognizing the need for legislative check upon the pernicious sale of potent narcotics and habit forming drugs and sedatives, we demand that in the interests of health and welfare of the community these bills be defeated, unless relieved of their useless and dangerous restrictions and impositions as regards the obtaining, possessing, and lawful use of these drugs by the medical profession.

D. W. Waugh, M. D., president.
H. Arrowsmith, M. D., vice-president.
T. C. Paffard, M. D., secretary.

Meetings of Local Medical Societies.

Monday, *March 3d.*—German Medical Society of the City of New York; Clinical Society of the New York Throat, Nose, and Lung Hospital; Roswell Park Medical Club, Buffalo; Utica Medical Library Association; Niagara Falls Academy of Medicine; Brooklyn Hospital Club; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Hornell Medical and Surgical Association.

Tuesday, *March 4th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Amsterdam City Medical Society; Lockport Academy of Medicine; Society of Alumni of Lebanon Hospital; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Medical Association of Troy and Vicinity; Long Island Medical Society; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

Wednesday, *March 5th.*—Long Island Society of Anesthetists; Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association; Psychiatrical Society of New York; Bronx Medical Association; Society of Alumni of St. John's Hospital, Brooklyn; Schenectady Academy of Medicine; Elmira Academy of Medicine.

Thursday, *March 6th.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Dansville Medical Association.

Friday, *March 7th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society.

Saturday, *March 8th.*—Therapeutic Club, New York

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 19, 1913:

Cofer, L. E., Assistant Surgeon General. Directed to proceed to Philadelphia for special temporary duty. **Cumming,** H. S., Surgeon. Relieved from duty in command of the Cape Charles Quarantine Station, and directed to report to the director of the Hygienic Laboratory, Washington, D. C., for duty. **Delgado,** J. M., Acting Assistant Surgeon. Granted thirty days' extension of annual leave on account of sickness, from January 1, 1913. **Kerr,** J. W., Assistant Surgeon General. Directed to proceed to New York, N. Y., and such other places in the State as may be necessary for conference with the Public Health Commission of the State of New York regarding the necessary revision of laws and regulations affecting the public health. **Lumsden** L. L., Surgeon. Detailed to attend the annual meeting of the Indiana Sanitary and Water Supply Association at Indianapolis, Ind., February 25th and 26th. **Markoe,** W. W., Acting Assistant Surgeon. Granted thirty days' extension of annual leave, on account of sickness, from January 1, 1913, and thirty-days' annual leave from February 1, 1913. **Oakley,** J. H., Surgeon. Directed to proceed to Philadelphia, Pa., and take charge of the station during the temporary absence of Surgeon W. G. Stimpson on leave of absence. **Ransom,** S. A., Acting Assistant Surgeon. Granted thirty days' leave of absence, to be taken during the calendar year, after February, 1, 1913, at such times as the interests of the Service will permit.

Commission for the determination of a standard of purity for drinking water for use on common carriers in interstate traffic: Detail for the commission: Surgeon J. F. Anderson, chairman; Passed Assistant Surgeons A. J. McLaughlin and W. H. Frost, and Professor E. C. Franklin, members. The following named gentlemen have been invited to become members of commission and have indicated their acceptance of the invitation: Professors William T. Sedgwick, M. J. Rosenau, George M. Whipple, Edward Bartow, F. F. Wesbrook, Edwin O. Jordan, Charles Gilman Hyde, W. H. Park, C. C. Bass, Dr. Henry Hansen and Dr. S. J. Crumbine. The labors of the commission will be conducted by correspondence.

Casualty.

Surgeon Henry Downes Geddings was born in Charleston, S. C., June 27, 1859, and graduated from the Medical College of the State of South Carolina, Charleston, in 1880. He was appointed an assistant surgeon August 18, 1888, a passed assistant surgeon September 2, 1892, and commissioned a surgeon February 12, 1904. His first service was during the yellow fever epidemic in the State of Florida in 1888, when he was on duty at Camp Perry, near Jacksonville, August 19, 1888, under Surgeon W. H. H. Hutton of the Service. He served at various marine hospitals and quarantine stations of the Service, and on February 12, 1897, was detailed by the President as technical delegate to the International Sanitary Conference, which met at Venice, Italy; and on April 7, 1897, represented the Service at the Twelfth International Congress in Moscow, Russia. He was detailed for duty in the Bureau June 3, 1899, and served as assistant surgeon general to April 30, 1909. In June, 1909, he was detailed to attend the meeting of the International Commission for the revision of the international classification of diseases at Paris, and to the International Conference on Tuberculosis, Stockholm, Sweden. On June 17, 1909, he was detailed for duty in the office of the American Consul, at Naples, Italy, where he served until September, 1912. He died in Washington, D. C., on February 13, 1913.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending February 21, 1913:

Fauntleroy, P. C., Major, Medical Corps. Arrived in Washington, D. C., on February 14th, from duty observing the Balkan War. **Frick,** E. B., Lieutenant Colonel, Medical Corps. Assigned to duty as an assistant to the chief surgeon of the Western Division, in addition to other duties. **Hathaway,** L. M., Captain Medical Corps. Returned to duty at the Presidio of Monterey on February 16th, from leave of absence. **Hill,** E. C., Lieutenant, Medical Corps. From sick in quarters to duty on February 14th. **Jones,** H. W., Captain, Medical Corps. Left Jackson Barracks, La., on February 19th, on leave of absence for ten days. **Kirkpatrick,** T. J., Major, Medical Corps. Left Fort Adams, R. I., on February 18th, on leave of absence for twenty-one days. **Lincoln,** H. F., First Lieutenant, Medical Reserve Corps. Left Fort Apache, Ariz., on February 7th, on leave of absence until the sailing of the transport for the Philippine Islands on April 5th. **Smith,** W. H., Captain, Medical Corps. Left Fort Sheridan, Ill., on February 15th, accompanying troops to Fort Sill, Okla., and on February 18th left Fort Sill on ten days' leave of absence. **Truby,** W. F., Major, Medical Corps. Assigned to duty as an assistant to the chief surgeon of the Western Division, in addition to his other duties.

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Births, Marriages, and Deaths.

Married.

McDowell—Noyes.—In Washington, D. C., on Monday, February 17th, Passed Assistant Surgeon Ralph Walker McDowell, United States Navy, and Miss Ruth Noyes. **Meyerding—Stinchfield.**—In Rochester, Minn., on Wednesday, February 12th, Dr. Henry William Meyerding and Miss Laura Stinchfield.

Died.

Cheever.—In Portsmouth, N. H., on Saturday, February 15th, Dr. Benjamin Cheever, aged forty-three years. **Cohan.**—In Norwich, Conn., on Thursday, February 13th, Dr. Francis H. Cohan, aged forty-two years. **Derr.**—In Hagerstown, Md., on Wednesday February 12th, Dr. Hamilton Kemp Derr, aged sixty-one years. **Ferry.**—In Poland, Ohio, on Friday, February 14th, Dr. Herbert Works Ferry, aged thirty-four years. **Gauthier.**—In Southbridge, Mass., on Tuesday, February 11th, Dr. Franklin C. Gauthier, aged eighty-eight years. **Lemen.**—In St. Louis, Mo., on Saturday, February 15th, Dr. Joseph R. Lemen, aged fifty-nine years. **Loving.**—In Pine Bluff, Ark., on Thursday, February 13th, Dr. Arthur B. Loving, aged sixty-eight years. **Mackay.**—In Chicago, on Tuesday, February 11th, Dr. Adam Mackay, aged sixty-three years. **Megrath.**—In Loudon, N. H., on Wednesday, February 12th, Dr. William A. Megrath, aged fifty-three years. **Page.**—In New York, on Wednesday, February 19th, Dr. Kingman B. Page, aged forty-nine years. **Potts.**—In San Francisco, Cal., on Sunday, February 9th, Dr. John S. Potts, aged seventy-two years. **Rauch.**—In Johnstown, Pa., on Tuesday, February 11th, Dr. Kimmel Rauch, aged forty-one years. **Steele.**—In Portsmouth, R. I., on Monday, February 17th, Dr. Minot A. Steele. **Wile.**—In Danbury, Conn., on Friday, February 21st, Dr. William Conrad Wile, aged sixty-five years. **Willits.**—In Bloomsburg, Pa., on Monday, February 10th, Dr. Charles Willitts, aged fifty-six years. **Witter.**—In Wellsville, N. Y., on Wednesday, February 12th, Dr. George H. Witter, aged fifty-nine years.

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Original Communications.

INFANT FEEDING.*

What is Believed and Taught Concerning It in Boston.

BY JOHN LOVETT MORSE, A. M., M. D.,

Boston,

Associate Professor of Pediatrics, Harvard Medical School; Associate Visiting Physician, Children's Hospital and Infants' Hospital.

It gives me great pleasure to have the opportunity to tell what we believe and teach in relation to infant feeding in Boston, because I, for one, feel that our teachings are misunderstood and therefore frequently misinterpreted. There is, obviously, a certain amount of difference of opinion among the Boston pediatrists as to minor points in infant feeding. They agree, however, on the main points, and I feel that what I shall say represents fairly the opinion there.

Breast milk. We believe that the natural food of the human infant is human milk, that nothing else can take its place, and that no other food can be made like it. All other foods are more or less unsatisfactory substitutes. We believe that it is the duty of every woman to nurse her own child, if she is able so to do. I personally believe this so strongly that I will not tell a mother how to feed her child artificially unless her reasons for not nursing it or for weaning it are satisfactory to me.

We are, nevertheless, sometimes accused of believing and teaching that modified cow's milk is better for babies than human milk. What is the basis of these accusations? Presumably that breast feeding, being the natural method of feeding, is easier to understand than artificial feeding and there is, therefore, less to be said about it. So much has to be said about artificial feeding to make it plain that both students and physicians are liable to forget what has been told them about breast feeding and, in spite of what has been taught them, to think first of artificial foods. I personally always give a student *zero* who, when asked "What is the best food for this baby?" does not say human milk.

We also believe that if a woman does not have enough milk for her baby, she should not wean it, but should give it what she has and help this out with a substitute food.

Wetnurses. Next to its own mother's milk, the milk of another woman is the most suitable food for a baby. Fortunately, it is possible to feed most babies satisfactorily on some modification of cow's milk and rarely necessary to have recourse to a wetnurse. My own rule is, however, not only never to let a baby die, but never to let it get into a condition where I fear that it may die without compelling the parents to procure a wetnurse, if one is to be had. If they will not do so, I retire from the case. Fortunately, it is almost always easy, in Boston, to get a wetnurse at the Directory for Wetnurses established by Doctor Talbot.

Modified milk. We believe that the best substitute for human milk is some modification of cow's milk, that is, modified milk. The term, modified milk, is applied to any food of which milk, in any form, is the basis, no matter whether it is a simple dilution of whole milk with water or a mixture with whey, cereal waters, sugars, or what not. The term, modified milk, does not mean any special food.

Why is it necessary to modify milk? Nature provides a dilute food rich in fat and carbohydrates and relatively low in proteids, that is, rich in heat producing substances and relatively low in tissue building substances. It seems reasonable to suppose that this type of food is the one best suited for the infant's digestive power and metabolic processes. Cow's milk, while a dilute food, does not contain the different elements in the proportions natural for the infant and is, therefore, presumably utilized by the infant only with considerable economic waste. It seems more than probable, therefore, that babies will thrive better on milk modified in such a way that the natural relations of the food elements are approximately maintained. Our experience has shown us, moreover, that the average well baby does thrive better during the early months on modifications of cow's milk of this general character than on straight cow's milk or on simple dilutions of it. We believe, therefore, that this general principle should be followed in the feeding of well babies. We believe equally strongly, however, that it cannot be followed in the feeding of sick babies or of those whose tolerance for fat and sugar has been lowered by illness in the past.

The food elements in the milk of other animals whose milk can be procured in sufficient amounts to be considered in the feeding of infants, are in essentially the same relative proportions as in cow's milk. It is, therefore, necessary to modify them in some way to render them suitable for the average well infant. Since cow's milk can be procured anywhere, and in any amount, while the others are hard to procure and then in only limited amounts,

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*Read before the Chicago Pediatric Society, December 17, 1912.

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and all have to be modified, cow's milk is preferable to the others.

Raw and heated milk. We believe that it is of the utmost importance to have a pure, clean milk to start with and that it is impossible to feed a baby satisfactorily, no matter how the food is prepared, unless the milk used in the preparation of the food is of good quality. There is no evidence, either experimental or clinical, to prove that the pasteurization of milk at low temperatures produces any changes in the milk which render it less suitable as a food for infants or predispose to the development of the diseases of nutrition. In spite of this fact, I, for one, and I think the other pediatrists in Boston agree with me, still prefer to feed babies on pure, raw milk, if possible. This does not mean, however, that we do not most heartily believe in the pasteurization of milk when the supply is not above approach and when there is danger of bacterial infection.

The evidence in favor of the innocuousness of the boiling of milk is not so conclusive as in the case of pasteurization, but sufficiently so to make it far preferable to the use of unclean milk. In many cases it seems to prevent the formation of large casein curds in disturbance of the casein digestion.

Percentages. In Boston, we believe most thoroughly in the method of thinking and calculating the composition of infants' foods in percentages of the different elements contained in the food. We believe that it is the proper way to approach the subject and that better results can be obtained in this way than in any other. Feeding in percentages does not mean to us now, and never has meant to us, any system of feeding, understanding by the term "system" a set of hard and fast rules for feeding babies of different ages, although it has often been said to mean this by those who have never taken the trouble to find out what percentage feeding is. It is true that various tables, expressed in percentages of fat, sugar, and proteids, have been given to show what the authors of the tables have believed that average well babies of given ages will take and thrive on. These tables have been given merely to show that young babies need weak foods and that as they grow older the strength of the food must be increased. They are intended to serve merely as guides to beginners in the preparation of the first food for a well baby when it comes into their hands, and to show, in a general way, what the average well baby will take. They serve as guides in the same way as the statements made by those who criticise them that whole milk should be at first diluted with three parts of water, then with two parts, and so on. A man who is expert in the feeding of infants and who is able to analyze the symptoms and properly appreciate the history in the individual instance will never refer to one of these tables. The beginner may find it necessary to do so when he sees a baby for the first time. In any case, the first formula must always be something of an experiment. We believe that after this, the food should be so prepared as to meet the indications furnished by the symptoms, the findings in the stools, the appearance, and the weight chart in the individual case at a given time.

The fact that most of these tables show a relatively high proportion of fat and sugar with a relatively low percentage of proteids, has nothing to do with percentage feeding, but is merely a coincidence due to the fact that most of those who believe in calculating in percentages also believe, as already stated, that well babies do better, as a rule, on such a combination of the food elements. There is no further connection than this between percentage feeding and relatively low proteids. Another reason for the mistaken belief that percentage feeding and low proteid feeding are inseparable is, perhaps, that percentage feeding was developed at the time when it was believed that the proteids of cow's milk were the only cause of disturbances of digestion. That belief has been long since disproved. The principle of percentage feeding is, however, just as useful and just as important to-day as it ever was.

We believe that it is impossible successfully to feed babies artificially by rule, and that good results can be obtained only when the food is fitted to the requirements of the individual infant. We believe that feeding in percentages does more than any other method to prevent routine feeding and to encourage individualization in feeding, because it is impossible to think and calculate in percentages without knowing what food elements and how much of each one of them is being given. No one can decide these points as to the food without having some reason for his decision.

We believe that it is important not only to determine what food elements and what amounts of these elements are to be used, but of equal importance to know that these elements are present in approximately the desired proportions in the food when it is prepared. We believe that this result can be more easily and more certainly attained by calculating in percentages than in any other way. We believe that accuracy is as important in the calculation and writing of a prescription for a baby's food as in that for a medicine. We do not believe that as accurate results are obtained in any other way as by the percentage method. We do not wish any one to suppose, however, that we believe that the mixtures when prepared contain exactly the percentages of the food elements ordered. This would be an impossibility. We do believe, however, that the percentages are approximately correct and nearly enough so for practical purposes. In any event, the relative proportions of the various food elements are correct, even if the exact percentages are not. If the food does not agree, changes in the percentages to meet the indications furnished by the symptoms will be accurate relatively to the original percentages, which is all that is necessary.

We do not believe that it is possible to feed all well babies on one food or all sick babies on another food, as so many writers tell us. We believe that it is necessary to fit the food to the baby, not the baby to the food, and that the elements of the food must be varied to suit the needs of the individual infant, whether sick or well. We also believe that if those who advocate the use of single, routine foods were in the habit of endeavoring to decide in each instance what the indications were for the various food elements and for the relative amounts of each, they would find that the indications were not the same in all instances. We believe that the use of a routine food shows a lack of clear thinking, and that the more clearly a man thinks the less he is willing to use a routine food. We do not claim that thinking in percentages will make a man think clearly, but we do contend that a man cannot use percentages in feeding without thinking some, and that the more he thinks, the more he is likely to think.

It has been charged that the percentage method of feeding prevents those who use it from adopting new ideas in infant feeding and from taking advantage of the advances in the knowledge of the subject. This is distinctly not so. In the first place, it is not a routine method of feeding, and those who use it are of necessity compelled to give a reason for everything they do. They are, therefore, predisposed to be open minded and to adopt new methods, provided there is a reason for so adopting them. It is unquestionably most flexible and adaptable to all advances in our knowledge of the subject and to all variations in our point of view. The amount of any individual element in the food can be varied to suit the indications without changing the others. Any element may be left out or a new element may be added. Alkalies may be added or omitted. It may or may not be predigested. That is, the percentage method of feeding, so called, is merely a method of calculation and a means of attaining accuracy in the preparation of infants' foods. It neither presupposes or implies anything as to what should be in the food or why it should be there. These points must be determined in other ways.

It has been asserted that the knowledge of mathematics required in the calculation of the composition of the food in order to obtain the desired percentages of the different food elements is greater than the average physician possesses. We believe that this is distinctly not so, and that reasonably accurate results can be obtained by anyone with a rudimentary knowledge of arithmetic. The knowledge required to determine what food elements and how much of them the individual baby needs may be beyond the knowledge of certain physicians. This fact, however, has nothing to do with the percentage method of calculation and is no reflection upon it. The reflection is upon the physicians.

Many have apparently identified the percentage method of calculation with the preparation of foods at the milk laboratory. There is no connection between the two. The explanation of the mistaken idea that there is a connection is presumably due to the fact that Doctor Rotch, who is one of the firmest believers in the percentage method of calculation, was the founder of the milk laboratories. There is no doubt, however, that the milk laboratory, by its accuracy in the preparation of food, carries out the essential idea of accuracy in the method of percentage feeding.

We are not in any way bound to milk laboratories or to any especial milk laboratory. We believe that, if the work of the laboratory is done as it should be done, food may be prepared more accurately at a laboratory than in the home. Believing that accuracy is an important element in infant feeding, we heartily approve of the milk laboratory. We also realize that in the majority of cases extreme accuracy is not essential and that the reasonable accuracy which can be attained in the home is satisfactory for all practical purposes. We realize, too, that on account of expense, time, and distance, laboratory feeding is feasible for but a small minority.

It has been hinted, or at least we feel that it has been, that we, in Boston, are wedded to our idols, that we are back numbers, that we are ignorant of what is going on in infant feeding in the rest of this country and in Europe, and that, when we do know what is being done elsewhere, we are too well satisfied with ourselves and our methods to adopt, or even countenance any new methods. Naturally, we are not prepared to admit the truth of these allegations. We know that we are familiar with what the rest of the world is doing, and we believe that we are open minded and most ready to adopt anything that is good, no matter where it originates. We are, however, sufficiently convinced of the correctness of our own methods to cling to them until it is proved to us that other methods are better than our own. We are not prepared to accept anyone's dictum simply because he lives at a distance, not even if he writes in another language. He must either show us conclusively that he is right or we must be allowed to prove it for ourselves before we will believe it. Then we are not only ready but eager to adopt and make use of it. Thus far we do not know of any advances in the science of infant feeding which shake in any way our confidence in the percentage method of feeding. In fact, all the advances which have been made have strengthened our belief, because they have demonstrated its flexibility and adaptability to progress. We include the new discoveries among our resources and calculate in percentages of the food elements, as before. We can calculate low percentages of fat and high percentages of proteids as easily and accurately as high percentages of fat and low percentages of proteids. It is no more difficult to calculate percentages of maltose than of lactose, or of precipitated casein than of total proteids. We believe that on account of our method of thinking and calculating in percentages of the different food elements we make better use of the recent discoveries in infant feeding than we otherwise should. Our training in fitting the food to the individual and to the indications in the special case teaches us to use our knowledge intelligently and not in a routine way. We can, therefore, take advantage of all the advances in the science of infant feeding without going to extremes and without discarding that which is good in the old methods. We believe that, while we may not rush forward as rapidly as some others, we slip backward much less frequently and that our rate of progress is, on the whole, quicker.

Calories. It is as irrational to speak of a system of caloric feeding as it is of a system of percentage feeding. Babies cannot be fed calories; they must be fed food which they can digest and utilize. We do not believe, therefore, in using calories as the basis of an infant's food. We do believe, however, that the estimation of the caloric value of the infant's food is of great importance. The food should be prepared to meet the indications in the individual case and the caloric value then estimated in order to determine whether the caloric needs are being met or not. In this way both underfeeding and overfeeding can be avoided. That is, the estimation of the caloric value of the food serves as a check. It prevents us from starving a baby in our efforts to get a food to fit its digestive capacity, and from grossly overfeeding it in our efforts to make it gain. It must be remembered, however, that babies do not all require the same number of calories for each unit of weight. One baby will thrive on a quotient on which another baby will starve, while another will starve on a quotient which will cause digestive disturbances in a fourth. Here, as always, in infant feeding, the baby, not rules, must be followed. We believe, therefore, that when intelligently applied, the estimation of the caloric value of the food is of great assistance.

Among other things of which we have been accused is of grossly overfeeding babies. Certain writers have seemed to think that all Boston babies vomit profusely and show other signs of indigestion. This is not the case. Boston babies do well, and we are proud of them. The best guide as to whether a baby is overfed or not is the baby and not the caloric value of the food which it is taking. As a matter of fact, Boston babies now need and get about the same quotient of energy as other babies. I took the trouble at one time to calculate the number of calories in the food of a series of babies which I had fed before it was customary to estimate caloric values, and found that the quotient of energy corresponded to the present accepted average, showing that at that time also they were not overfed theoretically any more than they were practically.

Incidentally, it may be remarked that the percentage method of feeding renders the calculation of the caloric value of foods very simple and tends to develop accuracy in this as well as in all other directions.

Fats. We have been repeatedly accused of giving unduly large amounts of fats to babies, and many writers have apparently supposed that excessive fat feeding was an integral part of what they have called the "percentage system" of feeding. Since our critics have discovered that fats are not the cause of all the troubles of digestion, as they thought at one time, we have recently been criticized less than in the past. As I have already stated, we believe that the average well baby thrives better during the early months on foods in which the natural relations of the fat, sugar, and proteids are retained. I have already explained, too, that there is no connection between this belief and percentage feeding. We were familiar with the symptoms of fat indigestion long before the crusade against high fats reached this country from abroad, and no one who understood infant feeding ever gave or advocated giving more than four per cent. of fat in a mixture. We were aware that fat in the food could cause constipation as well as relaxation of the bowels before we knew how to recognize the soap stool. We do not deny that many babies were given, and are now given, too much fat in their food. This is in part because of the belief that has been so long current that fat always acts as a laxative. It is due far more to the fact that the average physician does not appreciate that different creams contain different amounts of fat and that some milks are richer than others. This lack of appreciation is not due to lack of proper teaching or to bad example on the part of the pediatrists, but to the carelessness and ignorance of the physicians. This we are trying to correct by teaching them accuracy by means of the percentage system.

Sugars. We believe that under normal conditions lactose is preferable to maltose in the feeding of infants, and that there is no indication for the use of saccharose in the place of these sugars. The reasons for this belief are that lactose undergoes lactic acid fermentation, which is the normal one in the infant's intestine, more readily than the other sugars and that it is more suitable for the development and maintenance of the normal infantile intestinal flora than the other sugars. It favors especially the development of *Bacillus bifidus,* which is normally the predominant organism in the large intestine. We are doubtful whether the so called "sugar fever" really is caused by sugar and, if it is, do not feel that the fact that the rise of temperature occurs more often with lactose than with maltose counts against the use of lactose in the feeding of normal infants, because fever never occurs unless there is a diarrhea, which shows some lesion of the intestine. The fact that the assimilation limit of lactose is lower than that of maltose is of no importance, because this limit is at least three times as large as would ever be given in a properly modified milk.

We are convinced, however, that there is a kind of intestinal indigestion in infants which is due to the fermentation of milk sugar and believe that the dextrin-maltose mixtures are most useful in the treatment of this condition.

We are also convinced that in the acute diarrheas due to bacterial infection the sugar given should be determined by the nature of the infection. In the type caused by the gas bacillus and other organisms of its class large amounts of any sort of sugar are contraindicated, maltose being more harmful than lactose because it undergoes butyric acid fermentation more readily. This type of diarrhea yields most rapidly to treatment with lactic acid bacilli. The food must contain a moderate amount of lactose to furnish a proper medium for the development of the lactic acid organisms. In the type due to the dysentery bacillus and other organisms which produce toxic substances from protein, on the other hand, sugars are indicated, because, when there is an excess of readily fermentable carbohydrates in the food, the bacterial activity changes from the proteolytic to the fermentative type. Lactose is preferable to maltose for this purpose, chiefly because it is more slowly broken down and absorbed and consequently exerts a more prolonged action.

Starches. It has been evident for some years that the conception that young babies are unable to digest starch was erroneous. The last doubt has been removed by Hess's demonstration of the presence of a starch splitting enzyme in the duodenum of the newborn. I believe that every one in Boston is theoretically convinced that there is no reason why starch should not form a part of an infant's food. Practically, however, some are still averse to giving it to a young infant. Personally, I see no reason why it should not be given to any infant, no matter what its age, if indicated. We do not believe in the routine addition of starch to the infant's food and do believe that the amount added should be calculated in percentages, the percentage added depending on the purpose desired. We rarely add starch in the early months for its food value, using it chiefly for its mechanical or colloidal action in preventing the formation of hard casein curds.

Proteids. We believe, as already stated several times, that the average well infant thrives better during the early months on mixtures containing relatively high percentages of fat and sugar and relatively low percentage of proteids. We know perfectly well that the old idea that the proteid was the only element in the cows' milk which caused trouble was erroneous and we, I think, give higher percentages of proteids, on the average, than we did some years ago. We feel, however, that, if the proteids are increased too much beyond the proteid needs, an unnecessary strain is thrown on the proteid metabolism and on the organs of excretion. We cannot believe that the proteids never do harm. We believe that there is a proteid indigestion in the same way that there is a fat and a sugar indigestion. We believe, too, that proteid indigestion is more often overlooked than the others because it is harder to recognize, and that, when its symptoms are better known, it will be found to occur far more frequently than many at present suppose. Therefore, we do not give the high percentages of proteids to young, well babies which are recommended by many others.

We believe, however, that, when there is a disturbance of the digestion of fat and sugar, it is of great advantage to raise the percentage of proteids in order to make up for some of the calories lost in the necessary reduction of the percentages of fat and sugar. We also believe that, when there is acid fermentation in the intestine, the change in the bacterial flora produced by the administration of a large amount of proteid is of great advantage. We are not sure whether casein in the form of precipitated casein is or is not more useful than the total proteids in the treatment of disturbances due to the fermentation of milk sugar, but are endeavoring to make up our minds on this point.

We believe most thoroughly that in certain types of indigestion, especially gastric, it is most advantageous to reduce the amount of casein and increase the amount of whey proteids, that is, we believe in the so called "split proteid" or whey mixtures. We are equally sure that there is a type, or types, of indigestion due to milk sugar, salts, or both, in which whey and whey mixtures are not only of no aid but distinctly harmful. They must, therefore, be used with discretion.

Salts. There is no question in our minds that a part, perhaps a considerable part, of the disturbances of digestion in infancy are due to improper amounts or improper proportions of the salts in the food. We are not prepared to go as far as Schloss and attribute all the disturbances of digestion to this factor. We feel, too, that at present our knowledge concerning the salts, the part which they play in normal digestion and metabolism and the symptoms of the disturbances which they cause is so limited and incomplete that we can pay but little attention to them in the regulation of the diet, either in health or in disease.

Finally, we believe that it is wrong to think so much as is now the custom of the disturbances of digestion caused by single elements of the food. There can be no doubt that in many instances in which the disturbance appears to be due to a single element, the real trouble is in the relation of the different elements to each other. We feel that our knowledge of the connection of the disturbances of digestion with the various food elements is still extremely rudimentary and that we must be very careful not to accept each new item of information as the final solution of the problem.

Alkalies. We feel very uncertain as to the action of alkalies in infancy. We do not know whether to accept the views of Southworth and Van Slyke and Hart that they favor the rapid emptying of the stomach by delaying the coagulation of casein by rennin, that of Clark that they increase the flow of hydrochloric acid, that of Cowie and Lyon that they delay the pyloric opening reflex and consequently the evacuation of the stomach, or that of Stolte that their chief action is in the saponification of the fats. At present most of us are using them on the basis that they delay the action of rennin on casein and thus allow more or less of the milk to pass the pylorus before coagulation takes place, this being possible on the supposition that the pyloric opening and closing is less dependent on the reaction of the gastric contents, when these are entirely liquid. Acting on this conception we add the alkali in proportion to the casein, that is, to the cream and milk which contain the casein, in the mixture, and not in proportion to the total amount of the mixture. We use alkalies, therefore, in gastric and not in intestinal indigestion. Most of us do not add them to the food of well babies. We are not at all sure that we are doing right in pursuing this method and are prepared to change at any time when we are shown a better one. We feel that this is one of the matters which most urgently require further investigation.

Intervals between feedings. This is not the time or place to enter into a discussion as to the intervals of feeding. We are familiar with the experimental evidence as to the advisability of long intervals, but we do not feel that it is entirely convincing, because we believe that there are other elements in the problem which have not been considered. We are not at all convinced by the clinical evidence in favor of long intervals, because we can show equally good evidence in favor of short intervals. In general, I think, we begin with two hour intervals, but work to three hour intervals much more rapidly than in the past, while we do not often use the four hour intervals. While this is our usual practice, we have no set rules and vary the interval to suit the individual case. It goes without saying, or should, at all events, that the interval must vary with the amount of food given at a feeding, the strength of the food and its composition, as well as with the digestive capacity and gastric motility of the individual infant. We feel very strongly that this is another matter regarding which the last word is far from having been said.

Classification of the diseases of the digestive tract in infancy. The matter which is perhaps troubling us most in Boston at present is how to classify the diseases of the digestive tract in infancy. A few years ago we were quite well satisfied with a classification which we had then evolved. The discoveries of the last few years have shown that this classification is wrong in many respects, so far wrong indeed, that it can hardly serve even as a basis for revision. None of the other classifications seem to us, however, any better. An entirely new one is necessary. It seems impossible to make a satisfactory one now, because, while the recent advances in our knowledge have compelled us to discard that which we formerly believed to be true, they are not definite enough to form a firm basis for a new classification. We are in a transition stage. That which is new and seems true to-day is likely to be disproved next year and that in turn displaced in the following year. Any classification which is made now can be regarded as nothing more than a makeshift and cannot be expected to withstand severe criticism.

We feel that there is a small and relatively unimportant class of cases in which the symptoms are not due primarily to disorders in the digestive tract, but are the result of causes acting indirectly through the nervous system. We believe that there is another large class of cases in which the primary cause lies in the food. The error may be an excess of a single food element, an excess of all the food elements or an improper relation of the elements. It seems wiser not to think of these disorders as gastric or intestinal, but as disturbances of digestion due to an excess of fat, sugar, or proteids, as the case may be, or to overfeeding. There can be but little doubt that disturbances of the digestive secretions and injuries to the walls of the digestive tract develop as the result of the abnormal chemical changes which take place in these conditions. What are the symptoms of these injuries to the digestive tract and how are we to recognize them? We are not sure that we know. I am sure, for one, that I do not know. We believe that bacteria play a greater part in the production of these injuries and of the symptoms than do many others, and feel confident that the bacterial side deserves at least as much consideration as the chemical. It is very difficult to prove this, however, and more difficult to determine what part of the injuries are chemical and what bacterial. We believe further that there is a very definite class of cases in which the cause is certainly bacterial, and that the disorders due to bacteria should be subdivided according to the etiological organisms. Furthermore, the treatment in this class of cases must be based on the bacteriological etiology. It hardly seems possible to go further than this at present. It is even more difficult to give names to these various diseases. I, for one, am not at present prepared to attempt it.

70 Bay State Road.

URETHRAL AND PERIURETHRAL LITHIASIS.*

By Victor Cox Pedersen, A. M., M. D.,
New York.

As in all other organs of the urogenital tract urethral and periurethral lithiasis rest on three general bases. The first factor is disturbances of the metabolism of urinary excretion by which the chemical reaction and specific gravity are occasionally without, but almost invariably with infection so changed that precipitation occurs of salts normally in solution. The second factor is disturbances in the hydraulics and physics of the act or urination through natural variations in the calibre of the urethra or through changes of disease, such as strictures, dilatations, old abscess cavities, fistulæ, and the like, or through the deformities of anatomical abnormalities, such as diverticula or through the deformations of operations, each in its own way leading to arrest, retention, decomposition, and precipitation of the urine, with infection as the rule and without infection as the rare exception.

These two forms of disturbance might be called the primary pathology or pathogenesis of urethral lithiasis. While the results upon the tissues locally, after the stone has formed or become impacted, might well be termed the secondary pathology or sequels of urethral lithiasis. It will be the endeavor of this paper to adhere to these points of view.

The third general basis of urethral and periurethral lithiasis is of extraneous origin and comprises foreign bodies in the urethra, such as spicules of bone, shreds of dressings, pieces of stitches, fragments of wood, or surgical instruments, and other elements artificially introduced in the course of disease, surgical intervention, and unnatural practices. Such foreign matter becomes the nucleus of the calculus through the excitation of the two factors in the pathogenesis of stone just alluded to, with secondary precipitation of urinary salts upon this nucleus.

From the foregoing general bases it follows that urethral and periurethral calculi are either migratory with various degrees of impaction, or formative, otherwise called native—urethral stones, in the strict sense. Migratory concretions originate in renal, ureteral, and vesical pathogenesis through all the factors just laid down in the opening sentences of this paper to which is added migration of the stone from its seat of origin toward the outer world until arrested in the urethra at one of the natural narrowings in health, or at one of the pathologically altered points in disease.

The term encysted calculi is employed for stones in pockets and diverticula communicating with the urethra in either the anterior or posterior portion. Congenital diverticula of the anterior urethra usually occur between the glans and the scrotum, while acquired forms result from injury, such as rupture, cysts, scars, strictures, fistulæ, and the like. Prostatic urethral diverticula are also either congenital or acquired. Remains of the urogenital sinus constitute the congenital forms, while the acquired types are due to cysts, abscesses, etc., or, finally, to the secondary pathology of the stones themselves, leading to ulceration through the urethra and then to encystment. Some authorities maintain that these encysted stones have unusual and peculiar composition. Englisch,[1] in 100 specimens, found thirty-five per cent. of complex composition, twenty-seven per cent. phosphates, twenty-two per cent. urates, and sixteen per cent. oxalates.

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*One of the contributions to the symposium on Lithiasis of the Urogenital Tract, at the open meeting of the Section in Genitourinary Diseases of the New York Academy of Medicine, January 2, 1913.

In 1904, Englisch[2] collated notes of 400 cases and averaged the sites of impaction as follows: Membranous urethra, forty-two per cent; penile urethra, fifty-eight per cent.; distributed thus, naviculæ fossa, 11.2 per cent.; pendulous portion, 14.5 per cent.; scrotal portion, 13.7 per cent., and bulbous portion, 18.6 per cent. Englisch omits the prostatic urethra, perhaps through inclusion of this anatomical part under the term membranous, otherwise we could not understand why that very short portion which we term membranous should receive forty-two per cent. of his statistical impactions, whereas in common experience it receives, strictly speaking, none, because if the membrane arrests a stone it will necessarily lie proximal to it in the prostatic urethra.

Native urethral calculi occur through local formation by infection and alteration of the urine, so that precipitation of its salts is determined commonly around inspissated mucus or other products of inflammation, and occurs through changes in the hydraulics of urination so that retention, decomposition, and precipitation are favored. Unusually large bulbs, dilatations behind strictures, fistulæ, abscess cavities, and diverticula are the best types to mention of recesses favorable to such lithiasis.

From what has been said of the pathogenesis of urethral lithiasis it will be noted that such stones are also either endourethral, namely, originating in this canal itself, or periurethral, arising in tissues and organs physiologically or anatomically related with the urethra. Thus the prostate is the commonest source of such periurethral stones, and next, abscesses draining into the urethra, just as the kidneys, ureters, and bladder originate most migratory, endourethral calculi.

Strange as it may seem, urethral lithiasis affects child and adult alike. In children these stones are usually migratory, impacted, endourethral manifestations. In adults lithiasis may be endourethral, periurethral, migratory with impaction, or formative in origin. Likewise, the frequency in the adult of urethral disease permits a migratory, endourethral calculus with only moderate impaction and relative mobility to augment in a pouch made for itself by itself, set up inflammation and infection, and thus become a formative urethral stone which may, by ulceration, become finally a periurethral deposit.

The tendency of German authorities is to take the purely pathological viewpoint and classify urethral lithiasis into two groups: 1. The exourethral, which embraces those stones which arise from the upper urinary organs and from the prostate; and, 2, the endourethral calculi, including only those which strictly form within the cavity of the urethra itself. It seems wiser, however, to subdivide these pathological entities from the more practical standpoint of treatment into those of the anterior and those of the posterior urethra. Essentially each such subdivision embraces the classification of the German authorities. Let us consider each of these classes in turn as they appear in children and adults.

In small children practically all urethral concretions are of intrauterine renal origin, migrating outward and impacted at one of the normal anatomical constrictions, namely, at the bulb, penoscrotal angle, and meatus. In adolescents and adults, if the urethra has not been infected, the same facts are true as in children, but inasmuch as a very large majority of adults have, or have had, urethral and periurethral disease, the impaction occurs in relation with the sequels of such disease. The number of stones in children is usually solitary, occasionally a few, whereas in adults the number varies from one or a few to a dozen and even a urethraful. The size of the stone decreases directly with the number, so that single large stones are the rarest and multiple small stones the commonest.

The results upon the urethra of the impaction of stones as the so called secondary pathology, have already been explained. Like the symptoms, they are determined by the absolute or relative obstruction of the stone. Thus it is that in a healthy urethra a partially obstructing stone sets up all the primary pathological conditions which, if preexistent, would have caused the stone and which, by persistence, augment the stone itself and its effects locally. In this manner a kind of cycle of vicious events is locally started and repeated.

The syndrome of lithiasis of the anterior urethra with impaction is in young children only objective and consists in outcries from pain and severe struggle, and strain to pass urine which is voided, if at all, only in drops. In adults, however, the cases fall into two groups: First, patients who give little history until the urethral obstruction suddenly appears; and, second, patients who present a logical and consecutive story of varying degrees and forms, separated by widely uncertain lapses of time, brief in some, longer in other individuals, of renal disorder, pain, pus, blood, ureteral colic during migration of the stone into the bladder, vesical irritation of its presence in the bladder, and finally the urethral obstruction, absolute or relative in degree. Sometimes such patients have noticed the passage of urinary sand and stones, too small to obstruct, on several or many previous occasions.

The immediate results of the obstruction provide the next syndrome of symptoms alike in character, but more severe in children than adults, namely, shock, anuria, retention of urine, distended and tender bladder, rupture of the urethra, and extravasation of urine, especially in children. These are variously related with absolute obstruction. Slight or partial obstruction may give few symptoms so that sometimes stones may be retained with little inconvenience for years. Pluyette[3] and Jesjakaw[4] each report a case having retained calculi respectively fourteen and fifteen years. Inasmuch, however, as the degree of obstruction is rather high when not complete, dysuria, acute suppurative urethritis (distinguishable from gonococcic urethritis only bacteriologically), periurethritis with abscess formation, etc., rapidly ensue, more commonly in adults, because in children shock with total obstruction or anuria usually spells death for the patient.

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[1] *Archiv für klinische Chirurgie*, lxxii, p. 487.

[2] *Ibidem.*

[3] Report actually made by Guinard, *Bulletins et mémoires de la Société de chirurgie*, xxvi, p. 892, 1900.

[4] *Centralblatt für Chirurgie*, xxv, p. 565, 1898.

Physical examination in anterior urethral lithiasis presents to inspection the stone lying at the meatus, or as a swelling at any point along the urethra, with or without signs of abscess; and to palpation, a hard mass, immobile or mobile, with crepitus if the stones are multiple, and with the stricture distal to the stone or with fluctuation if an abscess is present. Instrumental examination includes the use of a large *bougie à boule* to define the obstruction, a small one, or a sound, to pass through it and touch the stone, and requires the urethroscope and x ray to verify these findings. Stones in diverticula may permit instrumentation without results altogether unless the stone is pressed toward the urethra in order to make contact with the examining sound.

I have had no personal observations of impacted urethral calculi in children, but have found in literature the subjoined case reports. I have endeavored to collect an illustrating and interesting series of cases in literature for both children and adults. It will be found that they are not complete in many instances, from necessity and from circumstances over which the contributors quoted doubtless had no control, but let it be known that omission from my paper of such scientific details in these citations from literature as uranalysis, urethroscopy, cystoscopy, radioscopy, and autopsy is due to their absence in part or whole from the originals.

In many instances the diagnosis and other knowledge of the case is quite complete without such an array of scientific data. On the other hand, as a matter of comparison and study it is to be regretted that such hiatuses are very frequent.

Advances in the diagnosis of lithiasis of the kidney, ureter, and bladder will henceforward make the occurrence of endourethral stones with impaction more and more rare, so that in medical centres they may almost entirely pass out of common experience. Endourethral and exourethral stones by formation, however, will be met with from time to time. It is for these reasons that illustrative cases in literature are not easy to meet, if due respect is had for careful selection.

Dugan,[5] probably before the Kentucky State Medical Association, notes four interesting examples of stone impacted in the urethra, with rupture and extravasation of urine in very young male infants—one four days old, one eight days, one a month old. The other two cases were in the same child, who was eighteen months old. He operated upon all four patients, doing five operations. The first two, almost newly born infants, died—one from the rupture of the urethra and extravasation of urine, the other from the operation or infection. No autopsies are described.

CASE I. Infant aged four days, normal at birth. Night of third day was seen to be straining. The following morning the penis and scrotum were swollen. The doctor was called and made diagnosis of ruptured urethra. Perineal section for stone, escape of urine. Flat, scalelike calculus the size of a grain of rice was found. Drainage; no sloughing; kidneys acted well; death in coma.

CASE II. Infant aged eight days, normal at birth. History same as in Case I. Rupture of urethra, which became infected. Incision made in perineum; escape of urine; stone extracted from penile portion; suppuration; death from shock or infection.

CASE III. Infant aged one month, stone recognized by palpation in penile urethra just in front of bulb; could not be moved; urethrotomy; recovery.

CASE IV. Infant aged eighteen months, dysuria and greatly distended bladder. Fever; stone felt in deep urethra; incision, with much difficulty in removal; uric acid with phosphate outside; perineal wound left open. Sound passed for some time to present traumatic stricture. Eight months later the same symptoms reappeared from presence of a new stone which was larger than the first and seated in the prostatic urethra. Removed with a scoop after perineal incision. As there were no evidences of infection the wound was closed.

The composition of urethral stones in childhood Dugan dismisses by saying that they consist of uric acid. They sometimes have a phosphatic exterior when the bladder is infected as in Case IV just described. There is no mention of radiographs or uranalyses in his case reports.

Wathen, in discussion of Dugan's cases, noted four operations on the same patient; first at thirty months for stone in bladder and urethra. A fistula existed for some years. When twelve years old this child had a calculus removed from the perineum, which began apparently in an old fistulous tract. A third operation for stone in the perineum was necessary many years later, and one year later stones were removed from the membranous urethra and bladder. He is now about forty years of age, and the x ray shows no stones anywhere.

Willmoth also reported a stone in the urethra of a baby, aged five days, large and impacted, two inches back of the meatus. The stone was split and extracted with mosquito forceps. The stone was three times the size of a cherry stone.

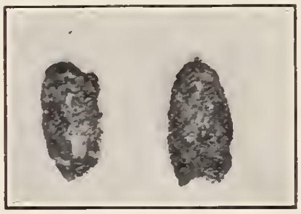
FIG. 1.—Impacted urethral calculus, external urethrotomy. Weight, 0.93 gramme. Composition, chiefly oxalate of lime, little uric acid.

I had a very interesting case of anterior urethral lithiasis with impaction in a Chinaman, who came to the genitourinary clinic at the House of Relief, March 27, 1906, with an interpreter who spoke English imperfectly. This limitation may have been the reason why we could not obtain a history of renal colic, pyuria, hematuria, and other details going with lithiasis in the upper urinary organs, but only a history of sudden and almost absolute urethral obstruction. The diagnosis was easy by external palpation of the body of the stone which could be distinguished, but not separated, from a stricture in front of it against which a *bougie à boule* of full size lodged and through which one of small size passed and grated on the stone. Admission to the hospital was declined. A small opening was made down to the stone, which was delivered by gentle pressure. Congestion of the mucous membrane, however, from the irritation of the stone caused hemic oozing, so that he finally consented to stay in the hospital over night. The incision healed quickly and without sinus and the stricture was dilated. Unfortunately, urethroscopy and cystoscopy and radiography were refused. The patient ceased treatment with a free stream of clear urine. Many months later the man, with gratitude, celestial in more senses than one, hunted me up and presented me with a very beautiful tea set, which is in fragrant contrast with the ingratitude of the average hospital patient.

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[5] *Kentucky Medical Journal*, ix, p. 523, 1911.

The literature contains the following very instructive case reports:

Abel[6] in commenting upon Dugan's contribution noted two cases in adults in which he crushed the stones with alligator forceps.

Peak, at the same meeting, reported a stone 1.5 inch long, funnel shaped, seated in both urethra and bladder from a patient suffering from multiple strictures of the urethra and the subject of several operations including suprapubic cystotomy.

Adrian[7] reports a case as follows: Patient, aged thirty-four years, never had gonorrhea, was married, potent, never ill, and had no history of trauma of perineum. Drank somewhat. Three years before had left sided renal colic, never repeated. Later difficulties in urination—twice complete retention (thirteen and ten hours). Spontaneous rectification. Much trouble subsequently, as if there were an obstacle in the urethra. One physician diagnosticated stricture. For six weeks past had been able to feel some object in the urethra which had increased in size. Object hard, round, and could be moved a few cm. For three months, in order to urinate, the patient had had to push back the object. On examination, the author felt the latter behind the scrotum, freely movable. The sound impinged against the object but gave no information. It was not thought wise to try to force it into the bladder. Endoscope showed a whitish gray object of smooth contour. Operation: Urethra dilated with Kollman-Oberlander instrument and with the latter in position the stone was forced forward through the length of the urethra, but could not be extracted until after meatotomy. Complete recovery from all symptoms including glycosuria. The specimen was 2.2 cm. long and 3.8 cm. around, had a urate of sodium kernel, a secondary deposit, and a tertiary deposit of calcium phosphate. It lay in the dilated bulb and was clearly of renal origin whence it migrated to the bladder and thence to the bulbous urethra in which mobility had permitted concentric instead of eccentric secondary tertiary layers as is the rule in most urethral calculi by impaction.

Gérard[8] describes six cases of anterior urethral lithiasis with impaction, summed up as follows: Five had a single stone, one multiple concretions occupying both anterior and posterior urethra, and only one a specimen of noteworthy size. All six were migratory, had sojourned for some time in the bladder; two were urates with clear urine, three were phosphatic with infected urine, and one patient had renal tuberculosis. Stricture was a conspicuous factor, both physiologically and pathologically, preventing spontaneous expulsion. The urate stones gave sudden pronounced symptoms without antecedents, the phosphatic calculi involved symptoms of the primary urinary infection and less definite symptoms of obstruction.

Hayden[9] reports five cases of lithiasis of the anterior urethra with impaction:

CASE I. Patient, aged thirty-eight years, was admitted for painful urination; had never had urethritis. History of renal colic (left) recurrent. About ten weeks previously a stone from the kidney seemed to pass into the bladder which expelled it some days later. No stricture. Olivary bougie touched a rough object in bulbous urethra which could also be felt from without. External urethrotomy with removal of a fifteen grain stone from the bulb. Stone probably from kidney, impacted later in bulb. X ray had been negative.

CASE II. Patient, aged forty-five years, admitted for painful and difficult urination. No history of renal colic. Urethritis in youth, "never fully cured." Had had both external and internal urethrotomy when in his twenties for relief from strictures. Five years ago litholapaxy under ether. Urinary troubles had been present constantly. Endoscope now showed a large stone in bulb with a tight stricture. External urethrotomy; stricture cut; stone of twenty-six grains extracted. Condition readily explained; a fragment of stone remained in the bladder after the stone crushing. Passing into the urethra this lodged behind the stricture.

CASE III. Patient, aged forty-five years; urethritis in youth and urinary troubles ever since. No history of colic Endoscope showed stricture 4 inches from meatus and back of this a stone which also could be felt from without. External urethrotomy, stricture cut, and stone (49 grains) removed.

CASE IV. Patient, aged sixty-three years. No history of colic. Urethritis in youth and urinary troubles since. Stricture two inches from meatus and another at bulbomembranous junction. Behind the latter a rough body palpable through perineum. External urethrotomy.

CASE V. Patient, aged sixty-three years. Neither renal colic nor gonorrhea; troubles of short duration only. Four hard objects in pendulous urethra. Urethra anesthetized and stones removed with urethral scoop and manipulation; infected bladder cured. Source of stones obscure.

CASE VI. Patient, aged fifty years, gave history of colic but none of urethritis. Had just undergone a paroxysm of colic, followed by retention. Sound encountered a rough body in prostatic urethra. External urethrotomy; two stones removed with difficulty; escaped from the kidney they had been grasped by the prostate in attempts to expel urine.

The third general basis of lithiasis in the urethra was in this paper previously described as of extraneous origin and as of foreign bodies for nuclei. The following two cases in literature are of great interest, in that they concern anterior urethral cases:

Morton[10] reports the case of a man, forty-eight years old, perineal sinus. Probe encountered stone in urethra. Twenty-six years before he had had an attack of retention and introduced into his urethra a homemade wooden sound which broke off inside. He then got a metal catheter No. 4 and used it, knowing there was a piece of wood in the passage. His catheter struck an impediment which he took to be the piece of wood, but which in reality was a stone. At last an abscess formed and opened in the perineum. Pus and urine escaped. The author operated and found a large stone in a self-made urethral pouch. The fragment of wood had served as a nucleus for the stone.

Adrian[11] notes another case with a fragment of bone as nucleus in a man, fifty years old, once the victim of abscess in the sacrogluteal region with evidence of bone exfoliation. Vesical calculi with bone nuclei are common. Adrian removed this specimen by external urethrotomy. Caries of the tuber ischium was shown to have been the source of the abscess from which the spicule must have burrowed into the bladder and migrated into the urethra or it may have lodged in the periurethral tissues first and then have ulcerated into the canal. The stone when removed was the size of a cherry pit and occupied the bulbar sinus as in Case I (report of Adrian above). The shape of the stone corresponded behind that of the sinus, while in front it projected into the urethra as a pointed segment. The mineral portion was phosphate of calcium and magnesium.

Lithiasis of the posterior urethra, like that of the anterior urethra, involves impaction and formation as the two main causes and endourethral and periurethral sites as the chief locations, and affects children very rarely, but adolescents, adults, and the aged much more commonly as the sequel of antecedent disease processes. Its products may also be endourethral and exourethral calculi, exactly as in the case of lithiasis of the anterior urethra. The exourethral manifestations are almost invariably due to disease in the prostate or to operations upon this gland.

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[6] *Kentucky Medical Journal*, ix, p. 523, 1911.

[7] *Zeitschrift für Urologie*, iv, p. 481, 1910.

[8] *Echo médical du Nord*, xv, p. 600. 1911.

[9] *Transactions of American Association of Genitourinary Surgeons*, iv, 13, 1909.

[10] *Bristol Medicochirurgical Journal*, xxviii, 127, 1910.

[11] *Ibidem.*

Endourethral calculi of the posterior urethra are strictly those of the prostatic urethra, as the membranous portion may obstruct, but does not harbor these concretions, which are almost always migratory with impaction in the normal urethra, but formative in the anatomically abnormal or pathologically deformed channel. They are, therefore, subdivisible into free, diverticular, and urethrovesical calculi, any and all of which may be solitary or multiple.

Free endourethral calculi of the prostatic urethra are most common; lie loose in the dilated urethra; are, as a rule, small and multiple, in apposition, and facetted, the greater the number the smaller the size and vice versa, and have weighed from 200 to 300 grains. These calculi have descended from the bladder and have conserved their mobility. In front, the membranous portion arrests them. Between this and the neck of the bladder they accumulate, the prostate undergoing dilatation. A sort of gutter for the passage of urine may be present.

Diverticular endourethral calculus of the prostatic urethra is more rare, the calculus being inclosed in a urethral diverticle, appearing in the endoscope as part of the urethral wall, the rest being hidden in the prostatic tissue, and possibly having the shape of a gourd. These stones have either lodged in a natural diverticle or have formed a cavity for themselves in which case they might be also regarded as periurethral. As they increase in size they tend to project into the lumen.

Urethrovesical calculi in certain cases may lie in both the urethra and bladder and project into the latter. There may be a groove or a constriction which corresponds to the neck of the bladder and gives to the calculus an hourglass shape. It cannot be said whether these stones originate in the urethra or bladder. They cause various disorders of urination.

The symptoms of lithiasis of the posterior urethra of endourethral type may, as in the anterior portion, be very slight owing to tolerance of the normal canal, and give a negative or a doubtful history of the impaction of the stone. Another group of cases with a similar history present themselves with a chronic abscess and fistula at the bottom of which a probe will meet the stone. The largest number of patients, however, give a more or less definite history of recurrent or chronic and relapsing urinary disorder, punctuated with attacks of pyuria and hematuria, ureteral spasm, vesical irritation, etc. Then comes a crisis which commonly marks the passage of the stone from the bladder and its arrest in the prostatic urethra, soon followed by dysuria, infection, prostatic pain, and pain on defecation. A purulent, urethral discharge is an important feature, requiring bacteriological investigation to distinguish it from gonococcal invasion. Physical examination involves the use of the sound, urethroscope, cystoscope, rectal examination, bimanual examination with the sound in the urethra, etc. In these cases the condition of the prostate varies from congestive engorgement, due to infection, generalized, or focalized as an abscess, to absolute enlargement of chronic inflammation and later atrophy. If the stone has resided long enough to ulcerate by pressure into the prostatic substance the gland may be much thinned to a mere abscess wall and the calculus passes into the periurethral class. Radiography is of more value in vesicoprostatic stone and periurethral stone, as the solitary endourethral concertions are apt to escape detection. Crepitus is present only with multiple calculi or when the condition is complicated with incrustations of the urethral wall.

The following more or less unique cases of endourethral lithiasis of the prostatic urethra are worthy of note. Muller[12] describes two:

Case I. Patient, aged thirty-seven years. Urinary troubles for six weeks. Imperative desire to urinate, painful urination, etc. *Bougie à boule* showed stricture and back of it a sensation of calculus. Perineal incision; stone size of large hazelnut in prostatic urethra; recovery uneventful.

Case II. Patient, aged eighteen years, history similar to that of foregoing case. Had gonorrhea two years before and urinary troubles ever since. *Bougie à boule* revealed stricture and back of it an obstruction thought at first to be stone, but later a second stricture of the prostatic urethra. Operation for relief of latter, the urethra being split to the prostate. Stone found imbedded at the neck of the bladder.

Spittel[13] reports a case, of a man, aged twenty years, with frequent micturition, scalding, and sense of "scraping" extending from anus to meatus; stream thin, weak and turbid from phosphates; could urinate well in lateral decubitus; some dribbling between urinations; bladder not distended; rectal examination gave crepitus, due to friction of two stones in prostatic region; confirmed on sounding. A third stone in the bladder. Suprapubic cystotomy and removal of the three stones, one from the bladder and two from prostatic urethra. The latter were drawn backward into the bladder; they were facetted so that their surfaces corresponded, and were composed of phosphates and carbonate of lime. Spittel believes that these stones had formed primarily in the prostate. The phosphaturia preceded the calculus formation and was evidently due in some manner to jail life, the patient having served a year's sentence, with hard labor, limited to certain dietetic articles only, and had suffered flogging, etc.

One might comment on this case by saying that calculi do not pass from the urethra into the bladder except by artificial means.

Pepper[14] reports the case of a Maine lumberman, aged twenty-three years, with severe pain in scrotum. Mass therein had been slowly enlarging. Right testicle had been removed in childhood—reason unknown. Dribbling of urine so that he wore a urinal; hernia excluded and an abscess diagnosticated. Needle drew off pus; cut down on abscess and introduced finger; could then feel urethra and a hard mass therein, regarded as a calculus; urethra incised and large stone extracted, 1.5 inch long and 0.75 inch thick. Retention catheter left in. Capacity of bladder small.

Periurethral lithiasis of the posterior urethra embraces two common forms, viz., calculi of the prostate itself, and calculi of the periurethral tissues after injury and operation. The cause of these stones is commonly formative after infection, either by initial deposit or by increase in the size of a stone which has ulcerated out of the urethra after impaction. True[15] prostatic concretions are multiple. Cameron reports 300, Paulicki[16] 240. In composition they are usually calcium prosphate or calcium carbonate about albuminous nuclei. They are frequently not suspected until met during prostatectomy, having determined few antecedent symptoms, or they may be associated with chronic prostatitis. The laminated prostatic corpuscles, corpora amylacea, etc., may, by apposition of a few dozen, become large concretions, of pea size for example, in color milky white, yellowish, or dark brown, of fatty lustre, translucent periphery, and brittle consistence. They may lie in the acini and excretory ducts in numbers of one hundred or more, migrate thence into the prostatic urethra, and be found about the colliculus. They appear at any period of life, but are most common in the prostates of old age. Through infection they may be covered with crusts of the lime salts and thus become true calculi of essentially prostatic origin, as distinguished from endourethral stones which may ulcerate into the prostate. The lime salts deposited are mostly basic phosphates, carbonates, triple phosphates, and sometimes oxalates, and change the appearance and consistence of these bodies so that they are hard and no longer translucent, white, brownish, or yellowish. On cross section they have a radiate striation. If single they may reach even the size of a hen's egg or be very numerous, small, and facetted. The prostate as a whole or in part may be involved or multiple stones may be individually encysted or occupy a common cavity.

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[12] *Lyon médical*, cxvi, 788, 1911.
[13] *British Medical Journal*, 1912, i, 8.
[14] *New England Medical Monthly*, xxix, 385, 1910.
[15] *Glasgow Medical Journal*, vi, 273, 1874.
[16] *Wiener medizinische Wochenschrift*, xviii, 1368, 1868.

Radiography seems to reveal two types, one diffuse and of hemp seed size, common in old age. The other shows the stones crowded together on both sides of the median line and appears at any period of life.

It is well recognized by all authorities that these concretions cause chronic prostatitis with destruction of the secreting portion, cyst formation, and atrophy, until only a thin wall of glandular structure or the capsule alone remains, or with abscess and sinus formation at any point.

The symptoms of true prostatic lithiasis may be insignificant and pass unnoticed during life. On the other hand, large, solitary, or multiple calculi with prostatitis may provoke such pronounced symptoms as difficult, painful, and frequent urination, pain in perineum, prostate, and rectum radiating down the penis and thigh, obstipation and painful defecation, purulent urethral discharge. Rupture of the stone into the prostatic urethra shows itself as acute posterior urethritis or as acute retention, through the size of the stone or swelling of the mucosa. If small, the stone may escape with the urine. Abscess and external fistulæ may result.

The diagnosis of true prostatic calculi may be easy by palpation through the rectum if the stone is large and the prostate atrophic, or if the gland is nodular through multiple calculi, which may also add crepitation. Or the diagnosis may be extremely difficult if the stones are small, centrally located, and individually encysted. The sound will detect any which project into the urethra or will aid as a means of bimanual examination, a procedure which should never be omitted. The acoustic explorer, designed by Poncet, the urethroscope, and cystoscope are very important. Radiography is also of use where other methods may not have been especially satisfactory.

I had the following interesting case of true multiple intraprostatic lithiasis, without operation, of which the notes are incomplete, because urethroscopy, cystoscopy, radiography, and other methods of examination were refused. The patient was a pensioner of Sailors' Snug Harbor, robust, florid, and jolly, with an enlarged, somewhat irregular prostate according to rectal palpation and pyuria, but hardly any urethral discharge. He brought a boxful of small stones, representing what he thought to be a fourth part of the total he had voided. They commonly appeared during urination, especially in the midst of exertion, such as swimming or defecation. The first stone he passed appeared during urination in the water while swimming and was accompanied by pain as it travelled to the meatus, where it lodged, almost blocking the stream entirely and whence he fished it with thumb and forefinger after retiring to a dressing room. He either pressed them from the urethra with the hand or fished them out with the fingers. He seemed to attach little importance to them as his manner of carrying the specimen and his indifference to medical examination and treatment show. Fig. 2 shows this collection of calculi very well indeed.

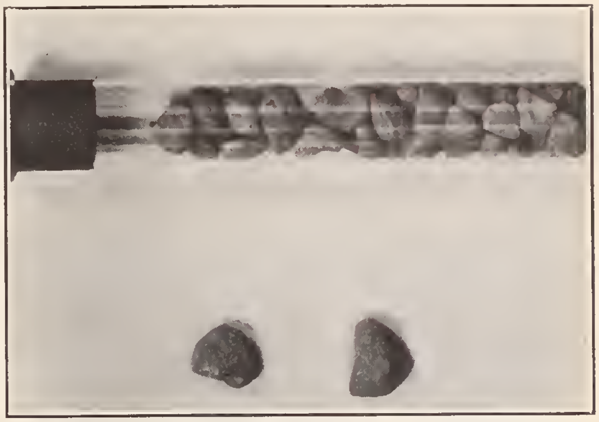

FIG. 2.—Prostatic calculi, voluntarily voided. Weight, 7.36 grammes. Composition, uric acid and urate salts. Specimen one fourth of whole.

Jeanbrau[17] gives a case report of a patient troubled for six years previously with incontinence and difficult urination. Benefited at the time by irrigation of bladder. Troubles recurred from time to time. When seen by author symptoms first suggested old urinary tuberculosis. Vesical capacity was small and cystoscope could not be used; prostate small and hard; testicles healthy; no tubercle bacilli; no history of gravel; no hematuria. Animal inoculation; while waiting for result was treated for tuberculosis. In the meantime sounding chanced to detect calculi in prostatic urethra. Perineal section; no stone palpable in urethra; prostate split and stone found size of a hazelnut, lying "like a stone in a fruit"; recovery uneventful; no statement as to source of nature of stone; urine was alkaline, with large amount of mucus.

J. Lynn Thomas[18] gives descriptions of three cases:

CASE I. Man, sixty-three years old, had 101 prostatic calculi and a rectourethral fistula. Had had an obstruction for twenty years and used catheters. For months had been passing fecal matter in the urine. Prostate enlarged and tender; a No. 6 sound could enter the bladder. Suprapubic cystotomy; vesicourethral opening found contracted and rigid; incised and the finger introduced, thus entering a prostatic pouch filled with calculi; cavity infected so that author made a counter opening and expelled 101 stones through one or the other avenue; one drain through both openings. Rapid recovery.

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[17] *Montpellier médical*, *xxxii*, 303, 1911.

[18] *American Journal of Urology*, v, 224, 1909.

CASE II. Man, aged sixty-two years. Urinary disorders for twelve years. Used catheter at times. Diagnosis had been enlarged prostate with septic cystitis. Suprapubic cystotomy; a stone extracted from the bladder; finger in rectum found enlarged prostate; inspection of bladder showed a sacculation between bladder and rectum containing a stone to extract which it was necessary to open the prostatic urethra, whereupon eight small facetted calculi were found.

CASE III. Spiculated calculus imbedded in the prostate. This was accidentally discovered in the course of an exploratory suprapubic cystomy. The prostatic urethra was dilated with the finger and the stone recognized and removed; perineal drainage; recovery.

Lund[19] gives an account of two interesting cases:

CASE I. Man, aged sixty-nine years, had had frequent micturition for years; prostate per rectum found to be the seat of a hard nodular formation; bladder slightly trabeculated; no cystitis; diagnosis "malignant prostate." Prostate enucleated through median perineal incision; many little black concretions seen; in certain cases these stones caused irritation and abscesses.

CASE II. Man, aged sixty-five years, had had for years frequent, urgent micturition, with recent attacks of retention. An enlarged, smooth prostate was discovered per rectum, enucleated, and found to contain numerous prostatic stones of reddish hue. The presence of these stones apparently caused an edematous swelling (the organ was actually small). The prostate was inflamed and a small abscess had formed. The calculi lay in part free in the urethra, but were also distributed throughout the prostatic gland and ducts.

Dugan[20] presented a collection of seventy-nine stones all from the prostate of an old man. The gland had been transformed into a pouch. Two physicians had examined the patient very carefully, under ether, and had decided that calculi were absent. The sound should have been passed and then with the finger in the rectum presence of the stones would have been recognized. The man, already in a coma, was operated on and death resulted in forty-eight hours.

Professor Pousson[21] relates the following two cases of intraprostatic calculi:

CASE I. Male, fifty-two years old. Troubled for several years with frequent micturition, getting up several times nightly; urination painful with terminal hematuria; sense of weight and discomfort in perineum and anus, aggravated to pain during defecation; patient became very nervous, getting no relief. On examination the urine was found to be normal; olivary bougie No. 18 revealed two projections in the bulboperineal region; no membranous spasm; on rectal touch there could be felt a little to the left of the middle line two small indurations included by the parenchyma. There was no protuberance. Pressure with the finger caused much pain. Diagnosis of intraprostatic calculi. Perineal incision and division of prostatic tissue disclosed two whitish concretions each as large as a large pea, very irregular in shape and bristling with sharp points. They were dry and friable, went to dust upon compression between the thumb and finger and were composed entirely of calcium phosphate.

CASE II. Man, fifty-four years old. Diagnosis had been made of probable vesicoprostatic tuberculosis; pyuria; on the other hand his general condition was excellent. No. 20 olivary bougie passed easily, causing no pain. Capacity of bladder not diminished. Rectal touch perceived two nodules, very sensitive to pressure. The author sought to scratch possible concretions with his finger nail and obtained the desired sensation. His diagnosis, therefore, was intraprostatic calculi. As the bladder was already infected suprapubic cystotomy was performed; bladder free from stone; a few ulcers in the trigonum were curetted and cauterized with the red hot iron; posterior urethra incised and concretions found and extracted with difficulty; bladder drained with Guyon-Perrier tubes; the wound became infected and a retention catheter caused orchitis. Ultimate complete recovery. The calculi were similar to those reported in the first case.

The second class of periurethral lithiasis of the posterior urethra concerns deposits in deformities through anatomical abnormalities or operative procedures.

The following very significant case of lithiasis after prostatectomy focalized in the deep operative field is reported by Webb.[22] Patient, aged sixty-eight years, seventeen years ago had undergone perineal prostatectomy (one of the first done in America, by the late Dr. Samuel Alexander). Was free from prostatic trouble for several years; symptoms then reappeared and continued; never used the catheter but wore a urinal all the time for the dribbling urine. When examined found to have infected urine and ascending nephritis; only a filiform bougie could enter the bladder at first; when a follower was passed a sensation appeared to indicate a stone in the bladder; radiography showed large oval mass, apparently in the latter. Rectal touch showed hard, insensitive mass in prostate. It was thought latter could not have been removed. Suprapubic cystotomy found the bladder empty. Seemingly a large indurated prostate was still present, in attempting to remove which it was found that the supposed gland was a mass of thirteen stones, the facets of which were adapted to one another. Stones were phosphatic, and were removed easily with relative recovery.

The relation between radiography and lithiasis of the anterior and posterior portions of the urethra has already been alluded to. It is a procedure not often employed on at least two grounds, first, because the diagnosis may be fixed without it, and, second, because competent radiography is so expensive in time and means that it is usually omitted when the case may be otherwise decided.

This subject is definitely brought out by the following case report from Pasteur.[23] Man, fifty-odd years old, consulted author who took a radiograph and got multiple spots in the pelvic oval; patient had had gravel and renal colic; radiographs at that time negative (save for possible ureteral shadow) as far as kidney was concerned; lower down certain shadows led to probable diagnosis of vesical calculi. The author, to confirm the diagnosis, passed an explorer and got friction in the posterior urethra, while the bladder was found empty. Diagnosis of prostatic calculi was made. The prostate was hypertrophic with residual urine in the bladder. Retention catheter worn and condition improved. By means of a large sound the prostatic stones were then forced into the bladder which, when filled with liquid, was able to expel them. Cystoscopy showed that nothing remained behind.

This case was one of extraprostatic stones which, having migrated from the bladder, were arrested in an enlarged prostate. As an example merely of this common occurrence the case would not be worth reporting. The point of interest is that the arrest of stones in a prostate, the seat of simple glandular hypertrophy, the indication might by some be regarded as perineal prostatectomy. In this particular case operation of any kind was refused. Could radiography have made the correct diagnosis? For this purpose the bladder would have to be cut out of the field by filling with bismuth, suspension, etc. On the other hand, as far as this case went, the exploring olive was amply sufficient. For exact diagnosis it is never well to reply too much on a single test, like radiography, to the exclusion of all others.

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[19] *Boston Medical and Surgical Journal*, clxv, 170, 1911.

[20] *Ibidem.*

[21] *Association française d'urologie*, xv, 725, 1911.

[22] *Journal of the American Medical Association*, lvii, 2082, 1911.

[23] *Paris chirurgical*, iii, 1036, 1911.

A shadow of stones in the posterior urethra and prostate would necessarily be more or less associated with the shadow of the symphysis pubis and perhaps at times difficult to distinguish from it.

TREATMENT.

The treatment of urethral and periurethral lithiasis is preventive and curative. Preventive measures imply the management of errors in general and urinary metabolism characterized by intestinal autointoxication, which almost invariably invites colon bacilluria, and by excess of crystals if not actual presence of gravel in the urine. Prevention also regards careful after treatment in any urogenital surgical condition, so that foci and pockets of precipitation may be properly dealt with.

Curative treatment acknowledges two classes of cases, those of emergency and those of election type. Emergency cases are characterized by acute, severe symptoms of obstruction, anuria, infection during a few days or even hours, and they naturally belong to childhood and old age. In other words, urethral lithiasis is another condition which the extremes of life tolerate badly with a fatal issue all too common.

In adolescents and adults other than the aged emergency cases arise in the same manner and from the same causes, but usually as an addition in the form of urinary crisis during a longer or shorter history of antecedent disorder. Such crises also create emergency cases for immediate operation.

On the other hand, a very large group of cases are of the election type and permit the surgeon to proceed more or less at his own choice as to time and means. In this sense, therefore, the treatment of such cases of lithiasis of the urethra rests on the presence or absence of complications. If the stone is mobile, recently impacted, and without total obstruction to the urine, most authorities will agree that an effort should be made to pass it forward out of the anterior urethra or backward into the bladder out of the posterior urethra by instrumental or digital manipulation. Delivery from the anterior urethra may often be made through the aid of meatotomy, crushing with alligator forceps, and dilatation of the obstructing stricture with the straight sound. Large, blunt pointed sounds may be used to retire stones into the bladder, where they may be crushed and pumped out. The disintegration of stones may be easily accomplished with the fulgurating wire through the cystoscope in the bladder or through the open end urethroscope in the urethra. Almost all uncomplicated cases will yield to the foregoing rational measures. The complicated cases, however, which almost always have infection as the primary cause of the complication, require open operation, removal of the stone, and drainage of the infected field, which necessarily embraces, secondarily, the anterior urethra, the posterior urethra, and often the bladder.

If some of the important points touching urethral and periurethral lithiasis have been even partially covered by this paper, the author will feel repaid many fold for time and labor.

45 WEST NINTH STREET.

SCLERODERMA INUSITATUM.

By WILLIAM P. CUNNINGHAM, M. D.,
New York,
Clinical Lecturer in Dermatology, Fordham University; Clinical Assistant, New York Skin and Cancer Hospital.

Scleroderma is sufficiently rare to warrant the description of any case that may occur; and the case I have to describe presents so many unusual features that it is well worth our careful consideration.

CASE. The patient, S. M., spinster, German, aged fifty-two years, had always been a housemaid. Her general health had been excellent with the exception of rheumatoid arthritis, limited to the fingers, and scleroderma limited to the feet and legs. The rheumatoid arthritis enlarged most of her finger joints and caused a deviation of the phalanges to the ulnar side. This can be seen in Fig. 1, where the sole of the foot presents and the hand is seen holding up the dress. One little finger is fixed flat in the palm transversely across the metacarpophalangeal articulations as in Dupuytren's disease. But the fingers, despite their deformity, are pretty useful yet; and there is not the

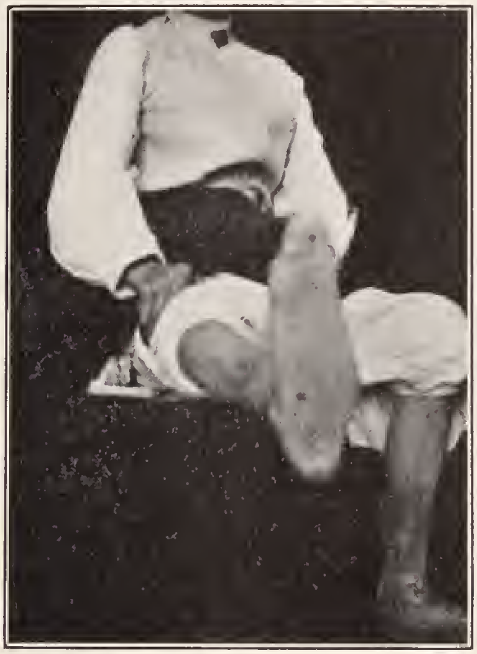
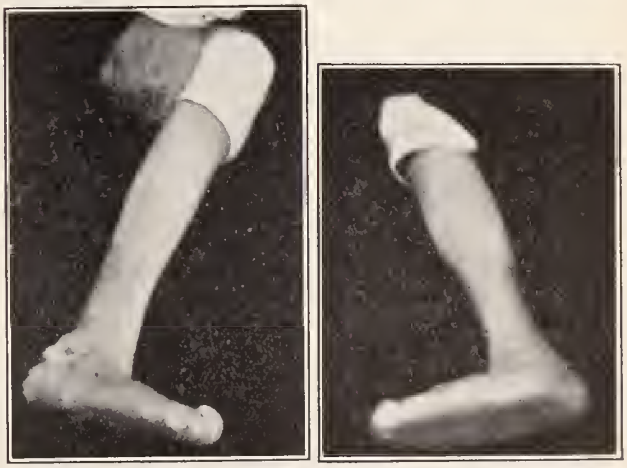


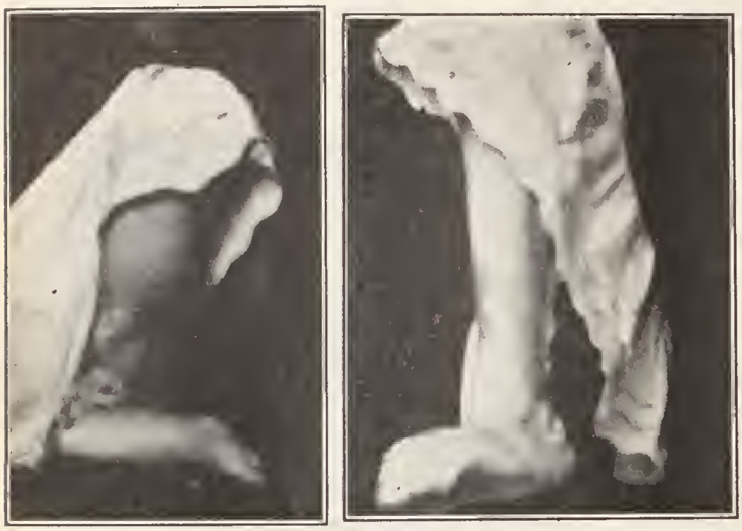
FIG. 1.—Showing sole of right foot.



FIGS. 2 and 3.—Showing limitation of scleroderma to foot and lower third of leg.

slightest trace of scleroderma in them. The skin is supple and soft.

The scleroderma is limited to the feet and lower third of the legs (see Figs. 2 and 3, 4 and 5). There is a sharp line of demarcation encircling the calf, about one third of the way to the knee. This line is about at the same level on both legs (compare Figs. 3 and 4). It is comparatively even all the way round. The skin immediately below it is a dead sort of pink and fairly firm. As you feel your way down the limb the density steadily increases. At the ankle there is no joint to be made out, just an irregular enlargement, dirty white in color, hard as stone, and etched with shallow ulcers, from one half an inch to one and one half inch in diameter, round or oval, with sluggish fibrous bases, yielding little or no discharge, and causing very little pain. There are five of these on the left limb and two on the right. The right foot from ankle to toes is an immovable mass with the toes compressed into a tapering bunch, giving the impression of a foot squeezed in a vise and set in cement. The toes are traceable to some degree, but most of their outline is lost in the compression and condensation of the tissues. The general aspect of the skin is a dirty white, shot with a few spots and streaks of lilac and brown, except in the neighborhood of the ulcers where the pigmentation is more marked.



FIGS. 4 and 5.—Scleroderma of left foot and lower third of leg, showing line of demarcation.

One toe is fixed at right angles across the others like the finger in the palm.

The left foot shows about the same changes, though not to so marked a degree. The outline of the toes is better preserved. There is the same density, the same appearance of having been squeezed in a vise and set in cement. Note especially that I have had the soles of both feet photographed, to show the involvement of these regions in their entirety. This is particularly interesting in view of the fact that the soles are very rarely involved in scleroderma. The patient's mouth is undergoing some changes worth recording. The interdental spaces are widening without the loss of any teeth. Her facial appearance has changed considerably in consequence of the alteration in the shape of the superior maxilla which seems to have grown larger and more arched. But there is no scleroderma to be detected in the tissues of the mouth.

The disease began fifteen years ago. The rheumatoid arthritis and the scleroderma appeared almost simultaneously. The patient noticed a small hard spot on the inner side of the foot. It was pinkish and gradually spread, becoming whiter as it did so. Almost imperceptibly the disease extended in all directions from the initial focus up the leg, down to the toes, across the dorsum and under the foot.

An inspection of the pictures will show little nodular elevations on both feet. These are about the size of hazel nuts and somewhat softer than the surrounding skin. This is the way the ulcers begin. These ulcers have been coming and going for several years. They are cured by care and cleanliness and relapse promptly on suspension of treatment. The special points of interest about this case are: 1. The limitation of the scleroderma for fifteen years to the legs, not a usual location; 2, the involvement of the soles, quite an unusual location; 3, the decidedly sharp line of demarcation between the diseased and healthy skin; 4, the almost exact level of that separating line on both legs; 5, the association or rather commingling of scleroderma, rheumatoid arthritis, and Dupuytren's contraction in this one patient.

The hands are affected with rheumatoid arthritis and Dupuytren's contraction, but not with scleroderma. The feet are affected with scleroderma and Dupuytren's contraction, but not with rheumatoid arthritis.

Reflecting that all three of these diseases are referred to a nervous cause, their conjoint appearance in one patient is somewhat suggestive. Is it not possible that the etiological factor (whatever it may be) which is responsible for one may be responsible for the others; that operating under different conditions it produces one or another of the three diseases, and that in my patient the conditions were such that it produced all three diseases in the one subject? Obviously this is mere speculation, but it certainly is odd to see a combination of such rare diseases, all referred to a nervous origin, and it very naturally aroused the train of thought herein developed.

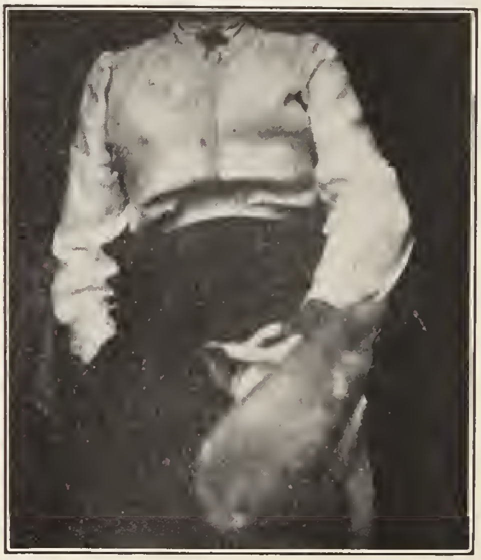


FIG. 6.—Scleroderma affecting sole of left foot.

With regard to the treatment, none is of any avail.

Scleroderma sometimes improves, sometimes gets well, but more by "good luck than good management." We are as ignorant of the remedy as we are of the cause. Whenever we seem to succeed in our empirical applications, it is simply another case of *post hoc, propter hoc.* We do not know how it happened, but we assume the credit. When the same brilliant treatment is tried again, it fails lamentably. The plain truth of the matter is that our knowledge of the subject is limited strictly to the manifestations.

315 West Fourteenth Street.

INDURATIVE HEADACHE.

By Augustus Maverick, M. D.,
San Antonio, Texas.

The ordinary case of two hour headache has little medical interest; the victim has no trouble in making his own diagnosis and in finding a suitable cause, and as for the treatment, any amateur healer is glad to give him the necessary details. On the other hand, the headache which persists off and on for months or years and which changes the optimistic philanthropist into a bomb throwing anarchist, has a different aspect. It is among cases of this kind that the physician often has the opportunity of enjoying that most fascinating of all sport, namely, finding the cause or making the right diagnosis.

No physician has failed to have at times a really mysterious case of headache which baffled him in every diagnosis he could muster forth, in spite of which the unrelieved sufferer kept coming back to see him as regularly as the milkman.

First, of course, he made a general physical examination and noted all the patient's habits and former troubles. His thoughts probably turned first to the toxic causes of headache. The patient's habits, however, appeared to be good and his occupation seemed to be beyond suspicion. He used tobacco and alcohol little or not at all; he never touched the coal tar preparations, opium, arsenic, or other drugs; and he rarely breathed foul air or poisonous gases. There was also nothing to suggest lead poisoning, the gums showed no dark line, and the blood examination no tattooed red cells. Repeated analyses of the urine eliminated uremia. His appetite was good, dyspepsia and constipation unknown. There was no personal or family history of gout. Examination of the urine had proved the absence of diabetes and of oxaluria; and of the blood, absence of anemia and polycythemia. Finally, use of the thermometer over a certain period, together with the absence of other symptoms, had convinced the physician of the absence of any septic process, tuberculosis, malaria, or other chronic infection.

Next, the physician, following the textbook scheme, turned his attention to the possibility of some organic affection of the brain, the meninges, the endocranial vessels, the skull, and the organs of special sense. The patient had never experienced a severe injury to the head. There were no symptoms of pressure on the brain, no cerebral vomiting, no choked disc, no local palsies, and the physician felt safe in leaving out of consideration any intracerebral mass such as a new growth, an aneurysm, an abscess, or a cyst. No symptoms were present to indicate some general organic nervous disease like general paresis, tabes dorsalis, syringomyelia, or desseminated sclerosis. A negative Wassermann and Nuguchi luetin test or a trial of specific treatment left out syphilis (gumma of the brain, syphilitic endarteritis, syphilis of the meninges, tertiary syphilis of the skull). Absence of all cerebral symptoms eliminated chronic endocranial periostitis and pachymeningitis of nonspecific origin as may occur after an attack of some infection like influenza; and also eliminated hemorrhage, thrombosis, and embolism of the brain vessels. General arteriosclerosis failed as an explanation when the blood pressure was found normal. If in the beginning the headache had taken on an aspect very suspicious of cerebrospinal meningitis, examination of the spinal fluid would have aided in preventing the diagnosis. Careful examination had convinced the physician that there was no apparent deformity or inflammation of the skull itself. The eye man now took a hand and tested for errors of refraction, examining at the same time for choked disc, and for iritis, glaucoma, and other eye diseases capable of causing headache. Whether the patient was doomed to wear glasses or not, made no difference with his headache, for this was not one of the many cases in which the eyes are to blame. The ear and throat specialist now searched in vain for adenoids, polypi, nasopharyngeal catarrh, disease of the frontal, ethmoidal, and sphenoidal sinuses, and for middle ear and mastoid trouble. Then the dentist made sure the teeth were beyond suspicion.

At last, in his dilemma, the medical man fell back for his diagnosis upon that third group, the functional causes of headache. First of all, he made certain that the character of the attacks in no way resembled those typical of migraine. The sphygmomanometer had already convinced him that an abnormal blood pressure was not to blame and there was no sign of other circulatory disturbance which would produce a venous congestion of the brain. All history of excessive mental strain, proximity to loud noises, the carrying of weights on the head (e. g., a heavy hat), or a former heat stroke, was absent. The oculist had eliminated eye strain, and the general examination, if the patient was a woman, had made sure of the absence of menstrual disturbances, uterine displacement, or other apparent abnormality of these parts. The pain not being confined to the ramifications of a definite nerve trunk, with sensitive nerve points, made pure neuralgia improbable. The patient did not suffer from other functional nervous trouble, there was no epilepsy nor mild attacks of petit mal that would be followed by headache. The general control of the emotions appeared good, and for this reason the physician did not feel satisfied in resting on hysteria or neuresthenia as his decision, although the temptation by this time would have been great.

Having thus covered the field of headache causes rather thoroughly without satisfying himself or his patient, our hero's next move would probably depend a great deal on his special professional hobby. If he owned a private surgical hospital, the patient would run a certain risk of losing at least an appendix; if he was a disciple of the Metchnikoff school he would not forget to turn loose his Bulgarian dogs of war; or if he was merely a man of modest tastes he might prefer the term "idiopathic headache" as sounding very elegant. Before he makes his final step, however, let him rub his finger over the scalp where the pain is worst and if he feels little hard, tender lumps or strands slipping beneath his finger under the skin, his diagnosis is made—the case is one of indurative headache. Some readers will now exclaim, "I know all about indurative headache and would have thought of that the first thing." Let these pass on to newer fields, for this article is dedicated to the majority of practising physicians to whom indurative headache is unknown or unappreciated.

Indurative headache, or rather "chronic muscular rheumatism" or "nodular fibromyositis," to which group this affection belongs, has been recognized and treated for the past one hundred years, at least since the writings of Balfour in 1816. For the last thirty-seven years (led by the Swede, Helleday), the Scandinavian school alone has given this subject the attention it deserves. Following their lead, German writers have taken it up and considered it thoroughly. In our own modern medical literature, as well as in French, the whole subject has been sadly neglected, remembered by only a few widely scattered articles in the journals and an occasional mention in the textbooks. We are concerned here with only one part of the whole subject, but when no less an authority than Edinger avers that two fifths of all headaches are of this indurative type, and when we realize the importance of headache in general, we can readily afford to give this affection an independent and conspicuous place in our rogue's gallery of common ills.

Indurative headache, *musculärer Kopfschmerz* of the Germans, and *céphalée musculaire* of the French, may be defined as a painful affection of the muscles in back of the head associated with sensitive nodules or indurations in the muscle sheaths and surrounding fasciæ. The victim complains of a severe neuralgic headache, which may be confined to the back of the head, but is also sometimes felt over the forehead as well, and frequently down the back of the neck and between the shoulder blades. The attack often starts with painful stiffness of the posterior neck muscles, an important diagnostic point. In a typical case the pain is excruciating; it may be almost constant the year around or recur at odd intervals, like attacks of migraine, for which it is often mistaken. Intervals of relief are more common in the warm season since cold winds and damp weather are particularly apt to excite fresh suffering. Different cases naturally vary a great deal in the severity of the pain, its extent, and frequency of recurrence. Patients mildly affected may complain merely of a sense of constriction or pressure in the back of the head or an aching between the shoulder blades; then, again, there are instances when the attack begins very acutely, the pain becomes agonizing, the head is drawn back, the patient prostrated, and an attack of acute cerebrospinal meningitis closely simulated. Untreated indurative headache persists indefinitely for years. The diagnosis is readily made by light palpation of the muscles behind the head and neck, the examining fingers being greased with petrolatum. About the insertions of the trapezius, splenii, complexus, sternomastoid, and associated muscles, tender, ill defined strands, septa, small beads, or doughy swellings, or distinct hard nodules are felt, freely movable over the skull or sometimes attached to the periosteum beneath. Running the finger down along the side of the spine where these muscles gain attachment and where the rhomboid, scaleni, trapezius, and others arise, similar painful spots and commonly other indurations are found. The transverse processes of the cervical vertebræ are invariably sensitive to pressure, although indurations need not always be felt here. Indurations are much less common in the belly of a muscle, nevertheless the whole muscle is frequently sore when its insertions are involved. This is well seen with the trapezius, which may ache between the shoulder blades and out along its attachments to the spine of the scapula to the shoulder tip, although no indurations in its substance are apparent. Important is the fact that only one or two nodules in a muscle may cause a great deal of mischief. In addition to the muscles of the occipital bone, the mastoid process, and the upper vertebræ indurations are sometimes, though much less seldom, found in muscular insertions of the clavicle and hyoid bones; and occasionally in the frontal part of the occipitofrontalis and in the temporal muscles, but without indurations, headache may be transferred to these regions during an attack. Even little nodules in the facial muscles have been noted. An associated involvement of the muscles throughout the body may occur, but is not common. Some authorities have also drawn attention to a not infrequent general lymphatic glandular enlargement, thickenings of the cervical sympathetic nerve branches, and sometimes a tendency to goitre.

The diagnosis of indurative headache is easy when its frequency is kept in mind. It is hardly necessary to mention the possibility of mistaking the natural roughness of the occipital bone for indurations. The severe cases, which show a resemblance to acute meningitis, can be distinguished by the absence of fever and Kernig's sign and by making a spinal puncture if occasion demands; likewise by the relief from hot applications and other simple measures which will not influence the progress of the graver malady. Periodical attacks of indurative headache are often mistaken for migraine. In migraine, however, there are no sensitive muscular nodules, and between attacks the scalp is not apt to be sensitive to touch; furthermore, the pain when severe does not radiate down the back out to the shoulders, and painful stiffness of the neck does not usher in an attack. The pain of indurative headache is not preceded by a sensitive aura, nor terminated by vomiting. Migraine almost invariably begins in early youth, but indurative headache usually arises in adults. The commonness of unilateral headache and of ocular symptoms in migraine is also to be remembered. The final test is the treatment; the massage which cures most cases of indurative headache has no such influence on true migraine, and the cases of migraine we hear reported as cured by massage are usually all cases of indurative headache. Obviously, the two conditions may be associated, and muscular indurations may attack victims of migraine as well as others.

These indurations (*Muskelschwielen*), as the name indicates, are composed of fibrous tissue thickenings; in early stages they are edematous and feel soft or elastic, but as the fibrous tissue contracts they become hard and dense. They arise in the muscle sheath and its proliferations into the muscle substance, also in the subcutaneous connective tissue, the condition being really more of a fibrositis than a myositis, strictly speaking. The underlying cause is apparently some nutritive change in the muscles involved, possibly an insufficient blood supply caused by the lack of exercise our civilized life demands of them, or what some writers speak of as a rust of the tissues or premature senility of the muscles. The pressure caused by the contracting fibrous tissue on entangled nerves is apparently responsible for the pain. The toxines of chronic constipation, oral sepsis, influenza, recurring sore throat, rheumatism, and other infections have been blamed for playing some part. The history of a previous attack of acute rheumatic fever is not common. Exposure of the head and neck to cold, as to cold winds and to frequent wetting of the hair, certainly plays a part in exciting an attack of headache and probably in encouraging the formation of indurations as well. Any occupation which tends to strain the neck muscles or hold them taut is unfavorable. General fatigue and damp weather also often encourage an attack, and certain individuals may be unfavorably influenced by constipation, acute indigestion, tobacco, alcohol, and other factors which may not influence others. Heredity is thought by some to be of importance. Women are more common victims than men, and most cases arise in adults, although children may suffer and even young infants.

The treatment of indurative headache consists in giving the involved areas better blood supply and limbering up the muscles. This is best done by massage. The indurations are stroked toward the body with the thumb, and then firmer strokes are made with the whole hand of all the muscles along the back of the neck. Such treatment is continued from ten to fifteen minutes and repeated for the first two weeks once or twice a day. The initial massage in very sensitive cases must be light and less frequent. The prognosis in cases properly massaged is particularly good; this remedy, for which we are under obligations to the Swedes, especially the writings of Nörström, was used by Müller with curative results in 119 of 140 cases. The benefit is usually rapid and marked, but in stubborn cases massage may have to be continued several months. For a thoroughly satisfactory result, the indurations must be completely dispersed, otherwise the pain and aching recur. The galvanic current is heartily recommended as an additional measure by many, also vibrating manipulation, but this last is contraindicated in patients with arteriosclerosis. In America, different physicians have used with reported success the sinusoidal current following a course of massage. The value of a spa treatment is doubtful and the same may be said of administering potassium iodide in an effort to dissolve the fibrous overgrowth. Stockman recommends the excision of large single nodules not too deeply situated, and describes the use of five to eight minims of one per cent. chromic acid, injected hypodermically into a nodule, causing it to shrink and greatly relieving the pain if the right spot is reached. For symptomatic relief of the headache itself, hot applications over the back of the neck and head are beneficial, together with the administration of sodium salicylate, fifteen grains, repeated two or three times. Early use of hot compresses and the salicylate, together with rest in bed, the patient being well covered, may abort an attack. The coal tars are best dispensed with. To prevent recurrences, the patient must protect himself from cold winds, too frequent washing of the hair, fatigue, and straining of the neck muscles. A dry, warm climate is preferable. A woolen night cap in winter is often a beneficial addition to the evening makeup, and bald headed sufferers have been reported cured by wearing a snugly fitting wig. Any neurasthenia, anemia, chronic tonsillitis, gastrointestinal, or other trouble associated with a case of indurative headache must naturally receive attention. The following case may be mentioned as a rather typical example of indurative headache:

Case. An automobile mechanical expert, aged twenty-nine years, had for two years suffered from severe headache. This headache was worst over the occiput, but there was frequently additional pain between the shoulder blades and sometimes over the forehead. The attacks were severer in winter, when they came on every week or two and lasted several days at a time, always becoming worse as night drew on. The pain was often very extreme and greatly interfered with his business. Running an automobile in a cold wind was very apt to excite an attack, and more recently he had suffered from cranking a large racing car which caused an overexertion of his neck to shoulder muscles. Between attacks of headache he always had more or less tenderness over the cervical spine. He smoked cigarettes to excess and thought this had an unfavorable influence on his headaches, and he also thought that the pain was worse when he became constipated.

Examination of the patient's head and neck was made in an interval free from headache. In the scalp over the occiput several hard lumps were felt, varying from the size of a small shot to a large bean and very sensitive to touch. These were freely movable over the bone, but there were also small fibrous strands, possibly normal, attached to the underlying periosteum. Over the mastoid region on both sides, little superficial swellings were seen which felt quite soft and which the patient complained of as being "sore." There was pain on pressure over the sides of the spine, not in the middle line, especially marked over the lower cervical and upper dorsal vertebræ. The whole upper back out over the shoulder blades was sensitive. No other indurations were felt over the spine or on other parts of the head. The lymph nodes along the anterior border of the trapezius, below the jaw and above the clavicle had a hard, shotty feel and were rather painful to pressure. There was an undue fullness in the region of the thyroid gland and a suspicion of exophthalmus.

Further questioning showed the patient to have suffered from frequent colds, sore throat, and attacks of "grippe" since childhood, and several years before a physician had told him he had tuberculosis. At nineteen years of age he was operated upon for appendicitis with pus and four years later for hernia in the scar. At the age of twenty-four years, in Columbus, Ohio, he had an attack of "nervous breakdown" with "pain in the back, headache, crying spells, and loss of senses at times." He "was always very nervous" but had had no similar outbreaks. At about this time he also suffered a moderate heat stroke. His venereal history consisted of chronic gonorrhea at twenty-one years and several "soft chancres" at nineteen. This last received only local treatment and was not followed by any general symptoms. A year later, however, another physician gave him iodide of potassium and mercurial inunctions because of "pimples on the back," but this treatment was not long continued or repeated. Mumps, measles, and perhaps scarlet fever, in childhood, completed the medical history. All the foregoing events, it will be noted, occurred before the present illness. He had never had rheumatism, nor muscle or joint trouble of any kind. He dissipated a great deal when younger, but now rarely touched alcohol. His wife died of tuberculosis a few years before. His parents and grand parents, as far as he remembered, were all healthy and long lived. No other relatives that he knew had chronic headaches, and there was no history of organic nervous trouble.

The general examination of this patient showed several points of interest. He had the appearance of a very nervous, emaciated man of about twenty-six years. His skin was clear, save for some old acne papules on the back, and showed no marks suspicious of former lues. The hair was thick and brown, the pupils equal and responsive to light and distance, the gums hard and mucous membrane bright red; the throat showed signs of chronic catarrh. The left lung apex was consolidated, but no râles were heard. The heart seemed normal. The liver and spleen were not palpable, and the abdomen was otherwise negative, save for the large scar of a former appendix operation. In the groins, especially the right, the glands were moderately swollen, hard, and quite sensitive to touch. They were also readily felt in the axilla and bend of the elbow, but these were not tender. The patella and Achilles tendon reflexes were equal on the two sides and slightly exaggerated. Blood pressure registered 120 mm. Hg., pulse 80, temperature and respiration normal. Hemoglobin was eighty-five per cent. Urine was negative except for threads of an old urethritis with many pus cells and mucous fibres microscopically. The sputum was once examined during a persistent cold and no tubercle bacilli were found. A Wassermann test was made and proved negative; the evidence that the patient ever had syphilis was certainly not great.

The treatment of this case along the usual lines gave relief, and the chances of permanent cure after a continued massage seemed highly favorable. The patient was also made to stop smoking, to wear suitable glasses, to avoid constipation, and to take better care of himself in general. The previous treatment he had received during his two years of suffering was naturally of a most varied kind, and at no time were the indurations noticed. Like many unrelieved sufferers, he finally found himself in the hands of a so called osteopath. If there is one trouble these mechanical bone artists ought to relieve by their rubbing it is certainly indurative headache, but this fellow, not to be misled by the actual seat of the pain, did all his rubbing over the lumbar region and in this way missed the chance of his lifetime to do a little good.

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507 Bedell Building.

THE METAMORPHOSIS OF THE WHITE BLOOD CORPUSCLE.

A New Interpretation of Facts.

By Thomas Powell, M. D.,
Los Angeles, Cal.

For the greater part of a century the leucocyte, commonly called the white blood corpuscle, has held the centre of the stage in all biological, physiological, and pathological circles.

One eminent authority declares that it is the pivot around which modern biology rotates. A scientist of conceded eminence and worldwide repute regards it as the nearest possible answer to the question: "What is life?" All authorities regard it as "living protoplasm," the "primordial animal cell," the universal "tissue builder"—in short, as a living, moving, and immortal animal cell. The correctness of this opinion has seemed to be self evident, for a certain period of its history the white corpuscle appears as *motum corpusculum*, or moving body. "Seeing is believing," as long ago expressed in the term, *vide et crede*, and, hence, to see the leucocyte send forth and then withdraw its tentacles, or pseudopodia, after the manner of its projection and retraction of the horns, so called, of the snail, and with the effect of locomotion, is but to be convinced that it is as certainly a thing of life as the snail; in other words, to watch the white blood corpuscle in the performance of its evolutions, from ameboid progression on up to vital duplication, is but to incur the conviction that it is a living organism and the beginning of all animal life, as the biologists have long and enthusiastically contended.

In short, it is confidently believed in all medical circles that the white blood corpuscle is a living cell and that the changes exhibited by it are genuine examples of metamorphosis or vital duplication, corresponding in every essential particular to the changes that take place in the developing ova of birds and animals. For many years I was as firm a believer in this doctrine as any one, due not to any personal study of its claims to credence or other data, but to the fact that it was originated by scientists of worldwide repute, and approved by others scarcely less renowned.

INCIDENTAL EVIDENCES.

It will be well, no doubt, to pave the way for the acceptance of what I conceive to be the correct explanation of the changes exhibited by the white corpuscle by calling attention, in the first place, to two facts which are particularly, though incidentally, likely to discredit the proposition that it is the primordial animal cell and a defender of vital interests—namely:

1. The fact that in health there is on the average only one white blood corpuscle to about one thousand of the red—which means that the former are, to say the least, unimportant.

2. The fact that in the great majority of diseases the white corpuscles are unusually numerous to begin with and become more and more so as the morbid process advances—a fact which is decidedly discrediting to the notion that they appear on such occasions with the view of rebuilding wornout tissues and defending vital interests by devouring germs. For, if this were true, the increase of their number would be attended by a larger percentage of beneficial results than we have thus far witnessed in the progress of such cases.

CONSCIENTIOUS INTERROGATIONS.

At this juncture let us lay aside all pride of opinion or other deterrent influence and look the facts of experience and observation squarely in the face; and let us begin by propounding to our inner consciousness the obviously pertinent questions:

1. In view of the fact that in health there is only one white corpuscle to one thousand of the red—things known to be normal and essential,—how can such a limited amount of tissue building material as that carried by the well man produce such voluminous results as the facts of his case naturally imply—namely, the evidences of good nutrition and its resultants, vim, vigor, and vitality?

2. If the white corpuscles are both germ devourers and tissue builders, why do they not succeed more frequently and promptly than they do in the accomplishment of their allotted tasks?

3. If these so called white cells are what they are generally supposed to be, would they not be more numerous in health, and less so in times of debility and disease?

It is practically impossible to escape the conclusion that these questions must be answered in the affirmative. At all events, the notion that the leucocyte is a valuable asset in Nature's economy is sufficiently discredited by these interrogations to justify the suspicion, to say the least, that its metamorphosis phenomena, variously referred to in the aggregate as mitosis, vital duplication, segmentation, and cell division, may be accounted for by referring them to agencies of a nonvital character—to the forces, not of life, but of decay.

I shall now undertake to prove that these corpuscles are composed of partially digested protein; that this, after having become inspissated, is broken into these so called cells in passing through the trabeculæ of the spleen and lymph nodes (as molten lead is broken in shot making) and that they owe their activities to the forces not of life nor of vital duplication, but of chemical dissolution—to the combined effects of chemotaxis, disintegration, and gaseous expansion.

And now comes to mind the well known and very significant circumstance, that in the early history of the cell theory the great warriors in the field of medical polemics were divided into two antagonistic camps, on account of the similarity that subsists between the "colorless corpuscles," as the leucocytes were then called, and pus corpuscles, the one party stoutly averring that these hypothetical bones of contention are identical, while the other as strenuously insisted that they are different. After a long period of disputation the matter was settled, it will be remembered, by the dictum of the rising medical genius of that day, Professor Rudolph Virchow, and wrongfully at that, as a duly exacting examination of the subject will show. That this dispute should have arisen is not at all surprising, however, for the resemblance that the one bears to the other is so very close that the settlement of such a question depends, according to Virchow, upon the acquirement of a knowledge of the source from which the particles in dispute had been derived: if from an abnormal source they are pus corpuscles; if from the blood they are white corpuscles.[1]

The further we go in the study of its claims the more evident it will be that this doctrine is, to say the least, utterly impracticable and that its perpetuity hangs upon an exceedingly slender thread.

DISCREPANCIES AND INCONGRUITIES.

Let us now examine with a justly critical eye the facts advanced by authorities in support of their contention that the white corpuscle undergoes the same kind of changes that take place in the development of the ova of birds and animals, and which are variously termed metamorphosis, vital duplication, cell division, segmentation, and mitosis.

In the first place, authorities have shown quite clearly, though incidentally and unconsciously, that there is a vast and irreconcilable difference between the changes that take place in *real* animal cells—the ova of birds and animals—as will be seen by reference to the diagrams they have used in setting forth the existing doctrine of cell division. For the changes thus depicted as occurring in real cells, as we see them in ova and disease germs, are perfectly regular, or uniform, while those set forth as taking place in the so called white cells are absolutely irregular. For instance, in speaking of the development of ova, Professor Jacques Loeb says: "After the entrance of the spermatozoon the egg has one nucleus which during segmentation is successively divided into two, four, eight, sixteen, etc., nuclei."[2]

Regarding the development of bacilli we are told: "At the beginning there is one bacillus. At the end of the second half hour there will be four bacilli. At the end of the third half hour there will be eight," and so on *ad infinitum*. In short, every change of this kind is made with geometrical precision and regularity—a uniformity which has never been exhibited by the white corpuscle, as every hematologist will frankly admit. Examine the diagrams by which our authorities illustrate the changes that take place in the white corpuscle, together with the explanations presented in connection therewith in illustration of the segmentation of the ova, and you will be absolutely amazed on seeing, as you will, the immensity of the difference that actually exists between the two sets of supposedly similar changes.

You will find upon examination that the illustrations of this matter presented by all the authorities involve discrepancies. That is to say, you will see that the one represents real cell division, and the other represents a supposedly similar, but widely dissimilar phenomenon, that which takes place in ova being perfectly regular and symmetrical, while the other is absolutely irregular and asymmetrical, facts which stamp this doctrine of metamorphic identity, or even the idea of similarity, as the merest figment of the imagination, an irridescent dream, a delusion, and a snare.

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[1] See *Cellular Pathology*, pp. 92, 187, 188.

[2] *Science*, October 4, 1907.

FALLACIOUS SUPPORT.

The leucocytic theory finds its only illustrative support in the ameba—a thing which is not only open to the objection of being utterly irregular, but to the further charge of having its origin in sluggish streams and stagnant ponds, where organic substances are passing into decay—conditions which are absolutely, not to say overwhelmingly discrediting to the theory that it is a living organism. The well known fact that the ameba is developed in connection with "mud" and "decaying leaves," as stated in Professor Dodge's *Elementary Practical Biology,* ought to be sufficient to satisfy any one that it is not a protozoon, but a particle of decaying organic matter—that the glutinous, or gummy, element of decaying plants is soaked out and formed by cohesive attraction into those masses which are termed *amœbæ* and that that part of the same which is variously termed the "vacuole" and the "contractile vesicle" is simply that portion of their substance which is being the more rapidly dissolved.

Verily, there is no lack of reasons for saying that every change, whether of form or position or appearance, that takes place in those inhabitants of *stagnant* ponds and *diseased* bodies now under consideration is logically attributable to the forces of adhesion, gaseous expansion, and chemotaxis. The truth is, the simulations of life exhibited by the objects under consideration have been so complete and so striking that it was almost impossible for any one to discern the evidences that they have afforded to the contrary.

"THE DEATH (?) OF AN AMEBA."

Under this heading Professor Linton has recorded in *Science* for July 21, 1905, an observation that militates enormously against the current opinion of the ameba. He states in substance that, while watching an ameba pass through the changes which are regarded as indications of life, comprehending those extrusions of its substance which are termed pseudopodia and that solution of continuity called vital duplication, he witnessed with astonishment the sudden falling to pieces of one of the parts into which it had divided. He illustrated the changes to which he referred by means of a set of drawings, number 8 being representative of the "final catastrophe," in the history of "this bit of supposedly immortal living substance," to quote his own words.

The fact that Doctor Linton placed an interrogation point in the title of his paper seems to indicate that his faith in the *immortality* of the ameba has been shaken. At all events, the fact that the ameba is found only where decay is going on, together with the fact that "the ectosarc and protoplasm disappeared suddenly as if by a disruptive explosion," to quote Linton's own words, show, and beyond the possibility of a reasonable doubt, that this solitary prototype of that *pseudopodic* inhabitant of *diseased bodies* called the leucocyte, is not a *real* animal, but a *pseudoanimal;* not a real cell, but a *pseudocell;* not genuine protoplasm, but the hypothetical protoplasm, or *pseudoprotoplasm,* that is found in *stagnant* ponds; that the plasmlike material called "animal protoplasm" is not the real physical basis of life, but the imaginary, or pseudobasis thereof closely related in character to *Bathybius,* the pelagic material set forth by the brilliant but erratic Professor Huxley as protoplasm of the most fundamental order—a purely hypothetical vagary which was exploded during the lifetime of its illustrious author.

In fine, be it said that the proposition that the leucocyte is a phagocyte, or germ devourer, can be completely exploded by a careful study of a few well known facts, supplemented by a moderate amount of legitimate reasoning.

WELL KNOWN FACTS.

1. The fact that fully digested protein called peptone is both perfectly *diffusible* and *noncoagulable.* 2. The fact so called animal protoplasm, more properly serum albumin, together with all other material of the kind that we find in the blood, the white corpuscles not excepted, are open to the objection of being only partially diffusible and decidedly coagulable—facts which plainly imply that everything of the kind is nothing more or less than partially digested material and is liable to produce a vast amount of trouble, by blocking the glands and capillaries, as in congestion and embolic obstruction, and by paving the way for the propagation of infective organisms by affording them a "suitable soil." 3. The well known fact that the disease germ is in its nature a promoter of decay—the *tertium quid,* or third agent, on which the oxidation of the unstable forms of organic matter depends.

These things being true, it follows, and with theory smashing power, that in every phagocytic operation that ever occurred, comprehending, as it does, the coming together of a living germ and a perishable substance—the so called phagocyte—the latter was not the destroyer, but the *thing destroyed.*

The argument now advanced may be summed up and emphasized by saying: The various things that go to make the animal, vegetable, and bacterial worlds have a *definite* and practically *uniform* contour and a no less definite manner and order of development, while that matchless deceiver, the white blood corpuscle, stands almost alone in its morphological versatility, in its indefinable shapelessness, and in its developmental irregularities, its only counterpart being the equally irregular, shapeless, and indefinable thing which is called the ameba. The study of the morphology and life history of plants, animals, and microorganisms enables us to describe with commendable accuracy the changes which will take place in succeeding generations of the same. But no such advantage can be had from the study of the so called "primordial animal cell." For it utterly defies the highest powers and possibilities of human insight, prevision, and description, not so much as a fairly accurate conception of the changes it is destined to undergo being at all possible. At best the history of this supposedly immortal thing can only be approximately described in advance of its coming by saying: The white blood corpuscle will start out as a spheroidal, nonnuclear, and nonmotile mass; that at some future but indeterminable period it will appear as a mononuclear object of no certain but very uncertain configuration; that at a later but very uncertain moment of time it will appear as a grotesquely irregular *motum corpusculum*, or moving body, and that at a still later but very uncertain moment of time it will fall to pieces and disappear—all this without bestowing upon its host, the body, so much as a *single discoverable benefaction.*

1413 Girard Street.

TEETHING AS A CAUSE OF DISEASE IN INFANCY.*

By Charles Herrman, M. D.,
New York,
Attending Pediatrist, Lebanon Hospital and Beth David Hospital;
Instructor in Diseases of Children, Columbia University.

Notwithstanding the remarkable progress that has been made in the science of medicine during the last fifty years, certain traditional beliefs remain as deeply rooted as ever. Not the least noteworthy is the important rôle which teething is supposed to play in the etiology of the diseases of infancy. Every day mothers bring their babies to the clinic, attributing their illness to teething. Every day, in taking the history of the child, the mother volunteers the information that some previous illness was ascribed by the attending physician to teething. But it is not only in the dispensary practice that we meet with these beliefs. In private practice even very intelligent mothers are only too ready to attribute many disturbances to teething; and for this we physicians are to some extent responsible. We are so apt to follow the line of least resistance. It is so much easier to agree than to disagree and explain. Frequently we are at a loss to make a diagnosis; the mother suggests teething and we gratefully accept the suggestion. But as Holt says, "the physician who starts out with the idea that in infants dentition may produce all symptoms, usually gets no further than this in his etiological investigations."

The present views with regard to teething are three: First, there are those who believe that very many disturbances may be due to teething; second, those who believe that none are due to teething; and, third, those who take a middle course, believing that a few disturbances may be caused by teething. To the first group belong a large part of the laity and some physicians. In a recent paper, Neumann has shown in graphic form that in Berlin, from 1877 to 1910, the number of certificates giving teething as a cause of death in infants has diminished from fourteen to three per 1,000. Three in a thousand is, I think, still pretty high. The number of certificates giving teething as a cause of death is an index of the intelligence of the physicians, their knowledge of pediatrics being in inverse proportion to the number of such certificates submitted.

The chief danger in believing that many disturbances are due to teething lies in the fact that valuable time may be lost. For example, in cases of acute gastroenteritis, the disease, falsely attributed to teething, is allowed to progress, and when the child is dangerously ill, possibly beyond all medical help, it is brought for treatment.

The second view is that "teething produces nothing but teeth." that the eruption of the teeth is a physiological process similar to the growth of hair and nails. This view, expressed by Politzer and Fleischmann forty years ago, and more recently by Kassowitz and others, is not incompatible in a somewhat modified form with the third view. So modified it would read, teething produces nothing but teeth in normal healthy infants. In such individuals the hair and nails are of normal appearance; but just as in certain constitutional diseases, such as syphilis and cretinism, these parts may show changes, so in infants with certain constitutional peculiarities the eruption of teeth may be sometimes associated with certain disturbances. The fact that an infant has such disturbances is, I believe, proof that it is not normal. I shall elaborate this point later.

Let us consider briefly the ways in which disturbances may be incorrectly attributed to teething: First, the presence of symptoms at the time of teething may be merely a coincidence. We have all seen numbers of children go through teething without any disturbances. If a baby contracted whooping cough during dentition no one would think of holding the teeth responsible, because we know that this disease is caused by a specific infectious material and is acquired by contact with another individual having the disease. The eruption of the twenty temporary teeth usually takes place from the seventh month to the beginning of the third year, that is, on the average about one tooth a month. It is therefore not surprising that disturbances quite independent of teething should occasionally occur when a tooth is appearing. Many babies are weaned at the seventh month; what is more natural than that the child should have digestive disturbances when put upon artificial feeding? Second. the true cause of the disturbance may not be recognized on account of an incomplete examination. For example, a baby is restless and has a rise of temperature, there is no reason to suspect ear trouble, and the ears are not examined. A diagnosis of "teething" is made and a couple of days later the drum perforates and there is a discharge. Or with similar symptoms, the urine is not examined on account of the difficulty of obtaining a specimen. Teething is diagnosticated. The symptoms persist, the urine is examined, and a pyelocystitis is found. Third, it may not be possible to determine the cause, even with the most careful and painstaking examination. It occasionally happens that even at the autopsy table the cause of death cannot be ascertained, but we are not on that account justified in attributing it to teething.

Teething produces nothing but teeth in normal, healthy infants, but many infants have constitutional peculiarities which are not strikingly apparent. Children with mild manifestations of rickets may have disturbances of dentition, but there are two constitutional peculiarities to which especially I should like to call your attention, namely, the so called exudative and the spasmophilic diathesis.

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*Read before the Medical Society of the Borough of The Bronx, November 13, 1912.

There is a form of papular urticaria frequently met with in infants. This has often been attributed to teething, as the German name, *Zahnpocken,* indicates. This eruption is but one of the manifestations of the exudative diathesis. Certain forms of infantile eczema are due to the same cause and are falsely ascribed to teething. These children with the exudative diathesis are also subject to recurring attacks of catarrh of the mucous membranes, rhinitis, laryngitis, bronchitis. I have also seen a number of such infants with recurring attacks of diarrhea with loose, mucous stools, quite independent of indiscretions of diet. Should such an attack occur at the time of the eruption of a tooth, what would be more natural than to suppose that one was the cause of the other? A careful analysis of the previous history, however, together with a further observation of the patient, will reveal the true underlying etiological factor, namely, this peculiar constitutional anomaly which is probably due to some disturbance of metabolism, the exact nature of which is as yet unknown.

Similarly the convulsions occurring in infancy are frequently ascribed to teething, as witness the German term *Zahnkrämpfe.* We now know, however, that such children have the so called spasmophilic tendency, and even in those who do not give all the clinical symptoms associated with this condition, the electrical reactions present changes from the normal. Moro, as evidence of a possible causal connection, says: "The occurrence of genuine eclamptic seizures has been observed in some infants during the period of teething and never afterward." But it must be remembered that during the period of dentition many other changes are taking place; it is a time of rapid development of nearly all the structures of the organism. In this connection it is noteworthy that the manifestations of the exudative and spasmophilic diathesis have a tendency to diminish or disappear as the child grows older. "Outgrowing a disease" is not merely a phrase, in these conditions it actually takes place.

Many of the symptoms attributed to teething are met with in the early months, before the eruption of teeth has begun. Many mothers consider an increased flow of saliva and putting the fingers in the mouth, indications of the onset of teething; but I have seen countless babies in which both these symptoms were present quite independently of dentition. The eruption of the permanent teeth is occasionally attended with some disturbance, but how often would one attribute a skin eruption, a diarrhea, or a convulsion in an older child to teething. At a time when teething was considered the cause of a number of infantile disorders, the gums were frequently lanced. Why has this operation been so largely given up? Obviously because it did not meet the indications. It is still done occasionally, but I believe often, just as the cutting of the frenum of the tongue, to ease the mind of the mother.

Let us admit that a few slight disturbances may be caused by teething; that requires no emphasizing. What we should emphasize is that in the presence of a disease in an infant we should not diagnosticate teething as a cause except as a last resort, after every other possible explanation has been excluded. The teeth should be treated as we treat prisoners at the bar. We should consider them innocent until proved guilty.

250 WEST EIGHTY-EIGHTH STREET.

THE HISTORY OF BLOODLETTING.

By FIELDING H. GARRISON, M. D.,
Washington, D. C.

(Concluded from page 437.)

After the fiasco of derivative bloodletting, many physicians gave up venesection altogether, but in Italy, under the leadership of Botallo, the practice was pushed to the extraordinary extent of bleeding in all disease without exception and that abundantly and many times in succession. For fully three centuries the Italians led the world, as it were, in extensive bloodletting. Costly bleeding glasses were hereditary in Italian familes and handed down as heirlooms.[11]

A special feature of bloodletting in the northern countries during the fifteenth and sixteenth centuries was its connection with astrology and the fact that it had become so popular among the masses that it was done in the public baths, in other words, almost as often as a man took a bath. After the invention of printing a curious portion of the huge vernacular literature of the period consisted of the so called bloodletting calendars and purgation calendars. In connection with these it is of interest to note that the first medical publication to be set in type was the Purgation Calendar *(Laxierkalender)* of 1457, printed by Gutenberg in the type of his 36 line Bible and consisting of a single sheet of paper in the Bibliothèque nationale at Paris; the second in order of time being the Bloodletting Calendar *(Aderlasskalender)*, printed at Mainz in 1462, and now contained in the Fürstenberg library at Donaueschingen in the Grand Duchy of Baden.[12] As in some of the drug store almanacs within our own recollection, the writers of these calendars affected the scientific power of prediction in regard to wars, famines, epidemic diseases, and other pests that were to befall mankind and their efforts were specially characterized by the fact that the times for purgation and the innumerable points of election in bloodletting were determined by "judicial astrology," that is, by horoscopes drawn from the ascendancies and conjunctions of the planets, under the signs of the zodiac. In the sixteenth and seventeenth centuries, the doctor was too frequently an astrologer and old Fracastorius declared men to be "slaves to the rabble of the sky." [13] Doctor Urinal and Doctor Almanac were standard figures in the plays of the English dramatists of the Elizabethan and Jacobean periods, for example, in Middleton's *Inner Temple Masque,* which opens with "Doctor

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[11] See the interesting essay, The Old Venetian Bleeding Glass, by Dr. John Knott in *Medical Press and Circular,* xlvii, 662-664, London, 1889.

[12] Sudhoff, *Archiv für Geschichte der Medizin,* 8, 1, 223, 227, Leipsic, 1907.

[13] Cited by Osler in *Proceedings of Charaka Club,* New York, ii, 15, 1906.

Almanac, coming from the funeral of December or the Old Year":

> I have seen the Old Year fairly buried;
> Good gentlemen he was, but towards his end
> Full of diseases: he kept no good diet;
>
> . . . .
>
> That was his fault, and many an old year smells on't.

The fifteenth century was, as stated, the great age of common public baths; the bath keeper was usually a barber surgeon and bloodletter, and toward the beginning of the sixteenth century these baths came to be frequented by both sexes at one and the same time. The contemporary pictures of the artists of the period reveal the astonishing spectacle of men and women, absolutely nude, huddled together in a huge common bath vat or in a steaming bath room, some playing upon musical instruments, some reading books, some guzzling wine, others eating a set meal from a temporary board arrangement not unlike that employed in Pullman cars, all soaking themselves at leisure and perspiring freely, while, as if to achieve the height of the ridiculous, a stream of blood spouts from the median basilic vein of some patron who is testing the bath keeper's skill as a venesector. Public establishments of this kind were still common at Budapest in the first half of the nineteenth century and have been described in detail in the Hungarian travels of Richard Bright (of Bright's disease).

Harvey's quantitative demonstration of the circulation of the blood had no appreciable effect upon the practice of bloodletting and it remained for Magendie to point out what should have been an immediate inference from Harvey's data, namely, that the so called points of election in venesection are really indifferent points, since the effect of opening the different veins anywhere is exactly the same. Like many great experimenters, Harvey himself was only a passable practitioner and, in the treatment of disease, he and his contemporaries were completely overtopped and overshadowed by the great figure of Thomas Sydenham, who ennobled the practice of medicine through those personal qualities of piety, good humor, and common sense which Edmund Burke declared to be the genius of the English race. All agree that Sydenham resembles Hippocrates in his original descriptions of disease, and when he says that he holds himself answerable to God for the care of his patients, we recognize the same dignified regard for human suffering which characterized the Greek master. It was Sydenham who first threw open the windows and let the fresh air into the sickroom, introduced Peruvian bark and paregoric, prescribed cooling draughts for feverish patients, steel tonics for lovesick or green sick maidens, riding in the open air for consumptives, and divested his prescriptions of all filthy and nauseating ingredients. In relation to venesection, Sydenham may be classed among the extensive, as opposed to the intensive, bloodletters. In almost every disease known to him he began his treatment by opening a vein, but he seldom let more than eight to ten ounces of blood at a time, and, if this did not avail, he pushed the procedure no further. This was his practice in smallpox, erysipelas, gout, rheumatism, hysteria, chorea, insanity, dysentery, renal and biliary colic, hemoptysis, hematemesis and hematuria, leucorrhea, metrorrhagia, hemorrhoids, scurvy, epistaxis, convulsive cough in children, and in the condition known as "going into a decline." In rheumatism, gout, renal calculus, and intestinal obstruction blood was let from the arm of the affected side; in gonorrhea he directed that the blood should be drawn about once or twice when half way through the treatment, as also in measles complicated with diarrhea or bronchitis. Venesection was interdicted by him in dropsy, diabetes, cholera morbus, and suppression of lochial discharges. The principal authority for Sydenham's practice is his little therapeutic manual (*Processus integri*) of 1691, which was the English physician's standby for over a century and which a certain Oxford enthusiast of the day is said to have committed to memory. From the details just gleaned from this book it is evident that in comparison with contemporary French practice, Sydenham's bloodletting was sensible, moderate, and temperate. It is said of Guy Patin, for instance, that he once bled a colleague thirty-two successive times for a continued fever and showed his own implicit faith in venesection by bleeding himself seven times in succession for a simple cold in the head.[14] The abuse of bloodletting by the seventeenth century doctors was, in fact, a favorite theme for the satire of Molière and Le Sage, and the story of Doctor Sangrado, the "tall, withered, wan executioner of the sisters three," who reduced the old canon Sedillo "to death's door in less than two days" by drawing twelve good porringers of blood at the start, with repetitions, is a well known chapter of *Gil Blas*. In the same novel, Le Sage gives an amusing instance of the use of another means of depletion, the seton or issue, an adjuvant of treatment which was first mentioned by the Salernitan surgeons, Roger and Roland, and was put upon a practical footing by the directions of Lanfranc. A little girl, Inesilla, after the communicative habit of the *enfant terrible*, betrays the secrets of the housekeeper's toilet to Gil Blas, which the valet souled hero proceeds to give away as follows: "Dame Jacinta, as I have said before, though a little stricken in years, had still some bloom. To be sure, she spared no pains to cherish it: besides daily evacuations, she took plentiful doses of all powerful jelly. She got her sleep in the night too, while I sat up with my master. But what perhaps contributed most to the freshness of this everlasting flower, was an issue in each leg, of which I should never have known, but for that blab Inesilla."[15]

In seventeenth century Italy, bloodletting was as popular as ever and was the subject of elaborate copperplate illustration in the many books on the subject, of which Malfi's *Il Barbiere* (1618) may be taken as the type.

The eighteenth century has always been accounted the Golden Age, alike of the successful practitioner and the successful quack, and both found themselves confirmed and fortified in the practice of venesection by the ingenious arguments of the medical theorists who swarmed during this period. Boerhaave's doctrine of the plethora furnished an additional excuse for it, and Boerhaave was followed by van Swieten and the old Vienna school. Stahl's theory (phlogiston) gave it the well known antiphlogistic flavor. Reil favored it on physiological, Brown and Friedrich Hoffmann on mechanical grounds, for the relief of sthenic and asthenic, spasmodic and atonic conditions. Johann Peter Frank held that it promoted the resorption of settled exudates and regulated the excretions. Haller tried to justify or explain its rationale by experiment, but got no further than the statement that it hastens the blood current. Percival Pott, Pringle, and the members of the Royal Academy of Surgery of Paris, bore a hard reputation as intensive bloodletters. Cullen and Théophile de Bordeu stand out as physicians who were very moderate in the practice. In the American colonies, Benjamin Rush, a follower of John Brown, was a veritable Sangrado of the New World, but the Anglo-Saxon practitioner of more conservative type was still a follower of Sydenham. General Washington, however, lost his life from bloodletting. A well worn epigram at the expense of John Coakley Lettsom, one of the illustrious line of English Quaker practitioners, noted for their ability, liberality of spirit, and their large charities, may still be quoted, although, like most epigrams, it was perpetrated at the expense of truth:

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[14] See Knott, *opere citato*.

[15] Le Sage, *Gil Blas* (Smollett's translation).

When patients sick to me apply,
  I purges, bleeds, and sweats 'em:
If after that they choose to die,
  What's that to me? I. Lettsom.

The first half of the nineteenth century is especially interesting as marking the prow-wave of extensive and intensive bloodletting, while, at the same time, by the law of action and reaction, the general decline of the practice was brought about in a remarkable way. Many of the leading medical men of the time had passed through the Napoleonic wars and, in this rough school, had acquired a hard brutality, a supercilious indifference toward their patients which was sharply accentuated when it came to letting blood. This was particularly the case with Francois Joseph Victor Broussais (1772-1838), who had sworn at troops as a sergeant and had swung a cutlass as a privateersman during the Revolution with the same vigor with which he afterward wielded the lancet as an army surgeon in Napoleon's campaigns. Broussais, like John Brown, believed that life depends on external irritation, disease upon local irritation of some particular organ or viscus, usually the stomach and intestines. There was no healing power in Nature and it was necessary to abort disease by drastic measures. He therefore initiated an antiphlogistic or weakening régime which consisted in depriving the patient of his proper food and leeching him all over his body. Even in cases of extreme debility, at least five to eight leeches were prescribed, while thirty to fifty applied together constituted his usual treatment. Under the Broussais régime, leeches became so scarce in France that in the year 1833 alone, some 41,500,000 were imported, when less than ten years before, three million had been sufficient to supply all demands. Broussais was followed in this sanguinary practice by Bouillaud, who abused venesection by bleeding *coup sur coup;* by Dupuytren and by Lisfranc. Of Lisfranc, Dr. Oliver Wendell Holmes, who was a medical student in Paris at this time, relates: "I can say little more of him than that he was a great drawer of blood and hewer of members. I remember his ordering a wholesale bleeding of his patients, right and left, whatever might be the matter with them, one morning when a phlebotomizing fit was on him. I recollect his regretting the splendid guardsmen of of the old Empire,—for what! because they had such magnificent thighs to amputate."

In England and Germany things were not much better. The leading English medical journal of the day, founded in 1823, was called *The Lancet*. In Italy, Giovanni Rasori, at his clinic at Milan, became such another vampire for bloodletting as was Botallo in the sixteenth century. Like John Brown, Rasori believed that the treatment of disease consists in stimulating depressed conditions and in depressing states of excitement, and that venesection was not only an arm of treatment, but a means of diagnosis, indicating an excited condition if beneficial or, if injurious, a state of depression. Acting upon these conventions, he either bled his patients to death's door or else practically poisoned them with gigantic doses of saltpetre (sixteen to ninety grammes a day), gamboge (one to four grammes for diarrhea), aconite (134 grammes in a week, death supervening), digitalis, opium, camphor, etc. Now the effect of all this pitiless bloodletting and drugging was exactly like what General Grant said about the strict enforcement of an obnoxious law. It eventually annihilated itself and in the most natural way, through the introduction of a new method of precision in medicine—medical statistics. Although the Romans and perhaps the Hebrews, took the census and counted troops, while John Graunt, in the sixteenth century, studied the meaning of the birth and death rates, and Süssmilch, in the eighteenth, emphasized the moral significance of vital statistics, yet there were no true medical statistics before the time of Louis. Louis, like Laënnec, Bichat, and Pinel, was a man of finer mould and spirit than Broussais or Dupuytren, and touched to finer issues. Leading the austere life of a scientific enthusiast, divided about equally between the hospital wards and the post mortem room, he was the first to make real medical statistics, in which the separate items were not merely counted but of equal weights; and to emphasize the importance of what he did, it is worth while to quote at length from our principal authority upon French medical teaching at this time, Oliver Wendell Holmes.

> You young men who are following the hospitals hardly know how much you are indebted to Louis. I say nothing of his *Researches on Phthisis* or his great work on typhoid fever. But I consider his modest and brief *Essay on Bleeding in Some Inflammatory Diseases*, based on cases carefully observed and numerically analyzed, one of the most important contributions to practical medicine, to the treatment of internal disease, of this century, if not since the days of Sydenham. The lancet was the magician's wand of the dark ages of medicine. The old physicians not only believed in its general efficacy as a wonder worker in disease, but they believed that each malady could be successfully attacked from some special part of the body—the strategic point which commanded the seat of the morbid affection. On a figure given in the curious old work of John de Ketam, no less than thirty-eight separate places are marked as the proper ones to bleed from in different diseases. Even Louis, who had not wholly given up vene-

section, used now and then to order that a patient suffering from headache should be bled in the foot, in preference to any other part. But what Louis did was this: He showed by a strict analysis of numerous cases that bleeding did not strangle—*jugulate* was the word then used—acute diseases, more especially pneumonia. This was not a reform—it was a revolution. It was followed up in this country by the remarkable *Discourse Upon Self-Limited Diseases* of Dr. Jacob Bigelow, which has, I believe, done more than any other work or essay in our own language to rescue the practice of medicine from the slavery to the drugging system which was a part of the inheritance of the profession. Yes, I say, as I look back upon the long hours of the many days I spent in the wards and in the autopsy room of La Pitié, where Louis was one of the attending physicians—yes, Louis did a great work for practical medicine. Modest in the presence of nature, fearless in the face of authority, unwearying in the pursuit of truth, he was a man whom any student might be happy and proud to claim as his teacher and his friend.

In Vienna, Skoda's therapeutic nihilism soon made short work of the "antiphlogistic" treatment of pneumonia by purging and venesection. In England, a vigorous assault was made upon the abuse of bloodletting by two well known authorities, James Wardrop, the surgeon, and the physiologist, Marshall Hall; while the manly and straightforward Charles Reade lent his splendid talents to the ridicule of the practice and landed many a clever cross counter, more especially in his enthralling story of *Hard Cash*. Charles Dickens has an amusing page on extensive leeching in *The Uncommercial Traveller*. Yet, in spite of all this marshalling of genius and talent against it, bloodletting still held its own in England until well after the middle of the century, when, under the influence of Sir William Jenner and Sir William Gull, it was discarded about 1860. Most of us have or have had relatives who went to the old country doctor every spring to have their veins opened. Even in the latest edition of Sir Thomas Watson (1870) it is still extensively indicated, and the buffy coat in the drawn blood was always looked for as a sign of inflammation. To be bled was regarded as a sign of a vigorous constitution, and Sir Richard Burton relates that, after the cholera epidemic of 1831, Englishmen lamented the disuse of the daily Lady Webster pill as a sign of decadence. Yet general bloodletting did gradually and surely decline after the time of Louis, for even such a rational substitute as the so called hemospasia of Junod, a method of producing a fainting spell by drawing blood from the brain to the foot, a species of bloodletting without letting blood, did not make any special impression, although the author asserted he had had most extraordinary success in many different diseases. The secondary reason for the gradual decline of bloodletting is probably to be found in the development of more refined methods of therapeutic procedure, such as the hypodermic needle, the many alkaloids introduced by Magendie, the coal tar products of the German chemists, good dietetic schemes, beginning with the pioneer work of William Beaumont, massage, hydrotherapy, electrotherapy, and other devices which emphasize the principal modern objection to venesection, namely, its extremely disagreeable character, both for the doctor and the patient. The very subject of bloodletting is, in fact, a disagreeable one. In modern practice, it seems like the plausible villain in the play, neither entirely good nor entirely bad. Its true merits have been ably upheld by such authorities as Paget, Hughes Bennett, Sir William Broadbent and Sir Andrew Clarke, and it would seem to be of special value in such indications as the sudden dyspnea, coma, and convulsions of uremic seizures or of puerperal eclampsia, the severe pain in pleurisy or pneumonia, threatened asphyxia from cardiac embarrassment, aneurysm, or carbon dioxide poisoning, and in cerebral hemorrhage, actual or threatened.

Haviland and Hall,[16] in a recent study of the subject, sum up the modern indications for bloodletting as follows:

> "1. Cases of an apoplectic nature, especially when associated with coma and cyanosis. 2. Cases of high tension and granular kidney in connection with arteriosclerosis. 3. Cases of convulsions in the status epilepticus. 4. Cases of uremia. 5. Cases of sunstroke with asphyxia. 6. Cases of polycythemia. 7. In hemoptysis, if there be engorgement of the right ventricle of the heart. 8. In aneurysm for relief of pain. 9. In cases of dilatation of the right ventricle of the heart from what ever cause arising. 10. In cases of pneumonia, for relief of pain and dilatation of the right ventricle."

Pye-Smith states that its main indication is "cyanosis with distention of the right heart." In the ticklish matter of arterial hypertension, bloodletting is usually sneered out of court, on the ground that "it produces no appreciable fall of blood pressure till the amount withdrawn by the circulation has become so great that life is directly endangered by the operation." On the other hand, Knott argues that, whatever inferences may be drawn from laboratory protocols, human beings are not necessarily rabbits, guineapigs, or dogs of a larger growth, since "the effect of a cut head or even a barked shin or scratched finger on the arterial tension in the human animal is often very pronounced indeed and requires neither kymograph nor sphygmograph to demonstrate it." [17] The intense thirst and copious water drinking which follow depletion would seem to make the bloodletting of the past a vague equivalent of "bloodwashing," in the sense of removing poisons from the system.

The history of therapeutics illustrates Cardinal Newman's belief that mankind is influenced by types rather than arguments, and not so much by ideas and pure reason as by prevailing fashions. The world has witnessed the rise and fall of many a drug and has seen bloodletting die hard. In spite of its long descent, we know little of its reason for existence beyond the notion that it may relieve states of tension and plethora or remove peccant humors. Yet there is hardly a physician with a good practice who may not suddenly encounter some circumstance in his experience in which venesection would turn out to be his sheet anchor and his patient's salvation. Even as the University of Minnesota has adopted the Renaissance idea of a botanic garden for teaching materia medica, or as experimental surgery is now taught upon animals at Yale and the Johns Hopkins Hospital, so it would be no bad plan if our medical schools used the Hindu method of inducting the student into the ancient practice of "breathing" a vein.

ARMY MEDICAL MUSEUM.

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[16] *Westminster Hospital Report*, London, 1911, xvii, 1-21.

[17] See Knott, *opere citato*, p. 664.

POSTOPERATIVE DILATATION OF THE STOMACH.*

By Harry A. Duncan, A. B., M. D.,
Philadelphia.

Case. About January, 1911, the wife of a neighbor and good friend came to me complaining of soreness in the epigastrium, inability to wear anything tight about the waist, constipation, and lassitude. This condition was chronic, but acute attacks of vomiting, prostration, sharp pains in the right costal region, clay colored stools, and severe headaches occurred more or less frequently. She was thirty-seven years old and the mother of two children. I suspected gallstones and instructed her how to look for concretions in the stools after one of the acute attacks. A few weeks later she returned with perhaps twenty small stones which were undoubtedly gallstones. She still complained of the soreness, but refused operation. I gave her rather large doses of tincture of nux vomica and was surprised at the marked improvement.

In March, I was called to see her in one of the acute attacks of pain, fullness in the epigastrium, much vomiting of greenish fluid, and severe prostration. It did not resemble gallstone colic as the prostration was too pronounced, and there was no tossing about with pain, so I could not make a satisfactory diagnosis. No gallstones were found after this attack.

May 20th she entered the hospital and was operated upon the same day. The gallbladder was drained; though no stones were found, its walls were thickened and it contained some thick, syrupy, black bile. The stomach was examined and appeared normal. The right kidney was found near the pelvic brim, and after closing the incision the patient was turned on her left side and the kidney was fastened in place through a second incision.

The patient was on the table one hour, and eight ounces of ether were used. Her pulse was seventy-eight and the temperature normal one hour after being placed in bed. She had a comfortable night and voided twenty ounces of urine during the first twenty-four hours. The drainage was satisfactory and her condition continued comfortable until the morning of the third day, when she vomited a dark, brown fluid—there had been no other vomiting—and complained of pain in the right side, and insisted on turning on her left side although this position interfered with gallbladder drainage. The urine was normal, but not over twenty-five ounces in quantity. An enema produced a profuse, dark, liquid stool. There was a circumscribed area of distention on the left side at the level of the umbilicus which gave a tympanitic note and suggested intestinal obstruction.

For the next three days the temperature remained normal, pulse 80 to 100,, drainage satisfactory, vomiting of dark liquid each morning, liquid bowel movement of the same character, abdominal distention everywhere, but more marked on the left side, patient gradually becoming more restless, sleepless, hollow eyed, pinched in features, complaining bitterly of thirst; the urine was normal but scanty. Everything by mouth had been stopped and constant enteroclysis was done to overcome the thirst, but the fluid was not well retained. On the night of the sixth day she rested much better than usual On the morning of the seventh day she vomited again what appeared to be several quarts, collapsed, and died within an hour.

An autopsy was refused but I followed her to the deadhouse and reopened my incision. There had been no leakage of bile into the peritoneal cavity. I found the whole abdomen filled almost to bursting with an enormously dilated stomach. A part of the greater curvature near the pylorus presented at the incision. The stomach occupied also the whole of the true pelvis. I enlarged my incision, punctured the stomach, and drew off a gallon of fluid—only part of its contents—so as to give me a better opportunity for observation, and found that the duodenum was dilated to the size of my wrist to the point where it passes beneath the mesentery. Below this point the bowel, both small and large, was collapsed. I made an opening into the dilated part of the duodenum and passed my finger through the apparent constriction without great force, yet there must have been constriction enough by the mesentery to separate an enormously distended duodenum and the markedly collapsed bowel. The point of constriction was definite and in no sense vague. Most of the collapsed bowel was in the pelvis, crowded there by the heavy stomach.

Some cases of fatal dilatation of the stomach following gallbladder operations or reposition of a floating kidney have been reported, but I am pretty well convinced that neither the operations nor the ether acted as the first cause in this case. I believe that the acute attack referred to as seen at the patient's home was really an attack of dilatation of the stomach, mild in comparison with this terminal attack.

It seems that in this case we may attribute the cause of dilatation to one of two factors, either a long mesentery with a heavy, empty bowel dragging on the root of the mesentery producing obstruction of the duodenum, or a paralytic distention of the stomach. It is not difficult to see how a dragging on the mesentery might produce temporary obstruction of the duodenum such as would cause the acute attack seen at the patient's home, and it is more than probable that, given this tendency with our patient in the dorsal position for three days, the stomach may have accumulated enough fluid and weight to force the intestines still lower in the pelvis and thus drag still more on the root of the mesentery and make the obstruction more or less complete and in the end fatal. Yet the dark fluid bowel movements occurring every day are evidence that the obstruction was not complete.

It is unfortunate that I did not at the time of operation examine the root of the mesentery. If the etiology lay in a stomach of poor nerve tone it would explain why the tincture of nux vomica benefited, and following operation a paresis of the stomach may have occurred, permitting it gradually to fill and then, by forcing the bowels down, constriction of the duodenum by the mesentery may have resulted secondarily.

I have seen acute dilatation of the stomach as a terminal feature in pneumonia, but it is probably more common as a complication in surgical conditions than is generally supposed. Last July I saw another case following bilateral salpingooophorectomy for pyosalpinx, but early recognition and prompt treatment soon gave relief.

This subject has received but little attention in this country. In 1859, Brinton discussed its clinical features. Campbell Thomson, in 1902, had collected forty-four cases, only some having followed operation. Neck, in 1906, recorded sixty cases. Recently, Laffer collected 217 cases in all. In 1907, Conner analyzed 102 cases. A brief epitome of his analysis is as follows:

Of the 102 cases three fourths developed during adolescence or early adult life. Females were affected in fifty-three per cent. of the cases. Forty-one per cent. followed operation with general anesthesia, the anesthetic in nearly all of these cases being chloroform. In a majority of the cases the symptoms of dilatation appeared in the first twenty-four hours. The anesthetic vomiting merged imperceptibly into that of the dilatation. Some of the cases did not develop for seven days after the operation. The chief symptoms were vomiting, pain, abdominal distention and tenderness, constipation, thirst, scanty urine, and rapid collapse. Seventy-four of the 102 cases ended fatally, or 72.5 per cent. Among the sixty-nine fatal cases examined, mesenteric obstruction was thought to exist nineteen times.

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*Read before the Charity Hospital Association of Philadelphia, November 23, 1912.

Conner states: "It is interesting in looking over the records of the reported cases of acute gastric dilatation to note that whereas the first case seen by most of the writers has passed unrecognized, subsequent cases observed by the same men have almost always been correctly diagnosticated during life. In other words, the condition is usually not difficult of recognition if the possibility of its occurrence be but held in mind."

The treatment is early and frequent use of the stomach tube, saline enemas and hypodermoclysis to overcome the loss of fluid. Because of the frequent occurrence of duodenal obstruction as the cause, a change of position from the dorsal to the belly or knee elbow is necessary to relieve the mesenteric constriction. Operation is of no value.

2721 NORTH LEHIGH AVENUE.

CULTIVATION OF *BACILLUS TYPHOSUS* FROM A SPOT IN A LUETIC TYPHOID SUBJECT AFTER THE FASTIGIUM.

By P. G. SKILLERN, JR., M. D.,
Philadelphia.
(From the William Pepper Laboratory of Clinical Medicine.)

The following case is of interest because of the infrequency of this examination clinically, and because of its diagnostic value in atypical roseolar rash and in cases modified by some intercurrent disease as, in this case, syphilis. It occurred in the service of Dr. Alfred Stengel at the University Hospital:

CASE. N. N., male, aged forty years, white, seaman, native of Finland, admitted October 7, 1912, complaining of weakness, having left a boat which had just arrived from Bombay.

On September 12th, nearly a month previously, while in the Mediterranean Sea, was overtaken with fever, malaise, diarrhea, loss of appetite, headache, and abdominal soreness. On admission he no longer complained of these symptoms, but said he felt very weak. An eruption appeared on body two weeks after onset of illness, and remained.

He contracted a chancre ten years previously. Was a heavy drinker and smoker. Had a fever which lasted four weeks after leaving Bombay. The water, which was taken on board ship at Bombay, was filthy.

Examination revealed a very profuse maculopapular eruption over most of trunk, arms, and legs, as well as on hands and feet and left cheek. This rash had the boiled ham appearance and symmetrical distribution of syphilitic roseola, and did not disappear on pressure. Lymph nodes palpable were the anterior and posterior superficial cervical, supraclavicular, left epitrochlear, and inguinals. An ancient scar, circinate in outline, was found posteriorly over neck and upper part of back.

Clinical examination of the blood gave a positive Widal reaction and a weakly positive (one quarter unit) Wassermann. Smears from the spots examined under dark field illumination showed no spirochete. Culture from the spots made by writer on October 15th gave a pure growth of typhoid bacilli, which agglutinated with serum from a known case of typhoid. Blood culture taken day after admission proved sterile.

On October 14th, a week after admission, the eruption was fading, leaving a grayish discoloration, and on November 8th, the day of discharge, the spots on abdomen were very faint indeed. At no time during stay in hospital was the temperature over 100° F.

241 SOUTH THIRTEENTH STREET.

INFECTION OF THE GENITOURINARY TRACT BY MICROCOCCUS CATARRHALIS.

By E. H. SITER, M. D.,
Philadelphia,
Department of Genitourinary Surgery, University of Pennsylvania.

The subject of the infection of the genitourinary tract, but principally of the urethra, by *Micrococcus catarrhalis* is a field that is comparatively unexplored, and the more I have looked into it, the more convinced I have become that the field is a wide one and one that should be more carefully looked into by the genitourinary surgeon. I think we are all too prone to consider most discharges, if not all, to be due to the gonococcus, and while it is usual to examine the discharge for the gonococcus, we are content with the finding of an intercellular diplococcus, and this finding with the urethral discharge makes the basis of our diagnosis.

A very interesting communication by Winfield Ayers, of New York, calls attention to this fact, and possibly the reporting of a number of cases which have come under my personal observation may add somewhat to the literature on the subject, which seems to be in negligible quantity. I have found in the majority of my cases that there had been no recent exposure, and not only had there been no recent exposure, but in a large proportion of the cases no previous Neisserian infection. Every genitourinary surgeon takes the previous history of his patients for what it is worth, but I have tried to verify the facts in most of my cases.

The microscope has also shown after most careful staining that while the organisms are not gonococci, they are diplococci. The clinical symptoms varied somewhat, but the only stable symptom seems to be a slight discharge of more or less mucoid character. The urine is not cloudy and shows no shreds. There are a few flocculi which float in the urine. The infection seems to be in the majority of cases an anterior one, and in only one case have I found any infection posterior to the cut off muscle, and this was in a patient who had never had a gonococcus infection.

The endoscopic picture shows a perfectly normal urethra. The cystoscopic examination is also negative, and in the one case where there was any involvement posterior to the cut off muscle the bladder was perfectly normal. The prostatic examination in all my cases has been negative. There has been no enlargement, and no seminal vesiculitis. The mode of infection is difficult to determine and does not seem to be entirely dependent on the presence of *Micrococcus catarrhalis* in the vaginal secretions, as a number have been examined after the infection of the male urethra.

The period of incubation varies from a few days to several weeks. This may not be accurate, as there is nothing to call the attention of the patient to the condition except the discharge, and this is usually seen only by "stripping."

The best treatment of this infection I have found is a negative treatment. In other words, I have found that the less you do for these patients, the better off they seem to be, and spontaneous cure seems to occur. I have found a mild dose of the balsamics with the ingestion of plenty of water and no local treatment whatever to be the best means of controlling and curing the difficulty. I have tried the various silver salts, with the result that the discharge has increased. The least harmful I have found to be the sterile emulsion of silver iodide in five per cent. strength.

The following cases may illustrate the points mentioned:

Case I. Man, aged forty-eight years, married, no history of specific urethritis. First noticed slight discharge one week previous when he consulted his physician, who referred him to me. There was no eversion of the meatus and no ardor urinæ. Urination was normal. Examination showed slight, whitish discharge. There were a few floating flakes in the first urine and the second was clear, and microscopic examination showed absence of gonococci, but diplococci in profusion. Endoscopic examination was negative.

Patient was put on emulsion of iodide of silver locally and small doses of balsamics. At the end of a week the condition was unchanged. The silver was dropped, and patient continued on balsamics. In four days the discharge had disappeared, and the urine was clear. Balsamics were continued, and the patient returned in a week with the discharge again visible. Weak solutions of nitrate of silver were now tried with the result that the discharge was increased. Silver was discontinued and balsamics continued. Discharge continued for ten days then ceased. There was no return in four months, and patient became normal.

Case II. Man, aged thirty years, married four months. Had had slight discharge for one month. Had been under treatment. There was no previous venereal history. Present condition had been without symptoms except slight discharge, whitish and semimucoid in character. Discharge apparent only upon "stripping." Urine had a few floating flakes.

Microscopical examination showed diplococcus other than the gonococcus. Urethroscopic examinations were negative. Examination of vaginal secretions in relation to this patient showed the same diplococcus, but in the female there was no noticeable discharge and physical examination was negative.

Patient was given hexamethylenamine and salol with varying success, and the discharge became intermittent. After two weeks treatment was changed to balsamics and discharge disappeared. There had been no recurrence in several months and repeated examinations of the vaginal secretions failed to reveal any of the microorganisms.

Case III. Man, married, no exposure, no previous venereal history, presented himself showing slight, whitish, mucoid discharge; had no symptoms other than this discharge; few flocculi in first urine. Microscope showed diplococcus.

Treatment consisted of balsamics internally and injection of iodide of silver five per cent. No change was observed after three weeks. Balsamics were continued and an astringent injection given. Discharge was increased, and in ten days injection was omitted and balsamics continued. Discharge was intermittent for several weeks. General tonics were substituted for balsamics and the disease cleared up in ten days.

Urethroscopic and cystoscopic examination as well as examination of prostate and vesicles were negative throughout this case. Vaginal examination of the wife of this patient was entirely negative.

I have observed a number of cases exactly similar to the foregoing, and I do not find that *Micrococcus catarrhalis* is at all harmful, and apparently it does not cause any complications. The only case in which I have seen any involvement of the posterior urethra, and the only evidence of that involvement was the presence of flocculi in the first and second urines.

The literature on the subject is very meagre, particularly from the clinical side. Bacteriologists have recognized the organism, but the clinicians I find have passed over the subject very lightly, or have not touched upon it at all.

Eraud recognized the diplococcus resembling the gonococcus and found it in the normal male urethra. Winfield Ayers has found that *Micrococcus catarrhalis* is capable of causing a urethritis of more or less severity, and that if it is not recognized early and treated properly it is a dangerous infection, and that the urethritis caused by this organism presents an entirely different clinical picture. Watson and Cunningham speak of a diplococcus which has not as yet been differentiated from the gonococcus, and which is capable of causing acute urethritis differing from the Neisserian infection in its clinical course. Keyes recognizes the infection of the urethra by *Micrococcus catarrhalis,* but says it is probably insignificant and differs in its clinical aspect from the gonococcus.

Wood maintains that *Micrococcus catarrhalis* is rarely found in the urethra and does not give rise to acute urethritis clinically, but to a chronic or subacute process which resembles the gonococcus infection. He says that absolute distinction between the two forms of organisms can be made only by cultural methods. Libman states that *Micrococcus catarrhalis* is found in the urethra, and asserts that an absolute differentiation can be made only by culture. He maintains that when urethritis from catarrhalis infection is seen early, it is impossible to differentiate it from the gonococcus infection, and that clinically it runs the same course.

Micrococcus catarrhalis has been found pathologically in the conjunctivæ. It has been found in cases of pyorrhœa alveolaris, and in the sputum of patients suffering from influenza. It has been seen by Neisser in the examination of the sputa of whooping cough, and is found in the affections of the nose and throat. I have found from the bacteriological side that it is possible to differentiate these organisms only by culture, and that the microscope, while it excludes the gonococcus, does not give a diagnosis of *Micrococcus catarrhalis.* Clinically I found that the acute onset was so mild as to be unrecognizable by the patient.

In fact there are no subjective symptoms sufficient to call the patient's attention to the fact that there is a discharge, in which it differs obviously from the Neisserian infection. The only symptom we have to deal with is the discharge. I have not found any eversion of the meatus, nor any ardor urinæ. The urination is not more frequent, and the only symptom which is apparent is the presence of a discharge.

As to the treatment, tonics and genitourinary antiseptics seem to be the only treatment of value. Local treatment in my experience has been valueless, and if continued aggravates the condition. Silver in any form, either of the newer salts, or the nitrate, even if used in extremely weak solution, increases the discharge. The duration is not long, possibly six weeks, and I have found that two weeks is the average time with, usually, recurrences.

I think the patient's general condition has as much to do with this infection as anything else. If the patient is run down and his mucous membrane is relaxed, he seems to be more prone to have this discharge than patients who are in a healthy condition.

My only object in calling the attention of the medical profession to this condition is that I think a great many of the so called chronic urethritis cases are in reality infections from *Micrococcus catarrhalis*, and if this is not recognized, the patient is treated vigorously, either with sounds or local applications, and the case drags on indefinitely. I think that if many of our so called chronic prostatic and chronic urethritis patients were subjected to a careful bacteriological examination that the entire absence of gonococcus would be determined, and if we went a step further and took a culture we should find that we were dealing with *Micrococcus catarrhalis*.

2038 Locust Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXI.—How do you treat psoriasis, and with what success? (Closed February 15th.)

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Answers due not later than March 15th.)

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Answers due not later than April 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXX was awarded to Dr. Arthur L. Fuller, of Colorado City, Texas, whose article appeared on page 454.

PRIZE QUESTION CXXX.

THE TREATMENT OF SUBACUTE AND CHRONIC LARYNGITIS.

(Concluded from page 456.)

Dr. M. Lubman, of New York, writes:

With the exception of the professional and specific forms, of which I will speak later, subacute and chronic laryngitis are always produced by continuity secondarily to some pathological condition existing higher up in the respiratory tract. The successful treatment of the diseases in question, therefore, should commence from the nose downward, and any pathological condition in the respiratory path of the nose and pharynx down to the larynx must be removed or remedied. The conditions in the upper respiratory tract, which ultimately produce chronic laryngitis, are quite numerous—a deviated septum, a spur with a hypertrophied inferior turbinate occluding the nasal chamber, polyps, ethmoiditis, sinusitis, mucopurulent rhinitis, adenoids, hypertrophied lingual tonsils overhanging the epiglottis, and granular pharyngitis. It is of prime importance that any of these conditions, when found, be removed, for it can generally be stated "that any interference in the upper respiratory tract, causing mouth breathing, will ultimately produce a chronic laryngitis." The term "subacute" is quite a relative one, in so far as it means that either the obstruction is not great, or the patient does not neglect it to go on to a chronic form.

Having removed the causal factors, the condition of the larynx will improve proportionately. To complete the cure, the larynx proper should be treated locally.

The treatment of the larynx can be subdivided into three parts: Hygienic, local, and internal.

Hygienic. Attention should be given to any constitutional disorders. The use of an antiseptic mouth wash or gargle is strongly recommended. The patient should be instructed to use his voice moderately, to abstain from any alcoholic beverages, smoking, as well as from spicy food and strong condiments. He should sleep in a well ventilated room, and lead an outdoor life. A sea voyage will frequently be helpful in these cases. A change of climate is very beneficial; the locality depending upon the general health of the patient. For stout and plethoric people, Sharon and Richfield Springs in the United States have a beneficial effect; for those who are delicate and anemic, chalybeate and muriated spas may be recommended.

Local. Local treatment consists in applying certain drugs directly to the diseased mucosa of the larynx. The local application of remedial agents is accomplished by means of sprays, injections, inhalations, direct application with a cotton carrier, and insufflation. The tip of the spray must have a downward curve at right angles, and be carried well back behind the epiglottis before pressure is applied. The spray may consist of a solution of sodium bicarbonate and potassium bicarbonate of each ten grains to the ounce. For steam inhalation, compound tincture of benzoin (a teaspoonful to a kettle of water) may be used a few times a day. Care should be taken not to have any draught in the room.

A few precautions must be observed in the local applications. The cotton on the applicator should be wound up quite tightly. This is best accomplished by moistening the applicator in water, and then winding the cotton up firmly. The mirror, when heated, should be tested upon the hand of the applicator before it is introduced into the mouth of the patient, for a remark from the patient, "It is too hot," discredits the physician. The best way is to have the mirror soaped and wiped off. When used in this way, it serves the purpose very well.

The tongue should be pulled forward and downward with mercy, as sharp central incisors will cut into it, and the successful application will be interfered with. When the patient's pharynx is very sensitive, cocaine in four per cent. solution, applied locally, will alleviate this. The excess of fluid should be squeezed out from the cotton to prevent trickling between the cords where it excites a spasm of the laryngeal muscles. The remedies used for local applications are zinc chloride, zinc sulphate, copper sulphate, iron perchloride, resorcin, and Mandel's solution, which consists of

℞ Iodine, ... grs. vi;
Potassium iodide, ... grs. xii;
Oil of peppermint, ... ♏v;
Silver nitrate, ... āā ℥i.
M. fiat solutio.

Of all the drugs enumerated, silver nitrate is still the banner carrier in chronic conditions. It should be started with a mild solution, about three or four per cent., and gradually worked up to a higher strength. If painful, cocaine should be applied first. The application should be made every other day, and diminished in proportion to the progress of the case. Argyrol in twenty per cent. solution may be used as a substitute; it is quite soothing.

Internal. Internal medication embraces the eliminators and absorbing drugs. The bowels should be kept open regularly with a cathartic, any gastric symptoms corrected, and tonics prescribed if the patient's condition requires it. Protoiodide of mercury, one eighth or one sixth grain, three times a day, after meals, is an absorptive agent. Muriate of ammonia with compound mixture of licorice will make the mucus less viscid. Potassium iodide internally is also given to help absorption.

The specific form of laryngitis should be treated constitutionally. Occupational laryngitis or "clergyman's sore throat" requires absolute rest, complete abstaining from use of the voice, and a change of climate. Couterets and Mont Dore in the Auvergne mountains have attained considerable reputation.

Other forms which are due to pressure or goitre or other growths, must be treated surgically and no time should be wasted upon local treatment.

Dr. Leopold Heimann, of Evansville, Indiana, states:

Subacute laryngitis. The predisposing causes are essentially the same as in acute laryngitis, and the treatment must be divided accordingly into constitutional and local.

When associated with inflammatory conditions of the upper air passages, pharyngitis and rhinitis, laryngitis must be treated in conjunction therewith. The patient, when possible, must remain in a warm room, and in severe cases must stay in bed and should refrain from using the voice as much as possible.

Free evacuation of the bowels is necessary with a saline aperient, given usually one hour before the early meal, which should consist of one or more glasses of hot milk. This stimulates the glandular activity and makes the expectoration of mucus easier. Some form of ammonia is indicated in moderate doses; ammonium chloride, five grain doses, is more palatable than the carbonate. Liquor ammonii anisatis of the German pharmacopeia, in ten drop doses in one fourth glass hot milk, is an elegant preparation readily borne in this condition. When a disturbing cough is present, small doses of heroine or codeine may be cautiously used. This is sometimes the key to the entire situation; by putting the larynx at rest all inflammation is allayed. Local treatment consists of applying counterirritation over the larynx. A Priessnitz compress is very serviceable and when properly applied acts admirably, but should be used only when the patient is under complete control in the house, and it should be used only at night. The Priessnitz compress is an ordinary towel folded lengthwise until it is about three inches wide; wring out of cold water and apply directly to the neck. Cover this thoroughly with oiled silk. Over this place several thicknesses of flannel. Leave on from eight to twelve hours without removing, then give entire neck a gentle alcohol rub. These compresses can be repeated from night to night as often as indicated.

Locally any of the oily solutions should be used in an oil atomizer. Before using this I use an alkaline solution of

℞ Sodii chloridi, ... grs. xv;
Sodii biborati, ... grs. xv;
Aquæ destillilatæ, q. s. ad........................ ℥ii.
M. fiat solutio.

Is must be used warm. This removes the mucus and any foreign material from the inflamed area. Follow this by any oily spray in an oil atomizer.

℞ Menthol, ... grs. x;
Camphor, ... grs. xv;
Albolene, ... ℥ii.
M. fiat mistura.

This should be used every two or three hours. Some prefer a vapor solution, and much benefit can be derived by adding one teaspoonful of compound tincture of benzoin or a few drops of eucalyptol to a pint of water, over a gas or alcohol lamp or in any of the various vaporizors on the market. Often an old fashioned tea kettle serves admirably.

Constitutionally, syphilis, rheumatism, tuberculosis, etc., must be taken into consideration and treated accordingly. All alcohol and tobacco must be prohibited. The thyroid gland should receive attention, as an enlargement of this gland by pressure on the recurrent laryngeal nerves may bring about a huskiness of voice simulating a laryngitis.

Tonics should be given in some form. Strychnine, either hypodermically or internally, acts admirably in these conditions. Electricity should not be used.

When the patient cannot for any reason remain in the house, I follow the foregoing treatment as nearly as possible.

Chronic laryngitis is a chronic inflammatory condition of the mucous membrane and the submucous tissue of the larynx accompanied by a congestion and an increase of tissue. Every case is a law unto itself and must be treated accordingly.

Obstruction in the nose must be remedied, and cardiac and pulmonary conditions ameliorated as far as possible. Syphilis must be eradicated, alcohol and smoking prohibited, and a rheumatic diathesis must receive appropriate attention. Epsom salts in a glass of warm water, one hour before the first meal, should be given daily as long as indicated. Small doses of effervescent sodium phosphate are far more acceptable to most patients when it is necessary to give a saline over a long period. This materially depletes the engorged and inflamed bloodvessels. An alkaline spray, used warm and followed by an oily spray, materially benefits this condition. The first removes the mucus and any débris, and the second tends to relieve the inflammatory condition. This is used by the patient every three or four hours. Once or twice a day apply to the entire mucous membrane of the larynx a twenty per cent. solution of argyrol. Some prefer a five per cent. silver nitrate or a zinc solution, but the former relieves and benefits most cases. If silver nitrate is used, it must be preceded by a five per cent. cocaine solution. Care must be exercised that none of the nitrate of silver enters the trachea and produces a spasm of the glottis. In cases of long standing, in which newly formed tissue is seen, large doses of potassium iodide or compound syrup of hydriodic acid give results. Some patients have an idiosyncrasy to iodine or any of its derivatives, which can be often overcome by small doses of belladonna.

When nodular growths are seen, these must be removed by the cautery or knife, but extreme precision must be exercised. Sometimes a recurrent chronic laryngitis is seen in elderly people who are not relieved by any treatment, and these, when possible, are greatly benefited by a sojourn in southern California, the eastern coast of Florida, or moist, warm climates.

Therapeutical Notes.

Treatment of Seborrheic Keratosis.—Montgomery and Culver, in the *Journal of Cutaneous Diseases* for September, 1912, state that where keratosis is present on a seborrheic skin in old persons, thick crusts had best be removed with the curette. Crystals of trichloracetic acid, or a saturated solution of it, should then be rubbed into the open surface thus produced. Better results may be secured with the acid than from solid carbon dioxide, and the effect is as good as that obtainable with the x rays. As a preliminary to employment of the crystals, they should be broken up with a few drops of water in a small dish. Cotton is then wrapped around the end of a probe, allowed to take up the acid, and applied, with rubbing, to the involved area. To arrest the action of the acid when necessary, water can be mopped on the lesion. The acid should, however, be left on until the surface has become white, i. e., for a few minutes.

Treatment of Intermittent Albuminurias.—Oppenheim in *Progrès médical* for October 26, 1912, observes that the orthostatic, cyclical, digestive, and fatigue albuminurias met with in childhood and adolescence almost constantly betoken the presence of slight renal weakness, generally in individuals predisposed to it through inherited rheumatic or gouty tendencies. Careful supervision of both the general and renal condition is required in these cases.

The diet should not be restricted to milk, but remain varied and ample, easily fermentable substances, however, being avoided. Moderate exercise in the open air, preferably in a mild climate, and reduction of mental work to a minimum, are desirable. A warm shower bath, followed by rubbing, should be taken morning and evening.

A half glassful of Vichy water should be taken for two weeks in each month, half an hour before meals. After meals, pills containing 0.75 grain (0.05 gramme) of lecithin may be taken, to the total number of five daily. In the alternate two weeks the following combination should be administered:

℞ Sodii arsenatis, ...gr. ss (0.03 gramme);
Iodi, ...gr. iss (0.10 gramme);
Sodii iodidi, ...grs. xv (1.00 gramme);
Syrupi aurantii, ...℥iii (100.00 grammes);
Aquæ destillatæ, q. s. ad...........℥x (300.00 c. c.).
M. sig.: One teaspoonful for a child six to eight years old, before dinner and supper; one dessertspoonful for older children.

In children exhibiting tuberculous tendencies, there may be substituted for the medicinal measures already referred to injections of sodium cacodylate, one half grain (0.03 gramme) daily, for six successive days, alternating with a like period of rest. In winter, codliver oil may be given by the mouth, and in the summer, the following powders:

℞ Calcii phosphatis præcipitati, grs. viiss (0.50 gramme);
Calcii carbonatis præcipitati, grs. iv (0.25 gramme);
Magnesii oxidi, ...gr. iss (0.10 gramme);
Sodii chloridi. ....gr. ¾ (0.05 gramme).
M. et pone in chartulam No. I.
Sig.: Take one powder before each meal in a half glassful of water.

In a number of instances there is evident lowering of the vascular tension. In these cases it may be advantageous to give one teaspoonful of a one to 10,000 epinephrine solution before breakfast on five successive days in each fortnight.

Where the albuminuria is clearly of the orthostatic type, rest in bed for some weeks should be advised at the beginning of treatment, and later a period of recumbency after each meal.

Treatment of Migraine.—R. Oppenheim, in *Progrès médical* for September 28, 1912, discusses in particular the therapeutic measures to be applied in the ophthalmic type of hemicrania. During the attack gentle and slow massage should be practised around the orbits, with especial pressure over the temporal arteries; or, a weak galvanic current may be applied. The following cachets should be taken every half hour until the estimated limit of safe dose has been reached:

℞ Antipyrinæ, ...gr. viiss (0.5 gramme);
Acetphenetidini, ...gr. iii (0.2 gramme);
Acetanilidi, ...gr. iss (0.1 gramme);
Caffeinæ, ...gr. ¾ (0.05 gramme).
M. ft. in cachetam No. I.

If antipyrine has already been found inefficient, from fifteen to thirty grains (one to two grammes) of potassium bromide should be given instead; or, cannabis indica may be employed:

℞ Extracti cannabis indicæ, gr. ¼ (0.015 gramme);
Acetphenetidini, . } ..ana grs. iiss (0.15 gramme).
Acetanilidi, ... }
M. ft. in pilulam No. I.

In the intervals between attacks an important requirement is to correct any ophthalmic disorder, especially errors of refraction, from which the patient may be suffering. To exert a sedative effect on the central nervous system, appropriate hydrotherapy and the ingestion of bromides are both indicated. The first should consist of the application of interrupted jets of lukewarm (32° C.) water to the entire body, except the head and neck, for two or three minutes, followed by a brief application of cold water to the feet. The bromide may be prescribed thus:

℞ Potassii bromidi, ...ʒiiss (10 grammes);
Sodii bromidi, ...
Ammonii bromidi, . .ana grs. lxxv (5 grammes);
Sodii benzoatis, ...
Syrupi aurantii, ...℥ii (60 grammes);
Aquæ destillatæ, q. s. ad............℥x (300 c. c.).
M. Sig.: One tablespoonful before dinner and supper.

Gastrointestinal disturbances, according to Robin, play an important part in the etiology of this affection. To correct these conditions exercise in moderation and life in the open air will be of assistance. Mental fatigue and the use of tobacco are both to be interdicted. In the diet, restriction of the meats is especially to be insisted upon. Stimulating beverages of all kinds must be proscribed.

Each morning a half tumblerful of an alkaline solution, prepared by dissolving the following salts in a quart of water, should be taken on an empty stomach:

℞ Sodii sulphatis, ...ʒi (4 grammes);
Sodii bicarbonatis, ...grs. lxxv (5 grammes);
Sodii phosphatis, ...ʒiiss (10 grammes).
M. et pone in chartulam No. I.

Where constipation does not yield to these salts, the following combination may be used:

℞ Fluidextracti frangulæ, .
Fluidextracti rhamni purshianæ, ...ana ʒvi (25 grammes);
Glycerini, ...ʒx (40 grammes).
M. Sig.: One teaspoonful in a halfglassful of water before retiring.

Intensive Strychnine Therapy.—P. Hartenberg in *Presse médicale* for January 25, 1913, lauds the use of strychnine sulphate in ascending doses, hypodermically, for tonic purposes. He uses a one per cent. solution and gives initial doses of 0.003 gramme in women and 0.004 gramme in men. These are increased daily by 0.0005 gramme until the limit of tolerance is reached, as shown by a feeling of slight intoxication, mild vertigo, stiffness of the jaw, or rigidity in the lower extremities. This reaction generally appears at 0.005 to 0.006 gramme in women and 0.006 to 0.007 gramme in men. The same dose is then injected on successive days until the effects are no longer produced, when a further increase in the dose is begun, more gradually, however, than before, e. g., by 0.00025 gramme only, or less, according to the subjective condition. The dose may thus be increased to 0.01 or 0.02 gramme, which may even be repeated once or twice in a single day, for six hours after each injection all summation of effect disappears. Such medication is indicated in neurasthenic states. Far from causing restlessness, the injections quiet psychic activity, relieve anxiety, and restore sleep. In simple neurasthenia permanent recovery usually takes place in from ten days to two weeks. In pseudoneurasthenia, however, the product of autosuggestion, and in mild forms of melancholia, frequently confounded with neurasthenia, strychnine is powerless, though harmless, and serves merely to point out the line of treatment to be followed, viz., suggestion. Other conditions in which strychnine is valuable are spinal and neural affections leading to hypotonia and atrophy, tabes dorsalis, cachexias, convalescence, tuberculous disease, etc. Contraindications are few, and in giving numerous injections the author has seen no untoward result. That there is no tendency to habit formation is shown in that the administration of 0.02 and 0.03 gramme doses could be abruptly broken off with impunity.

A Vehicle for Bromides and Iodides.—Milton Dunn, in the *American Journal of Pharmacy* for February, 1913, is credited with the statement that the Elixir digestivum compositum (N. F.), used principally as a vehicle, has not proved satisfactory as such. He suggests the following formula for a clove water which, he states, meets all possible requirements as a vehicle and is particularly efficient for the administration of bromides and iodides:

℞ Olei caryophylli, ...ʒi (4 c. c.);
Tincturæ persionis, ...ʒxiii (50 c. c.);
Alcoholis, ...ʒxi (43 c. c.);
Talci purificati, ...℥ss (15 grammes);
Aquæ, q. s. ad ....Oii (1,000 c. c.).
Misce et filtra.

Therapeutical Value of Cholesterin.—M. Roch, in *Revue médicale de la Suisse romande* for December, 1912, states that since very encouraging results have at times been obtained in severe anemias by the administration of cholesterin, its use should henceforth be indicated when cases of the pernicious type prove refractory to iron and arsenic. The substance is certain not to do harm and is by no means sure not to do good. It should be prescribed in daily doses of one to two grammes, in powder, cachets, or oily solution. In hemolytic jaundice cholesterin appears to have rendered service, though the reports have not as yet been sufficiently numerous to warrant a definite conclusion. In hemoglobinuric fever Audéoud has obtained good results with large doses—up to four grammes a day; in this condition cholesterin would appear to improve the tolerance of quinine. In infections, notably tetanus and bronchopneumonia, cholesterin seems to have been of service, though less definitely so than in the conditions where protection of the red corpuscles from harmful influences was the end in view.

Treatment of Wounds.—Demay de Cervant, in *Union médicale du Nord-est* for October 15, 1912, is credited with the following ointment for application to wounds:

℞ Iodi, ...gr. iii (0.2 gramme);
Potassii iodidi, ...gr. xv (1.0 gramme);
Adipis lanæ hydrosi, ...ʒv (20.0 grammes).
M. fiat unguentum.

The initial treatment consists of the application of fresh tincture of iodine, without previous washing. The wound is then dressed with gauze to which the iodine ointment has been applied.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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SOME REMARKS OF THE PRESIDENT.

In his inaugural address on March 4th, the President referred to problems that have confronted the medical profession in this country in a manner that seems to promise prompt and definite action. After complimenting the country on the way it had studied methods of production, the President went on to say that, on the other hand, neither cost nor economy had been properly studied, and he continued, in words which no physician can read without a thrill of pleasure:

> Nor have we studied and perfected the means by which government may be put at the service of humanity in safeguarding the health of the nation, the health of its men and its women and its children, as well as their rights in the struggle for existence. This is no sentimental duty. The firm basis of government is justice, not pity. These are matters of justice. There can be no equality or opportunity, the first essential of justice in the body politic, if men and women and children be not shielded in their lives, their very vitality, from the consequences of great industrial and social processes which they cannot alter, control, or singly cope with. Society must see to it that it does not itself crush or weaken or damage its own constituent parts. The first duty of law is to keep sound the society it serves. Sanitary laws, pure food laws, and laws determining conditions of labor which individuals are powerless to determine for themselves are intimate parts of the very business of justice and legal efficiency.

DEMENTIA PRÆCOX; ITS EARLY DIAGNOSIS BY THE GENERAL PRACTITIONER.

When we realize that from twenty to twenty-five per cent. of all admissions into asylums for the insane are those of cases of dementia præcox, and that the early recognition of this disease and its treatment increase considerably the chances of recovery, the importance of an early diagnosis becomes self evident. The need of timely recognition is further emphasized by the fact that, as its name indicates, dementia præcox is essentially a disease of youth, the deterioration of the mind being initiated precisely as the individual reaches the threshold of responsibility and usefulness. The specialist seldom sees such cases in their incipiency. The family, and too often the family physician, regard the mental phenomena as peculiarities of temperament, backwardness, stupidity, emotional indifference, loss of interest, etc., and it is only when the symptoms assume distinctly the characters of some familiar type or sign of insanity, mania, melancholia, delusions, etc., that the presence of a psychosis is recognized—too late often to arrest the morbid process.

Practical experience has shown that a sharp differentiation cannot strictly be drawn between the three forms of dementia præcox: 1. The *hebephrenic*, or essentially juvenile type, characterized usually by gradual enfeeblement of the mind, manifesting itself generally as a subacute, and occasionally as an acute psychosis; 2, the *catatonic*, occurring during adolescence or early adult life, characterized by a tendency to stupor, catalepsy, or periodical excitement, persistence of a single line of thought, unreasoning antagonism to all biddings, or the reverse, hypersuggestibility, etc., and tending toward dementia; 3, the *paranoid*, which may occur later in life, usually after the twenty-fifth year, attended by hallucinations and delusions, antisocial attitude and suspiciousness, and rapidly progressing mental degeneration. Certain phenomena, however, occur early in the history of most cases which are at least sufficiently marked to suggest the presence of a serious mental disorder. Prominent among these is emotional deterioration, the patient feeling neither joy nor sadness, and losing interest in his relatives, friends, pleasures, and, as a corollary to this, in his occupation, which he increasingly neglects. The flow of thought is impaired; incoherence becomes more or less evident, while a persistent reiteration of certain phrases begins to attract the attention of relatives and friends. Delusions of a depressed, hypochondriacal, and even persecutory type may also appear early in the disease, and be interspersed perhaps with outbursts of senseless and sometimes destructive excitement, usually ascribed to "bad temper" or "changed disposition." These alternating outbreaks of depression, listlessness, etc., and exaltation have been regarded as strong presumptive evidence of the presence of dementia præcox.

In the presence of such phenomena, the general practitioner should procure an examination of the patient by a competent and experienced specialist in psychiatry, without mentioning the likelihood of the presence of a mental disease to any layman, even to the relatives, if possible, lest the financial interests of the patient be inadvertently compromised in the event of a favorable verdict; since a diagnosis of dementia præcox would place the stamp of insanity upon its victim even though the remedial measures instituted proved successful. Where a specialist or a psychiatric clinic cannot be reached, and the practitioner finds it necessary to assume the responsibility of the case, he should remember that he is dealing, in the light of modern work, with an adynamic toxemia leading to degeneration of the organ of thought as physical basis, and occurring, in most instances, in predisposed individuals. The essential aim, therefore, should be to counteract the cerebral degeneration by measures calculated to enhance nutrition. Overfeeding, outdoor life, tonics, and change of environment are the essential features of the line of treatment which has given the best results. The strengthened organism adequately converts its toxic wastes into eliminable products and thus rids itself of the main pathogenic factor of the disease.

THE DECLINE IN PRESCRIBING.

In an address before the Philadelphia branch of the American Pharmaceutical Association, Dr. Henry Beates, president of the Pennsylvania State Medical Examining Board, said that one reason why the druggists receive few prescriptions for galenical preparations is that physicians do not know how to formulate prescriptions, that they are ignorant of the exact therapeutic action of drugs, owing to defects in their educational training. Doctor Beates has had an extensive experience in the examination of candidates for registration as physicians, and his conclusions are, therefore, entitled to grave consideration. It is this ignorance of the exact action of drugs that has, in Doctor Beates's opinion, caused the medical profession to resort to so large an extent to ready made mixtures. According to this critic, even when a physician prescribes a drug he rarely knows exactly how it acts, but notes only that the patient gets better or worse. This is a very severe arraignment of the present day curriculum, but it is one for which we fear there is more than a modicum of justification. Not that the teaching of materia medica is less efficient than it was twenty-five years ago, but this branch has been overshadowed by the increased attention paid to pathology, diagnosis, and other branches of the curriculum. Indeed, pharmacology has introduced a degree of exactitude in the study of therapeutic action not dreamed of a quarter of a century ago, but this is of the laboratory type, and the powers of clinical observation have not been correspondingly cultivated in the student. In many schools the tendency toward drugless therapy is reflected in the relegation of the study of materia medica to a less important plane than it is entitled to. We hope that Doctor Beates's criticism may prove stimulating to the schools that have fallen into this error.

That Doctor Beates's criticism of the lack of instruction in materia medica and therapeutics is justified, is shown by reference to the curriculum approved by the Association of American Medical Colleges, which provides only 240 hours for the study of pharmacology, materia medica, and therapeutics out of a total of 4,000 hours of required instruction, or only six per cent. of the whole. For therapeutics as such the curriculum provides only fifty-five hours, the remainder of the 240 hours in this division being devoted to pharmacology and materia medica. This certainly seems an inadequate proportion of time to devote to the important study of treatment.

MENTAL HYGIENE.

In all civilized countries the question of mental unsoundness in its various manifestations is engaging the earnest attention of the medical profession and to a lesser extent that of the laity. In Great Britain it is significant to note that a first attempt is being made to apply eugenic principles by legislation. During the past year a mental deficiency bill was introduced by the Home Secretary, some of the clauses of which are of a far reaching nature. One clause reads as follows: "Persons in whose case it is desirable, in the interests of the community, that they should be deprived of the opportunity of procreating children." Although the bill is only under consideration by the British Parliament, and although it is unlikely that it will pass as it now stands, the mere fact that such a measure should have been introduced is the straw which points the way the wind is blowing.

Indeed, in most countries of the world the problem of how to deal with those afflicted with mental unsoundness is acute and pressing. The situation in this respect in this country does not differ materially from that of other industrial countries. This is emphasized by the session of the Mental Hygiene Conference in New York recently and by the keen interest taken in the proceedings by members of the medical profession and by the general public. Dr. L. Llewellys Barker, professor of medicine in Johns Hopkins University and president of the National Committee for Mental Hygiene, spoke at this conference regarding Unsoundness of Mind a National Handicap, and in the definition of unsoundness of mind gave it a wide scope. He pointed out that the term does not only include those graver disturbances, insanity, imbecility, and idiocy, but also epilepsy, hysteria, hypochondria, and psychasthenia; even in conditions commonly designated as neurasthenia the mental functions usually are temporarily disturbed. Furthermore, he declared that society now recognized more than ever that problems of criminality, inebriety, vagrancy, prostitution, and pauperism were interwoven with problems of brain disorder. If it is granted that unsoundness of mind is prevalent in this and other countries to an alarming degree, then the problem before us is to devise means whereby its continuance may be checked.

For the prevention of insanity real reforms of social laws must be introduced. Provision for well born children is the especial province of eugenics. When we have been able to distinguish between good inheritance and bad, what steps shall be taken to perpetuate the one and eliminate the other? For the perpetuation of the good, education may effect something and selective mating may play a part, but this phase of the matter simply bristles with difficulties and we must proceed cautiously. With regard to the elimination of the bad, the eugenist's programme is fairly definite; that is to say, that measures calculated to check the output of the unfit are already in operation in certain States, but sufficient time has not elapsed to state definitely whether the result has been satisfactory.

So far as euthenics are concerned, we are on firmer ground, as external circumstances can be controlled more or less effectively. The influence of environment upon mental and physical health is enormous, and social reforms of every description can be introduced and enforced to the incalculable benefit of the race. Industrial conditions, for instance, can be vastly improved, and such conditions need improvement in all parts of the United States, not forgetting New York State. The question of the control of syphilis is a social reform which has been shirked and is being shirked, but is one which if grappled with vigorously would tend to decrease the toll of defective and insane to an unbelievable extent. In the meantime, a campaign of education is required. By continued iteration the community at large will be led to comprehend that social evils lead to physical and mental ills, and that the wisest and cheapest policy is to do away with such evils.

CHOLERA IN THE BALKAN WAR.

M. R. Kraus reported to the medical society of Vienna (*Semaine médicale*, February 12, 1913), that he had been called to fight the cholera in the Balkan war and had found the hospital at Tchorlou destitute of beds, physicians, and nurses, while the cholera patients were not isolated. In the third army, at Tchataldja, there had been 30,000 cases of gastrointestinal disease, with 2,000 deaths, and, estimating the mortality at its lowest figure (forty per cent.), there could not have been fewer than 5,000 cases of cholera. Infection had taken place probably from the river, in which numerous corpses were floating. Kraus established nine bacteriological laboratories and undertook to organize the hospitals, measures for isolation, disinfection, etc. He isolated the infected patients, secured boiled water for drinking, and submitted an immense number of soldiers to preventive inoculation. By the end of January cholera was extinct.

Tincture of iodine had proved an admirable remedy for cholera, in doses of five drops three times a day, and after a few days of this treatment, cholera bacilli were no longer found in the stools. To prevent the disease from extending into Bulgaria, a rigid quarantine had been established and it was the intention to submit the entire population to inoculation. Deaths from disease were from two to five times as numerous as those from wounds, and it was in time of peace that precautions should be taken to spare the army the epidemics heretofore so common in war.

THE HABITS OF RATS.

The habits of the rat, on account of the rôle it plays in the transmission of plague, are of great interest. The short essay written by Dr. R. H. Creel, of the United States Public Health Service, which appears in the *Public Health Reports* for February 28th, will be of interest to our readers, especially as a knowledge of the subject is very important in properly devising rat proving methods and in carrying out successful extinction of these animals.

The author found, through his observations and experiments, that *Mus norvegicus*, while essentially a burrowing animal and not addicted to climbing or swimming, is nevertheless quite capable of doing either. It burrows readily in the hardest earth, even to the depth of two and a half feet, and can pass through, probably by gnawing, all wooden material, soft brick, or mortar. The black rat and *Mus alexandrinus* (at least in Porto Rico) do not burrow at all, but are very adept at climbing or jumping, and therefore are the species chiefly found in the rural districts, removed from human habitations. It is possible for rats to escape from ships anchored a quarter or even a half mile from shore and make a landing, the water being smooth and the tide favorable. It is questionable whether rats under natural conditions would make the attempt, though unusual conditions aboard ship might determine this kind of migration.

THE ATOM FROM THE MODERN VIEWPOINT.

The former definition of the atom as an indivisible portion of matter has been abandoned by the modern physicists like Sir J. T. Thomson, who finds in the atom particles which have only one seventeen hundredth of the mass of the lightest atom known. Our previous concepts of the stability of the elements have also been upset by the teachings of Sir William Ramsay, who seems to have demonstrated the transmutation of metals by producing lithium from copper. A further shock to the accepted dogmas of chemistry was given in a paper presented jointly by Professor J. N. Collie and Mr. H. Patterson at the February meeting of the Chemical Society in London, giving the results of a series of experiments with electric charges. These results indicated that the synthesis of the atom had been accomplished. If these results are confirmed, we shall have to revise radically our concepts of the constitution of matter.

WHAT IS A WHITE BLOOD CORPUSCLE?

Our readers, whether convinced or not, will be interested in the communication in this issue of the JOURNAL on The Metamorphosis of a White Blood Corpuscle. How many of them can corroborate or refute offhand the arguments of Dr. Thomas Powell?

Obituary.

PHILIP HANSON HISS, JR., M. D.,

of New York.

Doctor Hiss died at his home, Sixty-first Street and Madison Avenue, New York, after a year's illness, on February 27th, in his forty-sixth year. He was born in Baltimore in 1868, graduated in arts in Johns Hopkins University in 1891, and received his medical degree from Columbia University in 1895, being appointed assistant in bacteriology the same year, subsequently becoming instructor in hygiene and bacteriology, adjunct professor, then professor of bacteriology. He was also professor of hygiene in the Women's Medical College in 1898, 1899, and bacteriologist to the board of health, where he served three years. Doctor Hiss won wide distinction for his work on typhoid fever, erysipelas, and pneumonia, particularly in the investigation of immunity and cure, and with Zinsser was the author of a well known treatise on pathology. His name is associated with many ingenious technical procedures in pathological work. He is survived by a widow and two children.

News Items.

New Laboratory for Experimental Surgery.—A laboratory for experimental surgery has been opened at the Flower Hospital and Medical College. Special courses in surgery are offered to graduates in medicine by Dr. A. L. Soresi, who has been appointed professor of experimental surgery and director of the laboratory.

Dr. Theodore C. Janeway to Lecture in Philadelphia.—On Friday, March 14th, the third lecture of the Rush Society will be given in Lecture Room B, New Medical Laboratories of the University of Pennsylvania, by Dr. Theodore C. Janeway, professor of the practice of medicine at Columbia University. His subject will be Nephritic Hypertension; Clinical and Experimental Studies.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—During the week ending March 15th medical organizations of Philadelphia will meet as follows: Monday, Samaritan Hospital Medical Society; Tuesday, Pediatric Society; Wednesday, County Medical Society; Thursday, Polyclinic Ophthalmic Society and the Pathological Society; Friday, Psychiatric Society and Northern Medical Association.

Society of Medical Jurisprudence.—At the regular meeting of this society, to be held in Du Bois Hall, New York Academy of Medicine, on Monday, March 10th, at 8:30 p. m., the paper of the evening will be read by Dr. Hermann St. John Boldt, on a Brief Comparison of Hospital Service in Germany and the United States, with a Reference to the Requirements to Practise Medicine. Professor Graham Lusk, of Cornell University, will open the discussion.

Alumni Association of the Lying-in Hospital.—A stated meeting of this association will be held on Wednesday, March 12th, at 8:15 p. m., at the Harvard Club. The paper of the evening will be read by Dr. Samuel M. Brickner on Practices and Superstitions of Obstetrics among Primitive People. The officers of the association are: Dr. H. B. Blackwell, president; Dr. W. L. Bradley, vice-president; Dr. D. J. Hamburg, editor; Dr. C. Frederic Jellinghaus, secretary-treasurer.

The Licensing of Midwives in Pennsylvania.—The medical profession of Pennsylvania is actively supporting the Richards Bill, now on the House Calendar, which provides for the licensing of midwives in the State. It is expected that there will be little opposition to the bill, as there is no desire on the part of those advocating the measure to stop midwives from practising. It is believed that these practitioners fill a useful place, and the only reason for having them licensed by the State is to lead to better work on the part of midwives generally, particularly in the prevention of blindness.

The Mary Putnam Jacobi Fellowship.—Our readers are reminded that applications for this fellowship of $800, open to any woman graduate of medicine, must be in the hands of the committee on award by April 1, 1913, and must be accompanied by: 1, Testimonials as to thoroughly good health; 2, letters as to ability and character; 3, a detailed account of educational qualifications; 4, a statement of the work in which the applicant proposes to engage while holding the fellowship; 5, examples, if any, of her work, in the form of articles, or accounts of investigations which she has carried out. Emily Lewi, M. D., chairman, 35 Mount Morris Park West, New York.

Mental Hygiene Exhibit in Philadelphia.—Arrangements have been made to present in the City Hall of Philadelphia the national exhibit on mental hygiene which formed a part of the exhibits of the International Congress on Hygiene and Demography in Washington last September. This exhibit explains and illustrates the significance of insanity and mental deficiency in the United States, giving reasons for the apparent increase in mental impairment. It also shows the cost of caring for the insane, and the relation of immigration to the increase of sanity and feeblemindedness in the United States. A valuable feature of the exhibit is the presentation of statistics regarding the nature, causes, and means of prevention of mental disorders.

Summer Course in Municipal Sanitation at Harvard University.—During the summer of 1913 Harvard University will offer a group of courses relating to the general subject of municipal hygiene and sanitation, which have been arranged with special reference to those who are teaching these subjects in other institutions, and furnish practical demonstrations of the principles of sanitation applied to actual problems. There will be thirty-six lectures on municipal sanitation, twelve on vital statistics, twelve on sanitary biology, a series of field excursions to various places of sanitary interest in the vicinity of Boston for purposes of practical work, and a series of exercises in the sanitary engineering laboratory at Pierce Hall. These courses, which should prove valuable to public health officers, will begin on June 30th and close on August 9th. The tuition fee for the course is $30, and the laboratory fee $10. Persons desiring to take the courses should write to Professor George C. Whipple, Pierce Hall, Harvard University, before June 15, 1913.

Philadelphia Medical Schools Raise Standard of Admission.—Beginning January 1, 1914, requirements for admission to Jefferson Medical College, Medical Department of Temple University, the Woman's Medical College, the Medico-Chirurgical College, and the Hahnemann Medical College will be raised to include one year of college credits in chemistry, physics, and biology. This action is in accord with the recommendation of the Medical Council of the American Medical Association. Colleges, which, as in the case of Temple University, do not possess such preparatory departments, will establish courses in this preparatory work under the supervision of its medical faculty. This raising of the standard will not affect students who are able to present equivalent credits from lay institutions in the scientific branches denominated. Furthermore, beginning with the same date, all the medical schools mentioned above, together with the University of Pennsylvania, which now requires two years of preparatory college work for admission, will require one year of hospital interneship to meet the new requirements of the Pennsylvania State Board of Examiners. The new standards, therefore, impose six years of study, thus exceeding the requirements of the council of the American Medical Association.

Personal.—Dr. John A. Fordyce has been appointed professor of dermatology in the Medical Department of Columbia University, to succeed Dr. George Thomas Jackson, who resigned recently.

Dr. F. F. Wesbrook, dean of the medical department of the University of Minnesota, has been appointed president of the new University of British Columbia, which is being erected at Vancouver, and will assume his new duties at the end of the present college year. Doctor Wesbrook will be the first president of this institution, which will begin its existence with a very rich endowment.

Dr. Southgate Leigh, of Norfolk, Va., was elected president of the Tri-State Medical Society, of Virginia and the Carolinas, at the annual meeting of the society, held on February 19th, 20th, and 21st. Dr. E. Reid Russell, of Asheville, N. C., was elected vice-president of the organization.

Dr. John W. Russell resigned on February 27th as medical superintendent of the Matteawan State Hospital for the Criminal Insane. Dr. Roy L. Leak is at present acting superintendent of the institution, pending the appointment of a successor to Doctor Russell.

Dr. John Nesbit Scott, of Kansas City, Mo., a pioneer in x ray work in America, recently had his right hand amputated, as a result of its exposure to the x rays. It is said that nine physicians have died from the effects of the early stages of experimentation with x rays in this country.

Dr. F. Gregory Connell, of Appleton, Wis., is the new president of the Fox River Valley Medical Society; Dr. W. Webber Kelly, of Green Bay, first vice-president; Dr. T. A. Nadeau, of Marinette, second vice-president, and Dr. R. H. Sweetman, of Green Bay, secretary.

A complimentary dinner was tendered to Dr. William J. Robinson in recognition of his public activity as writer and lecturer, on Friday evening, March 7th, at seven o'clock, at the Hotel St. Denis, Broadway and Eleventh Street, New York. Dr. A. Jacobi acted as toastmaster.

Double Tuition Fees for Foreign Students at Prussian Universities.—It is reported that in the future all foreigners who matriculate for study in Prussian universities will have to pay double tuition fees, and that entrance requirements will be raised, especially in the case of Russians. It has also been suggested that the number of foreigners admitted to any Prussian university be strictly limited, as at the University of Munich, where they may not exceed three per cent. of the total number matriculated. The agitation against foreign students in German universities has been going on for some time, the German students complaining that they were being crowded out by the foreigners. The number of foreigners studying in the universities of Germany during the present session numbers 5,196, of whom 338 are Americans.

Smallpox in Kentucky.—At the request of the Kentucky State Board of Health the Surgeon General of the United States Public Health Service directed Surgeon Taliaferro Clark to proceed to Kentucky to investigate the smallpox situation and advise with local health authorities relative to its control. Surgeon Clark's reports show a rather widespread prevalence of smallpox in the northern section of the Green River watershed, the greatest number of cases having been reported from Daviess, Ohio, Grayson, and Butler counties. The disease is so mild in its manifestations that people are not afraid of it, which greatly increases the difficulties of the health authorities in the enforcement of quarantine regulations. The benign type of the disease also accounts for the failure to detect the earlier cases, as the outbreak had almost attained the proportion of an epidemic before the diagnosis of smallpox was made and cases were reported by local physicians. Fully ninety per cent. of the people in the territory investigated had not been vaccinated recently, and seventy-five per cent. had never been vaccinated at all. The refusal of the people to submit to vaccination and their violation of quarantine regulations make it a very difficult matter for the health authorities to get control of the epidemic. Fourteen persons in Butler county were indicted for breaking quarantine rules, but this resulted in the concealment of cases of smallpox, and in consequence the number of cases reported is only an approximate estimate of the actual number.

A Halt in Doctor Friedmann's Plans.—The subjoined letter has been mailed to Dr. F. F. Friedmann, of Berlin, by the Comitia Minora of the Medical Society of the County of New York:

Dr. Friederich F. Friedmann, NEW YORK, March 4, 1913.
Waldorf-Astoria, New York:

DEAR DOCTOR FRIEDMANN: In response to your inquiry made on March 2, 1913, to the president and secretary of the Medical Society of the County of New York in regard to the method by which you may be permitted to demonstrate scientifically the efficacy of your tuberculosis treatment, the comitia minora of this society take this occasion to inform you that the public health laws of the State of New York prohibit the practice of medicine by any person not licensed so to do by the Board of Regents of the University of the State of New York.

The commissioner of Education of the State of New York may, in his discretion, on the approval of the board of regents, indorse a license or diploma of a physician from another State, provided the applicant has met all the preliminary and professional qualifications required for earning a license on examination in this State, and has been in reputable practice for a period of ten years, and has reached a position of conceded eminence and authority in his profession. Such an indorsement would permit the applicant to practise medicine within the State of New York.

In the absence of such an indorsement by the commissioner of Education, as provided by law, the comitia minora advise you that they will endeavor in every way possible to have the public health laws, regulating the practice of medicine, and prohibiting the practice of medicine by any other persons than those enumerated in the statute, enforced in all respects by the constituted authorities. The law also provides that anyone while actually serving without a salary or professional fees on the resident medical staff of any legally incorporated hospital is not within the prohibition of the statute.

The board of health of this city conducts various hospitals and clinics for the treatment of tuberculous conditions. The principal institution is Riverside Hospital on North Brother Island. There are other hospitals and clinics situated in various parts of the city and elsewhere, conducted under the jurisdiction of the board of health.

We assume that the board of health will consider your application to demonstrate to the medical staffs of one or more of these institutions the theory and method of your treatment, and we should recommend to the board of health that such an opportunity be afforded you under auspices and circumstances which will clearly indicate to the public that you are not practising medicine as the same is defined by law, but that you are engaged solely in a comprehensive demonstration, before competent medical men and under legal authority, of the scientific value of your treatment.

The Comitia Minora.
BROOKS H. WELLS, M.D., president;
JOHN VAN DOREN YOUNG, M.D., secretary.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

January 18, 1913.

Epigastric Border Incision of the Chest for Stomach Operation.—H. Brun states that the modern attempts to make more radical stomach resections for carcinoma of that organ require more space and a larger area for entrance to the field of operation than is furnished by the traditional vertical incision. An excellent exposure of the whole upper region of the abdomen is given by an incision recommended by Brun. The skin incision begins below, on the right rib frame work, is continued to the ensiform process about two fingers' breadth away from the border of the ribs, then turns sharply to the left to the hollow of the stomach and is prolonged to the left and below, ending near the cartilages. The muscles are cut through with as much regard to the preservation of their fibres as is possible.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

January 7, 1913.

Spontaneous Cure of Basedow's Disease.—Grober relates a case of Basedow's disease in a woman, thirty-four years old, which is noteworthy for the fact that beginning suddenly and progressing rapidly the disease has retrogressed almost completely without treatment in the last four to six years. A simultaneous and rapidly progressing pulmonary tuberculosis may be the cause of this spontaneous cure, but positive proof of this pathological relation cannot be established.

Chronic Diphtheritic Infection of the Lung.—A. Schmidt reports the case of a woman, sixty-two years old, who has had a chronic cough with pus and mucous expectoration and periodical attacks of fever for the past ten years. Objectively there are symptoms of chronic, double interstitial pneumonia. From the sputum, clear cultures of the diphtheritic bacillus can be cultivated, but smears from the tonsils are negative for this bacillus. No tubercle bacilli have yet been found. The patient had evidently not infected her surroundings, which is to be explained by the nonvirulence of the bacilli.

Diagnosis of Perforating Aneurysm of the Cerebral Arteries.—R. Langbein describes the case of an artist, forty years old, who, having previously enjoyed good health, suddenly complained of headache, vomiting, and stiffness of the neck. There was a slight, double paralysis of the abducens. Lumbar puncture revealed a slightly blood tinged fluid under increased pressure. There have been four recurrences of these attacks. Positive Wassermann reaction of the blood and spinal fluid point to a syphilitic origin of what is probably a perforated brain aneurysm.

Late Infection of Ophthalmic Blenorrhea.—Créde and Hörder explain the circumstance that the newly born, although they are immediately separated from the mother and receive isolated care, have late infection of blenorrhea (ten to twelve days), by assuming that the gonococci find their way into the eyes during birth, but not directly into the conjunctiva, where they remain latent without producing symptoms for a time longer than their incubation period. The Meibomian glands afford a good hiding place. The pus discharged from them produces the late secondary infection of the conjunctiva.

Treatment of Scleroderma with Cœliarin.—W. Kölle reports that continued treatment with the extract of the glands of the mesentery improves scleroderma surprisingly. After one and a half year of treatment the patient is almost normal again, and the process of the skin which had invaded the whole surface of the body remains only in spots.

Spontaneous Rupture of the Uterus during Pregnancy.—Beyer reports that a twenty year old woman pregnant in the fourth month, suddenly, without apparent cause, experienced severe colicky pains in the abdomen, meteorism, and stoppage of stools. In two days another colicky attack and severe collapse occurred, which pointed to internal hemorrhage. Laparotomy showed the abdomen to be filled with blood which had issued from a long tear in the wall of the uterus. Total extirpation was done, and recovery followed. The cause of the rupture was probably a pathological change in the wall of the uterus following a previous manual loosening of the placenta.

January 14, 1913.

Sources of Continued Increased Blood Pressure.—Schlayer examined 300 of these cases having more than 160 mm. Hg. blood pressure and found that eighty per cent. had positive kidney involvement which could be made out clinically; in 16.3 per cent. lesions of the kidney were only probable. Forty-six cases came to autopsy. In all of these there were definite anatomical signs of progressing kidney lesions. Therefore in every lasting overtension over 160 mm. Hg. kidney involvement should be suspected. The diseased kidney and continued increase of blood pressure are probably parallel symptoms of one and the same process, namely, an increased irritability of the sympathetic vasomotor system.

Elongated Mobile Sigmoid.—R. Kienbock, suspecting appendicitis in a patient suffering from persistent constipation and enlarged abdomen, had a careful Röntgen examination made with a bismuth meal and bismuth enema. A very long sigmoid was thus revealed, extending from left to right under the liver and up under the right hollow of the diaphragm.

Transmission of Infantile Paralysis by Fomites and Flies.—Josefson proves experimentally that the poliomyelitic virus fastened and dried on articles such as linen, etc., is still virulent for apes. The changes in the cord were of a degenerative character, but the noninfiltrating form also occurs during the process of a natural infection, as has been shown by Kling and others. The virus could not be detected on flies which had been in contact with children suffering from poliomyelitis.

Narcophin in Obstetrics.—T. Jaschke recommends this narcotic during very painful deliveries. A dose puts the patient to sleep without diminishing the force of the pains. An amnesia for labor has not been observed. In none of the forty-five cases tested was there any unpleasant side effects to mother or child.

Injury to the Cruciate Ligaments of the Knee Joint.—R. Pürkhauer describes two cases of the very rare condition of the rupture of the cruciate ligaments. In both cases the lesions were of long duration, the characteristic symptoms being an unnatural mobility of the tibia and femur. The x ray showed small splinters of bone in the joint. This corresponds with all previous experience that rupture of the cruciate ligaments involves a splitting of bones. In fresh cases an attempt should be made to suture the severed ligaments.

January 21, 1913.

Hypophysis and Diabetes mellitus.—Simmonds describes a case in which two months after the removal of a carcinoma of the breast metastases were scattered all over the body, including the hypophysis, and an uncontrollable polyuria appeared at the same time. The posterior lobe was found to be entirely destroyed. This and similar cases prove conclusively that in man diabetes insipidus may be produced by trauma to the hypophysis. The pars intermedia probably plays the most important rôle in this affection.

Treatment of Oxyuris vermicularis.—B. Hildbrand believes that the best way of treating these cases is by the application of a salve consisting of camphor, quinine, and thymol (vermiculin), on and about the anus after it has been thoroughly cleaned with soap and water. The procedure is repeated after each defecation. Personal cleanliness is carefully attended to, nails and fingers being thoroughly cleaned before each meal. These regulations are carried out for two or three weeks. No irritation has been noticed from the use of the salve.

January 28, 1913.

Toxidermatoses Healed by Ringer's Solution.—E. Eichmann reports three more cases of cure of skin lesions accompanying pregnancy by the intravenous injection of Ringer's solution. Objectively and subjectively the symptoms cleared up beautifully. Since this method is absolutely harmless, it is preferable to serum injections. A vegetable diet is insisted on.

Salvarsan in Chorea gravidarum.—E. Härtel treated his case of chorea with an intravenous infusion of salvarsan two to three months before term. The patient was cured, no return of symptoms appearing, even after delivery. This accords with the report of ten previous cases in the literature. The method is to be recommended in severe cases of chorea gravidarum which have resisted all other measures. Thus an interruption of pregnancy may be avoided, the efficacy of this procedure being doubtful.

FOLIA UROLOGICA.

September, 1912.

Röntgen Diagnosis of Kidney Tuberculosis.—G. Soderlund reports three cases of kidney tuberculosis in which a definite diagnosis was made by the radiograph. In these cases catheterization of the ureters was impossible because of extensive tuberculosis of the bladder. The author believes in cases in which the kidney is totally destroyed, and large masses of caseous material occupy its place, that the x ray is a valuable means of diagnosis.

October, 1912.

Abortive Handling of Gonorrhea.—H. von Feleky describes a method of abortive treatment of gonorrhea in which solutions are applied to the anterior urethra by means of a urethrescope: 2.5 per cent. of silver nitrate or ten per cent. protargol, argin, or albargin in glycerin. The application is repeated once or twice as is necessary. The patient also receives various local injections. The treatment is to be used only when the gonorrhea is in its earliest stages.

November, 1912.

Does the Finding of Tubercle Bacilli in the Ureter Catheterized Specimens Always Mean Kidney Tuberculosis?—Kielleuthner has, in three cases of lung tuberculosis, found tubercle bacilli in the urine, and has injected the urine into guineapigs in which tuberculosis developed. The autopsy showed no tuberculosis in the kidneys, ureters, bladder, prostate, seminal vesicles, or urethra. In these cases there is always an albuminuria. The presence of tubercle bacilli and albumin from one of the kidneys is not proof positive of a kidney tuberculosis. The kidney should not be removed with these findings as a basis. If its presence has been demonstrated on one side, the urine on the other side shows bacilli and albumin, but no pus and blood, one should not hesitate to remove the diseased kidney, as the author's experience shows that the albumin and bacilli disappear. Albuminuria, hematuria, and tubercle bacilli may, but do not always indicate kidney tuberculosis. The signs of a destructive process, the presence of bacilli, leucocytes, and erythrocytes, always indicate a surgical kidney tuberculosis.

Pyonephrosis tuberculosa occluda.—Smirnow says that this disease is of interest because of the rarity of the affection, as well as the great difficulty of diagnosticating it early. The name dates from 1907, when O. Zuckerkandl proposed it. Pyonephrosis tuberculosa occluda develops after an obliteration of the kidney pelvis or the ureter. The latter is most frequently obliterated in the first section, near the kidney pelvis or in the last part near the bladder. According to the place of obliteration the clinical and anatomicopathological pictures differ. The perirenal and periurethral interstitial tissue can also be affected; the process has passed from the kidney to the surrounding tissue either by perforation of the pyonephrotic bag or by propagation along the lymph ducts. Sometimes a cold abscess is formed along the psoas and suggests an affection of the spine. The varieties of pyonephrosis tuberculosa occluda are: 1. The urinary bladder is tuberculous; at the place of the probably affected kidney a tumor of immense size is to be found (pyonephrotic sac), no catheter will pass through the ureter. The diagnosis is easy. 2. The bladder is normal. One ureter is impassable and on this side a tumor will be found on the place of the kidney; diagnosis is possible by the history and the symptoms of the other organs. 3. The tuberculous affection of the bladder is far advanced; cystoscopy is impossible: an enlarged kidney can be palpated. Diagnosis is possible only by exploratory incision of the enlarged kidney, as this is quite frequently healthy and only hypertrophied, while the other is atrophic and shows a tuberculous pyonephrosis. In twenty-five cases of pyonephrosis tuberculosa occluda the diagnosis could be made with certainty before operation only in six or seven cases. The exclusion of the affected kidney in these cases can be considered as autonephrectomy, but never as spontaneous recovery! In neglected cases the other kidney also becomes tuberculous; therefore, early surgical intervention is necessary.

LYON MÉDICAL.

January 26, 1913.

Silent Areas of Pneumonic Hepatization and the X Rays.—E. Weill and G. Mouriquand, after studying numerous cases of pneumonia in children with the aid of the x rays, have reached the conclusion that a triangular cortical area of consolidation, discernable by radioscopy, frequently occurs in the complete absence of auscultatory physical signs. This is readily explicable on the basis of the newer views concerning the course of events in pneumonia, viz., that the initial stage is one of general infection, local manifestations appearing later. Occasionally these foci are only apparently "silent," for upon auscultation at the precise area found by the x rays to be involved, there may be noted a slight decrease in the vesicular murmur. In other cases, however, especially in infants, careful auscultation is without result. In a few instances the lesions remain silent throughout the course of the disease; in such cases the diagnosis is doubtful unless an x ray examination is made. These observations are taken to show that cases formerly labelled "central pneumonia" are in reality silent cases of cortical pneumonia; no central focus unrelated to peripheral consolidation was ever observed by the authors. The absence of auscultatory phenomena, moreover, does not imply that general pneumococcic infection is alone present at the time, since lesions may be demonstrable by the x rays. Knowledge of these facts permits of making an early positive diagnosis of pneumonia.

Salicylic Medication in Rheumatic Nephritis.—C. Lesieur, J. Froment, and Bussy assert that there should be no hesitation in continuing salicylates where nephritis appears as a complication in acute rheumatism. In two cases they report salicylic treatment clearly exerted a favorable effect, the renal phenomena showing a distinct exacerbation when the remedy was temporarily discontinued. The salicylate should be continued after the general and articular symptoms have subsided, and until the residual albuminuria, if there is any, shows no further reduction under the influence of the drug. Albuminuria or even well characterized chronic nephritis existing before the advent of rheumatism, should not be considered as an absolute contraindication to salicylates. The author's cases, in which the drugs were used, showed the advantage of temporarily discontinuing them in order to ascertain whether the added renal trouble is due to the rheumatism or the drugs, and also the degree of permeability of the kidneys—the ferric chloride test for salicyluric acid in the urine promptly turning negative in the favorable cases. Under the latter conditions, the salicylates should be resumed at once and continued until the signs of added renal disturbance have disappeared.

February 2, 1913.

Nitrogen Coefficient of Blood Serum.—J. Courmont, Boulud, Savy, and Blanc-Perducet inquired into the relation of the nitrogen occurring in the form of urea and the total nitrogen in the blood in twenty-two cases, nearly all with some renal disorder. Previous observations that this ratio or coefficient was increased in cases of nephritis with urea retention were confirmed, but it was found that the coefficient may, on the contrary, be very low. The absolute quantity of urea present in the latter event may be either high or low. This circumstance shows that variations on the coefficient may arise, not only from renal disorder, but also from lowered urea production, probably due, in turn, to imperfect hepatic function.

PRESSE MÉDICALE.

February 1, 1913.

Plastic Operation on External Genitalia in the Male.—Bonamy and Dartigues describe an operation intended for the replacement of infiltrated skin over the penis and testicles, as in penoscrotal lymphangioma, by healthy skin from the posterior aspect of the scrotum. After removing the involved skin, up to an horizontal incision above the root of the penis, the remainder of the scrotum is carried forward and upward, a buttonhole made in it through which the penis is passed, the horizontal line of contact of the skin margins sutured, and the penis covered by a further plastic procedure. Careful hemostasis is required, and it may be advisable to make a counteropening for drainage at the most dependent part of the new scrotum.

Osteomuscular Dystrophy with Dwarfism.—L. Tixier and C. Roederer report four new cases of a dystrophic affection recently described by Hutinel, characterized chiefly by osseous changes partaking of the nature of both rhachitis and osteomalacia, by a more or less marked functional disability of the muscles often out of proportion with the reduction in their size, and by stunted growth. The four cases ranged in age from 3.5 to ten years; three were of the same family. The affection develops insidiously, nearly always in breast fed children, and without relation to gastrointestinal disorders, such as are common in the etiology of rickets. As for the treatment, subcutaneous injections on alternate days, in one of the cases, of one c. c. of a one to 1,000 epinephrine solution was observed to exert a distinctly favorable effect on the muscles, though the stature was not increased.

February 5, 1913.

Action of Colloidal Copper on Blood.—H. Chabanier, L. Rollin, and E. Chabanier studied this question in the human subject as well as in rabbits. The red cell count and hemoglobin percentage were found to be lowered at first, returning to normal by the seventh or eighth day after the injection. The leucocytes showed a more abrupt decrease and a subsequent rise, about the third or fourth day after the injection, to a maximum over twice the normal number, followed, in turn, by a return to normal from the fifth to the eighth day. In the differential count, the polymorphonuclears are at first increased, later the lymphocytes. These effects are similar to those produced by colloidal silver.

JOURNAL D'UROLOGIE.

October, 1912.

Prostatism without Prostate.—Marion believes that many so called cases of prostatism without prostate in reality are prostates very slightly hypertrophied. He believes that in these cases excision of the bladder neck with a portion of the urethra is the operation of choice.

Duration of the Evolution of Kidney Tuberculosis without Operation and the Causes of Death.—Raffin first discusses the report of Wildbolz, who concludes that without intervention most patients with tuberculosis of the kidneys die in the course of five years. About twenty per cent. live from five to ten years, and those who live beyond ten years are very few. The author reviews 168 nonoperative cases. Of these patients, fifty-three per cent. had died at the time of writing and forty-seven per cent. were living; 11.3 per cent. died the first year; twenty-three per cent. died between the first and the fifth year; 15.9 per cent. died before the end of the tenth year, and but three per cent. lived beyond the tenth year. The average age which men live is four years and ten months, while the average that women live is five years and five months. The author attributes this to the greater frequency of alcoholism among men, the necessity for harder work, and the location of tuberculosis in the genital organs. He believes that, according to his statistics, tuberculosis is not much more fatal in infancy than in adult life. The cause of death in his cases was in ninety-four per cent tuberculosis, in six per cent. other causes.

Pseudohealing of Kidney Tuberculosis by Conservative Treatment.—Heitz-Boyer's first patient gave a history of kidney pain and had, when seen, normal urine. The cystoscope revealed that the left ureter was obliterated by a cicatrix. The right kidney was functioning well. The patient gave a history of hematuria eighteen years previously and following this prolonged bladder trouble. The patient finally died of uremia. The second case is very similar. Heitz-Boyer believes that these are typical so called favorable outcomes in nonoperative cases of renal tuberculosis. The presence of the presumably healed, but in reality only shut off tuberculosis sets up a toxic nephritis in the other kidney.

November, 1912.

Bladder and Urethral Syphilis.—Bicot describes a case in which the patient gave a history of vesical calculus, which was removed, cystitis, retrovesical fistula, and diarrhea. The cystoscope showed many reddened and inflamed areas. The Wassermann reaction was positive. Mercurial treatment very rapidly cleared up the bladder condition.

December, 1912.

Mechanism of Chronic Retention in Prostatics.—Virghi divided prostatics from the point of view of retention into three classes: 1. Prostatics with hypertrophied gland without the retention. 2. Prostatics without increased volume of the gland presenting retention as the principal symptom of prostatism. 3. Prostatics who have hypertrophy of the prostate and retention of urine. In the first type, notwithstanding an obstacle to evacuation to the bladder, the patients completely empty their bladder. The author believes that reflex inhibition, the median lobe, valves of the bladder neck are all incapable of producing chronic retention, also that the power of contraction of the bladder muscles never entirely disappears. The obstacle caused by the prostate only contributes in causing the retention. The retention is caused by the decreased elasticity of the sphincter, which prevents complete evacuation of the bladder.

REVUE DE CHIRURGIE.

January, 1913.

Sterilization by Formaldehyde Vapor in Surgical Practice.—G. Gross and M. Barthélemy point out that while urologists have used formaldehyde for the sterilization of sounds and cystoscopes, surgeons, obstetricians, and general practitioners have failed to avail themselves of its valuable properties. They report experimental work and clinical experience which showed it to be in many respects superior to the methods of sterilization now in vogue. All porous materials placed in a formaldehyde vapor absorb the latter until saturated. At room temperature this requires twenty-four hours, at the expiration of which the material exposed is completely sterile and remains so, showing that the microorganisms have been not only inhibited but destroyed. Upon raising the temperature of the vapor to 45° or 50° C., sterilization is secured in half an hour; 55° C. should not be exceeded, as the formaldehyde then begins to decompose. The authors employ this agent for routine sterilization. The apparatus consists merely of metallic boxes, closing tightly, at a short distance from the bottom of which is a tray covered with powdered trioxymethylene; the latter, in turn, is protected with several layers of fine gauze, which prevent particles of the formaldehyde liberating powder from reaching the material to be disinfected when the box is heated. Surgical paraphernalia in daily use are sterilized with the warmed formaldehyde vapors, while other material is sterilized in the cold, being left in the box for forty-eight hours. Rubber gloves are in no wise injured by this procedure, as they are by boiling or steam under pressure. Instruments need not be boiled unless they have been used in septic operations. Suture materials not intended for resorption, and dressings, including protective silk, are easily sterilized without deterioration provided they are unrolled. One of the authors performed six hundred operations with all the materials used sterilized by formaldehyde, while F. Gross has done one thousand celiotomies and a like number of radical hernia operations with gloves thus treated. The results, which were entirely satisfactory, lead the authors to recommend the method for widespread use, owing to its simplicity.

Phlebitis in the Presence of Uterine Fibromyoma.—J. Duvergey states that phlebitis occurred in five out of 270 cases of fibromyoma of which he has records. The complication supervenes oftenest as the result of compression of a vein, generally the external iliac, by the growth, but may also occur in veins at a distance from the uterus through the transmission of an embolus from an infected myoma of relatively small size. The clinical course in the first instance is insidious, with minimal fever and pain; in the second, however, there are high fever and sharp pain, and the condition is not likely to pass unrecognized. Turgescent varices in one of the lower extremities, especially if recent, constitute a valuable diagnostic sign. Where the surgeon is convinced that the phlebitis is due to uterine infection, immediate hysterectomy is indicated. Where, on the other hand, the condition is or appears to be due to pressure of the growth on a large vein, absolute rest in bed is generally the proper course.

Cecoureterostomy in Exstrophy of the Bladder.—D. Taddei, after pointing out the difficulty experienced hitherto of avoiding ascending infection after ureteral implantation, describes a procedure which he has worked out on the cadaver and found to give good results experimentally. At a primary operation the ileum and ascending colon are severed near the cecum and joined by terminolateral or laterolateral anastomosis, preferably with the Murphy button. The openings into the cecum having been closed, an appendicostomy is done, a portion of the organ being passed under or in the muscle tissue, or subcutaneously, in order to favor continence. The cecum is then gradually asepticized by irrigations with silver salts through the appendicular lumen, and at a second operation the exstrophied bladder is removed, an elliptic portion of the trigonum, as in Maydl's procedure, or better, two discs of bladder wall including the ureteral openings, isolated and implanted into the cecum, an area on the inner and lower surface of which is brought up extraperitoneally for the purpose. Ureteral catheters are introduced during the operation, brought out through the appendix, and allowed to remain for some days in order to prevent the contact of urine with the lines of suture during this period.

BRITISH MEDICAL JOURNAL.

February 15, 1913.

Carcinoma of Colon.—Joseph Cunning calls attention to the fact that the cecum and ascending colon are supplied by a single artery, the ileocolic. In cases of carcinoma of this portion of the large intestine the plan to be adopted in operation is to tie off this artery at its origin from the superior mesenteric just at the lower border of the transverse portion of the duodenum. The peritoneum, fat, and lymphatic glands, the latter accompanying the artery, are then stripped from the posterior abdominal wall from the mid line, downward and outward to the cecum and ascending colon. The ileum is clamped eight inches from the cecum and divided. Clamps are applied to a convenient and movable portion of the transverse colon and this, too, is divided. After the division of the peritoneum to the outer side of the ascending colon the entire cecum and ascending colon can be removed, taking the draining lymphatics and adjacent tissues along with it without having cut through or manipulated the cancerous area. The ileum is anastomosed, side to side, with the transverse colon. The operation is practically bloodless.

Results of Excision of Hip Joint in Thirty-four Cases of Suppurating Tuberculous Disease.—Charles A. Morton believes that recovery is very much quicker and the end results much better after excision of the hip together with thorough curetting of the diseased area and subsequent drainage until the discharge ceases, than is the recovery after the ordinary methods of fixation, etc. In the majority of his cases motion was present after complete healing, and in some this was almost as free as in the normal joint. So far as shortening is concerned the method of excision has no advantage over the fixation methods, and in some instances excision leads to greater shortening than is usually encountered after fixation. Certainly excision results in a great reduction in the liability to relapses.

Occurrence of Acute Pneumonia during Treatment with Arsenic.—E. Parkes Weber records such a happening in five children and suggests that the occurrence of acute pneumonia may be dependent in some way upon the taking of arsenic, as is herpes zoster. The cases all showed strikingly rapid recovery, and Weber suggests that the arsenic may also exert some favorable effect on the course of the disease. This raises the further question as to the possible therapeutic use of arsenic in pneumonia.

LANCET.

February 15, 1913.

Paths of Infection in Genitourinary Tuberculosis.—K. Macfarlane Walker cites the observations that in cases of orchitis during mumps, variola, pyemia, typhoid, etc., in which there is a blood invasion by the bacteria, the lesions are chiefly in the body of the testis. On the other hand, in the case of the metastatic infection in gonorrhea the lesion is primarily in the epididymis. Similarly, experimental urethral infection in the rabbit causes metastatic infection of the epididymis in the case of the tubercle bacillus. Further, close study of the tuberculous lesions in human and experimental cases shows very suggestive indications of the dissemination of the disease by way of the lymphatics of the cord, and suggests that the infection of the epididymis is due to the fact that this is the first place encountered which provides a suitable soil for the lodgment of the bacilli. In man it is extremely rare to find evidence of tuberculous involvement of the testis or epididymis without also finding some tuberculous disease of the prostate or seminal vesicles. Usually the prostatic disease is farther developed and older than that in the testis. It is not uncommon to find tuberculous disease of the prostate without involvement of the testis or epididymis. The conclusions are that tuberculous infection of the testis is a descending process and that the course of the descent lies along the lymphatic channels. Similar observations have been made regarding the relation of tuberculosis of the prostate to involvement of the kidney or upper extremity of the ureter. There may be associated with the presence of a tuberculous focus somewhere in the body an increased permeability of the kidney epithelium with possibility of production of a bacilluria without actual disease of the kidney. On the other hand, both experimentally and clinically, it seems that the most frequent site for primary genitourinary tuberculosis lies in the prostate or vesicles and that from here the bacteria are carried to the hilus of the kidney by means of the lymphatic channels.

Remote Results of Tonsillotomy and Tonsillectomy.—Harold Whale analyzes 290 unselected cases and concludes that the disadvantages of tonsillotomy are: 1. The liability of initiation of an infection. 2. Recurrence of the trouble for which the operation was performed except in the case of voice troubles, in which there is no greater tendency to recurrence than after tonsillectomy. The disadvantages of tonsillectomy are: 1. Risk of serious or dangerous hemorrhage at operation. 2. Risk of harmful subsequent deformity, such an adhesion of the posterior faucial pillar to the posterior pharyngeal wall. For any patient who requires operation, who has never had any voice trouble, and whose occupation depends upon the use of the voice, tonsillectomy should be urged with caution. Tonsillectomy appears to be the more dangerous operation, but, with the sole exception of voice troubles, is more likely to cure the patient permanently of the condition for which relief is sought.

Action of Scarlet Red upon X Rayed Skin.—J. O. W. Barratt experimented upon the ears of rabbits which had been exposed to the destructive effects of x rays from two to fifteen months previously. By injecting small amounts of the drug subcutaneously he found that it caused an extreme degree of epithelial proliferation such as occurs in the normal rabbit's ear similarly injected. This extreme proliferation was seen only in the case of ears which had been exposed to an incompletely destructive dose of the rays. When they had been exposed to a completely destructive dose and subsequently allowed to heal the injection of scarlet red was still an effective epithelial proliferant, but the resulting proliferation was less extensive and abundant.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

February, 1913.

Nature of Surgical Shock; Treatment.—W. Webster undertook a series of experiments to test the value of pituitary preparations in surgical shock, which necessitated some reinvestigation of the latter subject and a criticism of current views as to its nature and origin. His experiments were made on dogs and he finds: 1. Under certain circumstances a condition of depressed vitality occurs in dogs under operation, usually after a prolonged experiment under anesthesia, especially when the intestines are exposed and frequently handled. This depressed vitality is manifested by a lowering of the blood pressure and sometimes interference with respiration. 2. Compression of a large bulk of intestine raises the general blood pressure, although brisk handling of the gut causes a temporary lowering. These are transitory effects and not clearly connected with "shock." 3. As to whether increased escape of carbon dioxide from warmed and moistened intestine is an important feature in the production of shock, the results of the experiments are inconclusive, but the slowly progressive depression of vitality cannot be prevented by treatment of the warm saline with carbon dioxide. 4. In but few cases did stimulation of afferent nerves produce a lowering of the blood pressure, in none a condition resembling shock. 5. If anesthesia is not very deep, the abdominal incision may cause a lowering of blood pressure, which may be considerable and prolonged if the incision also is of this character. 6. A condition of shock develops after prolonged operative procedures when the intestines are exposed to air or moist warmth, or occasionally after very severe operative procedures which are of comparatively short duration, but which interfere to some extent with respiration.

Toxic Effects of Gasoline Fumes.—J. Guy W. Johnson bases his paper on forty-two cases of gasoline poisoning seen in the Montreal tunnel, and a few experiments on mice and dogs. The source of the gasoline fumes in the tunnel was a motor engine. As long as the engine was not running the ventilating apparatus was sufficient to keep the air fresh, but within an hour after the engine started the air would become foul, causing a throbbing and congestion of the vessels of the head, and, if continued, headache. The men affected collapsed suddenly and presented these symptoms in common: Suffusion of faces and hands; absence of most reflexes, except in those who had recovered consciousness; presence of conjunctival and pupillary reflexes; moderate dilatation of the pupils; pulse good, never over 110. All complained of severe headache, none had nausea or vomiting. Examination of blood taken from the men gave the spectroscopic bands for oxyhemoglobin, and showed absence of carbon monoxide. Samples of air taken from the tunnel consisted of natural air with traces of gasoline fumes and no carbon monoxide. Various other tests were made, as well as changes in the ventilating apparatus, but men continued to be overcome until the engine was removed. Rats and dogs shut up in the fumes of gasoline died with symptoms greatly resembling those shown by the men. The conclusions are that gasoline fumes are dangerous, the final outcome is very sudden, and gasoline engines are dangerous in tunnels where the ventilation is not extremely good and should never be used in such as are entered by means of a shaft.

BOSTON MEDICAL AND SURGICAL JOURNAL.

February 20, 1913.

Transfusion in the Treatment of a Ruptured Tubal Gestation Sac.—Robert M. Green reports two cases of ruptured tubal sac in which direct transfusion was successfully performed. Neither patient was moribund; both might have recovered without the transfusion, but the writer believes that without it the prognosis in both would have been fairly grave. It minimized shock, and expedited convalescence, even if it did not actually save life, and, while it would be unwise and unnecessary to advocate the employment of transfusion as a routine measure, it seems to be justifiable in properly selected, grave cases. The ideal method would be to have one operator begin the preparation of the donor's artery at the same time that another opens the recipient's abdomen, in order that the transfusion may be made immediately after the hemorrhage is checked, but when this is impracticable the donor's artery may be exposed while the abdomen is being closed and transfusion performed by the usual technic into one of the cephalic veins, using an Elsberg cannula in making the anastomosis. In any event it is better to transfuse at the time of the laparotomy than at a later period, since it supplies the blood when it is most needed, combats the shock of the primary operation without involving additional shock, and obviates the necessity and disadvantages of a second anesthesia, without which it could hardly be performed. If Elsberg cannula cannot be used, it seems advisable not to apply a clamp proximally to the donor's artery unless the compression of the cannula proves insufficient to control the flow of blood. It also seems advisable not to mobilize the donor's artery completely until the moment when the anastomosis is made, in order to avoid troublesome hemorrhage from minute arterial radicles.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 22, 1913.

Vaccination and Local Anaphylaxis.—Joseph H. Barach calls our attention to an interesting phase of this topic, which he believes is not generally recognized and the explanation of which is almost unknown. A vaccination is made, and after a slight redness or perhaps a small raised papule lasting from one to three days, the entire effect of the inoculation seems to have subsided, and the case is recorded as one which failed to take. On revaccination, a fortnight later we obtain a "take," and the previous vaccination, apparently unsuccessful, becomes active and follows the same course of evolution as the revaccination. The writer explains this clinically on the grounds of local anaphylaxis. The first inoculation produces antibodies against the strange virus: it sensitizes the organism. At the second inoculation the virus is attacked by the antibodies, and in the attack certain "by products" are freed. These latter act as poisons and produce the anaphylaxis. When the initial dose is large, or when the protein and antibody are diffused throughout the organism, the anaphylactic reaction is constitutional.

Boiled versus Raw Milk.—Joseph Brennemann has made an experimental study of milk coagulation in the stomach, together with clinical observations on the use of raw and boiled milk. The use of boiled milk or of raw milk as a routine measure is not advocated by the writer, who believes that each has its indications. He shows that raw milk and boiled milk are clinically very different foods; that the most striking difference between them, experimentally, is in their reaction to rennin; that the casein of raw milk, unless so modified that it will not form hard, large coagula, is more difficult of digestion than that of boiled milk; finally that these differences should always be borne in mind in comparing clinical, therapeutic, and experimental results in infant feeding and elsewhere.

Etiology and Treatment of Acne.—Ernest D. Chipman is of the opinion that bacteria may be ignored as an etiological factor in acne unless occlusion of the sebaceous ducts is present. Except in the treatment of acne by vaccines the bacteriological flora is of no importance; if we are able properly to drain the ducts vaccine treatment will be unnecessary. According to the writer the logical treatment of acne is twofold; local treatment directed toward the proper drainage of the sebaceous follicles, and general treatment to develop increased tone in the skin.

Transduodenal Lavage.—M. Ernest Jutte reports eight cases of chronic diseases treated by transduodenal lavage. In this method, the aim is so to direct the irrigating fluid that it does not flow into the stomach, but directly into the bowel, thus avoiding the act of vomiting. A rubber tube is introduced into the duodenum; to locate its position some secretion is aspirated and examined as to its origin. The paraphernalia and technic are fully described by the writer, who considers the procedure less unpleasant than the passing of the stomach tube. This method has been used in the treatment of a large number of diseases which have been found to be due to the excessive absorption of the products of putrefaction and fermentation and include intestinal disorders of various kinds, rheumatism, gout, sciatica, arthritis deformans, functional cardiac disorders, arteriosclerosis, Bright's disease, catarrhal inflammations, insomnia, and various nervous and mental disorders. The only explanation of the good effects of the treatment is the removal of intestinal toxemia.

Death Following the Administration of Phylacogen (Schafer).—Franklin C. McLean warns the profession that the use of this remedy is not without danger. The writer reports in full a case in which death, in a well nourished patient, occurred after the intravenous injection of five c. c. of Schafer's rheumatism vaccine. Anuria developed with constant emesis and hiccough. During the first twenty-four hours cyanosis was prominent. Death finally occurred from hypostatic pneumonia.

MEDICAL RECORD.

February 22, 1913.

Effects of the Beerless Exchange on the Morals and Health of Our Soldiers.—L. Mervin Maus has watched the effects of alcohol on the mental and physical condition of army officers and men for more than a generation. He has never seen one whom it has benefited, but has observed its injurious effects, and has known hundreds of officers who were cut down in the prime of life, dismissed, or rendered useless and retired on account of drinking habits. The writer asserts that the army of today is abstemious compared with the drinking army of the canteen days. Those who state the contrary are ignorant of its previous history. The writer suggests that if the condition of the soldier is to be improved the War Department should place a premium on temperance through official recognition of the abstemious. It is not to be expected that alcoholism and diseases of vice will vanish from the army, if it is composed of beer drinking soldiers.

Paralysis of the Recurrent Nerve Due to Circulatory Lesions; Recent Therapeutic Measures.—J. W. Gleitsmann touches on the physiological aspects, and describes the condition of recurrent paralysis produced by heart lesions in general, in connection with mitral stenosis and aneurysm. In the line of therapy he describes the operations of Horsley, Mertens, and Grabower, the experiments of Navratil, and also the latest procedure to lessen the distressing features of this condition as performed by Bruenings, who counteracts the atrophy and weakness of the paralyzed cord and restores its phonatory position by making injections of paraffin. Two applications are usually sufficient; in the first injections are made anteriorly, posteriorly, and in the middle. After five to eight days the interstices are filled out by the second series of injections.

Care of Speech Defectives.—E. W. Scripture observes that the treatment of stuttering by routine methods leads to failure and emphasizes the importance of proper training for all teachers engaged in this work. This training should be under supervision sufficient to keep them from making many mistakes, and the classes for speech defectives should be inspected at frequent intervals by medical experts. While speech defects have been divided into two groups, stuttering (often called stammering) and defective enunciation, his experience has shown that only about seventy per cent. of speech defectives belong to these two groups; it is not always possible to tell whether a child is a stutterer or not, nor is it easy to give a correct diagnosis in regard to defective enunciation. The supposition that the treatment of speech defects consists in some simple exercises is fatal to the success of the work. The writer reiterates the importance of examination and diagnosis by a medical expert, and suggests that the medical profession should provide proper clinics where speech defectives can be examined.

Large Doses of Antitoxine Given Early; a Means of Preventing Laryngeal Stenosis.—Louis Fischer believes that clinical experience has shown that effectual treatment consists in giving a large initial injection of antitoxine. In a severe case, from 10,000 to 20,000 units should be injected at the beginning; the result of the first injection will determine whether or no more shall be used. The writer's rule in intubation and extubation has been to avoid force and hurry. An antispasmodic (codeine, bromides and chloral, Dover's powder) is advised for twelve hours before intubation and for twenty-four hours after extubation. In severe cases of diphtheria 10,000 units by hypodermic injection are advised. If septic manifestations are evident, the most rapid relief follows the injection of 10,000 to 20,000 units into the median basilic vein.

ARCHIVES OF INTERNAL MEDICINE.

January, 1913.

Cysts of Entamœba tetragena.—S. T. Darling reports cases of infection with *Entamœba tetragena* in which were illustrated the production of cysts by this organism, its intermittency, the absence of cysts during acute symptoms, and their presence in formed stools long after the subsidence of acute symptoms. Infection in man appears to be the result of contamination of food with a small amount of fecal matter containing a great many cysts, during the first day or two after passing. The great importance of examination the stools of all convalescent and recovered patients with entamebic dysentery for cysts and thus detecting "carriers" is apparent, for it is the cyst that is the infecting agent and not the large trophozoite.

Diagnosis and Treatment of Syphilitic Aortitis.—W. T. Longcope points out that the characteristic lesion of the aorta produced by syphilis is responsible for most aneurysms, about seventy-five per cent. of cases of aortic insufficiency in adults, many cases of dilatation of the aorta, and certain cases of angina pectoris. The infection of the aorta probably takes place in the secondary stage, but the process usually remains latent for a number of years, the average being from sixteen to seventeen. Syphilitic aortitis is probably a common cause of the presence of a positive Wassermann reaction in so called latent syphilis. Its early signs are, beside the positive reaction, precordial pain, slight dyspnea, attacks of paroxysmal dyspnea and angina pectoris, cardiac hypertrophy, increased pulsation of the neck vessels, and signs of aortic dilatation. The symptoms are temporarily or permanently relieved by repeated injections of salvarsan, though in certain instances, especially after large doses, they may be aggravated for the first forty-eight hours after injection.

Respiratory Functions in Pulmonary Emphysema.—C. F. Hoover reports observations affording direct evidence that the patients suffer from impaired ventilation of the lung alveoli, with consequent high carbon dioxide content of the alveolar air, rather than from a deficient intake and absorption of oxygen. None of the cases studied showed the slightest modification of the symptoms when pure oxygen was breathed.

Modification of Technic of Wassermann Reaction.—A. F. Coca and E. S. L'Esperance point out that in using an isolated lipoid "antigen" preparation instead of syphilitic fetal liver extract in the Wassermann test, spurious or "pseudoreactions" can be entirely avoided, without heating the sera, by not using more than one half of the hitherto prescribed amount of the "antigen." They have also found it possible to eliminate another source of error in the reaction, the "prezone phenomenon," by employing, in each test, descending quantities of the "antigen."

Chemistry of Renal Calculi.—Max Kahn finds that the large majority of renal stones are composed of calcium oxalate; sometimes it is their sole component. Uric acid and the urates occur in small quantities in all renal calculi, but it is rare to find one composed mainly of these compounds. The shape, color, and consistence of a stone are not criteria of its chemical composition. Gouty tophi are not always composed of uric acid or urates. In three concretions examined, a negative murexide test was invariably obtained.

Causes of Variation in the Platelet Count.—W. W. Duke reports clinical and experimental work which led him to believe that diphtheria toxine in large doses is immediately poisonous to the bone marrow, possibly also to the platelets themselves, and causes an immediate fall in the platelet count. Benzol in large doses and diphtheria toxine in sublethal doses cause first a rise and later a fall in the platelet count. Tuberculin in small doses, benzol in small doses, possibly also diphtheria toxine in very small doses act for a certain time only as stimulants to the progenitors of platelets and cause only a rise in the platelet count. Low counts in diphtheria indicate a more severe toxemia than high counts, and low counts early in the disease a more severe case than low counts later on. The platelets are probably very shortlived bodies; the count can rise and fall with great rapidity.

ARCHIVES OF OPHTHALMOLOGY.

January, 1913.

Eye Troubles Caused by the Use of Hair Dyes.—Juan Santos Fernandez says that all hair dyes in use at the present time are more or less toxic in effect, and may give rise, under certain circumstances, to general and local eye troubles. The injurious effects experienced are of two classes, inflammatory and toxic, although both may be present at the same time. The trouble may be only ocular in character, or it may affect the general system as well from the start. The dyes which do the most harm are those that contain aniline derivatives. These are the dyes most generally used, as they are very easily prepared. Fortunately, as the aniline derivatives are powerful colorants a smaller quantity of the dye is necessary to produce the desired results, and there is therefore less danger to the eyes and the general health. As it seems to be impossible to prevent people from using hair dyes, he thinks that their manufacture should be regulated and suggests an act of the legislature placing the manufacture of hair dyes and similar cosmetics in the hands of chemists, or of other persons skilled in the use of drugs, whose duty it would be to use the least harmful substances and to mix them accurately. He has observed in the use of aniline preparations which are applied in shops where there is abundant water to wash off the excess of coloring matter, that the absorption was less frequent than when the application was made at home with less skill and insufficient rinsing of the hair. The practice of excluding the air from the head to obtain better color results increases the probabilities of absorption. The irritant action of many of the hair dyes gives rise to the formation of vesicles on the scalp, the dried fluid from which produces crusts and causes the hair to fall out in tufts. This condition is accompanied by intense itching of the scalp; general indisposition and lowness of spirits, followed by vertigo; slight renal disturbances are frequently seen, and sometimes albuminuria or even uremia may set in: cephalalgia, sleeplessness, dyspnea, delirium, arrhythmia, and vomiting may occur, and there is almost always edema of the face and eyelids. The ocular disturbances may at times be the only sign of poisoning and they may occur without pruritus or other skin disorders. He believes the skin to be the portal of absorption, because the irritation of the skin and the accompanying vesicles makes the process of absorption much easier. In most cases the effects are due to the nature of the coloring substance and the susceptibility of the user. The edema extends to the eyelids and is followed by chemosis, but in most of the cases observed the vision was not impaired and the fundus was not affected. As soon as the edema subsided the patients got well. He divides hair dyes into four classes: 1. Decolorizing (hydrogen peroxide); 2, vegetable tinctures (less frequently used); 3, tinctures with metallic basis, in more common use, and including caustic potash, nitrates of silver and mercury, bismuth, acetates of lead and copper, nitric and sulphuric acids, and sodium hyposulphite; 4, tinctures based on aniline derivatives; most of the modern hair dyes belong to this class.

JOURNAL OF MEDICAL RESEARCH.

January, 1913.

Inhibition of Hemolysis by the Serum of Cancerous Individuals.—W. O. Sweek and M. S. Fleisher briefly review the contradictory reports concerning the hemolytic activity of the serum of cancer patients when mixed with the corpuscles of lower animals. More recently an investigator found that the serum of patients suffering with cancer possessed markedly higher antihemolytic power than the serum of normal individuals or of those suffering from diseases other than cancer. Summarizing their experiments the authors find that the serum from eighteen cancer cases and twelve normal individuals was tested for its antihemolytic properties with lactic acid; eighteen cancer cases and twelve normal individuals were tested with oleic acid. In no case was any marked increase of the inhibitory power of the serum of cancerous patients evident. It appears, therefore, that the determination of the antihemolytic activity of the serum of cancerous patients cannot be used as a diagnostic method. Furthermore, there is no evidence that an increased antihemolytic activity exists in the sera of cancerous patients.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

January, 1913.

Effect of Oil of Orange on Gastric and Pulmonary Reflexes.—G. O. Jarvis, knowing from previous experience and the work of Abrams that the nausea of ether anesthesia is intimately connected with reflex gastric dilatation, and remembering the prophylactic effect against nausea and vomiting shown by Gwathmey[1] to occur when oil of orange is given in combination with ether, tested the action of inhalation of the oil on the size of the stomach and its reflex of dilatation. In a young man with thin abdominal parietes the stomach was first outlined, ether in strong vapor inhaled for three and a half minutes, one hour after eating, and the stomach then again outlined; a well marked dilatation of the organ was found. Next day, a similar test was made, but with the preliminary inhalation of oil of orange; no dilatation occurred. To render the test conclusive, concussion of the ninth to the twelfth thoracic spines was practised, which produced dilatation. The conclusion was thus reached that oil of orange inhibits the nasal reflexes produced by ether when the latter is administered alone. It was also found that oil of orange partly suppresses the pulmonary reflex of dilatation produced by plugging both nostrils with cotton. Albert Abrams, in an addendum to the article, points out that the inhalation of oil of orange actually evokes a lung reflex of contraction analogous to that resulting from the hypodermic use of epinephrine. Ether alone inhibits ciliary motion, whereas the addition of orange oil to it augments this motion.

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[1] See editorial article, this JOURNAL for September 14, 1912: The Mystery of Ether Anesthesia.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-eighth Annual Meeting, held at Chicago, Illinois, October 22, 23, and 24, 1912.

The President, Dr. Louis Frank, of Louisville, Kentucky, in the Chair.

Arteriosclerosis.—Dr. G. W. McCaskey, of Fort Wayne, Indiana, said the most important factor in the production of this disease was overstraining. This was a relative matter, depending upon the strength of the arterial wall on the one hand, and the blood pressure on the other. The various intoxications derived either from within or without played an important rôle. They might act either directly by producing anatomical changes in the structure of the vessel wall by causing an asthenic condition of the muscular structure of the media, or through the nervous and muscular mechanism of the vascular apparatus, raising blood pressure and causing overstraining.

Fibrosis and spasm were the two changes found in the arterial wall. The former was impossible of removal; the latter more or less completely amenable to treatment. The proper objects of treatment, therefore, were not to attempt the impossible task of removing fibrous tissue, but to overcome vascular spasm, conserve the failing myocardium in the later stages, and as far as possible to overcome autointoxication by rational measures. The best means for accomplishing these results must depend upon the individual case, especially the character of the dominant arterial change, whether fibrous or spastic, the stage in which the case came under observation, the degree of involvement of the heart, associated autointoxications, habits of life, etc.

If blood pressure was high, degenerative changes advanced, and the general aspects of the case threatening, rest in bed, was the most important initial measure of treatment. The diet should be as near the minimum requirements of the body as possible. This was less important with regard to the starches and fats than the proteids. The storage capacity for the former was very elastic, and a slight excess would do no harm, provided primary digestion was normal. . With the proteids, however, the question was quite different, as the kidneys were involved and should be saved all necessary work, and for the further reason that the very toxines were nitrogen containing bodies, the formation of which was favored by an excess of proteids. Vasodilators, iodides, and in advanced cases with failing hearts, digitalis and in certain cases, a special bath devised by the author at 100° F., the duration of which was gradually increased for one hour, were the general measures of treatment advocated. A special measure of treatment advocated in a group of cases in which the habit of cardiac hyperactivity was in excess of circulatory requirements and tended to keep up high blood pressure, was the use of aconite in increasingly hourly doses to the limit of tolerance or accomplishment of therapeutic results. With a strict hospital régime, the prognosis of even the very serious type of cases was not nearly so bad as we had been led to believe. He recalled a case in which serious attacks of angina pectoris, due to coronary disease, in a patient, sixty years of age, were completely relieved, and had remained relatively well for ten years.

Schafer's Vaccines.—Dr. B. F. Zimmerman, of Louisville, said a patient receiving a sufficient number of doses of the phylacogens to afford him symptomatic relief could not be assured of a complete recovery. After he had received a sufficient quantity to overcome certain acute or painful symptoms he would frequently express a desire to discontinue the treatment in which event, in all probability, he would suffer a return of the condition, all of which could probably have been avoided by a few more additional doses following the disappearance of acute symptoms.

In some cases he had found the subcutaneous injections ineffective. In such patients the intravenous administration would usually be followed by a prompt abatement of symptoms. In his experience this had been particularly true of chronic infections, and in such cases he employed daily increasing doses intravenously until the infections were no longer followed by systemic symptoms. At no time, however, had he given more than ten c. c. intravenously at one dose. These remedies, as indeed all sera and vaccines, were intended to combat infection and not to effect changes in joints which had become altered or deformed by long deposits, except such changes in these deformities as would naturally ensue from the eradication of the infection.

It was too early to state definitely what the ultimate results of this method of treatment would be. He thought much depended upon the accurate diagnosis of cases and the administration of the vaccines until the systemic reaction no longer appeared. In cases where the subcutaneous administration failed to give results the intravenous method should be employed.

Proof of the Therapeutic Value of Tuberculin.—Dr. Francis Marion Pottenger, of Monrovia, California, said our motive, as clinicians, was so to use tuberculin that we might keep the body fluids well supplied with specific antibodies, and at the same time produce thoroughly controlled focal reaction which would produce the maximum stimulation of healing without producing an extensive congestion and so doing harm. If one was conversant with the prop r doses, this could be done quite readily because the limitations of danger were somewhat wide: First, if tuberculin would stimulate the machinery of immunization and increase the amount of protective antibodies in the blood, we must expect this to manifest itself in the treatment of tuberculosis by a lessened tendency for the disease to spread. Resulting from this we expected fewer complications. Second, we expected tuberculin by its focal stimulation to favor healing of the focus, and as a result of this we expected a more rapid healing of the disease, and the improvement of whatever complications might be present, provided they were remediable; as, a result of both the increase in the immune bodies and the focal stimulation we expected to produce good results in more patients, to produce them more quickly, and to make the results more permanent.

Resistance of Luetic Red Cells to Cobra Venom Hemolysis and Value of the Reaction.—Dr. Willard J. Stone, of Toledo, stated that with normal red cells (four per cent. suspension) plus varying dilutions of cobra venom with one to 70,000 to one to 80,000, hemolysis took place in twenty-four hours. With luetic cells hemolysis was retarded or absent in dilutions varying between one to 15,000 and one to 40,000. The lecithin of luetic red cells was apparently not so freely available to unite with cobra venom to form the hemolysin as was the case in normal red cells. The resistance of luetic red cells to hemolysis with cobra venom was first described by R. Weil in 1909. It was a well known fact that syphilis attacked the lipoid constituents of the body cells since less lecithin could be extracted from syphilitic tissues than from normal tissues. Apparently the luetic toxine after seven to eight weeks so affected the lecithin of the red cells as to render it less available to unite with cobra venom and the cells appeared more resistant. Possibly the cholesterin content of luetic red cells was increased, which might account for the resistance of hemolysis with cobra venom. It was well known that cholesterin might inhibit hemolysis. The reaction had been made the basis of a test for lues by him in 112 cases of syphilis. It was found that in secondary cases after seven to eight weeks the reaction was positive in 87.8 per cent., while in tertiary syphilis the reaction was positive in 83.4 per cent. In eighty normals and controls, including typhoid, purpura, diabetes, cancer, tertian malaria, pseudoleuchemia, biliary cirrhosis with jaundice, and many exanthemata, the reaction was negative in all but one, a patient with transient morbilliform erythema. This was the first test made and might have been due to faulty technic, or the patient might have had latent lues. He had never been able to check up by further examination of this patient. The reaction appeared to have a distinct sphere of usefulness in latent syphilis, since the positive readings were considerably higher than with the complement fixation method of Wassermann. It was also of value in determining the extent of treatment, since the cobra venom reaction in a large percentage of cases, remained positive after the Wassermann reaction had become negative. The cobra reaction after disappearance under treatment might again become positive if the treatment had been insufficient. The test was open to fewer technical difficulties than the Wassermann. Further experience in the hands of more workers might demonstrate the value of the test. In any case the resistance of luetic red cells to cobra venom hemolysis was an extremely interesting biochemical phenomenon and might be of value where the Wassermann test failed.

Cæsarean Section.—Dr. ASA B. DAVIS, of New York, stated that obstetric surgery shared the progress of general surgery, making it possible to perform abdominal Cæsarean section now with a maternal mortality of not more than two per cent. in clean uncomplicated cases and no fetal mortality. This method of delivery was easier than normal labor, for the child was not compressed. Better results than these may be looked for. Already some operators reported considerable series without mortality. Improvement in morbidity was well marked. The reduced danger made the operation applicable in a greater variety of difficult labors. Now it was an operation of election, coming into competition with other forms of operative delivery. Some form of contracted pelvis formed the greater number of indications for the operation, as eclampsia, placenta prævia, malignant disease of the cervix, old cicatrices of the cervix preventing dilatation, artresia or deformities of the vagina after ventral suspension, of fixation without progress of labor, marked disproportion between the fetal head and capacity of pelvis; accidental hemorrhage, moribund mothers to save the child, tonic contraction of the uterus, obstructing tumors, rupture of the uterus with living child, impacted face, chin posterior. In cases where the mother had been repeatedly delivered instrumentally, resulting in a still birth each time, prolapse of the cord in undilated cervix may be a suitable indication for the operation in well considered cases.

Doctor Davis reported 149 consecutive Cæsarean sections in twelve years, with the loss of seventeen mothers, maternal mortality in all cases, 11.4 per cent.; 152 children delivered, twins three times, twenty-five children stillborn or failed to live, a fetal mortality of twenty-three per cent; also seventy-one consecutive Cæsarean sections in the past two years, with a loss of four mothers, maternal mortality of 5.6 per cent. There were seventy-two children delivered, eight died or were stillborn, a fetal mortality of eleven per cent. He reported fourteen patients with eclampsia so delivered, ten lived, 71.5 per cent., four dead, a mortality of 28.5 per cent. Sixteen children were delivered, eleven lived, 68.8 per cent. Five children died or were stillborn, a mortality of 31.2 per cent.; twelve mothers were primiparæ, one para II, one para III, none was in labor. Sterilization of the patient was not practised. Repeated Cæsarean section had been performed twenty-seven times, eighteen the second time, seven the third time, one the fourth time, and one the fifth time. The best time to operate was at once after labor started, thus insuring a mature child. If one was sure of the duration of pregnancy, the operation might be done at one's convenience at any time near term. It was not necessary to wait for dilatation of the cervix. After operation it relaxed enough to allow ample drainage. This was noted in the primiparous eclamptics who were not at term nor in labor. Unless there were urgent reasons, he advocated performing only the Cæsarean section, allowing involution to take place and then, if necessary on account of tumors, malignant disease, etc., do such operation as was required. He prepared the patient as for any laparotomy, injecting ergot half an hour before operation to secure a tonic uterus. The operation was done by a short median incision wholly above the umbilicus, in the midline. The uterus was held up to this opening by an assistant pressing against the flanks. The uterus was opened in front midline from just below the fundus downward. It was closed by an interrupted layer of chromic gut sutures down to the mucosa, and this layer was buried by a continuous suture, so that no raw surfaces were left upon which adhesions could form. The uterus dropped into the lower abdomen as after normal delivery. Adhesions could not take place between it and the abdominal wound, which was high above it. He had not seen hernia in any of his high operative cases.

President's Address; the Teaching of Obstetrics.—Dr. LOUIS FRANK, of Louisville, said he often wondered if four years of study in a medical school really qualified one to undertake all the responsibilities of practice—the graver ones of medicine and surgery, and those which came often in the still hours of the night—when not only one but two lives were dependent upon the skill of the attendant. In a long experience with recent medical graduates—in twenty years' observation of young hospital internes—he regretted to say that his belief was, it did not. In this department of work the American schools were far behind and this in what was one of the most important branches of our art. Obstetrics must be better taught and must be viewed from a broad standpoint. Williams had recently drawn attention to imperfect obstetric education and to the inability of many of our obstetric teachers. It would seem we had retrogressed, certainly there had been no advances. The branch was poorly taught and the practice as generally carried on was worse. Most obstetricians, both teacher and practitioner, had been deprived of, or surrendered such surgery as rightly and properly they should do The surgeon of to-day should no more be called upon to do a primary perineorrhaphy, or other operative procedure in the lying in room, than to put on forceps, do a version, or an accouchement forcé; yet our obstetricians, for the greater part, assigned such work to the surgeons, not only in practice, but in teaching the subject. Our students must have better training, a larger actual experience, hospital training, and more rigid requirements before entering this field of practice.

Let us insist that the men who were to introduce our progeny into this world should be something more than "grannies"; that they should be not only obstetricians but obstetric surgeons. Here was a great field for our postgraduate schools, one which, if properly carried out with demonstrations and practical teaching of the requisite kind, could, with the abundance of material at hand in our large cities, fill a place far more useful to the profession and public alike than they at present occupied.

It must be confessed that our postgraduate schools, and even our surgical clinics, had been in many instances an inspiration not always for good. The mercenary spirit was still dominant in postgraduate schools of medicine, and these institutions rich in endowment though the large ones might be, and with ample hospital facilities and excellent men in their faculties, required investigation as to the duration of courses, the manner of their teaching, and the conferring of certificates; if necessary, they must be regulated. Specialists could not be made in six or eight weeks, yet certificates of proficiency were granted following courses of such duraition, during which time the sole opportunity for qualifications had been to observe some seventy-five or one hundred operations and, for a fee, to do two or four operations with the assistance (?) of the tutor.

He urged special examinations for those members of the profession who desired to wield the scalpel, with additional requirements in an increased hospital experience for all specialists, surgical, obstetrical, and medical. Then recognizing as such those who were able to qualify as specialists, compelling them to adhere to such practice and not surreptitiously engage in work other than that for which they declared themselves particularly qualified.

Address in Surgery; Biological Interpretation of Abdominal Pain and Its Surgical Relation.—Dr. GEORGE W. CRILE, of Cleveland, said that the only types of infections that were associated with pain were those in which the infection might be spread by muscular action or those in which the fixation of parts by continued muscular rigidity was an advantage. The type of infection that might cause muscular action, when it attacked one region of the body, might cause no such action when it attacked another region. But, turning to the significance of abdominal pain, he considered a new viewpoint and a practical as well as fascinating one. He could best illustrate this point by referring to two cases. In the medical ward of the Lakeside Hospital several years ago there was admitted a man, seventy-eight years old, whose chief complaint was obstinate constipation. The abdomen was only slightly distended; there was no fever; no increased leucocystosis; no muscular rigidity; and but slight general tenderness. He asserted that he had lost weight and strength during the previous several months. A tentative diagnosis of malignant tumor of the large intestine was made, but free movements were secured easily and the surgeon abandoned the idea of an exploratory operation. The patient gradually failed and died without a definite diagnosis having been made in either the medical or the surgical service. At autopsy there was found a widespread peritonitis, arising from a perforated appendix.

A child, several years old, was taken ill with some indefinite disease. A number of the ablest medical and surgical consultants of a leading medical centre thoroughly and repeatedly investigated the case. Although at last they could make no definite diagnosis, they all agreed that it surely was not appendicitis because there was no muscular rigidity and no tenderness. The autopsy showed a gangrenous appendix and general peritonitis. How could the absence of pain in these apparently anomalous cases be explained?

Among 8,684 abdominal sections performed by his associates Doctor Bunts and Doctor Lower and himself and in the Lakeside surgical service 923 were on the stomach and intestines; 725 on the urinary tract, 744 on the gallbladder; 2,130 on the femals genital organs, and 3,988 on the appendix.

In a recent conference, after tabulating all their cases, they felt that certain conclusions could be drawn; that certain lesions of the viscera mentioned caused pain and indigestion; whereas lesions of the solid viscera caused usually no primary pain; that lesions of the hollow viscera causing no pain were rarely benefited by operation; that most cases of painful indigestion, if not duodenal or gastric ulcers, were exogastric; that the cause of the pain was the stimulus to muscular action; that pain was a damaging agency to health; that acute abdominal pain was usually surgical; that these phenomena obeyed a general biological law of adaptation; that the adequate stimulus of many of the phenomena acted through the brain; that when the brain was disconnected these phenomena disappeared and thus might the mortality and the morbidity be placed measurably further under the surgeon's control.

Address in Medicine; the Stomach from the Standpoint of the General Practitioner, the Specialist, and the Surgeon.—Dr. Charles G. Stockton, of Buffalo, said he had had frequent opportunity of observing the working of good and evil in the professional management of stomach diseases. This field was rich in illustrations because derangements of the stomach formed so commonly a part of pathological conditions starting in almost any part of the economy; because disease arising in the stomach often concerned directly the physician, the specialist, and the surgeon. Few regions more generously rewarded the correlated study of the physiology and chemistry, of psychology and general medicine, of special technic and wise surgery. Nowhere, now that the craze for oophorectomy and for fixation of the kidney had subsided, might one so often see the unhappy results of unthoughtful surgical interference; the failure from timid negligence of needed operative intervention; especially the evil consequence of early misunderstanding, misinterpretation, and subsequent mismanagement of cases. He reviewed a few conspicuously familiar, illustrated pathological instances arranged in three groups.

A case of unrecognizable tuberculosis, with gastric irritability. A specialist after analysis of stomach contents, recognized a gastric neurosis and treated it by lavage and restricted diet. Improvement was not forthcoming, so a surgeon was invited. He saw a reflex, secondary to chronic appendicitis, and removed the innocent organ Following a brief period of improvement, the result of psychic impression and suggestion, the case marched on; there was now fever, cough, expectoration, heralding infiltration, softening, and vomiting. Now this was a case for general medicine, not one for specialist or surgeon; yet it might have been, and both these might better have studied the case jointly with the family physician until the diagnosis was established.

Illustrations showing the need of the specialist and in which the general practitioner and the surgeon were inadequate were present in the following group:

A case of gastric atony, with anemia, emaciation, and mental depression; with constipation, slight hepatic derangements, tenderness, and recurring bilious attacks. The general practitioner perceived the denutrition, yet harmed the patient with superalimentation and chalybeates. A surgeon, noting the gastric distress, the moderate motor insufficiency, the colonic stasis, and the disturbed liver, felt that the primary fault was an infected and irritable gallbladder, and drained the useful organ with no worse effect than making it small, limiting its movements, and binding it by adhesions to the surrounding parts. In fact, the case was one for the skillful specialist, who by local treatment, carefully suited diet, and general development of the patient, in the end relieved the symptoms; then, by educating the patient as to his dietetic limitations and necessities by teaching forbearance, willingness, and waiting, had the satisfaction of seeing him restored to reasonable health.

Their defeats might often have been converted into victories had they adopted the sensible and uplifting course of united, closely knit effort in the diagnosis and management of cases. Yet more, the spirit of modern democracy, which well might flaunt the old French legend, liberty, fraternity, and equality, had invaded the profession. With its spread there would come, at least temporarily, an enormous advance in mediocrity and self sufficiency; higher medical education could not stop it; at best it could only hinder; at worst, it would accelerate it. Legislation could not control it. The remedy lay in the united stand for a higher ideal, for a better sentiment; in an actual, not nominal, getting together in their work. The management of an important medical case was a responsibility suited to a carefully selected committee, not to an individual who represented but one side of the truth; not to the staff of one of those clinics, whose subalterns were subsidized for the magnification of a single phase of medicine

Experiences in Spinal Surgery; Sixty Laminectomies for Spinal Disease.—Dr. Charles A. Elsberg, of New York, presented observations based upon sixty primary laminectomies, twenty-two for tumor, nine for section of posterior spinal roots, four for inflammatory bone disease, five for old fracture of the spine, two for syringomyelia, one for intramedullary cyst, one for aneurysm of spinal vessels, three for a peculiar disease of the cauda equina, and thirteen exploratory.

He showed that the dangers of a laminectory should be very small, but that spinal surgery was a special field demanding special training and experience. After considering the technical aspects of the operation, it was his belief that the value of the Wassermann reaction in making the indications for operation in spinal disease had been overestimated. In several instances a glioma was found at operation in patients with a positive seroreaction. It was almost as great an error to allow a patient with a possible spinal tumor to become totally paraplegic while antisyphilitic remedies were being tried, as to allow a patient with a possible specific brain tumor to become blind while mercury was being given. The correct diagnosis of the level of the lesion should usually be made, but one must not forget that a stasis of fluid above the lesion may give level signs above the true level. Secondary degenerations might rarely cause a shifting upward of the level signs.

The supposed danger from the sudden escape of cerebrospinal fluid during an operation was not great; the speaker had never seen any symptoms in his patients. Retention of urine might occur after a spinal operation, but the frequency of its occurrence was in direct proportion to the injury done to the cord. A very marked abdominal distention often occurred after laminectomy in the lower dorsal region.

After complete laminectomy, the function of the spine was fully recovered because the main support depended upon the vertebral bodies. As many as seven spines and laminæ could be removed and perfect function of the spine recovered. Some stiffness and rigidity might remain for a few months, especially after operations in the lower dorsal and lumbar regions. Free mobility was most quickly recovered after laminectomy in the cervical region.

He considered the surgical aspects of old fractures of the spine, and showed by a report of cases that the results of operations for old fracture of the spine with evidences of compression of the cord, were little short of brilliant. Ultraconservatism was indicated in fresh fracture of the spine, and only few patients should be subjected to an operation. But in the patients in whom symptoms appeared only weeks or months after the injury and in patients in whom there was improvement at first and stationary symptoms persisted, a decompressive laminectomy should be done. Marked angulation of the cord could be straightened out, intramedullary cysts drained, etc.

Laminectomy for decompressive purposes was often indicated; the opening of the spinal canal might, and often did have a profound effect upon the spinal cord, which might act beneficially upon some spinal diseases whose nature was as yet not understood and whose pathology was unknown.

The removal of an extramedullary tumor of the spinal cord was one of the most satisfactory operations in surgery. The operation could usually be done in less than one half hour and the danger was small. Two stage operations were indicated in intramedullary growths and in the giant tumors of the roots of the cauda equina. The treatment of localized intramedullary tumors by the method of extrusion had opened up a new field. It was both feasible and safe to incise the cord in order to allow of the extrusion of intramedullary tumors, to empty cysts of the cord, for decompressive purposes in infiltrating growths and in spinal gliosis.

(*To be concluded.*)

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Principles of Human Physiology. By Ernest H. Starling, M. D., F. R. C. P., F. R. S. Philadelphia and New York: Lea & Febiger, 1912. Pp. xii-1423.

When the dimensions of this work, over fourteen hundred pages, are considered, the reader, especially if he is a student or a practitioner, can hardly fail to be appalled. Yet Professor Starling's book embodies considerable matter which is reviewed either cursorily or not at all in the average textbook. The structural and energetic bases of the body, for example, occupy nearly two hundred pages, but these will be found exhaustive from the standpoint of physiological chemistry. The newer conceptions concerning the structure of proteins, the energy of molecules in solution, the properties of colloids, the electrical changes in living tissues are also included among the subjects considered at length. Special physiology receives its due share of attention notwithstanding the wealth of details that the more recondite subjects contain. It is a matter of regret that the author saw fit to introduce no references in the text for the benefit of those who are specially interested in physiology. The book is excellently printed on thin paper, a feature which reduces its bulk to convenient limits.

Microbes and Toxines. By Dr. Etienne Burnet. With a Preface by Elie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M. D. New York and London: G. P. Putnam's Sons (The Knickerbocker Press), 1912. Pp. xvi-316.

A work on microbiology by an investigator connected with the Pasteur Institute, of Paris, a colleague of Metchnikoff, especially when ably translated, cannot but command a favorable reception in this country. Beginning with a study of the general functions and the transformation cycles of carbon and nitrogen in which certain bacteria play such a prominent part, the author then describes their rôle in the human body. Here each organ is taken in turn and its microbial flora briefly described. The specific characters of animal and vegetable organisms are then reviewed in turn, including in some instances a feature now attracting special attention, their chemical composition. The physiology of bacteria, the manner in which they influence and are influenced by their environment close what might be termed the introductory portion of the book. The remainder, about two thirds of the volume, is devoted to the study of pathogenic microbes, infection, inflammation, and phagocytosis, the pathogenic protozoa, microbial and vegetable toxines and endotoxines, tuberculin, venoms, immunity, and anaphylaxis. The applications of bacteriology, vaccines, sera, and chemiotherapy close the volume. Notwithstanding its small size, this book contains an aggregate of knowledge seldom equalled by more pretentious works, while the manner in which it is written renders its perusal as agreeable as it is instructive.

Symptoms and Their Interpretation. By James MacKenzie, M. D., LL. D. Second Edition. London: Shaw & Sons, 1912. Pp. xx-304. (Price, 7s. 10d.)

In the first edition of this excellent little work the author drew attention to the valuable aid afforded by pain and the nervous phenomena accompanying it in diagnosis. Without decrying laboratory methods, he held that their practical value to the general practitioner was relatively slight compared to the information available through recognition of the symptoms arising from reflex stimulation of the nervous system and many of the simpler diagnostic resources. The more recondite methods used in well equipped hospitals and laboratories serve their purpose and can be carried on efficiently, but when such facilities are not available, the physician must use all the resources afforded by the older and simpler methods. Such views have seemed too unorthodox for some, but these, fortunately, proved relatively few, and the bulk of the profession has obtained considerable aid from the lines the author lays down. The second edition brings the whole subject up to date and constitutes a very valuable contribution to our knowledge of diagnosis.

Stuttering and Lisping. By E. W. Scripture, Ph. D., M. D. New York: The Macmillan Company, 1912. Pp. xiv-251. (Price, $1.50.)

It is a well known fact that sufferers from stuttering and lisping receive scant encouragement from the average physician as regards relief from these conditions, also that the usual methods of treatment are mostly ineffectual. It is largely within the last decade that systematic investigations have been made, classifying the different forms of speech defects and analyzing the various underlying causative factors. These are the methods considered in the present work, which is a comprehensive presentation of laboratory, clinical, and psychological studies, and the methods of treatment applicable to the different types of cases with the idea of attacking the fundamental causes of the disturbance in each individual case.

La Virulence des pneumocoques. Par L. Cotoni. Paris: G. Steinheil, 1912. Pp. 96.

In this monograph of ninety-six pages the author presents many interesting points relating to the pneumococcus. He starts with a general discussion of the organism and gives a description of the medium used by him in his work. The cultural characteristics as well as the pathogenic qualities are related. The modifications of virulence according to whether it has or has not been passed through lower animals are reviewed. The manifestations of infection of various animals by this organism are given, and the article closes with a presentation of the author's conclusion. To one particularly interested in bacteriology in general or in pneumonia this contribution would be distinctly valuable.

Lead Poisoning and Lead Absorption. By Thomas M. Legge, M. D., D. P. H., H. M., and Kenneth W. Goadby, M. R. C. S., D. P. H. London: Edward Arnold; New York: Longmans, Green, & Co., 1912. Pp. xi-308. (Price, $3.50.)

This volume is one of the series of the international medical monographs and is a comprehensive presentation of the symptoms, pathology, and prevention of lead poisoning with special reference to its industrial origin and on account of the principal processes involving risks. The treatise deals to a large extent with the observations and experiments of the authors, both of whom have had excellent opportunities for experience. Of particular interest and importance are the facts presented concerning the etiology and pathology of plumbism. The industries in which lead is used are numerous, and each has been studied with regard to the avenues of intoxication and the prevalence and seriousness of the symptoms. The conclusion is reached that the main source of absorption is inhaled dust containing lead particles. Cutaneous absorption, even in painters, is of comparatively slight importance. From this evidence prophylaxis becomes a comparatively simple matter, as it depends largely upon ventilation and exhaust fans to remove dust containing lead from the respired atmosphere where it is formed by the various industrial processes. Of equal interest is the evidence supporting the view that the primary and fundamental pathological changes produced by plumbism are in the blood and bloodvessels. Anemia, increased viscosity, and clotting time of the blood are followed by vascular degeneration and microscopical hemorrhages and occlusions, affecting almost all of the tissues of the body. These processes are correlated with the various symptoms of the disease: Neuritis thus results from minute extravasations into the nerve sheaths causing degeneration; encephalopathy from microscopical hemorrhages in the cerebral cortex; colic from the involvement of the mesenteric and intestinal vessels and those of the sympathetic plexuses of the abdomen. The chapters devoted to preventive measures and treatment are of much practical value.

BOOK AND MAGAZINE NOTES.

The latest book of Dr. James J. Walsh, *Modern Progress and History,* contains addresses made on various academic occasions, a few of which have appeared previously in print. Among the eleven essays there are a few which will appeal to our profession, among them a paper on Prescriptions Old and New, which appeared in this JOURNAL for June 17, 1911. This article makes very interesting reading. The others are Dentistry, How Old the New, Professional Life and Community Interests, and The Story of Postgraduate Work. But the essay which interested us most is Pronunciation Old and New, in which the author takes up the study of what is called the Irish brogue; it is shown that the Irish were taught English in Queen Elizabeth's time, and that they have preserved almost intact the speech of that period. Irish English, therefore, instead of being a degenerate form of English, used by the uneducated masses, is really English as it was spoken during the golden age of English literature.

What Mr. Hillquist calls the "gospel" of socialism is now preached in thirty languages and counts some thirty million adherents in different parts of the world. What socialists hope to accomplish, their programme of reforms wanted in the United States, their tenets in general and the principles upon which these are based, together with an explicit statement of what socialists do not believe, are set forth in *Socialism Summed Up* (Morris Hillquist. New York: H. K. Fly Company, 1913. Pp. 110. Price, $1) in plain yet eloquent language. It is worth reading by the doctor of any political creed, for planks from the socialistic platform have now entered into every party edifice, yet socialism as a whole is little understood. Socialism is a singularly attractive doctrine to those of the temperament to which the average physician belongs; the firm believer in individualism, moreover, will find here precisely what he will have to fight in the early future. Recent developments in Great Britain show what impends among us, for the profession lends itself readily to socialism from its altruistic and liberal nature

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Meetings of Local Medical Societies.

MONDAY, *March 10th.*—Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Williamsburg Medical Society, Brooklyn; New Rochelle, N. Y., Medical Society; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *March 11th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); New York Obstetrical Society; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine; Newburgh Bay Medical Society; Jamestown Medical Society; Rome Medical Society; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, *March 12th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Pharmaceutical Association; Dunkirk and Fredonia Medical Society; Alumni Association of the Norwegian Hospital, Brooklyn; Richmond County, N. Y., Medical Society.

THURSDAY, *March 13th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; West Side Clinical Society, New York; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers; Auburn City Medical Society; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

FRIDAY, *March 14th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-Internes of the German Hospital in Brooklyn; Saratoga Springs Medical Society.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending February 26 1913:

Bahrenburg, L. P. H., Passed Assistant Surgeon. Directed to delay his return to Galveston, Tex., for conference with bureau relative to medical inspection of arriving aliens and the habilitation of the new quarantine station at the port; also to report to director of the Hygienic Laboratory for special instruction in the method of microscopical examination for the detection of hookworm disease. **Carmichael,** D. A., Senior Surgeon. Relieved from duty in command of the service at Buffalo, N. Y., and directed to proceed to Vineyard Haven, Mass., and assume command of the Marine Hospital at that port. **Clark,** T., Surgeon. Directed to proceed to St. Paul and other places in Minnesota to investigate the prevalence of trachoma. **Irwin,** Fairfax, Senior Surgeon. Granted one month's leave of absence, to take effect upon his arrival in the United States. **King,** W. W., Passed Assistant Surgeon. Detailed to proceed to Gibraltar, Spain, for the medical examination of emigrants departing for the Hawaiian Islands. **Kolb,** L., Assistant Surgeon. Directed to relieve Passed Assistant Surgeon C. W. Vogel and assume command of the Reedy Island Quarantine Station. **Loughran,** J. J., Acting Assistant Surgeon. Granted six months' leave of absence, without pay, from March 1, 1913. **Lumsden,** L. L., Surgeon. Detailed to attend the Interstate Agricultural and Industrial Congress to be held at St. Joseph, Mo., March 6 to 8, 1913. **Olesen,** Robert, Passed Assistant Surgeon. Relieved from duty in the Philippine Islands and directed to proceed to San Francisco, Cal., and await further orders. **Reed,** A. C., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Reedy Island Quarantine station and report to the medical officer in command for duty and assignment to quarters. **Tuttle,** Jay, Acting Assistant Surgeon. Granted thirty days' leave of absence from February 20, 1913. **Vogel,** C. W., Passed Assistant Surgeon. Relieved from duty at Reedy Island Quarantine and directed to proceed to Ellis Island, N. Y., and report to Chief Medical Officer for duty.

Board Convened.

Board of medical officers convened to meet at Galveston, Texas, for the reexamination of a detained alien. Detail for the board: Surgeon G. M. Guiteras, chairman; Acting Assistant Surgeon W. H. Gammon, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending March 1, 1913:

Baker, C. R., Lieutenant, Medical Reserve Corps. Left Fort Constitution, N. H., on February 27th for Fort Ethan Allen, Vt. **Duncan,** W. A., Captain, Medical Corps. Arrived at Fort McPherson, Ga., on February 21st, and at Fort Oglethorpe, Ga., on February 26th, to instal x ray machine. **Hanson,** L. H., Captain, Medical Corps. Granted leave of absence for sixteen days, about March 12th. **Keene,** T. B. V., Lieutenant, Medical Reserve Corps. Ordered to active duty at Fort Benjamin Harrison. **Meister,** W. B., Lieutenant, Medical Corps. Assigned to duty with the 22d Infantry at Camp Fort Bliss. **Miller,** R. B., Major, Medical Corps. Left Fort Wayne, Mich., on February 26th, for Texas City, Texas. **Myers,** W. H., Lieutenant, Medical Reserve Corps. Left Fort Screven, Ga., on February 19th, for his home on leave of absence until May 7th, when his resignation will take effect. **Robinson,** J. L., Lieutenant, Medical Corps. Left Fort Wayne, Mich., February 25th, for Texas City, Texas. **Smith,** A. M., Lieutenant Colonel, Medical Corps. Returned to Fort Snelling, Minn., from duty with Fourth Infantry en route to Galveston, Texas, on account of infection in his right hand. **Snyder,** H. McC., Captain, Medical Corps. Sick in quarters on February 17th. **Usher,** F. M. C., Major, Medical Corps. Arrived at San Antonio, Texas, on February 23d, and assumed the duties of chief surgeon of the Cavalry Division.

The following named lieutenants have been ordered to active duty in the Medical Reserve Corps at the posts following their names: T. A. Burcham, Fort Des Moines; E. H. Webster, Fort Brady; G. M. Solby, Fort Mackenzie; F. H. Newberry, Fort Wayne; T. S. Proxmire, Fort Sheridan.

The following named officers of the Medical Corps have left their stations and have gone with troops to Galveston, Texas: Major F. M. Hartsock, Captain A. W. Williams, Captain C. L. Cole, Lieutenant S. S. Creighton, Major C. E. Koerper, Major E. F. Geddings, First Lieutenant Omar H. Quade, First Lieutenant J. M. Willis, Major F. A. Dale, First Lieutenant H. J. Hallett, and First Lieutenant H. H. Blodgett.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the two weeks ending March 1, 1913:

Benton, F. L., Surgeon. Detached from the *Delaware* and ordered to duty with marines on the army transport *Meade*. **Charlton,** C. F., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the navy recruiting station, Hartford, Conn.; detached from this station and ordered to the Naval Hospital, New York, N. Y. **Dragoo,** C. H., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty with marines on the *Meade*. **Findeisen,** W. E., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty with marines on the *Prairie*. **Hale,** G. D., Passed Assistant Surgeon. Will proceed from the Receiving Ship at Puget Sound, Wash., to the U. S. S. *Yorktown*. **Huff,** E. P., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to duty with marines on the *Prairie*. **Johnson,** L. W., Passed Assistant Surgeon. Will proceed from the Naval Recruiting Station, Baltimore, Md., to the Naval Hospital, Washington, D. C. **Littell,** J. C., Acting Assistant Surgeon. Will proceed from the Marine Recruiting Station, Cleveland, Ohio, to the Navy Recruiting Station, Salt Lake City, Utah. **Munson,** F. M., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Hartford, Conn., and ordered to duty with marines on the army transport *Meade*. **Payne,** J. H., Acting Assistant Surgeon. Detached from the Navy Recruiting Station, Atlanta, Ga., and ordered to the Navy Recruiting Station at Hartford, Conn. **Pollard,** J. B., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Dallas, Texas, and ordered to the Naval Recruiting Station, Atlanta, Ga. **Post,** D. C., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Navy Yard, New York, N. Y. **Straeten,** R. J., Passed Assistant Surgeon. Detached from the *Florida* and ordered to the *Tonopah*. **Townsend,** W. G., Acting Assistant Surgeon. Detached from the Marine Recruiting Station, Baltimore, Md., and ordered to the Navy Recruiting Station, Baltimore, Md. **Whitmore,** G. B., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Salt Lake City, Utah, and ordered to the Receiving Ship at Puget Sound, Wash. **Wood,** C. O., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty with marines on the *Prairie*.

Births, Marriages, and Deaths.

Married.

Dow—Smylie.—In New York, on Thursday, February 20th, Dr. Edmund LeRoy Dow and Mrs. Julia Ely Smylie. **Hibshman—Mathews.**—In Philadelphia, on Wednesday, February 19th, Dr. Harry Z. Hibshman and Miss Charlotte Elizabeth Mathews. **Kemp—West.**—In Baltimore, Md., on Tuesday, February 18th, Dr. Howard Martin Kemp, of Turner Falls, Mass., and Miss Mary Louise West. **Klein—Brower.**—In Williamsport, Pa., on Wednesday, February 26th, Dr. Arno Klein, of Mount Vernon, Ind., and Miss Emily Virginia Brower. **Peake—Gregory.**—In Delhi, N. Y., on Tuesday, February 11th, Dr. Chester A. Peake, of Brooklyn, and Miss Susanna L. Gregory.

Died.

Allen.—In Cambridge, Mass., On Saturday, February 22d, Dr. Nathan L. Allen, aged fifty-nine years. **Ambler.**—In New York, on Monday, February 24th, Dr. J. Edgar Ambler, aged forty-one years. **Barton.**—In Scranton, Pa., on Thursday, February 20th, Dr. Edith Barton. **Bayley.**—In Haverstraw, N. Y., on Thursday, February 27th, Dr. Norman B. Bayley, aged sixty-six years. **Bell.**—In Baltimore, Md., on Monday, February 24th, Dr. Alexander T. Bell, aged seventy-seven years. **Bowdish.**—In Marion, Ohio, on Thursday, February 20th, Dr. Russell Clark Bowdish, aged ninety years. **Brown.**—In Higbee, Mo., on Monday, February 17th, Dr. Alfred James Brown. **Clark.**—In Portland, Me., on Tuesday, February 18th, Dr. George Albert Clark, aged sixty-six years. **Dal.**—In West Olive, Mich., on Thursday, February 13th, Dr. John W. Dal, of Chicago. **Duvall.**—In Kansas City, Mo., on Saturday, February 15th, Dr. John F. Duvall, aged sixty-five years. **Eichelberger.**—In Frederick, Md., on Sunday, February 23d, Dr. James W. Eichelberger, of Emmitsburg, aged seventy-one years. **Fetherolf.**—In West Milton, Pa., on Sunday, February 16th, Dr. James Allen Fetherolf, aged sixty-three years. **Fischer.**—In Paterson, N. J., on Saturday, February 22d, Dr. George Fischer, aged forty-eight years. **Goodman.**—In Brooklyn, N. Y., on Wednesday, February 19th, Dr. Alexander Mansfield Goodman, aged fifty-nine years. **Gosweiler.**—In New York, on Saturday, February 22d, Dr. Augustus VanHoff Gosweiler, aged sixty-three years. **Hiss.**—In New York, on Thursday, February 27th, Dr. Philip Hanson Hiss, Jr., aged forty-one years. **Kinne.**—In Excelsior Springs, Mo., on Thursday, February 20th, Dr. Elizabeth Kinne, aged eighty-six years. **Leonard.**—In St. Joseph, Mo., on Monday, February 24th, Dr. John W. Leonard, aged fifty years. **L'Hommedieu.**—In Brooklyn, N. Y., on Friday, February 21st, Dr. John B. L'Hommedieu, aged forty-six years. **Little.**—In Brooklyn, N. Y., on Monday, February 24th, Dr. William A. Little, aged sixty-three years. **Miller.**—In Santa Fe, N. M., on Tuesday, February 18th, Dr. Robert Hamilton Miller, aged thirty-eight years. **Miller.**—In Castile, N. Y., on Saturday, February 22d, Dr. Roger Wright Miller, aged sixty-eight years. **Montgomery.**—In Owensville, Ind., on Thursday, February 20th, Dr. Thomas J. Montgomery, aged seventy-four years. **Neville.**—In Chicago, on Thursday, February 20th, Dr. James A. Neville. **Ramsey.**—In Memphis, Tenn., on Saturday, February 22d, Dr. Walter Hardy Ramsey, aged sixty years. **Shawgo.**—In Jacksonville, Ill., on Wednesday, February 19th, Dr. J. B. Shawgo, of Quincy, aged sixty-nine years. **Shortlidge.**—In Wilmington, Del., on Monday, February 24th, Dr. Evan G. Shortlidge, aged sixty-nine years. **Staley.**—In Chicago, on Thursday, February 20th, Dr. Amos C. Staley. **Sturgeon.**—In Akron, Ohio, on Tuesday, February 11th, Dr. Samuel H. Sturgeon, aged sixty-four years. **Wagner.**—In Fort Wayne, Ind., on Sunday, February 23d, Dr. Edward F. Wagner, aged fifty-two years. **Walker.**—In Buffalo, N. Y., on Friday, February 21st, Dr. Hiram Dana Walker, aged seventy-three years. **Ward.**—In St. Louis, Mo., on Saturday, February 22d, Dr. Edgar Pearl Ward, aged forty-six years. **Welty.**—In Norwalk, Ia., on Friday, February 21st, Dr. Ephraim Welty, aged seventy-three years **Winnie.**—In Hornell, N. Y., on Wednesday, February 19th, Dr. Ephraim Winnie, aged seventy-seven years.

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ACIDOSIS.*

BY WILLIAM S. GORDON, M. D.,

Richmond, Va.,

Professor of Clinical Medicine, University College of Medicine.

The baneful effects of acetone bodies found in diabetes mellitus have been long known. It is only within the past few years, however, that acidosis occurring in other diseases or as a primary disorder has been recognized as a serious and not infrequent condition. Various theories have been advanced as to the underlying disturbances of metabolism which cause the appearance of betaoxybutyric acid, diacetic acid, and acetone in the urine; but we must remain in ignorance of the real source of acidosis until a better knowledge of physiological chemistry is obtained. I do not pretend to offer anything in the way of original investigation; nor is it my purpose to treat at length the theoretical part of the subject, but rather to call attention to a few of the views recently expressed and to emphasize certain practical points suggested by a study of illustrative cases. We may thus approach nearer to the whole truth by viewing the standpoints of different observers.

Labbé (*Presse médicale,* April 3, 1912), attributing diabetic coma to the toxemia of betaoxybutyric and diacetic acids, believes in a preliminary stage of acidosis, inasmuch as some apparent cases are relieved by alkalies. He supposes the true coma to be due to a progressive destruction of nitrogenous substances in the body—a polypeptic intoxication—with elimination of ammonia and aminoacids, which is rapidly fatal and defies treatment. One of the writer's worst cases of diabetes, produced by a severe mental shock, had an enormous excretion of urea prior to the appearance of sugar.

In an editorial article (*Medical Record,* September 14, 1912) on the biological significance of the thymus, this statement is made: "Klose believes that thymus extirpation causes acidosis, and that the excess of acid in the economy prevents the deposition of the lime salts. The inference is that a natural function of the thymus is the prevention of acidosis. Thus free phosphoric acid is rendered harmless by the nuclein synthesis. The changes in the nervous system are parallel with those of the bones. There is a peculiar swelling and liquefaction of nervous substance presumably due to the acidosis. This is expressed clinically in many ways. The coma which results in time from this mechanism is readily intelligible."

In the same journal (March 16, 1912) occurs the following abstract of a very interesting article by Dr. B. W. Rhamy (*Journal of the American Medical Association,* March 2, 1912):

> Subcutaneously injected, acetone has a slow cumulative toxic power which may, during periods of individual susceptibility, effect serious or even fatal damage. Subcutaneously injected, the toxic power of acetone is much greater than that of methyl alcohol. Guineapigs not only have an individual susceptibility, but have daily variations in their individual susceptibilty. Acetone dehydrates and hardens tissues, is a local irritant, and causes hemorrhagic extravasations. If acetone is formed in the intestines or liver, it must be in a pure, strong state at the site of formation, and would there exert its destructive action on the neighboring cells. Following a toxic dose of pure acetone, guineapigs develop coma, rapid respiration, and nervous phenomena, including itching, dizziness, muscular twitching, and temporary mental disturbance; and may develop convulsions in the form of rapid clonic spasms. The acetone is excreted almost entirely by the lungs. Post mortem examinations of guineapigs killed by acetone poisoning show fatty degeneration of the liver and kidneys, with hardened and ruptured bloodvessels and hemorrhagic extravasation. Acetone is to be considered a far more important signs of toxemia in pregnancy than urea or albumin, and should always be looked for as a premonitory danger signal of toxemia.

The author proceeds to state that indol, urea, and other substances can be injected in large amounts without injury provided the body is healthy. The same truth doubtless holds, in a measure, with regard to acetone. The inference is that in the case of human beings, acetone toxemia occurs when even small quantities cannot be eliminated. In some of the eight cases of acetone poisoning reported by Doctor Rhamy the condition seemed to be primary, while several were fatal.

Reference is made (*Journal of the American Medical Association,* lviii, p. 2040) to two cases of liver disease, reported by Marcel Labbé and H. Bith, in which acidosis appeared. In the first case, proving fatal, the liver was fatty; in the second, recovering, there was transient disturbance of sugar metabolism, with urobilin and aminoacid in the urine. In the light of previous statements the question may be asked whether these were cases of primary disease of the liver.

Frew (*Proceedings of the Royal Society of Medicine,* March, 1912), after a study of the urine in 662 children, believes that:

> In the large majority of cases of acetonuria following anesthesia, the acidosis is an independent condition caused by temporary inability of the digestive organs to handle carbohydrates. This is due to the withdrawal of food as a preparation for the anesthetic, and to carbohydrate

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*Read before the fifteenth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, Norfolk, Va., February 19 and 20, 1913.

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starvation. The acetonuria usually appeared in twelve hours after admission, reached its maximum in thirty-six hours, and gradually lessened, disappearing by the fourth day. The younger the child, the greater the incidence. The administration of dextrose caused a disappearance of symptoms in twelve hours.

With the opinions expressed above may be compared the report by J. Bentley Squier (*Medical Record*, January 6, 1912) of a fatal case of acidosis occurring after nephrectomy. The author quotes Brackett, Stone, and Low, of Boston, as follows: "One of the conditions under which an increase in acetone execretion occurs is phosphorus poisoning, the acetone excretion taking place as the result of the destruction of fat tissue." He further states: "They believe the toxic symptoms are due to the fatty antecedents of acetone rather than to acetone itself"; and quotes Waldvogel, who concluded that a direct toxic action of the anesthetic was an important factor in producing the acidosis of certain children upon whom his observations were made. Again, the author refers to the views of Cragin and Hull to show that relatively short anesthesia with chloroform might produce serious, extensive, and fatal lesions of the liver. He states that it is uncertain whether the acidosis is the cause or the result of the liver changes, and that tne amount of acetone in the urine is not always proportionate to the symptoms. In this connection it is well to bear in mind the observations of Straub and Schlayer (*Münchener medizinische Wochenschrift*, March 12, 1912), who state that the repeated application in eight cases of uremia, of Haldane's test for carbon dioxide tension in the alveoles, has confirmed the belief that uremia and acidosis are closely related. When carbon dioxide tension falls below normal, acidosis exists.

With regard to carbohydrate starvation we find the following statement in Webster's *Diagnostic Methods:*

> The omission of sugars from the diet forces the organism to utilize its protein and fat, and thus gives rise to an accumulation of nitrogenous and fatty metabolic products as well as to an increase in the acids of the body fluids. In this way an acidosis already present would be increased in intensity. If the carbohydrate free diet is continued for some time, a readjustment takes place, and the acetonuria may gradually diminish, as is instanced by the fact that certain races show no acetonuria even though on an absolutely carbohydrate free diet.

O. Berghausen (*Archives of Internal Medicine*, February, 1912), in speaking of the rôle of acidosis in the production of hemoglobinuria, believes that local tissue changes must occur before the appearance of hemoglobinemia or hemoglobinuria; and that, since cold, trauma, and passive congestion may produce an attack, and since these three conditions are associated with the production of excessive acidity in the tissues, it is reasonable to infer that the organic acids thus formed may have some direct influence in producing the attacks. These conclusions are based upon the power of a 1.5 per cent. solution of sodium citrate to prevent hemolysis of both the patient's and normal human corpuscles in an atmosphere of carbon dioxide at room temperature.

E. O. Houda (*Journal of the American Medical Association*, April 20, 1912) reports the case of a boy of fifteen years from whom a gangrenous appendix was removed under chloroform. There was no pus nor evidence of peritonitis. For twenty-four hours the pulse and temperature were normal, after which periodical restlessness, jaundice, ethereal odor of the breath, mental confusion, ana stupor appeared. The kidney function was normal, but acetone was found in the urine. The patient died in coma. The autopsy showed a normal peritoneum and no sign of infection about the wound. The liver was quite large and of a pale color. I recall a similar case, which occurred some years ago in the country. The surgeon whom I summoned and who operated promptly, removed a partly gangrenous but unruptured appendix, and closed the wound without drainage. For twenty-four hours all went well, but a rapidly deepening jaundice developed, and the young man died in coma. Facilities for urinary analysis were not at hand. Death was attributed to sepsis; but, from the viewpoint of the case reported above, it may be questioned whether this opinion was correct.

L. M. Routh (*British Medical Journal*, July 13, 1912), citing a case of unilateral parotiditis associated with glycosuria and acidosis, thinks that the complication was due to autointoxication, with secondary effects upon the pancreas.

F. Reiche (*Münchener medizinische Wochenschrift*, 58, 2153, 1911) states that in 3,826 cases of diphtheria and acute anginas, of which 3,200 were acute diphtheria, acetonuria was present in sixty per cent. of the cases. The important observation was made that diet seemed to play a small part in producing acetonuria, since many of the patients were receiving carbohydrates.

Silberstein (*ibidem*, July 23, 1912) states that children with acetonemia have a markedly coated tongue, vomiting, pallor, and fever; and that cod-liver oil may produce this condition. Repeated attacks in the same child have been traced to whipped cream, milk, cheese, and other articles. Fruity odor of the breath and acetonuria are usual accompaniments. Idiosyncrasy, with intolerance, must be present. The kind of fat probably has no influence, while direct ingestion of fatty acids might cause the condition. The treatment recommended consists of alkalies (soda preferably), followed by hydrochloric acid and pepsin.

Walter C. Swayne (*Proceedings of Royal Society of Medicine*, June, 1912), after an analysis of four cases of vomiting, six of albuminuria, and five of eclampsia, occurring in pregnancy, concludes that choloroform should not be given to patients with acidosis or eclampsia, and that increasing acidosis in cases either of albuminuria or severe vomiting indicates the termination of pregnancy, with the usual measures for acidosis.

In connection with anesthesia, Dr. Sidney A. Chalfant (*Journal of the American Medical Association*, lix, 11) has a valuable paper on the relation of postoperative vomiting to acetonuria, as determined from a study of 700 cases of ether anesthesia. His tables are very interesting, and the conclusions were as follows:

> 1. Vomiting occurs in a large percentage of cases after anesthesia.
>
> 2. The liability to vomiting is increased when acetone is found in the urine.
>
> 3. Protracted vomiting is best treated with sodium bicarbonate by bowel and lavage. These patients need careful watching on account of the liability to acid intoxication.

4. Acetonuria is due to faulty metabolism, and is increased by carbohydrate starvation.
5. Acetonuria has no relation to the length of anesthesia.
6. The duration of anesthesia has only a slight influence upon vomiting.

The author refers to Waugh, who, in the discussion of Frew's paper, states that in 2,000 cases of chloroform anesthesia in which the preanesthetic purge and diet restriction were omitted there was not a single case of acid intoxication.

In the following cases, occurring in the writer's practice, acidosis was present in a greater or less degree:

Case I. Female. General sepsis, presumably starting from an abrasion on the leg. Mild jaundice. Uncontrollable vomiting. Cerebral involvement and death in coma.

Case II. Female. Exophthalmic goitre. Operation impossible on account of the patient's condition, although there was practically no enlargement of the thyroid. Cerebral involvement and death in coma.

Case III. A young boy. Cyclic vomiting. No apparent cause. Recovery.

Case IV. Male. Trichiniasis. No marked symptoms apart from the usual ones except a noticeable rapidity of the pulse rate. Recovery.

Case V. Female. Insanity. Outcome unknown.

Case VI. Pregnancy. Mitral regurgitation. In this case the acidosis was marked, with albumin, lactose, and casts in the urine. The urine became normal under dietetic and eliminative treatment.

Case VII. Pregnancy. Mild acidosis; concentrated alkaline urine, with heavy precipitate of phosphates. Patient complained of hemorrhoids, constipation, and headache. No renal involvement. The acetone disappeared after the patient had dieted and taken nitrohydrochloric acid with bitter tonics.

Case VIII. Pregnancy of three or four months' duration. Mitral regurgitation of long standing. Intense acidosis and almost uncontrollable vomiting. Severe hematuria, with albumin and casts. Labor induced by an obstetrician. The life of this patient hung in the balance for some days, but recovery ensued. She has had several attacks of acidosis when not pregnant. In the last attack there was marked hematuria.

The symptoms of acetone poisoning, in the main, are nausea, vomiting, diarrhea, tachycardia, and other circulatory disturbances, pruritus, dyspnea, vertigo, somnolence, convulsions, and coma. The peculiar odor of the breath is often present. D. G. Hall (*Boston Medical and Surgical Journal*, clxvi, 18) states that in seven out of nine cases of cerebrospinal meningitis the saliva was acid, and thinks that acidity predisposes to the disease. In fact, attention has been called by other observers to the close resemblance at times between the symptoms of acidosis and those of cerebrospinal meningitis. The diagnosis is not difficult, as the presence of acetone in the urine, and the odor of the breath, with the symptoms stated, establish the condition.

The prognosis depends upon the severity of the toxemia, the resistance of the patient, the complicating conditions, the early recognition of the disorder, and the promptness of treatment. Fatal cases are more common than one would suppose.

The treatment resolves itself into the removal of the cause; active elimination; the use of carbohydrates by the mouth, rectum, or veins; and the administration of alkalies—sodium salts preferably—through the same channels. Marchand speaks of the efficacy, in diabetic coma, of the intravenous injection of 300 c. c. of a five per cent. solution of sodium bicarbonate. Chalfant states that the administration of glucose before operation made no decided difference in the postoperative vomiting, while the patients strongly objected to the taste of the glucose. It was not given by rectum on account of the purge. On the other hand, E. Chauvin and N. Aeconomos (*Presse médicale*) aver that postanesthetic vomiting is prevented by the administration of glucose, 150 grammes; tincture of nux vomica, 0.50 c. c.; tincture of canella, three c. c.; water, sufficient to make 300 c. c. In patients with alkaline urine and excess of phosphates, I have had good results from the mineral acids, bitter stomach tonics, and regulation of the diet.

A few comments based upon a review of foregoing statements may be admissible. It is clear that the processes concerned in producing acidosis are not thoroughly understood, and that they result from disturbed metabolism due to various pathological conditions. While acetonemia may appear under carbohydrate starvation and disappear under a corresponding regulation of the diet, it does occur on a full carbohydrate diet. Even in the former case other preexisting factors may be operative. Excessive urea formation may precede the appearance of acetone. The gravity of the condition may be out of proportion to the amount of acetone in the urine; and while a large number of cases of acetonemia are relieved, even when unrecognized and untreated, the toxemia is frequently of serious import. Its occurrence with alkaline and phosphatic urine should not be overlooked.

It is evident, also, that the nausea, vomiting, and consequent abstinence from food which are often correctly supposed to cause acidosis may frequently be results instead of causes, and that, so far as symptoms and treatment are concerned, the toxemia should in such cases be regarded as a primary and not as a secondary or incidental disorder. Furthermore, it should not be forgotten that the symptoms of acidosis may be erroneously attributed to other morbid states. Especially in pregnancy should one be on the watch for a toxemia due directly to acetone and not accounted for by kidney involvement or the retention of urea. The importance of routine examinations of the urine is apparent, lest we be caught napping and find ourselves confronted by a grave and unsuspected complication.

The relation which acidosis bears to the hepatic and renal disturbances following anesthesia is a matter of serious concern to the surgeon as well as physician. We have seen the rapidity with which fatty changes may set up in the liver, and we are not unfamiliar with the suppression of urine which sometimes occurs and which may prove quickly fatal. It is a point to be determined whether the acidosis is secondary to the effects of the anesthetic upon the liver and kidney, or whether it is a direct result of some disturbance of metabolism due to the anesthetic, thus becoming the immediate cause of the liver and kidney involvement. The majority of patients who take anesthetics are the subjects of disease and consequent metabolic derangement. In these subjects acidosis may previously exist and be made worse by chloroform or ether; but in many instances the organs, previous to anesthesia, are not manifestly diseased. Does acetone poisoning occur under these conditions, and, if so, is not either the acute suppression of urine or the fatty liver primarily attributable to the acidosis? This is a vital question, which has an important bearing upon prevention and treatment.

I have had it in mind to begin a series of experiments in order to gain a partial idea, at least, of the disorders of metabolism associated with anesthesia. The tables published by Doctor Chalfant are quite conclusive as regards the specific points which he intended to cover. There is more work to be done, however; and it might be profitable for others interested in the subject to take up the investigation along the lines suggested in this paper. The study of the toxemia of pregnancy is of great importance. With regard to anesthesia, the particular agent used and the condition for which it is given should be recorded. In cases of death from anesthesia, autopsies should be made if possible, and the changes in the liver and kidney be accurately noted. Great truths are sometimes discovered by individuals, but, as a rule, they are born out of the experience and experiments of a number of observers.

5 EAST FRANKLIN STREET.

BLOOD AND SPUTUM IN CROUPOUS PNEUMONIA.*

Bacteriological Studies.

By RANDLE C. ROSENBERGER, M. D.,
Philadelphia,
Professor of Hygiene and Bacteriology, Jefferson Medical College;
Professor of Hygiene and Preventive Medicine,
Woman's Medical College;

AND CHARLES V. DORWORTH, M. D.,
Philadelphia,
Late Resident Physician, Philadelpha General Hospital.

The almost daily request when sputum is submitted for examination, to demonstrate the pneumococcus, led us to study the general bacteriological flora in cases diagnosticated as croupous pneumonia.

Every bacteriologist knows that the pneumococcus can be demonstrated in normal saliva, in the majority of cases both by spreads and by inoculation into animals. Some sputa contain only a few of these organisms, while others show great numbers; yet no symptoms of pneumonia are present in either case. No one can say that the mere presence of the pneumococcus in the sputum means pneumonia; nor, simply by the inoculation into an animal of this sputum if the animal dies and the pneumococcus is isolated from the blood, is it any criterion to say that it came from a patient with pneumonia.

The sputum in croupous pneumonia is bacteriologically very rich in many types of organisms, and very rarely by simply making one or two spreads from any one specimen, do we find a predominance, so to speak, of any so called specific organism of this disease.

There is nothing extremely characteristic of the morphology of the sputum after the rusty or prune juice character disappears. Very little if any difference in the bacterial flora took place in the sputum before or after the crisis.

Our technic was to take at least six spreads from each sample submitted. The first spread was made in the ordinary way, the bottle was shaken thoroughly, and the second spread was made, the sample again shaken, and spreads made until six were obtained. Sometimes the sputum was poured out into Petri dishes and spreads were made from different portions. Spreads were stained with Loeffler's methylene blue and some in each series stained by Gram's technic. So in every case of clinically diagnosticated pneumonia, at least six and as many as thirty-six slides were examined.

Sputum was collected in sterile receptacles every third day, and an effort was made to have it collected as early in the course of the illness as was possible. The physical characteristics were noted, and then from each specimen smears were made.

In summing up our results, a fact which was very evident was the difficulty of obtaining sputum early in the disease. Of the total number of cases, in only seven was it possible to obtain sputum before crisis, lysis, or a complication set in. Whether this was due to the fact that there really was no expectoration, or the patient having swallowed it; or whether there was actually less secreted, is difficult to state. As the course of the disease progressed and the crisis or lysis passed, the expectoration increased. There was no attempt made actually to measure the amount of sputum secreted in the course of the disease. Of the total number of cases from which sputum was obtained early, only three cases exhibited a tenacious rusty sputum. Two of these patients ran a typical course of croupous pneumonia. In one, the pneumococcus was recovered from a blood culture, and in but one of these did the pneumococcus predominate in the sputum before crisis.

The rusty sputum in these cases was not maintained for any length of time, and only one case showed this color on the second examination. Of the other cases in which sputum was obtained early, it was always tenacious and a grayish color usually predominated. After the crisis or lysis began, the sputum was thick and tenacious, and later, during convalescence, became of a serous character. The majority of the samples were blood stained shortly after crisis and later became uniformly gray, though some showed a yellow mucopurulent sputum after crisis.

In the bacteriological studies of sputa before crisis we found there was no predominance of one organism over another. There were four bacteria which were seen most frequently, the pneumococcus, streptococcus, micrococci of suppuration, and *Micrococcus catarrhalis*.

Other organisms found were *Bacillus pseudodiphtheriticus, Bacillus Friedlander, Bacillus septus,* and various other unidentified bacilli, some being Gram positive and others Gram negative.

SUMMARY.

It was possible to obtain sputum in some cases as early as two days after the illness began. It was examined on an average until sixteen days after the onset of the disease. In one case in which tuberculosis later developed as a complication, twenty-one examinations of sputum were made over a period of eighty-three days, the final one showing the presence of tubercle bacilli.

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*Read before the Pathological Society of Philadelphia, January 9, 1913.

In some cases it was possible to obtain sputum for only one examination, while in other cases six or seven examinations were made. Sputum was examined from seventeen cases, making the total number of spreads studied 296.

1. The amount of sputum obtained in our cases of croupous pneumonia before the crisis was usually very small.

2. The characteristic rusty sputum is not obtained in all cases of croupous pneumonia, and was found in forty-two per cent. of our cases.

3. There was no predominance of the pneumococcus over streptococci, micrococci of suppuration or micrococcus catarrhalis in croupous pneumonia before the crisis.

Isolation of bacteria from the blood in different stages of cases of croupous pneumonia, has been attempted by many men. The results as a whole have varied. Prochaska in two series of thirty and ten cases respectively, found the pneumococcus in all of the cases. Several other investigators, including Silverstrini, Sertoli, and Rosenow, have been successful in finding the organism in a large percentage of cases. That a bacteriemia does exist at some time during the course of the infection is undoubtedly true, as the results of investigations have proved. That all cases clinically diagnosticated as lobar pneumonia are due to the pneumococcus has not been verified. Why the organism is found in some cases and not in others is hard to explain. It may be due to, 1, improper culture media; 2, faulty technic; or, 3, obtaining the blood too late in the disease.

The studies here reported include twenty-four cases clinically diagnosticated as croupous pneumonia. In two the diagnosis was revised, one turning out to be pulmonary tuberculosis and the other one bronchopneumonia. Cultures were taken, some as early as nine days before crisis, up to thirty-seven days after crisis. Thirty-six cultures were taken in all—sixteen before and twenty after crisis.

The following technic, including the preparation of patient, was followed: A tourniquet was placed around the arm, and as the vein of choice became prominent, the area over the vessel was touched with pure lysol. Luer all glass syringes were used. Seven c. c. of blood were withdrawn, five c. c. were placed in a flask containing 200 c. c. of bouillon and calcium carbonate. The contents were thoroughly shaken and placed in the incubator at 37° C. The bouillon was examined at the termination of twenty-four and forty-eight hours. This examination consisted in making a spread from the culture and staining with methylene blue.

The other two c. c. were mixed with agaragar which had been liquefied and poured into Petri dishes. Two dishes were made, each containing one c. c. of the blood. These were likewise incubated at 37° C., and examined at intervals of twenty-four and forty-eight hours. The pneumococcus does not grow well upon plain agar and even in our cases did not, as a rule, develop in these plates, even though the blood was intimately mixed with the agar.

REPORT OF CASES.

In 45 per cent. of the total number of cases an organism was found in the blood. In 20 per cent. staphylococci; in 12.5 per cent. pneumococci, and in 8.33 per cent. streptococci were found.

Of the total number of patients in whom organisms were present 54 per cent. died and in 50 per cent. of those who died no organism was demonstrable in the blood. In 33.33 per cent. of cases in which pneumococci were found death occurred, in 25 per cent., staphylococci were present, and in 100 per cent. where streptococci were observed, death took place.

CONCLUSIONS.

1. As the cultures were taken upon varying days from the time of onset of disease, it cannot be said that one would be more likely to find an organism at one time before the crisis than at another.

2. The finding of an organism in a culture taken after the crisis or beginning of lysis is, in our findings, rare. It is, however, possible. This is probably due to "anti" substances during the growth of pneumococci, symbiosis has ceased to exist, and the organism dies out.

3. In one series diagnosticated as lobar pneumonia organisms other than the pneumococcus were found in the blood.

These other organisms include staphylococcus. streptococcus, and in one case an organism morphologically and culturally resembling *Bacillus typhosus*. It is possible that in some few cases the staphylococcus came from the skin.

4. The prognosis of uncomplicated lobar pneumonia is not altered by obtaining the pneumococcus in culture.

5. It is interesting to note in this series of cases, that most of the patients having the lesion on the left side recovered, while with one exception every patient having a lesion upon the right side died. It may be, however, only a coincidence. Of the four cases coming from the alcoholic ward three died.

All the cases studied were from the medical wards of the Philadelphia General Hospital.

NOTE.—In the case where a typhoidlike organism was obtained from the blood, it was motile; did not coagulate milk; did not ferment lactose or glucose; produced no gas; and was agglutinated by the patient's serum and by another known typhoid serum.

CONNECTION OF THE SEXUAL APPARATUS WITH THE EAR, NOSE, AND THROAT.*

A Contribution to the Study of the Subject.

By VIRGINIUS DABNEY, M. D.,
Washington, D. C.
Assistant Surgeon, Episcopal Eye, Ear, and Throat Hospital; Assistant Surgeon, Children's Hospital; Otologist and Laryngologist, Washington City Orphan Asylum.

The proposition so well advanced by Mackenzie in 1884, and subsequently elaborated by him and others, that there was a definite physiological connection between the nose, throat, and ear and the sexual apparatus, was felt to be axiomatic by the fathers of medicine, and even the lay observers in the old days. To such an extent was this true that all the old satirists and dramatists had much to say on this engaging subject, which has sound anatomical and physiological grounds for its basis. Thus, Aristotle mentions the weakening effect on the sight of the gratification of excessive lust. He likewise discusses castration and its effects before and after puberty, at which time particularly the coarsening effect on the speaking voice, perfectly familiar now as then, especially on the singing voice, was so pronounced if copulation was permitted, that the custom of infibulation, explained by Mackenzie in his scholarly paper, was devised to prevent the use of the penis for sexual purposes during the apprenticeship of the choir boys. In this connection it seems permissible to note that this practice exists among the Zulus and other warlike tribes in Africa, consequent upon their observation that even moderate sexual intercourse destroys the martial spirit and capacity. I had in my possession one of these contrivances, which are a species of male analogue to the celebrated *ceintures de chasteté* in the Musée de Cluny of Paris, whereby the crusaders fatuously thought during their absence to enforce chastity on their wives. The African device is very simple, being a little cap of woven grass, worn over the glans, fitting back over the corona, and effectually preventing any copulative use of the organ by those who aspire to the rank of warrior.

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Among the modern writers, as before mentioned, Mackenzie has taken a prominent place, his bibliography having been of great service to me here, but the French and German investigators, with the wealth of material and the freedom of its use to be had in the continental hospitals and clinics, have added much to our knowledge and grasp of this interesting subject and ever present problem. Arviset, Isch-Wall, Joal, Peyer, Endriss, Trousseau, and Fliess have all given to the medical world the important results of their valuable and painstaking observations and conclusions, firmly establishing as facts the easily demonstrable theories herein set forth.

From the physiological to the pathological is but a short journey when the destination is the undue gratification of the animal desire; thus, we find abnormalities in the nose chiefly, but in the ear and throat in lesser degree as well, due to vicious practices of a sexual nature. Viewing the physiological aberrations first, these are better understood when it is realized that, as pointed out by a number of careful investigators (Voltini, Zuckerkandl, Hack, Mackenzie, and others) the inferior, part of the middle, and of the superior turbinate, and the tuberculum septi are covered with a tissue truly erectile, and closely analogous to the erectile tissue of the glans penis. Moreover, through the medium of the deep petrosal nerve and the sphenopalatine ganglion, connection is established between the nose and the sympathetic system. Holding ever in mind the function of this system of nerves, and its vasomotor control of the calibre of minute bloodvessels, and given cavernous spaces with interposed elastic fibres in the nose, it is easily seen that the psychic and nervous mechanism which produces that determination of blood into the cutaneous and subcutaneous spaces of the cheek and forehead, known as "blushing," can under the same or similar influences send it to the erectile tissue of the nose, where the resistance is much less. The use of the olfactory sense in the lower animals, such as the dog, cat, gorilla, deer, and many others in determining the receptive attitude of the female needs but passing mention in suggestion of the rôle played by this part of the nose in the animal kingdom. By the same token the use of perfumes from time immemorial has been a conscious or an unconscious attempt to stimulate lecherous thoughts, though in times of moral decay women have, unfortunately, not been the only offenders. Cicero inveighs against the "spreading of unguents" and other odoriferous and erotic preparations upon the person, as the practice was much in vogue in the days of the Roman empire and the Greek republic, and not unknown to-day. Hence, we hear of "intoxicating" perfumes, well named, though few who use the phrase know the solid biological ground upon which the expression rests.

Flaring of the nostrils or distention of the alæ of the nose is seen in certain animal types of men and women, chiefly the former, when desire is excited, or when the object appealing to the lower instincts is about to be enjoyed, to borrow the phraseology of the East, as noted so frequently in the *Arabian Nights' Entertainment.* This is but a reminder of the lower animals which endeavor to catch the distinctive scent of the female desiring sexual appeasement. Again, the labored breathing characteristic with some types at the height of sexual orgasm, or shortly before, is the result of stimulation of the respiratory centre, presumably by engorgement of the vessels which is general at this time.

From the normal, or physiological view, the following peculiar cases are to be met: In the case of women whose noses are normal, satisfactory organs in other respects, at the time of the catamenial flow the turbinates become swollen, at times to the extent of exciting the reflexes of sneezing and coughing (Joal, Mackenzie), and this periodic, irritability may persist during pregnancy, and even lactation (Fliess). With the passing of the time for the normal flow, the nose returns to normal till the next period, when the phenomenon again occurs. Moreover, those areas in the nose called by Fliess for obvious reasons "genital zones," which Mackenzie noted years ago as especially sensitive and peculiar, have been cauterized in pregnant women only to result in speedy abortion. Similarly, in certain cases of "nasal dysmenorrhea" cocainization of these same zones has removed the pain and other unpleasant features of that state. This theory has been further tested satisfactorily by Schiff in Vienna (Brettauer), where he has availed himself of the immense clinical facilities to excellent purpose. In alluding to these facts, Brettauer states that operative correction of nasal abnormalities cures some dysmenorrheas. Thus, epistaxis is occasionally encountered in boys at the approach of puberty, and redness of the nose was very marked in one of my patients each month after he had reached puberty. Among the older writers, Lusitanus reports the case of a man who frequently sneezed at the sight of an unusually "comely maiden"; Bonet, Bartholini, and Vanderwiel also give instances of sneezing at or before the act of coitus, of which peculiar habit Mackenzie has had instances. Turning to the results of excessive indulgence in the normal function, and of unnatural habits, it has been observed by Joal and Mackenzie that onanism will at times produce epistaxis, while with the lecherous a flow of blood accompanies or follows coitus (Joal, Arviset, Hack, Isch-Wall). I have had under observation an epileptic in whom the height of sexual orgasm produced severe respiratory spasm and a seizure.

The marked increase in odor from the nose in ozenous cases at the time of the monthly flow, noticed repeatedly by Mackenzie and Trousseau, has been my observation to this extent, that those who had atrophic rhinitis without ozena, had it at this period of ovarian activity. I have thus far not had the opportunity to notice the peculiarity of increase in odor, but regard the type of cases that I have seen as the more striking. "After a night consecrated to Venus" (Joal), patients who have had any nasal, aural, or laryngological abnormality invariably find this condition exaggerated.

The idea shared by the ancients, that venery was destructive to the singing voice, still prevails, and with excellent reason; in fact, I have personal knowledge of one singer of renown and superb physique, of no vicious habits other than rather frequent illicit intercourse, whose voice left him suddenly as far as singing in grand opera was concerned. Again, there is a singer on the grand opera stage now whose sexual touch is death to the voice of any young singer who ventures too often, so inordinate is her desire, and so powerful her sexual personality. It is, of course, well known that cohabitation with some women is fraught with much greater loss of vitality than with others, though this sapping of energy is not confined to men, women being occasional sufferers at the hands of men of the satyr type.

The swelling of the column of the neck, said to be observed as the result of the initial coitus in women, and an ancient test of successful entrance (the neck was carefully measured before and after), is of interest in so far as it relates to the frequent enlargement of the thyroid gland of girls from the ages of twelve to nineteen years, the beginning of the functional activity of the organs of reproduction. The frequency of this enlargement, unassociated with dental caries or tonsillar disease, has often struck me, as fully twenty-five per cent. of the white girls of this period of life who visit one clinic with which I am associated show this hypertrophy if closely examined. Obviously, many come for that very reason, though some are quite unaware of the abnormality. I have encountered no such cases in the colored race, though I do not aver that they are unknown.

Joal mentions the case of an asthmatic patient, of the usual neurotic taint, who improved rapidly at the beneficial altitude of Mont Dore, but at once, upon sight of his wife, who had come to inquire for him, had a violent paroxysm, and became steadily worse till she was forced to return home without him.

The engorgement of the turbinates and of that part of the erectile septum, with or without the copious discharge of mucus, presenting a perfect picture of the so called "hay fever" attack, epistaxis, sneezing, coughing, and the asthmatic seizures are all characteristic of both the physiological type of these aberrations, and under undue excitation of the sexual apparatus, may become also pathological by prolonging the effects, and leaving behind a permanent result instead of allowing the tissues to return to normal. The sensation of obstruction in the throat, choking, and the sensation of constriction in that region have long been recognized as normal to the pregnant state with some women, by modern observers as well as by the ancient. Shakespeare, who has invaded every field of human effort and knowledge, has a reference to this fact in *King Lear*. I have observed this in women who habitually suffer at the menstrual period. They describe the sensation as one of difficulty in taking a full breath, only to be relieved at the copulative act; however, it is not common and is almost always restricted to the voluptuous types..

It would be difficult to exaggerate the difficulty surrounding and hampering the laryngologist who attempts to secure such histories as this investigation necessitates, even where there is no taint of the unnatural or vicious; obviously, questions asked to lay bare anything like onanism, excessive venery, or a generally libidinous tendency must be based on almost positive knowledge. Moreover, the assumption that these various causes exist as the explanation of the abnormality seen in ear, nose, or throat must be conveyed with a degree of tact and judgment rarely possessed by most of us. The power of judicious inference, and grasp of the nature before us are nowhere in the field of medicine more requisite than here. In addition to the cases mentioned in the body of this discussion as illustrating certain phases of sexual influence, the following patients will serve to lend weight to the theories advanced herein:

CASE I. A woman, twenty-five years of age, intensely nervous, consulted me for an acute and absolute stoppage of the nose, accompanied by sneezing, lacrimation, and the symptom complex which we find in the so called hay fever cases. The engorgement of the turbinates was so severe that cocaine had no astringent effect whatever, though irrigation with warm saline solution, followed by a spray of twenty-five per cent. argyrol did give temporary relief. The condition persisted for several days, gradually lessening till ten days later, when another acute attack was experienced. Thus, she went along from week to week, being free for a few days, then again the victim of the most distressing asthmatic seizures at night, and the enforced mouth breathing in the day. The neurosis in the case was marked, and she herself explained her lack of nervous control as due to two severe shocks she had experienced in the past six years, one a death and the other a serious accident in which she had been dangerously and painfully injured. Finally, quite by accident, I was enabled to discover the cause of all her respiratory difficulties. She had been married over a year, and, while permitting the fullest indulgence in the marital relation, was preventing conception; this was the first stage of the nasal engorgement. The interval, during which she allowed Nature to have her way and became pregnant, corresponded perfectly with the time during which she was free from respiratory trouble; this was the second stage. Four months later, when the fetus endeavored to rise above the brim of the pelvis, thus becoming somewhat apparent to the public, she wore her clothing tight enough to prevent this revelation, and the reflex protest of the gravid uterus was almost immediately shown in the return of her symptoms; this was the third stage. After the lapse of two years, she is again going through identically the same experience.

I have under observation now a woman who has the most annoying seizures of sneezing, about a dozen times a day and at night as well, though she has no nasal abnormality whatever, uses no compression of the uterus, and leads a life for the betterment of the fetus. The explanation would seem to rest upon the fact that there is a slight backward displacement and the rise of the uterus at this time (the fourth month) is slightly embarrassed. This is the only month during which the reflex has been observed. Fellows had a neurasthenic patient whose nasal stoppage and associated headache caused him much worry in his failure to discover the cause, but noting her pregnant condition (six months), and her subsequent relief at delivery, he vaguely surmised that the two conditions bore some relation of interdependence. His suspicions were confirmed, when, at the time of another attack of hay fever symptoms, six years later, he advised an examination by a gynecologist, who reported a retroversion, correction of which completely and permanently cured the nasal trouble.

CASE II. This is interesting as showing the effects of a purely mechanical cause producing the changes which are usually seen resulting from neurosis or some psychic element. A young man, of unusually puritanic cast and controlled impulses, noticed that if he happened to drink much, regardless of what the beverage was, before going to bed, or to cause in any other way his bladder to become unduly distended during the night, or to lie on his back during sleep (allowing greater pressure on the base of the bladder and the seminal vesicles), he would be awakened by the turgescence of his turbinates, and the consequent discomfort of the ensuing mouth breathing. Moreover, there was not always a coincident turgescence of the penis. Again, at stool, if the mass of feces was so impacted as to make unusual pressure on the prostate, engorgement of the turbinal tissue followed at once, though it subsided in a few minutes.

CASE III. A plasterer, twenty-eight years of age, was examined for relief of throat ache and difficulty in nasal respiration, which latter proved to be due to enormously swollen inferior turbinates; yet these structures under cocaine diminished to the thinness of an atrophic condition, except when he was suffering from an acute attack, during one of which a general surgeon had advised the ablation of these important organs. Upon close questioning, the man proved to be confirmed in his venereal desires, then averaging six copulative acts a week. In the recent past he had exceeded this by double for long periods at a time. The turgescence which had previously always followed or preceded the sexual act, or thoughts of it, now had become nearly constant, as the frequent transient congestion had at last left permanent damage behind in the form of dilated capillaries.

CASE IV. A young girl who had been taking on weight for some months, complained, in a voice totally devoid of resonance, that she had great difficulty in breathing through her nose, especially at night, and that the tone and quality of her voice had altered. Examination revealed nothing wrong with her respiratory apparatus, and plenty of space was seen for breathing purposes, though the mucous membrane of the nose and nasopharynx, and even of the larynx was rather relaxed. Her sinuses were devoid of content, and gave a clear transillumination. When first seen, she gave the impression of unmistakable vasomotor disturbance, or some form of neurosis, but I could not determine just what species it was. After a month's absence, she returned with the same history, and I again advised her to return to the physician who had referred her to me, and ask to be built up. Upon inquiry of him myself, I learned that she had not menstruated for months at a time, and so marked was this tendency that he had suspected a premature menopause. I had asked him if she had any uterine abnormality, as I felt sure the exciting cause lay in that region. The nasal relaxation was merely the result of the congestion caused by Nature's search for a vicarious outlet, and this engorgement was at the time when she had previously experienced the catamenial flow. So intense was it that the resulting relaxation was sufficiently complete to last till the next congestive period. Similarly, Scott states that in those who have hay fever the symptoms are invariably worse at the menses.

CASE V. A woman of thirty-eight years of age, who seven years before had been subjected to a great shock at the sudden death of her husband while she was six months pregnant, complained of tinnitus aurium, and especially of paroxysms of sneezing. This latter the day before her monthly periods was always much worse. Her ear drums were somewhat retracted, and the Eustachian tubes slightly occluded, though inflation was easy. The nose showed nothing abnormal, but upon questioning her as to the condition of her uterus, she said that at her first confinement she had suffered a complete tear, which was not repaired at the time, and only imperfectly so some years later. She wore a pessary continuously, neglect to do which always made her sneezing worse, and increased the tinnitus. The degree of departure from the normal seen in the ears did not account for any of the aural distress from which she had suffered since the laceration, but especially since the formation of the dense scar tissue in the perineum, and the marked backward displacement of the uterus.

CASE VI. A very precocious girl of sixteen years of age, whose tonsils had been removed thoroughly by a competent laryngologist a year before, complained of pain in the throat radiating down the sternomastoid muscle and up into the ears; the tinnitus and slight deafness which accompanied this pain were especially distressing. The throat was normal to all appearances and the ears were perfect, yet the symptoms regularly appeared every three or four weeks, accompanied by a rise of temperature, at times as high as 101° F. This condition was very baffling, as she was organically sound, unusually intelligent, though very sensitive and nervous. Upon inquiry it developed that she had been menstruating nearly two years, but I found on keeping an accurate schedule of her attacks that all of them began the week following her ovarian activity. Owing to her sensitive nature and her desire to avoid worrying her parents, she had not complained always when suffering; so neither they nor I were able before this to get a systematic and regular list of the days and periods during which she was the victim of the long list represented by earache, deafness, throat ache, tinnitus, and fever. Her attacks lasted about two days as a rule, and the temperature was invariably higher in the morning, one of the temporarily confusing elements in this case.

CASE VII. A young married woman who had been slightly deaf in her left ear for three years, requested treatment for this condition. Her left inferior turbinate was so pale and yet so hypertrophied that this unilateral condition prompted me to ask if she had any uterine trouble, or if her menses were approaching. To the latter question she replied that they would occur in three days. Moreover, she volunteered the information that her hearing was always much worse at this time, and that now her good ear, previously immune, was similarly affected. Recently she had had amenorrhea and her deafness had continued in the good ear during the delayed flow, though the ear was normal in all other respects. The gynecological examination showed a prolapsed uterus, hitherto unsuspected.

CASE VIII. A boy of eighteen years of age, upon whose throat I had operated for enlarged tonsils several months before, began to have severe nosebleed, and the attacks became more frequent till I cauterized twice a plexus of enlarged vessels at the anterior end of the septum. This hypertrophy had not existed longer than four months, as I had examined him at that time, but he had practised masturbation during this period till the congestion at each vicious act had so dilated the minute vessels, and so frequently, that the vessel walls had lost tone and remained stretched and thin, ready to rupture at any exertion or slight traumatism, including the vicarious copulative act.

CONCLUSION.

The most striking fact in the etiology of these aberrations is the element of neurosis, which is invariable save where a mechanical factor acts as the causative agent. Those who will not grant the rôle of causative agent to the nervous state, must as an alternative admit the striking coincidence and explain it away if they can. I wish especially to emphasize that many of these apparent phenomena result from perfectly normal impulses, and not necessarily from the vicious and weak yielding to ardent desire. Between the impulse and the intricate relay station for the forwarding of the order there is a break or another impulse crossing it.

It is my firm conviction that many more cases than we suspect escape our diagnoses, in whom this sexual element is the contributing if not the exciting cause of many of the common nasal and aural abnormalities of function, partly for the reasons mentioned at length in this paper, partly from the lack of time needed to study intimately such cases, and partly from failure of the patients to give us their full confidence.

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1633 CONNECTICUT AVENUE.

DISEASE OF THE NASAL ACCESSORY CAVITIES.*

By SEYMOUR OPPENHEIMER, M. D.,
New York.

The accessory sinuses of the nose consist of the two maxillary antra, one on either side, two frontal sinuses, two sphenoidal sinuses, and the anterior and posterior group of ethmoid cells. Their lining mucoperiosteum is continuous with the mucous membrane of the nose, has ciliated epithelium, and comparatively few glands. Primarily, therefore, the underlying basal factor causative of morbid changes in the various nasal accessory sinuses, depends upon the essential fact that in a cavity with rigid walls, lined with mucous membrane and with limited outlets in contact with the atmosphere, obstruction of these outlets by swelling of the tissues in their close relationship, produces interference with proper drainage and ventilation. Should this condition be maintained for any length of time, purulent changes inevitably ensue.

The presence of pus in some of these sinuses is much more frequent than is generally believed. That this should be so can be readily appreciated when one considers that some sinus inflammation occurs in every instance of acute coryza, in many infectious diseases, and in practically all cases of influenza; and while the large majority are transient and disappear without any treatment, yet in a considerable proportion purulent changes in the sinus mucosa remain dependent upon the severity of the basic etiological factor and the bacteriological character of the infectious elements present in the given case. In the presence of inflammatory changes of the nasal mucous membrane, or deviations of the nasal septum or irregularities of other portions of the nasal interior interfering with free drainage, repeated attacks of acute sinusitis inevitably produce purulent changes in a comparatively short period of time as a result of the retention of the nasal secretion with its accompanying bacterial infection.

Both from an etiological aspect and from the practical side of treatment, obstruction to free drainage and ventilation of all the sinuses is most important; for if free drainage in acute cases is not promptly obtained, it will be found that in a short time pus will be present. It is not necessary by any means that obstruction to drainage and ventilation should exist within the sinuses themselves, or at the exact location of the stomata, but more frequently it is the swelling of the intranasal tissues in their immediate or proximate vicinity which is the responsible factor in the presence of an infection. It may be mentioned, in this connection, that even in well established cases of suppurative sinusitis where the osseous walls are not the seat of marked necrosis, often the removal of any nasal obstruction will produce marked abeyance of the infection, and the inflammatory changes of the mucous membrane disappear without further active surgical measures.

In considering the important question of suppuration of these sinuses, the surgical and anatomical relation of adjacent tissues should be most carefully taken into consideration, and while I do not want at this time to consider the anatomy of the sinuses, yet it is desired to emphasize the fact that, before any treatment of a given case is considered, especially in relation to the surgical aspect, a complete knowledge of the anatomical relations of the affected sinus of the particular case should be ascertained by all diagnostic measures available. In view of the marked variations in the size and shape of the sinuses of all individuals this knowledge is imperative. It has seemed to me, that an important fact which is often overlooked in determining the development of purulent changes, is the tenuity and limited blood supply of the mucous membrane lining the sinuses. Often complicating infection of the surrounding tissues takes place, and consideration must be taken of the great variations in the diameter of the osseous walls; it being readily understood that a wall of extreme tenuity with the possibility of dehiscenses being present, would naturally present a point of vital danger to the adjacent organ in intimate relationship with it.

It may be said that the symptom of purulent secretion in the nose is common to disease of all of the sinuses excepting where the ostia are closed, and the general symptomatology indicative of intranasal inflammation is more or less characteristic of all accessory cavity disease.

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In suspected instances of sinusitis, the presence of pain in close relationship to the particular sinus affected is important, although severe spontaneous pain is rarely observed in chronic cases. This pain is often boring in character, frequently but a dull ache, and is largely influenced by the posture of the patient. That headaches and neuralgia, often treated unsuccessfully by various means, are the result of a suppurative sinusitis is a well established fact. Often characteristic is the fact that the pain is not continuous, but frequently disappears only to recur, and, most curiously, it is apt to be periodic, coming on at a definite hour each day, remaining for a longer or shorter period of time, and recurring at the same hour the following day. It must be remembered, that the degree of head pain is by no means necessarily indicative of the extent of the sinus involvement, for the modifications in the configuration of the particular sinus and its relation to the other sinuses, differ greatly in every individual. Upon this factor can be explained many of the bizarre phenomena relating to this most important symptom. I would also like to mention here that tenderness of the bone, increased by pressure over a sinus containing pus, may be a symptom of considerable diagnostic value, especially in relation to the frontal sinus, but on the other hand, the presence of pain at or near the point of emergence of nerves is of little or no significance and is in my experience a most misleading symptom.

We now recognize that various pathological phenomena relating to the eyes are in many instances the direct result of purulent sinusitis, and that this has a definite anatomical basis is well shown in the intimate relation existing between the orbital cavity and its contents and the sinuses. The occurrence of edema of the eyelid, orbital cellulitis, ptosis, partial and complete blindness has its very definite explanation.

Another question to which more attention should be paid is the effect of purulent sinusitis upon the cranial contents. The retention of pus with subsequent osseous and venous pathological changes produces, in some instances, well marked mental symptoms. Not only may cerebral abscess occur from this cause, but mental deterioration may in some instances follow. That this should be so can be readily appreciated from the intimate relationship existing between the sinuses and the base of the brain. I have no doubt that in the future the great importance of this relationship will be more clearly elucidated than at present. These serious symptoms of purulent sinusitis occur most frequently, in my experience, during an acute exacerbation of a chronic inflammation, and unless one obtains a clear history of the past condition of the patient, the grave character of some of the presenting symptoms will not be fully appreciated.

TREATMENT.

As to the treatment of these conditions, conservative measures primarily will produce results satisfactory to both patient and surgeon in the great majority of instances, and while various methods of surgical procedure will give equally good results in the hands of various surgeons, yet whatever method may be advocated for any particular sinus, or individual case, the underlying factors essential to success are the maintenance of free drainage and the elimination of all "dead" spaces. If such can be obtained by methods which will conserve as much of the nasal mucosa as possible, especially the turbinal structures, then by all means should such methods be adopted, for as has been well said, "it is poor surgery to sacrifice the turbinal structures and destroy the mucous membrane lining, the nasal cavity, and the interior of the sinuses, when we can in many instances get drainage by less radical measures."

Intranasal treatment is undoubtedly efficacious in obtaining permanent curative results in the great majority of patients with sinus suppuration, unless there is well advanced osseous caries, which is infrequent, or if the type of the infection has produced excessive degenerative tissue changes in the lining of the sinus walls. By far the great majority of cases with pus in the sinuses can be permanently freed from symptoms by careful, intelligent intranasal treatment. Obviously this does not imply that all cases respond in this manner, for in a small percentage, and especially does this apply to the frontal sinus, external radical operation is imperative. At the same time, I am strongly of the opinion that a not inconsiderable number of cases that have been treated by radical operation and not always with favorable results, could have been greatly improved, and possibly cured by more conservative procedures.

A factor that must always be taken into the most careful consideration in obtaining drainage of any of these sinuses, is the tendency of artificial openings or artificial enlargement of the natural stomata rapidly to contract and defeat the objects desired. This is especially so as regards the sphenoidal cavity and maxillary antrum.

In suppurative affections of the maxillary antrum, a small puncture through the nasomaxillary wall should at first be employed, but usually the best results will be obtained by sacrificing a portion of the anterior end of the inferior turbinal and making a rather extensive resection of the lateral nasal wall ,in order that the tendency to contraction may be reduced to a minimum. If this procedure does not give the desired results, the exploration of the antrum via the canine fossa with a counteropening along the floor of the nasal cavity should be resorted to. The important point to bear in mind in the study of suppuration of this cavity is that the pus in the antrum here may not be primary, but may be draining into the antrum from the frontal sinus; therefore it follows that only when the source of the purulent supply is removed, will a permanent cure of the maxillary sinusitis result.

In the presence of symptoms directing attention to an affection of the optic nerve, most particular heed should be directed to the sphenoidal cavity and posterior ethmoidal cells. In the instance of the sphenoidal cell, a large opening for free drainage should be made in its anterior wall, well down to the floor. It is most difficult to maintain a patulous opening here, and it must be carefully watched and, if necessary, enlarged.

In the instance of long continued suppuration of the frontal sinuses, with more or less retention of the purulent secretion and extensive pathological changes in the lining membrane, complicated by anatomical conditions which interfere with proper drainage, probably nothing short of radical external operation will suffice to obtain a satisfactory cure. It must be borne in mind, however, that in a not inconsiderable number of patients with this affection, less radical intranasal methods directed toward the establishment of free drainage will prove sufficient; such measures consisting of the removal of the anterior end of the middle turbinal with some of the anterior group of ethmoid cells. Intranasal methods of drilling or enlarging the nasofrontal duct are, in my judgment, attended with grave danger, due to the possibilities of endocranial injury. To perform surgical procedures of this type, in a region which does not allow of the working end of the instruments being in constant view, is to my mind to invite disaster.

Again, if the frontal sinusitis is of sufficient gravity to require such extensive intranasal manipulation, then it seems to me that it demands an external operative procedure for its relief. With the removal of the middle turbinate, the exposure of the ethmoid region, even far anteriorly, can be accomplished, and this must be done in every instance to facilitate drainage from the various ostia, if intranasal measures are to be successful.

CONCLUSIONS.

The conclusions which I have reached as to the so called radical operative procedures sometimes indicated in the presence of purulent changes in the nasal accessory sinuses, can be summed up as follows: In the presence of chronic osseous changes, or the development of active eye symptoms or endocranial complications, radical operation is imperative—and one should not temporize with anything less. In combined frontal and ethmoidal suppuration, with more or less polypoid degenerative changes of the middle turbinal, external radical operation alone will effect a permanent cure. In frontal and maxillary sinusitis, where there is reason to believe that intercellular septa or irregular partitions exist within the sinus, it is impossible to obtain a satisfactory result other than with large external openings which will allow the thorough removal of such septa and the diseased mucous membrane. If, however, free drainage is present, and there are no signs of ill effect on the general health and only an occasional headache is complained of and the patient can be kept under observation, I think the risks of radical operation more than counterbalance the advantages.

Obliteration of the infected cavity in its entirety is the ideal aimed at in radical procedures. If that is not accomplished a cavity remains that may again become infected, with a repetition of the former morbid process. Previous, therefore, to a radical operation, especially upon the frontal sinus, the patient should be informed of the possible final results of the operative procedure, that such an operation like many others is not always successful, and that it may be attended with serious consequences; and, finally, that it is not to be classed other than as a serious major operation.

45 East Sixtieth Street.

URIC ACID CALCULI.*

How to Prevent Their Formation by the Use of Phenol.

By William Henry Porter, M. D.,
New York,
Professor Emeritus of Pathology and General Medicine, New York Post-Graduate Medical College and Hospital, etc.

It is not the purpose of this paper to discuss the method of production, nor the exact point at which uric acid is formed. These points have been fully covered in several of my former papers on this subject, in all of which it has been argued and shown that uric acid is formed normally, in the secretory cells lining the uriniferous tubules, that it is its proteid antecedent only that exists in the blood.

Uric acid, as we all know, is one of the normal end products of the oxidation and reduction of the proteid molecule, and as such, is one of the essential products carrying nitrogen out of the body.

Owing to the fact that this acid has a function to perform, just as it drops from the renal cell into the lumen of the uriniferous tubule, it is both a secretory and an excretory product.

As the uric acid passes into the lumen of the tubule it comes in contact with the neutral phosphate of soda, followed by the formation of sodium urate and the acid phosphate of soda, which latter gives to the urine its normal acid reaction.

When all the uric acid is thus transformed, the system is working normally, so far as this end product is concerned, and no free uric acid escapes from the uriniferous tubules. It is only when the uric acid is overproduced or formed in larger quantities than can be fully transformed into urates that it is found free in the urine, and then it becomes a pathological product. Whenever it is overproduced, it often masses together, with the formation of large or small calculi. When this occurs, it often becomes unduly interesting to the patient and calls for therapeutic intervention.

Furthermore, it is not the purpose of this paper to discuss the question of how best to combat the overproduction of uric acid, but to elucidate the method by which phenol prevents the massing together of the uric acid crystals and thus intercepts the formation of uric acid calculi.

Many years ago it was a well known clinical fact that the administration of one or two grains of pure phenol *per os* three times a day would prevent the formation of uric acid calculi; that it would also arrest the recurring attacks of renal colic. That this phenomenon is no mere coincidence has been abundantly established by the uniformity and certainty with which such results have been attained in a very large number of cases.

How that this empirical result could be explained upon a logical and scientific basis was for many years an unsettled problem. With our ever progressing knowledge, however, in relation to the chemical mutations which regularly take place in the alimentary canal and urinary channels, much new light has been thrown upon the chemico-physiological phenomena of the human system.

As a result, it has become possible to formulate a theory which will fully and clearly explain the action of phenol, so long recognized as a valuable therapeutic factor in this class of cases.

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Phenol, like alcohol and many other compounds, is known to possess the property of coagulating albumin; consequently it is not good chemistry to introduce carbolic acid directly into the blood. In fact, it must be impossible even to take phenol, in its own form, through the wall of the alimentary canal into the circulation. On the other hand, there is considerable tangible evidence that phenol is often found in the urine when this drug has been administered *per os* or used as a surgical dressing.

At first these opposing conditions seem to be almost irreconcilable; but by adhering strictly to fixed chemical laws, these aparent contradictions are easily made to harmonize, without introducing any unknown biological factors.

Phenol, like many other substances, contains replaceable hydrogen atoms; which circumstance enables it to unite with basic substances and form carbolates of the same. Following the same laws that have been laid down for the action of the mineral acids in the alimentary canal, the action of carbolic acid can similarly be elucidated.

The strikingly brilliant results attained in clinical experience by the internal administration of this acid in the condition of overproduction of uric acid no longer begs for an explanation. The phenol, when it reaches the stomach and intestinal canal, reacts upon the sodium, potassium, and other saline compounds contained in the foodstuffs, in a manner similar to the action of the mineral acids, and forms carbolates of sodium, potassium, etc. The most likely combination is that with the sodium compounds, because these are the most abundant in the foodstuffs in the digestive tract.

The phenol reacts upon the normal sodium phosphate, and forms carbolate of soda and the disodic phosphate, according to the following equation:

$$C_6H_6O + Na_3(PO_4) = C_6H_5NaO + Na_2H(PO_4).$$

Similar combinations can be effected with potassium, calcium, and other compounds found in the alimentary canal.

The carbolate thus formed can be absorbed and taken into the blood stream without precipitating the proteid elements. While the phenol salt is contained in an alkaline menstruum like the blood and fluids of the tissues, it has no occasion to be decomposed and have the carbolic acid reformed.

Whether the various carbolate salts have any irritating action upon the system, more than is common to inorganic compounds in general while they are making their transit through the body to be eliminated by the excretory organs, is a question open for discussion. Having already affirmed the law, however, that all inorganic compounds act in the organism alone by virtue of their mechanical presence, it seems reasonable to assume the same for the pseudoorganic class of compounds to which carbolic acid belongs, to wit, that the carbolate salts are not decomposed in the blood, but are powerful mechanical irritants to the system, equal to most poisons of the strictly inorganic[1] substances.

While these phenol compounds are not in the strict sense "mineral" substances pure and simple, so far as their action, both clinical and experimental, is able to prove, they follow the same law of action that governs the purely mineral compounds, and not those which govern organic elements.

It is a well known fact that certain saline compounds, when added to freshly drawn blood, prevent its coagulation. It is also equally well established that, when carbolic acid has been taken in considerable quantities, the coagulating power of the blood is retarded. Presumably this is due to the saline form of the carbolate compounds formed from the acid in the alimentary canal; for, on the other hand, the uncombined carbolic acid, when brought directly in contact with blood, coagulates it.

Taking all these observations together, it appears quite logical to assert that the mechanical presence of the carbolate salts in the circulating blood can, like that of other known saline compounds, so affect the proteid bodies contained in the blood that the coagulating power of the latter is decreased or altogether arrested.

Further, it might be supposed that the presence of the carbolate so changes the metabolism in general, in connection with these abnormal conditions named, that the final product of oxidation tends to become *urea*, instead of stopping at the lower product, *uric acid*.

This, however, cannot be the actual method by which the formation of uric acid calculi is so suddenly arrested and the superacidity of the urine changed to a less intensely acid reaction. For the total quantity of uric acid formed and to be eliminated from the system daily can be reduced only by cutting down the quantity of food stuffs ingested; or by increasing the intake and the distribution throughout the system of oxygen, thus increasing the rapidity and thoroughness of the oxidation processes.

There is no evidence whatever, direct or indirect, that carbolic acid, when introduced into the alimentary tract, alters the oxygenating capacity of the system or regulates the food supply. Therefore, here as in all other instances, the intake of the foodstuffs must always be kept within the oxygenating capacity of the system, if true repair is to be fully and permanently established and the overproduction of uric acid effectively prevented; and the true method of action of carbolic acid, in the condition known as overproduction of uric acid, must be sought in another direction.

While the alkaline carbolates are fairly stable in alkaline menstrua, they are very easily decomposed, and the carbolic acid is set free, in a neutral or acid medium. The carbolates,[1] after having circulated through the system, pass out of the blood by a process of filtration through the walls of the capillary bloodvessels which constitute the Malpighian tufts in the kidney, in a manner similar to the escape of all the other mineral salts from the blood stream.

From this point, the phenol salts pass down the lumen of the uriniferous tubules with water and other salts, until they reach the location at which uric acid is constantly being formed and given off by the excretory epithelium into the cavity of the uriniferous tubules.

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[1] We here allude to the different principles of classification adopted by chemists as to what should be called "organic substances." The term is considered here in its ancient acceptation, the compounds normally found only in living organized structures, animal or vegetable. According to this definition, phenol is "inorganic," although classed as "organic" by those who take this term to signify "containing carbon."

At this point the carbolates come in contact with free uric acid, and the two react upon each other. Decomposition of the salt ensues, which, in the case of the sodium carbolate, results in the formation of a somewhat soluble urate of soda and the liberation of carbolic acid as expressed in the following equation:

$$C_6H_5NaO + C_5H_4N_4O_3 = C_6H_6O + C_5H_3NaN_4O_3.$$

This formation of the urate of soda prevents the transmutation of the overproduced uric acid into calculi, thus dispersing the painful symptoms almost as if by magic. This action of the carbolic acid is made possible by the fact that the food stuffs contain a surplus of soda compounds which ordinarily remain unabsorbed, and consequently pass out of the alimentary canal with the feces.

In the natural working of the digestive process, the normal sodium phosphate is acted upon by the gastric hydrochloric acid, with the formation of disodium hydrogen phosphate and sodium chloride, as expressed in the following equation:

$$Na_3(PO_4) + HCl = Na_2H(PO_4) + NaCl.$$

The later salt is not decomposed in the urinary channels by the uric acid, but passes off with the urine unchanged.

When carbolic acid is administered, on the other hand, some of the surplus soda in the food stuffs in the alimentary canal is acted upon by the phenol with the formation of disodic phosphate and a carbolate of soda instead of sodium chloride.

The carbolates are easily absorbed and pass to the kidneys, where they are readily decomposed by the uric acid, thus using up the overproduction of the latter, and thereby preventing its deposition in the form of calculi, as shown above.

When the quantity of phenol taken is small and the elimination somewhat slowly effected, the odor of carbolic acid is not perceptible in the urine, but just as soon as a considerable quantity of the acid is taken, the odor of carbolic acid becomes apparent in the renal secretion. Furthermore, its presence in the urine can be detected chemically. Thus, the laws of chemistry and physiology have furnished quite a complete explanation for the good clinical results which have so frequently been obtained by the internal administration of phenol in conditions in which uric acid is being overproduced.

It also helps to clear up many of the hitherto unexplained phenomena associated with phenol poisoning when the drug has been used as a surgical dressing. Ordinarily, in a wound, the carbolic acid coagulates the proteid substances that it comes in contact with, and thus prevents its own further entrance into the general circulation. But when it is used in large quantities or remains in quantity for some time in the dependent cavity of a wound, the carbolic acid may unite with the soda or other mineral compounds contained in the fluid exudations of the wound, and thus render possible its access to the circulation.

In rare instances the ordinarily fibroplastic barrier between the surface of the wound and the underlying sound tissue is imperfectly formed. When this is the case, the phenol compounds are rapidly drawn into the circulatory channels, and pass on to the kidneys, to be eliminated in the urine, as before explained.

If carbolates are absorbed and pass to the kidneys more rapidly than they can be eliminated with safety by these excretory organs, these salts, by virtue of their irritating properties and their ability thereby to disturb proteid transmutations within the body, cause a disintegration of the red corpuscles of the blood. The pigment contained in the hemoglobin is set free, and an acute and often fatal hemoglobinuria is produced.

46 West Eighty-third Street.

MEDICAL EFFICIENCY.*

By Ira S. Wile, M. S., M. D.,

New York.

In these days of practical life when a wave of commercialism appears to be sweeping over the country, it is interesting to note that some of the terms ordinarily applied to industry are to be attributed to medicine. "Efficiency" appears to be part of the commercial slogan, and every now and then one hears the term "medical efficiency." It occurred to the writer that it might be well to ascertain, if possible, what medical efficiency really is. Apparently the term "efficiency" is vague and has various meanings for various persons. As a whole it is an idea laden with the concepts of proficiency, thoroughness, and accomplishment.

In a desire to secure various opinions, I have written well known workers in different fields to ascertain their views upon medical efficiency.

Dr. Alfred Stengel regards it as not having any definitely established significance. Dr. Luther Gulick, on the other hand, states that the ratio of effort to result is the measure of efficiency. "Medicine should strive to be effective; efficiency is not the right idea in medicine."

These two views are not in accord with such opinions as those expressed by Charles Richmond Henderson, who, in brief, states: "1. An efficient physician is one who is successful in healing the sick, surgery being included. 2. Medical efficiency in the social sense means chiefly the prevention of disease."

Mrs. Florence Kelley refers to efficiency in the individual physician as "dependent upon skill in diagnosis, a moral quality which compels the patient's respect and obedience, wisdom in applying therapeutic agencies, and honesty in instructing the patient and those who belong to him how to avoid recurrence and transmission of disease." "Community medical efficiency" she differentiates as a matter of organization and distribution of results dependent upon the organization of the medical service as the most important of all services, national and international, and she further states: "In the light of this belief, our present competitive organization of the profession appears hideously inefficient and actually preventive of efficiency."

Dr. Edward Devine makes the same distinctions as to individual efficiency as dependent upon "skill in diagnosis, technical equipment, and skill in treatment, as opposed to medical efficiency in the community, which depends upon high standards in the medical profession, adequate laboratories for research, and an active policy of public sanitation working toward the control of infection on the one hand and public education on the other." He further suggests that an index for the medical efficiency of the community would be the death rate.

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Dr. Richard C. Cabot regards medical efficiency as "the accomplishment of what medicine intends or proposes to do." He recognizes that this will vary from age to age. There is a wise provision in his comment that "efficiency demands more of a physician in New York than in Albuquerque." He further states, "I do not myself think very much of the word efficiency, it is a 'safe and sane,' a standpat rather than a progressive word. Any great man or great profession is far more than efficient—one may be efficient without being honest, selfsacrificing, humble minded, ardent, courageous, or imaginative. I have known very efficient surgeons who have had none of these qualities."

In the opinion of Dr. James P. Warbasse, "medical efficiency is the quality of accomplishing effectively the function of medicine." The function of medicine he regards as: "1. The prevention of morbidity; 2, the allaying of physical suffering; 3, the increasing of physical efficiency in the individual units of society; and, 4, the prolongation of life."

Dr. W. T. Sedgwick states: "Since for me medicine is the healing art (*Heilkunde*), medical efficiency is effective healing or successful curative medicine. Effective surgery is probably its most striking and successful hemisphere. From another angle medical efficiency is effective medical practice—the skillful application of medical knowledge to further the science or employ the arts of curative medicine."

As the estimate of a man dealing with social service work in hospitals, Dr. Michael M. Davis, Jr., presents some important questions. He regards "the measure of efficiency as the relation between results achieved and energy expended; or, in other words, between results and cost." He believes that "medical efficiency should be determined by answering two questions: 1. What results are obtained with relation to the disease? 2. What results are accomplished in improving the human beings who come for cure?" He admits that it is usually impracticable to answer these questions definitely in relation to the physician's private practice. In considering the work of an outpatient clinic or a hospital, he regards it "possible to define medical efficiency as the proportion of cases successfully treated to the total number of cases treated." In hospital practice he believes one of the greatest causes of medical inefficiency to be the too early discharge of patients from the wards. From the standpoint of society as a whole, he again defines medical efficiency to be in inverse ratio to the number of persons who die from preventable diseases.

"My idea of human efficiency," writes Dr. Charles A. L. Reed, "is that it implies the ability on the part of an individual to develop the laws and resources for the prevention and care of the diseases, and the power to promote human welfare by the practical application of any or all of the sciences embraced under the general title of medicine."

Medical efficiency must be considered with reference to the various phases of medicine, such as etiology, pathology, symptomatology, prognosis, and treatment. It is obvious that the etiological factors in disease condition the pathology, the prognosis, and the treatment. Similarly it appears clear that symptomatology has marked relations to diagnosis, prognosis, and treatment. Treatment itself may bear a distinct relation to prognosis on the one hand and the etiology of similar conditions on the other hand. The careful and effective cure of acute diseases lessens the number of permanent complications and chronic crippling sequelæ.

Bearing these few facts in mind, medical efficiency may be viewed from the standpoint of cure, and to this extent the efficiency depends largely upon individual physicians. The second phase of efficiency views the subject from the point of preventive medicine, and constitutes a social problem. There is a mixed type wherein cure and prevention are closely bound together as would be evidenced in the use of antitoxine for both the cure and prevention of diphtheria. It is noteworthy that the cure of individuals depends upon the effectiveness of an individual physician, and the efficiency will be manifest and dependent upon the intelligence, judgment, and skill of a particular physician. This phase is especially exhibited in the relation of the surgeon to problems of amputation where the idea of conservation and conservative procedure is of paramount importance.

The widespread prevention of disease depends not upon any single physician, though his efficiency may spread its influence over a limited neighborhood, but upon the profession as a whole.

A moment will convince any one that medical efficiency, either for the individual physician or for the profession, depends upon many extraneous factors. General education and widespread traditions have their influence upon medical standards. Natural climatic conditions or unnatural conditions in housing or grouping of people may have a pronounced effect upon the efficiency of the profession. The mere legal status of a community, in so far as it permits child labor, night work for women, and fatiguing hours of work for men distinctly limits the efficiency of the profession in eliminating accidents and diseases. Unrestricted marriage laws bear their grist of defectives and weaklings. To the same extent, industrial progress which does not afford protection or safeguard employees in the matter of ventilation, elimination of dust, or the use of safety devices, correspondingly militates against professional efficiency. It sounds strange to say that general prosperity with abundance of funds lessens the health of the community, but the relation of this condition to medical efficiency is clear in view of the increased use of alcohol, the spread of venereal diseases, the attacks of gastrointestinal disturbances. Keen competition with all its mental strain has made insanity a problem of great importance.

Political organizations that interfere with the wise administration of health ordinances or which refuse to sanction or actually do interfere with the promulgation of hygienic laws, stand in the way of medical efficiency. Sectarianism in medicine, the attitude of conciliation toward charlatanism, the winking at irregularities and criminalities are positive factors in retarding the progress of efficiency in the medical profession.

Recognizing the social and economic forces which at present interfere with medical progress in addition to the internal difficulties within the profession and our low standards in education, it is well to consider what the essentials are that promote medical efficiency. While analogy is not complete, let us consider the application of the Twelve Principles of Efficiency for Industry, as laid down by Harrington Emerson.

1. *Ideals.* It is needless to state that ideals represent part of the backbone of professional life. The desire to cure quickly and restore individual patients to health is common to all physicians. The spirit of sacrifice and unselfish devotion is widespread. The spirit of education, the love of books, research, investigation, and contact with the world so as to secure an intimate knowledge of living conditions, has always existed. The great advance in thought that leads to social service, that regards medicine as a public function, that makes the physician a community tool, is gaining in force. The ideals of preventive medicine were never more keenly felt than to-day.

2: *Common sense and judgment.* It is a fact of common knowledge that the medical profession lays no claims to infallibility. With the best of training, errors will arise. Sound judgment and the application of common sense to individual problems or to social difficulties will always be necessary. It is essential to realize that the welfare of the mass is above the welfare of any class. In raising the standards of health in the community and eliminating disease, the medical profession is limiting its sphere of curative activity. Judgment determines that prevention must be the future activity; that it is more rational to limit the spread of disease than merely to consider each patient an end in himself. There is an appreciation of the fact that scientific opinion changes from time to time and that much thought is necessary to select those apparent advances which are to be of permanent value, as opposed to those which will represent only transitory states of scientific progress. Quackery and pseudoscience must be submerged through the exercise of common sense and the spread of rational ideas.

3. *Competent counsel.* The sphere of medicine has developed so rapidly that it is impossible for a single mind to grasp all that it contains. The development of specialties has been a natural outcome of this widened knowledge. Surgery, obstetrics, and various other specialties within medicine afford abundant opportunity for utilizing competent counsel as individual cases demand. In the social aspects of medicine it has now become necessary to secure the advice and cooperation of various special consultants, who in previous years were ignored. Sanitarians, engineers, lawyers, educators, social workers represent new types of specialists, whose counsel must be sought in working out problems of professional efficiency. The doctor is not essentially a sanitarian, nor an educator, nor a lawyer, yet for the education of the masses, for the securing of constructive hygienic legislation, and for sanitary improvements competent counsel must be secured to enable the doctor to advise in a safe and sane manner the medical advances necessary to promote communal welfare.

4. *Discipline.* Discipline is especially important within the profession so as to promote harmony. There should be every encouragement of local, State, and National organizations that have at heart the welfare of the medical profession. Every effort should be made to establish a high order of ethics and conduct within the professional ranks. It is a professional duty to cry out against irregular, dishonest, or criminal practitioners. The medical profession must discipline itself in order that it may be free from lay criticisms and that it may freely criticise similar irregularities or criminalities as they may appear in every walk of human endeavor.

5. *The fair deal.* Personal jealousy must give way to a more altruistic jealousy for general accomplishment. The recognition of the value of the services of the physician should be based upon its relation to the general welfare, and not upon the annual income. The fee splitting evil with all its dark and dismal records must be overcome. Common honesty in the profession itself and fairness to the patient involve a recognition of the necessity of above board dealings which will erase this unfortunate blot on the page of medical history. There must be honesty to patients in hospitals and clinics so that the abuses at present existent may cease, and the patients receive such treatment as will restore them to physical health without the sacrifice of unnecessary time and without plunging the families of the patients into further despair. It is important at this time to urge the establishment of institutions only as they may be necessary for the welfare of society without any relation to the possibilities of giving some doctors an opportunity for clinical work. There should be adequate institutions for lessening disease in its more dangerous phases. By controlling the spread of infective diseases, the need for hospitals for chronic sufferers eventually will be decreased. It seems quite strange to find that few hospitals have facilities available for the cure of acute venereal diseases, though all are willing to receive the victims when operative procedures become necessary. There are insufficient institutions for contagious diseases, and the numerous chronic conditions which make patients unwilling drains upon their families and social incumbrances. The question of the type of institutions to be established requires fair consideration.

6. *Records; reliable, immediate, and accurate.* Without placing great stress upon the personal records of individual cases, there must be established a full system of birth and death registration, together with the report of contagious and communicable diseases. The medical profession should hasten the day when reliable vital statistics will exist throughout the country, so that there will be a sound basis for the determination of health policies. Vital records form a potent and essential factor of medical efficiency and constitute the basis of argument and constructive legislation.

7. *Planning and dispatching.* Haphazard measures in the establishment of hospitals and dispensaries must cease. All institutions for the public health and welfare should be located after due thought and in accordance with sound planning with reference to the needs to be met. The needs of special institutions require different locations and varying amounts of land. Transportation facilities demand attention as well as topographic and climatological conditions. An industrial clinic such as that in Milan would require little ground space, while an institution for the insane would necessitate an extensive acreage. There must be carefully planned campaigns of education, scientific outlines for sanitary surveys, and the general encouragement of public health measures. After thorough planning, argument, appeals, and education are prerequisites for the legislation that is so necessary to bring the desired institutions into tangible existence.

8. *Standards and schedules.* The curricula of medical schools are gradually being improved, but they require more standardization than is at present possible with the laxity of State laws relating to medical practice. The nature, the effectiveness, and the control of postgraduate work along clinical and laboratory lines must be supervised that they may no longer serve merely as an opportunity for the exploitation of serious minded students. Action is necessary to determine what shall constitute specialism. It is time that a halt was made in permitting poorly equipped individuals to announce themselves as specialists in any walk of life. In medicine a specialist should have superior merit, but the basis of this must be carefully considered. We may suggest also that there should be some standardization of hospitals and dispensaries with regard to their fees and with regard to the various types of patients they will treat. There must be arranged more ample accommodations for the great selfrespecting middle class, whose means are insufficient to warrant the expenditure now required from the private wards, but who do not represent the class that is catered to in the public wards. The whole subject of social service requires thorough investigation as to methods and results in large and small communities that it may be developed to a high state of efficiency.

9. *Standardized conditions.* Equality of opportunity is the essential basis of democracy. In medicine there should be a uniform medical practice covering the United States. The man who is competent to practise in New York should be competent to practise in California, and the man incompetent in New Orleans should be incompetent in St. Louis. No person should be permitted to practise without due examination, theoretical and practical, in such important subjects as anatomy, physiology, diagnosis, obstetrics, pediatrics, and hygiene. These are all basic subjects and of greater moment than the question of sectarian treatment. Public medical positions must be taken out of politics, and civil service appointment should enable communities to secure men whose information and training are sufficient to enable them to perform the duties of the offices they seek.

10. *Standardized operations.* It is wholly practical and exceedingly desirable that model units be established by careful study for hospitals, dispensaries, sanatoria. The particular plans that are necessary for institutions dealing with special classes of patients, such as the tuberculous or the insane demand standard requirements as minimum. It is possible to standardize methods as related to water supply, sewage disposal, city lighting, and industrial environment, but these can only be worked out by the cooperation of the medical profession with allied professions. As there are various standard procedures adopted by chemists, The American Public Health Association and similar organizations, so methods of research should be standardized as far as may be practicable.

11. *Written standard practice instructions.* In order to secure standards of efficient practice, it is necessary to review ordinances and State regulations in so far as they may deal with the problems of disinfection, fumigation, and quarantine. Some standard nomenclature should be generally adopted as the international classification of the causes of death. Special details in treatment demand more carefully written textbooks with full explanations of methods that may be grasped by students. Methods of public education through the press, public lectures, demonstrations, and traveling exhibits require the study and support of the profession.

12. *Efficiency rewards.* The laborer is worthy of his hire. Physicians' fees must be regulated with fairness to physician and patient alike. Superior service is entitled to superior reward. There must be adequate compensation for public service rendered by medical men. There is no reason why municipalities should be parsimonious in their dealings with those servants who are essential for conserving public health. Contract practice with its paltry fees is responsible for much inefficient medical service and for many of the criticisms of personal medical inefficiency. There is a large question as to whether medical charity should not be totally abolished and all physicians in attendance upon public patients should not be paid from the public funds. This step has already been taken in many municipalities and in the future will spread throughout the country. The present British Insurance Act represents a difference of opinion as to the amount of money the public treasury can afford to pay the profession for caring for the health of families with limited increase.

It is patent that medical efficiency bears a marked relation to these twelve principles of efficiency. They must all be considered in order to accomplish the best results for the mass of the people. When social medicine becomes thoroughly efficient, the individual physician may possibly have less to do, because there will be less illness to be cured, but there will be an increased opportunity for the profession to conserve health, and this represents a higher ideal in medicine. The personal efficiency of physicians will be enhanced through the raising of the standards within the profession, through the demand for fewer physicians, and through keen competition for securing places of usefulness.

The day of medical efficiency thus interpreted is not near at hand. Utopia must result before all the qualifying and retarding conditions are removed, and the millennium may come before medical efficiency becomes an accomplished fact. The profession with all its ideals looks forward to its own development and is constantly striving to hasten the day when there will be no uncertainty as to what constitutes medical efficiency.

230 West Ninety-seventh Street.

EXTRASYSTOLES.*

Clinical Observations; Their Etiology and Treatment.

By Selian Neuhof, M. D.,
New York,
Adjunct Attending Physician, Lebanon Hospital.

Extrasystoles (more properly premature contractions[1]) consist of anticipated cardiac contractions occurring before their normal rhythmic time. Such anticipated beats are responses of the heart to new abnormal impulses. The latter may originate in the auricle, in the ventricle, or in the auriculoventricular bundle, and the different origins may be graphically recognized in good polygraphic tracings or in electrocardiographic curves.

Isolated extrasystoles are readily recognized by the ordinary methods of clinical examination. The stethoscope placed at the cardiac apex detects one or two short, sharp sounds representing the extrasystolic beat; these sounds are usually followed by intervals (compensatory pauses) longer than those between the rhythmical beats. If at the same time the radial pulse is palpated, a small beat may be felt corresponding to the premature contraction heard at the apex. In so called frustrant contractions the extrasystole does not raise the aortic pressure sufficiently to produce a pulse wave, hence no corresponding beat is felt at the wrist and only one extra sound is heard at the apex.

Statements are found in the literature that extrasystoles are usually accompanied by painful or other sensations in the chest. In the cases I have observed this has been an infrequent occurrence. The sensation, when present, was that of palpitation or of a slight feeling of faintness. The great majority of the patients did not know of the presence of any cardiac irregularity.

Atropine sulphate, one fiftieth grain, injected hypodermically, is the test used to determine functional extrasystoles. In some cases I carried out this procedure; if the arrythmia disappeared, it was looked upon as functional. In other patients the arrythmia was temporary and the atropine test could not be used.

It has not been possible definitely to classify the etiology of every case of extrasystole; yet the study of this arrythmia in conjunction with such signs and symptoms as dyspnea, presence or absence of decompensation, size of the heart, etc., and with observations on blood pressure, stomach and intestinal disturbances, etc., has often yielded information of prognostic and therapeutic value.

To illustrate the various causes and types of extrasystoles and their comparative importance in the clinical syndrome, short case histories and accompanying discussions follow.

Case I. I. B., aged fifty years, had always had a regular pulse. With the onset of a mild grippe bronchitis occasional extrasystoles developed. Her heart, blood pressure, and urine were normal, there was no decompensation or circulatory disturbance. Her temperature was normal on the second day; the extrasystoles disappeared and did not return.

This case is typical of premature contractions which occasionally accompany the onset of mild infections, but are more frequently found at the time of critical defervescence. Severe febrile infections may be accompanied by myocarditis, marked circulatory disturbances, and arrythmias, but it does not appear possible that temporary extrasystoles accompanying mild fevers or crises and then disappearing can be evidence of myocardial involvement. The cause of this type of arrythmia is not known; it probably acts by interfering with neurogenic control of the normal heart rhythm. These extrasystoles are not of serious import and require no treatment.

Case II. Miss B. S., aged twenty-six years, was a very robust looking woman. Death and sickness in the family had made her worrisome and irritable. For six months she had had constant stomach symptoms, gnawing pains to the left and above the umbilicus, and frequent "night" pains in the epigastrium. Accompanying the pains she sometimes had paresthesia of the extremities, and vasomotor symptoms, flushing of face and hands. For about two years physicians, not the patient, noticed cardiac irregularities.

Except for extrasystoles the circulatory apparatus was normal. Polygraphic tracings showed that the extrasystoles were auricular. They could be made to disappear for a few minutes by rapid forced breathing.

The patient's gastric symptoms were suggestive of ulcer. In the absence of decompensation or of any history pointing to any cardiac affection, the arrythmia was apparently functional and due to abnormal reflexes caused by her stomach condition. The reflex path in these cases has not been determined. I have found the breathing test above described of occasional value in determining so called functional extrasystoles.

In this case treatment was directed entirely to the stomach. Upon improvement of the latter, she was allowed to follow her usual occupation and advised to avoid excitement. When last seen the frequency of the extrasystoles had diminished.

Case III. Mrs. S., aged sixty-five years, had been under treatment for her stomach for several years. She suffered from splanchnoptosis. When indiscreet in diet she was immediately seized with violent pains at the umbilicus, nausea, and anorexia. She had marked arteriosclerosis and myocarditis; the urine was normal. During the last gastric attack, extrasystoles (ventricular) were present for the first time.

Because of her age, and cardiac and arterial condition, it had seemed that the extrasystoles would be forerunners of more serious arrythmic disturbances; but the extra systoles disappeared with the disappearance of the gastric symptoms.

Case IV. Mrs. A. L., aged seventy-six years, had marked splanchnoptosis. For one year she had attacks of severe "abdominal" colic lasting several hours; this was sometimes temporarily relieved by belching. For several months she had been on a vegetable diet with increase in the severity of the stomach symptoms. She had arteriosclerosis, the systolic blood pressure was 160, the area of cardiac dullness was diminished, there was a soft systolic murmur at the apex. When first examined there was no edema of the legs. At the beginning, frequent extrasystoles were present; these with her advanced age, arteriosclerosis, and pains, made it appear probable that she was suffering from some form of cardiac angina. Digitalis was given; she was put upon proper diet, alkaline powders, and atropine. Within a few days the extrasystoles disappeared, the abdominal colic became less frequent and painful, and in a few weeks disappeared entirely. Shortly after the arrythmia was gone, slight edema of the legs developed, lasting several weeks. Here temporary decompensation (edema) followed the arrythmia; this was apparently due to the patient's advanced age and arteriosclerosis.

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*Read before the Harlem Medical Society, New York, December 4, 1912.

[1] Lewis: *Clinical Disorders of the Heart Beat*, p. 39, 1912.

The foregoing cases (II, III, IV) illustrate a large group in whom extrasystoles originate apparently reflexly in gastric disturbances. Most writers[2] affirm that extrasystoles are found in gastric disorders only when the stomach is full and distended, and are caused by the distended organ pressing against the diaphragm thus embarrassing heart action and circulation. Others believe that absorption of toxic products from the stomach is a causative factor. Lewis[3] states that the connection between extrasystoles and digestive disturbances is not fully understood. In my own experience, extrasystoles were most frequent when pain was a prominent symptom of the gastric condition. For example, in the foregoing three cases, there was no gastric distention, in fact the patients suffered from severe anorexia and were under fluid diet during the time the extrasystoles were present. When the patients improved and could eat liberally and literally fill their stomachs, the extrasystoles disappeared in two of the cases (Cases III and IV).

The arrythmia seems to have no prognostic significance upon the stomach condition, nor does it in itself require medication except when accompanied by signs of cardiac decompensation.

Case V. G. H., aged sixty-eight years, suffered from several attacks of abdominal pains accompanied by a slight rise of temperature, nausea, and vomiting, for four weeks before admission to the Lebanon Hospital. He had several attacks later. During the attack his abdomen became rigid, and intestinal rigidity was sometimes present. His condition was suggestive of peritonitis from appendicitis or intestinal obstruction. Myocarditis and marked arteriosclerosis were present; there was no decompensation. His blood pressure was 160 Hg. mm. With the onset and during the mild attacks of peritonitis, very frequent extrasystoles were present; after the attacks the pulse became regular. When the peritoneal attacks were severe the type of arrythmia changed from extrasystoles to complete irregularity of the pulse (auricular fibrillation). Twice with amelioration of the peritoneal condition, the fibrillation changed to extrasystoles. Finally auricular fibrillation appeared and remained until death. Except for dyspnea, which might have been due to abdominal distention, no decompensation accompanied the arrythmia till shortly before death.

It is impossible to state what proportionate rôles, if any, toxemia and peritoneal reflexes played in the production of the extrasystoles and auricular fibrillation. The advance and recession of the severity of the abdominal condition could be foretold by a study of the arrythmia. Therapy directed to the heart alone would have missed the importance of the etiological abdominal factor; such therapy could not have cured the arrythmia without the removal of the underlying cause.

Case VI. E. G., aged twenty-six years, had articular rheumatism when fourteen years old. Cardiac examination showed an aortic stenosis and hypertrophied heart; the apex beat was situated one inch below and slightly outside the nipple line. The systolic blood pressure was 140; the patient was athletic and of excellent musculature. There was no dyspnea or decompensation. Of late he had been very active in business. During the last three months he had occasionally felt "extra thumps" at the heart. He was sometimes awakened at night by "attacks of palpitation" usually lasting several minutes and ending with a sharp "thump" and pause. Upon examination his heart was rhythmic except after forced exercise (rapid walking) when an occasional extrasystole was heard.

Overstrain of an hypertrophied heart was apparently the cause of the extrasystoles. From the patient's description, attacks of palpitation at night ending with an extrasystole ("extra thump and pause") it seemed probable that short attacks of paroxysmal tachycardia were present. Such a heart needed comparative rest, otherwise the occasional arrythmia might have led to more constant arrythmias, tachycardias, and possibly decompensation. Less active application to business was advised and bromides were prescribed. Within a few weeks, the extrasystoles and palpitation disappeared.

This patient typifies cardiac overstrain as the etiological factor. Here the heart was hypertrophied as the result of a valvular lesion; but hypertrophy and overstrain from other causes, e. g., from athletics, may act similarly. The cause gives the indication for treatment.

Case VII. G. K., aged fifty-two years, had two attacks of decompensation, dyspnea, edema of the legs, ascites, and an enlarged liver. He gave an indefinite rheumatic and alcoholic history. There was evidence of an aortic stenosis; the cardiac area was enlarged, the apex impulse weak and diffuse. Occasional extrasystoles were present. With rest in bed and under digitalis the decompensation disappeared. After several weeks, he was readmitted to the hospital with the same symptoms and arrythmia and died one month later of cardiac failure.

Case VIII. A. M., aged forty-six years, as the result of articular rheumatism some years ago, suffered from aortic stenosis and cardiac hypertrophy. The apex beat was diffuse, and was situated in the sixth interspace one inch to the left of the nipple line. While in the Lebanon Hospital, the patient suffered from decompensation, edema, and dyspnea. He improved, but after four months reentered the hospital with more marked cardiac failure. A systolic murmur was now heard at the apex. For a few days the heart action was regular, then occasional extrasystoles were present, finally auricular fibrillation appeared and remained until death.

Though the valvular lesion (aortic stenosis) was the same in Cases VI, VII, VIII, the presence of myocarditis, dilatation, and severe decompensation made the extrasystoles of serious import in the two latter cases. Rest and medication only temporarily improved the cardiac condition.

Case IX. F. K., aged twenty-three years, had been well until her present illness. The latter began with a chill, general muscular pains, and fever four weeks prior to her admission to the Lebanon Hospital. On auscultation loud murmurs corresponding to mitral and probable pulmonary insufficiency were heard. During her three months' stay in the hospital, she had several attacks of chills and fever, each attack lasting from one to two weeks; at these times the pulmonary and mitral murmurs became more marked and extrasystoles were frequently present. In two of these febrile attacks the type of arrythmia changed to complete irregularity of the pulse (auricular fibrillation). When fever was present, there was slight dyspnea, but no other sign of decompensation. Throughout her illness, the cardiac area was normal to percussion; urine and blood pressure were also normal. Two blood cultures remained sterile after seven days. When the temperature had been normal for four weeks the patient left the hospital with permanent involvement of the mitral and pulmonary valves, with evidence of adhesive pericarditis and with a pulse which had remained regular for two weeks.

In this patient extrasystoles accompanied each fresh outbreak of endocarditis and were somewhat indicative of its severity. When the infection was mild—slight fever, short duration—the extrasystoles were infrequent; when severe they became frequent and twice changed to complete irregularity of the pulse. The treatment (injection of polyvalent vaccines, salicylates, etc.), though without apparent effect, was directed against the endocarditis, not the arrythmia.

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[2] Vaquez: *Les Arrythmies,* 220, 222, 1911; Le Conte: *L'Extrasystole,* 88, 89, 1911.

[3] Lewis: *Clinical Disorders of the Heart Beat,* 44, 1912.

CASE X. P. L., aged forty years, was an inveterate tobacco smoker since youth. For several years he had not been able to work regularly because of sharp stabbing pains in the left chest, particularly after exertion. Examination showed that the area of cardiac dullness was slightly enlarged downward and to the left; there was a soft systolic murmur at the apex. The blood pressure was normal; there was no decompensation. There were frequent extrasystoles which partly disappeared after the subcutaneous injection of one fiftieth grain of atropine sulphate. Apparently mild myocarditis was present. Tobacco was prohibited and small doses of atropine were prescribed. The anginal pains soon stopped and the patient was able to work regularly. It was only after some months that the extrasystoles became noticeably fewer.

No attempt has been made to include all causes of extrasystoles, for example, such as result from shock, fright, nervousness, anemia, agonal cases, the use of digitalis, etc. The extrasystole in itself is only a form of arrythmia and represents but one phase of a cardiac examination. It may be indicative of severe myocarditis or of reflex disturbance in some organ other than the heart. In the latter instance it appears most apt to disturb the normal rhythm when arteriosclerosis, high blood pressure, or some degree of myocardial involvement is present. In fact some writers (Mueller[4]) believe that extrasystoles in themselves offer direct evidence of myocardial involvement. In some of my cases, however, though frequent or isolated, extrasystoles were present, there was absolutely no evidence of myocarditis or of arterial disease. The relative value of this arrythmia must be carefully weighed and studied in the cardiac examination. This applies especially to cases of decompensation from any cause. The knowledge of the blood pressure[5] is also important. The examination is not complete until the gastrointestinal canal in particular has been searched as a possible reflex cause for the extrasystoles and inquiry has been made regarding those drugs (especially the digitalis group) and addictions (tea, coffee, and tobacco) which sometimes produce this arrythmia. If the gastrointestinal canal and heart can be excluded, painful abdominal conditions—e. g., cholecystitis, peritonitis, etc.—should also be considered as etiological factors.[6] By themselves, extrasystoles may be of no clinical significance or may be portents of a lasting arrythmia[7] and severe decompensation. They may require no treatment, sedative treatment, or treatment directed against the underlying cause. Though digitalis may produce extrasystoles, it is not contraindicated when the cardiac condition otherwise warrants its use and is the cause of the arrythmia; it then acts favorably by improving the cardiac condition.

CONCLUSIONS.

1. The recognition of extrasystoles by ordinary clinical methods of examination is usually easy.
2. Painful sensations in the chest accompanying extrasystoles are infrequent.
3. Depending upon the underlying cause, patients with this type of arrythmia may or may not require treatment.
4. When the cardiac condition calls for digitalis or allied drugs, extrasystoles offer no contraindication to their use.
5. When viewed as part of the clinical syndrome, extrasystoles may sometimes be of prognostic importance.
6. Extrasystoles may be forerunners of more severe types of arrythmia, particularly of tachycardia and auricular fibrillation.

1275 MADISON AVENUE.

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[4] Mueller: *Archives of Internal Medicine*, January, 1909.
[5] Herring: *Pflüger's Archiv*, lxxxii, 1, 1900; Huchard: *Congrès international de médecine*, 589, Paris, 1900.
[6] Wenckebach: *Archives des maladies du cœur*, 81, 1908.
[7] Lewis: *Clinical Disorders of the Heart Beat*, 53, 1911.

THE SPECIFIC TREATMENT OF PELLAGRA.*

The Relative Value of Sodium Arsanilate and Salvarsan.

BY E. H. MARTIN, M. D.,
Hot Springs, Ark.

That pellagra is of comparatively recent occurrence in our practice must be the excuse for the small number of cases on which my deductions are based. Written histories and records have been kept, however, of each case and these, eighty-three in number, have been carefully reread, analyzed, and classified, and all cases in which the diagnosis was doubtful or which were under treatment only a short time have been excluded in the final analysis. This has excluded a number of apparent cures, and brings the final series down to cases in which the diagnosis was absolutely positive and which, except the fatal cases, each had sufficient treatment to exclude chance or accidental recoveries.

Of the eighty-three cases, four came first under observation in 1909, nine in 1910, thirty-five in 1911, and thirty-five in 1912. These figures do not show the relative frequency of the disease in Arkansas during those years, as the patients came from many States, and the lack of increase in 1912 over 1911 merely argues that fewer pellagra patients are leaving home for treatment.

A very careful analysis of these records has caused me to exclude forty-five on account of the data being insufficient for certainty. These forty-five cases were treated for a short time with sodium arsanilate in some instances, and some others had single doses of salvarsan, and almost all of them ended in recovery, but the cause and effect are not absolutely certain, and they are therefore not offered as evidence. Some of the forty-five are also still under treatment. Of the thirty-eight others, eleven come from the sodium arsanilate series and twenty-seven from those treated with salvarsan.

The eleven cases sufficiently treated with sodium arsanilate give nine recoveries and two deaths. Of the nine patients recovered there were two who received single doses of salvarsan, but the arsanilate treatment preponderated. Each patient received many doses of the arsanilate, and treatment was kept up in most instances over two summers. One of the recovered cases dates from 1909, four from 1910, and four from 1911.

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*Read before the National Association for the Study of Pellagra, Columbia, S. C., October 4, 1912.

Of the two fatal cases, one terminated fatally from chronic nephritis, the other from cerebral complications, probably made worse by the slight reaction sometimes following sodium arsanilate in very severe cases. This idea will be discussed later.

Of the twenty-seven cases taken from the salvarsan series, twenty show apparent cures, three are doubtful, but greatly improved, and four ended fatally after treatment was begun.

Of the twenty presumed cures, seven were treated in 1911 and remain cured. Four of these came back and received midwinter doses of salvarsan which may or may not have been necessary. There were thirteen patients seemingly cured by salvarsan in 1912 of whom nine were discharged previous to August 1st and are still well. These twenty cases and the three doubtful ones received the following number of doses: Four received five doses each, twelve received six doses each, two received seven doses each, three received eight doses each, one received ten doses, and one received twelve doses.

These doses were usually given at intervals of from seven to ten days, and the first dose was usually 0.2 gramme, the second dose 0.4 gramme, and the subsequent doses whatever the patient's weight called for—basing the full dose on 0.1 gramme for every twenty pounds after allowing for clothing.

In very weak and nervous cases these doses are reduced. Each of these patients received the number of doses mentioned in an unbroken series, except the two getting ten and twelve doses. The former of these was given four doses at one series, four at a second series, and two at a third. The latter received three doses at first, three doses several months later, and six doses in her third series. The reason in each case was the same—not enough treatment at first because we were in unknown territory and did not know how many doses could safely be given at short intervals. Both patients are apparently cured. Of the three doubtful cases, two were given six doses each and one received eight doses. The patients apparently recovered and lost pellagrous symptoms, but each had to leave Hot Springs before receiving a dose without a subsequent reaction. These three patients may be really cured, but as this reaction seems to be proof of the presence of the organism causing pellagra, the patients cannot be regarded as cured until a dose of salvarsan can be given without a reaction following.

The author of this paper has met with strong opposition in advancing the theory that the reaction following the administration of salvarsan in cases of syphilis and pellagra is due to toxines released from killed organisms causing those diseases. However, opposition cannot alter facts—the reaction, consisting of fever, emesis, and bowel movements of a watery and gaseous character, does occur. Either of these three factors of the reaction or any two of them may be absent or all may be present, in either case the reaction is positive. Granting that the distilled water is fresh and the technic of administration all that it should be, this reaction does *not* occur in any patient *not* having lues or pellagra. That it is sometimes absent in certain cases of syphilis is at times explained by the organisms not being in reach of the circulating blood and in other cases its absence cannot be explained in the light of our present knowledge, though, certainly, there is a reason which we will some day understand. However, it is rarely absent, except in cases where its absence can be expected—after first doses in tabes or spinal syphilis for instance. So certain are these facts in my opinion, an opinion based on carefully watching and recording the results of 1,100 intravenous doses of salvarsan, that my guide for treatment in both syphilis and pellagra is the reaction. Each patient is given appropriate intravenous doses, usually seven days apart, until no reaction follows—meaning no rise of temperature above normal, no emesis not otherwise explainable, and no characteristic bowel movements. A single watery, gaseous bowel movement constitutes evidence of reaction and calls for another dose as imperatively as a rise of temperature. This absence of reaction which should indicate a total destruction of the germs of the disease is attained in seventy per cent. of all cases of syphilis by two doses, if given within ten days, twenty-eight per cent. require three doses at that close interval, and two per cent., mostly cases of cerebral or spinal syphilis, will require four or five doses. Pellagrins, however, require from five to eight doses to cause the reaction to disappear, as a rule, though apparent cures often occur after one dose.

Also, in cases of cerebral and spinal syphilis, there is often seen a delayed reaction, never seen in other cases of syphilis. So, knowing from the clinical symptoms of pellagra, the increased reflexes, the nervous and mental symptoms, the symmetrical character of the skin lesions, that the spinal cord and the brain are the chief sites of trouble, we should naturally expect some such prolongation of the reaction following salvarsan as is at times seen in lues of the nervous system.

Such is invariably the case, the reaction of salvarsan in cases of pellagra is not a frank paroxysm as it is in cases of secondary syphilis, but is usually a matter of three days. The reason for this is not difficult to imagine, though it may not yet be possible to prove. If the organisms, doubtless spirilla or spirochetes, are situated in the nervous system the circulating blood cannot bear its salvarsan to them with sufficient freedom to cause their destruction *in situ*, but it is probable that sufficient approach is made by the salvarsan bearing blood to influence the breaking up of colonies and to cause the organisms to pass gradually into the blood current where they were killed from day to day until so much salvarsan has been eliminated from the patient that it is no longer effective.

The fact that colonies of organisms are thus broken up was sufficiently proved to several patients by the appearance of acute symptoms. For instance, in one case the second dose of salvarsan, while improving existing symptoms, caused a renewal of stomatitis. In another case, the skin lesions present rapidly disappeared, but an entirely new set of symmetrical skin lesions followed the administration of the drug. These were temporary and yielded to later treatment. In a great many cases the increasing of the diarrhea shortly after treatment is begun is very noticeable, both in arsanilate cases and those treated with salvarsan. Analogous to this, I have seen similar results in tertiary syphilis in at least a score of cases. Patients with strictly tertiary lesions and with presumably not a single spirochete in the circulating blood, would be changed to secondary cases after the administration of a dose of salvarsan, as shown by the prompt appearance of the secondary eruption which, however, would disappear after, or even before the next dose.

The severity of this reaction depends upon the number of organisms killed, and therefore upon the severity of the particular case and also upon the size of the initial dose. It is reasonable to suppose that there are usually germs of pellagra in other parts of the patient's body, in the blood for instance, even if the central colonies are in the nervous system. Therefore, a very desperate reaction may be expected in some cases, though not all, if the first dose is a full one.

It is much more desirable to give small and increasing doses and not to give a full dose until the third, as then the free germs in the system may be presumed to have been already destroyed. Even with this precaution there is danger in patients with marked cerebral symptoms, which brings us back to our four deaths. Three of these were patients with cerebral cases, practically insane; the fourth gave no mental symptoms, but was a chronic alcoholic as were two of the other three. These patients were given extremely small doses of salvarsan, but there seemed to be some connection in each of the three cerebral cases between the reaction and a subsequent cerebritis or meningitis. One of these, a woman, was given only one dose of 0.15 gramme, and while she improved wonderfully for three days she could not sleep—two days later she died with meningitis. The other two cerebral patients had similar histories, except that they were also alcoholic habitués, and the withdrawal of whiskey, voluntary and persisted in, may have had some influence in bringing on cerebritis and coma. The fourth fatal case was that of a very constant drinker, and his cerebritis also followed his refusal to drink even moderately. His reaction was ten days past and he had been out on the street several days before he began to have nervous symptoms, and what appeared to be an acute attack of pellagra was precipitated. This came with fever, eruption, diarrhea, sore mouth, and mental hebetude which deepened from day to day until coma supervened on the fifteenth day and death on the sixteenth. Eminent consultants considered his death to be due to alcoholism, but it seemed to me to be a pellagrous explosion. The other three patients were close to the end, and it may be that no possible delicacy of approach could have saved them, but it is equally possible that they might have lived a few days longer but for the reaction following the salvarsan, which is also true of the patient previously mentioned who died during the treatment with sodium arsanilate.

Comparing final results from sodium arsanilate and salvarsan, there seems to be but small choice between them. Each seems entirely to cure the cases completely treated. So we must weigh the two plans of treatment for other advantages. The arsanilate must be given hypodermically from three to five days apart for from eighteen months to two years, allowing a three weeks' interval between each course of 100 grains. This is laborious, but it is at least possible anywhere, and intravenous medication is not. For this reason alone the arsanilate treatment will probably be the most used in rural districts where distilled water cannot be procured fresh from the still, and where the intravenous needle is not required often enough for the practitioner to acquire sufficient skill to administer repeated doses in the same spot without injuring the vein, often the only available vein and needed for future doses. On the other hand, the early results from the arsanilate are extremely slow compared with the almost miraculous disappearance of symptoms in the majority of cases after using salvarsan—and many cases are so slow to begin to improve on sodium arsanilate that the patients and the physician both become discouraged.

The average patient will take six doses of salvarsan in five weeks and be cured thereby, and that is evidently preferable and should be the course pursued whenever the patient can be so treated or can reach such treatment. Some patients can afford to remain away from home only about two weeks, long enough to get three doses. When that is the case it is well to give them that much intravenous treatment and then have the arsanilate kept up after they get home. With two such specifics which will absolutely cure practically all cases not rapidly approaching the grave, it is time for the physicians of America to cease thinking of pellagra as an incurable disease.

That we cannot save every patient should not discourage or lend doubt. We do not save every patient who has malarial poisoning, yet no one doubts the specific value of quinine. We readily understand and appreciate the fact that one may be provided with a perfect weapon or instrument and not know how to use it. Improperly used, every such agent—from a fourteen inch gun to a capsule of quinine—is a failure. The fact is that repeated failures really to cure pellagra, even when the way has been pointed out, is no more surprising than the fact that many a case of malarial fever follows the bungling use of a proved specific.

On the other hand, thousands of cases of pellagra have been left to run their courses downward merely because the physicians in charge refused to believe the facts stated in this paper, facts which were offered to the profession with equal clearness if not with as much proof one year ago. Thousands of cases of pellagra are being permitted to go on without any attempt whatever to use any specific treatment. Hundreds of these unfortunate patients are in institutions offering facilities for any kind of treatment and paying good salaries to educated and trained men to give them the best.

Are they doing their duty? Are the physicians of the south who are waiting for more proof before trying specific treatment, while a large percentage of their patients are dying, entirely blameless?

Dugan Stuart Building.

CARBONATED BATHS.*

Indications and Contraindications for Their Use in Chronic Diseases of the Heart and Vessels.

By I. M. Groedel, M. D.,
Bad-Nauheim, Germany,
Professor, Geh. Medicinalrat.

The treatment with carbonated baths of chronic disturbances of the circulation (diseases of the heart), which originated in Nauheim, is now known, acknowledged, and used everywhere. But there still exists a good deal of uncertainty as to what cases the baths are best adapted. I shall, therefore, give a short résumé of my experience.

Beneke, who first treated with carbonated baths in Nauheim patients with heart trouble, thought that it was especially for such cases as were complicated with articular rheumatism or with cardiac valvular defect originating therefrom, that the baths would be beneficial through establishing satisfactory compensation and the removal of circulatory disturbances. Later, it was also found that different kinds of purely muscular affections of the heart were good subjects for the Nauheim treatment. But for a long time there existed a prejudice against the treatment of disturbances of the circulation in arteriosclerosis. Physicians were particularly afraid to allow patients with highly increased blood pressure to take such baths, believing that carbonic acid increases blood pressure. But I have since demonstrated that by a special preparation of the bath an increase of the blood pressure can be avoided; these patients, therefore, are also treated therewith, and usually with good results; in fact they constitute about fifty per cent. of all the patients in Nauheim.

Finally, it has been shown that no group of disturbances of the circulation or heart is unsuitable for bath treatment. Thus the conclusion was reached that the carbonated baths were advantageous for all cases in which the heart had become insufficient, thus producing disturbances in the circulation, as well as for every kind of heart trouble without insufficiency of circulation. It was found to be of no import whether the heart trouble or circulatory disturbance was the result of a valvular defect, of a pure affection of the heart, of changes in the vessels, of nervous origin, disturbed metabolism, or diseased kidneys, etc. Undoubtedly the mode of treatment, especially the temperature and synthesis of the bath, must be varied according to the condition.

From what I have stated it might be taken for granted that there exist no contraindications. But that is not the fact; in each group there exist exceptions. If we take up first the general indication of insufficiency of circulation or of the heart musculature, there are numerous patients who should not undergo bath treatment. These are the cases of advanced insufficiency, in which the symptoms appear not only when the heart is forced to perform greater labor, but when the organ is at rest, through deficiency of reserve power.

Patients who are not influenced by regular treatment, such as absolute quiet, diet, and drugs, should not be sent from home to a spa, although in Nauheim we sometimes experience success with a combination of baths and drugs and other methods of treatment in patients with whom treatment at home was a failure. This success is then attributed to the special treatment and constant surveillance of the whole régime, perhaps in a sanatorium. Such exceptional patients should not influence the physician seeking a consultation.

I shall now take up the different diseases of the heart and vessels, to point out the cases in which a treatment with carbonated baths should not be applied:

1. *Valvular defects.* The baths will fail in their purpose if permanent damage of high degree has resulted in the tissues of the liver or kidney with pronounced hydropic manifestations, through chronic valvular defect or decompensation. Lighter hydropic manifestations, such as we often see in disturbance of compensation, are not contraindications; these will often disappear during bath treatment, like acute stasis in the liver or kidney, or catarrhal stasis of the lungs. Emboli following decompensation in a valvular defect, if they have existed for a protracted period, exclude bath treatment, which should be permitted only after an interval of half a year after the attack. If emboli have repeatedly occurred, the bath treatment should be absolutely excluded. The same is the rule with emboli resulting from other heart affections, and it does not matter whether the emboli occur in the brain, the lungs, or any other part of the body.

2. *Heart muscle affections.* Carbonated baths should not be ordered in progressive, fatty degeneration, circulatory disturbances depending upon this degeneration, orthopnea, etc., nor if there is a suspicion of new formation in the heart muscles (for example, gumma), of heart muscle infarct, or of aneurysm.

3. *Pericarditis.* Disturbances remaining after a cured pericarditis, such as adhesions or pericardiac friction sounds, permit of baths, but hydropic or inflamed exudates are absolute contraindications.

4. *Arteriosclerosis.* In disturbances of circulation produced by arteriosclerosis, not taking into consideration the general contraindications already mentioned, we must warn against carbonated baths when the blood pressure has excessively increased. A high blood pressure is *per se* no contraindication, as mentioned above; on the contrary, we see in such patients improvement within certain limits. If the blood pressure is permanently higher than 220 mm. Hg. (measured with the Recklinghausen-Riva-Rocci instrument, or similar apparatus with an arm band), the baths should not be taken.[1]

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*We have asked Professor Groedel to give us his experience with Nauheim treatment, as he was present during the development of the treatment and as he possesses an extraordinarily rich experience. We think that his article, which we have translated from the original German, will be of interest to our readers.—Editor.

[1] Such increased blood pressure leads always to suspicion of an attack of sclerosis of the kidneys, even if uranalysis gives a negative result. Affections of the kidneys with circulatory disturbances I shall mention later.

If the baths are given according to my instructions they will not produce increase of blood pressure, but diminish it. After the bath the original degree of pressure reappears. In very high blood pressure (over 220 mm. Hg.), the vacillation is sometimes very great and produces severe vertigo. This should be avoided. Undoubtedly frequent vertigo in arteriosclerosis, even if the blood pressure is only slightly increased, is a warning to be very careful with carbonated baths.

In connection with arteriosclerosis, I wish to mention aneurysm of the aorta and angina pectoris. Diffuse enlargement of the ascending aorta is no contraindication as long as there does not appear important circulatory insufficiency; the same may be said of small aneurysms; nor have I seen any unpleasant effects from carefully prescribed baths in larger aneurysms. But if we observe steady growth in an aneurysm, I think it advisable to keep the patient at home and not to send him to a spa.

In angina pectoris it is often very difficult to distinguish the organic form, that is, angina resulting from sclerosis of the coronary arteries or from sclerotic changes in the origin of the aorta, from nervous reflex, or vasomotor angina pectoris. All the different kinds bear carbonated baths equally well, if the baths are administered according to the method proposed by me, and receive benefit from them if properly graded. I except only those cases in which a so called anginous condition exists, that is, such patients as are never free from pain. Patients also whose attacks, although they receive the usual drugs, last for hours, especially if symptoms of acute edema of the lungs appear, should not receive the baths.

Apoplexy in patients with arteriosclerosis forms also a contraindication if a year has not elapsed after the attack without recurrence.

5. *Disturbances of circulation with chronic nephritis.* If the nephritis is parenchymatous the carbonated baths are injurious, but in interstitial nephritis the baths may be given and are beneficial, although this statement is made with great circumspection. The baths are indicated only in the beginning of the disease, especially in cases with a slow, often stationary course. It is better not to advise baths in the final stage of the disease, with exceptionally high blood pressure (over 220 mm Hg.) with the appearance of uremic symptoms, even if this should consist only in permanent or repeatedly occurring headaches or vertigo, especially with an inclination to severe attacks of acute pulmonary edema.

6. *In insufficiency of circulation from cirrhosis of the liver,* baths are indicated only in the beginning to improve the circulation, even if ascites in light form should appear. If this ascites is severe, or if symptoms of generally bodily dissolution appear, baths should not be advised.

7. *Nervous heart disturbances.* In patients with vasomotor neuroses the carbonated baths are generally very beneficial, also in nervous exhaustion. But in neurasthenics prone to excitation, together with heart trouble, the carbonated baths have no specific success; as in such patients there sometimes occurs increased excitability, I mostly discourage the baths.

A contraindication for the treatment of a disturbance in the circulation, respiratory disease of the heart, by carbonated baths, may also be found in a complication by some other disease. I have already mentioned nephritis and diseases of the liver. Diseases of the lungs form no contraindication, except tuberculosis. While there may be observed a beneficial influence even in chronic bronchitis and emphysema of the lungs, in phthisis carbonated baths should never be administered, even in so called cured conditions, as they may lead to recurrence. Carbonated baths should, furthermore, not be given in any other diseases which have a debilitating influence upon the body. Diabetes combined with arteriosclerosis necessitate a special light treatment, that a further loss of body strength may not occur.

In pregnancy, there existed formerly an old preconception that carbonated baths would be detrimental only during the first three months, as abortion might be produced. I advise omitting such baths for pregnant women with disturbances of circulation.

If in chronic diseases of the heart there appea acute inflammatory conditions, a bath treatment should not be given, and, if begun, it should be stopped. The same is also the case if another acute disease occurs during treatment, or if in an existing kidney trouble a fresh inflammation of the kidneys, hemorrhages, etc., appear, or if in subacute articular rheumatism acute exacerbations are observed together with fever.

TUBERCULOSIS.*

A Study of Treatment in Ward Q (The Hopeless Ward) of the Metropolitan Hospital, Department of Public Charity.

By M. W. McDuffie, M. D.,

New York.

This preliminary report represents work in Ward Q of the Metropolitan Hospital, Department of Public Charity, during the past year; observations in over 500 cases, with the following treatments: Mercury succinimide, mercury bichloride, mercury biniodide, arsenic troxide, salvarsan, Fowler's solution of arsenic by mouth, mineralization treatment, oils, Sherman's vaccines (letter P), combined bacterial vaccines (Van Cott), Schafer's vaccine or filtrate, Schafer's tuberculosis vaccine or filtrate, Dr. Cocheu's vaccine or filtrate, Dr. Duncan's autotherapy filtrate, tuberculin by mouth, tuberculin injections, antistreptococcus serum, quinine, baptisia, formaldehyde solution; salicylic acid mixture, salicin, sodium salicylate, guaiacol, and vanadium; a total of twenty-six different forms of treatment.

Our efforts have been directed to the two main essentials in this disease, namely:

1. To get rid of the germs; and, 2, to make the soil unfavorable for their growth.

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*Read before the New York County Homeopathic Society, October, 1912.

The following shows the statistics of the ward for the six months before taking up this research, for the first six months in this work, and for the past five months.

Ward Q.

Before treatment, May 1 to November 1, 1911.

47	transferred	18 per cent.
43	discharged	16 per cent.
10	remained	4 per cent.
165	died	62 per cent.
265	Total	100 per cent.

First 6 months treatment, November 1, 1911, to May 1, 1912.

36	transferred	16 per cent.
37	discharged	16 per cent.
22	remained	9 per cent.
140	died	59 per cent.
235	Total	100 per cent.

Past 5 months, May 1, 1912, to October 1, 1912.

20	transferred	10 per cent.
52	discharged	26 per cent.
65	remained	32.5 per cent.
63	died	31.5 per cent.
200	Total	100 per cent.

The first six months showed, practically speaking, a ten per cent. improvement in lessened death rate and prolongation of life. The total improvement, as you can see from the last five months' report compared to the six months before treatment, is wonderful for a ward of such hopeless cases and in so short a time, and is sufficient excuse for our continuing this work as we have done and for our presenting this paper. The different treatments have been tried in from ten to over 100 cases at a time. Some patients have had courses in the several different treatments. We commenced our efforts from the standpoint of eliminating the tubercle bacillus and observing the results upon the course of the disease. Our next efforts have been directed toward the other organisms which accompany the tubercle bacillus—in other words the secondary septichemia as shown by the temperature, pulse, and respiration. The first guide, namely, the elimination of the tubercle bacillus has been discarded except as an adjunct, as we found that this could be apparently accomplished, but in the greater number of cases without improving the temperature, pulse, and respiration, or checking the progress of the disease. The second guide, namely, temperature, pulse, respiration, seems quite trustworthy as it has been with tedious difficulty that we could find a treatment which would lower the temperature and improve the pulse and respiration, but to our satisfaction we found when this was brought about that there was a corresponding improvement in all the other symptoms, in other words, the treatment of toxemic or surgical tuberculosis cases (with an apology for the use of the word surgical) from the standpoint of the tubercle bacillus gave negative results, but in treating them from the surgical or septichemic standpoint has give us positive and gratifying results. As was mentioned above, the total number of cases under observation has been over 500.

Some of the treatments have been given *per os*, but mostly by injection. It is interesting from a psychological point of view that on commencing this work we were told it would be impossible to give more than ten injections in succession, as the patients would absolutely refuse or even leave the hospital, but we have given over 5,000 injections and with comparatively few refusals. The injections have been given either subcutaneously, intramuscularly, or intravenously. Only five abscesses developed or one tenth of one per cent. No cleansing of the skin was used in the majority of the cases except for the intravenous injections, as it was found that the preliminary rubbing with alcohol, carbolic acid solution, or lysol was conducive to irritation. Iodine if anything would be best for this. No treatment has been tried without a careful search of present day literature on the subject or a knowledge of the effects on man or animals.

Treatment No. 1: *Mercury succinimide.* Ehrlich, of the diazo test and 606 fame, has brought great prominence to the forms of treatment called chemotherapy. Dr. L. B. Wright, of the United States Navy, has been a persistent advocate of mercury in tuberculosis since 1908, and his results and those of others have been interesting. Doctor Wright has reported in a recent article changing from the small doses of this drug to the largest dose possible with better results. His method of giving this treatment was:

℞ Solution of mercury succinimide, ...grs. xxiv;
Distilled water, ...℥i.
M. Sig.: Deep hypodermic injections of 5 drops or ⅕ grain.

At first he used one fifth grain, but in his latest article was using one and two fifths grain at a dose.

Hertzburg avers that mercury is apparently a specific for superficial lesions of tuberculosis. The action asserted for mercury in this disease was that it increased the resisting powers of the patients and that it acts as an antitoxine to the tubercle bacillus which it neutralizes or destroys, thus giving the patient a chance to throw off the toxines produced by the tuberculous process; that it diminishes night sweats, cough, and tubercle bacilli, and that it increases appetite and weight and slows the pulse; no effect on high temperature. Improvement in general is the usual result except in the septic cases. In Ward Q we found a one and two fifths grain dose entirely too strong, producing mercury symptoms in seven out of the first fifteen cases. We then gave it in one grain doses, watching carefully before repeating our doses for salivation, sore teeth, or diarrhea. Patients object strongly to this treatment, having generally quite a painful spot at the seat of injection for twelve hours to four days afterward. No abscesses occur, but if given subcutaneously instead of intramuscularly there is often a necrosis of the tissues from the size of a quarter to half a dollar. This is a long time in disappearing. Even when given intramuscularly there will occasionally remain for weeks a lump which annoys the patients.

Treatment No. 2: *Mercury bichloride.* Not liking the intramuscular method after a trial in over 100 cases, we began investigating the intravenous and found a method of giving this treatment based upon the experience of 10,000 such injections by Doctor Bernart, of Chicago. He found that mercuric chloride was best for this work in one or two per cent. solutions, and doses as high as seven tenths of a grain could be used. The solution for this was:

℞	Mercury chloride corrosive,	1.0;
	Sodium chloride,	3.00;
	Distilled water,	100.0.
M.		

Quoting from Doctor Bernart's article, it has a rapid and decided action. The intravenous method is usually very simple. The only difficulty is in the fat or markedly emaciated people. Complications from this method are practically nil. The safeguards are to use filtered solutions, clean syringe and needle. If in doubt as to whether in a vein, draw blood in syringe and mix with the mercury, then reinject. This treatment gives improvement in anemia; there is no renal irritation, but at times diarrhea. If diarrhea and cramps should be excessive then give powdered extract of opium, one grain three times daily. Morphine, hypodermically, is not so effective. Saline cathartics are contraindicated during the mercury course.

In our work the mercury treatment lowered at first the hemoglobin, red cells, and blood pressure, but only to a slight degree. It eliminated the tubercle bacillus from the sputum in fifty per cent. of the cases, and in twenty-five per cent. more reduced them from many to few. Some patients gained in weight and showed a general marked improvement. There was no effect on high temperature or in the septic cases, therefore but little value in the septichemic or surgical tuberculosis cases, but it may be of value in the first or early second stages owing to a decided action on the tubercle bacillus. This action is as efficacious upon the nonsyphilitic as upon the syphilitic.

Treatments No. 3 and 4: *Mercury biniodide.* We also observed mercury chloride by mouth as well as mercury biniodide and apparently our results were as good as by injection, and we believe for the mercury treatment that as much can be accomplished by giving mercury biniodide, one thirtieth grain three times a day, by mouth as by the intramuscular method. It is less painful, slower in effect, but just as beneficial.

Mercury treatment is of comparatively little value in this class of cases.

Treatment No. 5: *Arsenic trioxide.* From the marked anemia in our cases preceding death we were led to think of arsenic and its effect upon the blood in this class of cases for our next treatment. Bramwell, in the *British Medical Journal* for March 11, 1911, reports the use of arsenic in pernicious anemia since 1875. He obtained marked improvement and temporary cure in most cases from its use first as Fowler's solution, now as "606," with continued improvement in the blood and general condition. Babcock, in the *Interstate Medical Journal*, for January, 1911, says "606" has not been given an extensive trial in the syphilitic tuberculous. As a remarkable improvement follows the injection of "606," it ought to affect favorably all cases in which the patient is not too greatly reduced or the lung destruction is not too great. Nephritis, arteriosclerosis, and a very low blood pressure contraindicate. Mendel, of Germany, with a combination of arsenic and tuberculin intravenously, obtained good results with little or no fever in the first or second stage of pulmonary affections. Our arsenic treatment in Ward Q was the intravenous use of:

℞	Arsenic trioxide,	1.0;
	Normal salt solution,	2.25;
	Distilled water,	100.0.
M.	Sig.: One to two c. c.	

We found it had but little effect in the majority of high temperature cases, but improved the general condition.

Treatment No. 6: *Salvarsan.* "606" we used only on the syphilitic, and the contraindications such as high price, nephritis, arteriosclerosis, and the low blood pressure in most of our cases prevented our using it in many of the others, therefore we have made no deductions therefrom.

Treatment No. 7: *Fowler's solution.* Fowler's solution of arsenic by mouth gave us our best results for the arsenic treatment. We prescribed it in one drop doses three times daily. Arsenic is undoubtedly of value, but not a very satisfactory treatment owing to the rapidity of its toxic symptoms in these cases, before a checking of the tuberculous process.

Treatment No. 8: *Mineralization.* Since 1875 articles have appeared on the increased secretion of lime salts in tuberculosis, notably by Ott and Crofton. Twenty times the normal amount is excreted in this disease. Calcium has an affinity for the albuminous products accompanying the tubercle bacillus. Experiments show that this product causes fever probably due to the toxines and that this pyretogenic power is lost by combination with calcium. Some call this treatment the recalcifying method.

Calcium was first employed in the nineteenth century for scrofula and phthisis. It has hemostatic properties. It acts as a moderator of the nervous system. It also acts as a cardiac tonic. It is contraindicated in old people or in those with high blood pressure, having a strong affinity for the bloodvessels.

When calcium is given it enters into the general metabolism or allows the calcium already present in the body to be utilized without loss. It is said to be extremely useful in thyroid insufficiency, as proved by experiments on dogs. This is interesting as some say that the frequency of tuberculosis in childhood is due to thyroid insufficiency. The method of giving calcium was as follows:

℞	Sodium chloride,	34.4 grains;
	Sodium carbonate,	10.13;
	Calcium phosphate,	1.1;
	Sodium phosphate,	1.23;
	Magnesium phosphate,	0.9;
	Potassium carbonate,	2.6;
	Boiled water,	120 c. c.

Note the sodium chloride. Sodium carbonate and potassium carbonate are dissolved in boiling water, the solution is filtered, and the other ingredients are added. A tablespoonful of this was given in a glass of water every four hours.

This treatment in Ward Q increased weight and blood pressure principally. It had no effect on high temperature cases and caused gastric annoyance.

We consider calcium to be of but little value.

Treatment No. 9: *Oils.* The oil treatment increased the hemoglobin and red cells to a slight extent, but lowered blood pressure. Fifty per cent. of the patients gained in weight and showed decrease in tubercle bacilli in sputum. No effect on high temperature cases. Caused gastric annoyance. The oils used were a combination of the essential oils.

Oils in Ward Q cases were of but little value.

It is interesting to note, however, that the oil treatment was most beneficial in those with high blood pressure, while the mineralization treatment was beneficial only to those with low blood pressure.

Treatment No. 10: *Vaccine therapy.* Vaccine therapy in tuberculosis has proved its worth and stands on firm ground in the first and early second stages of the disease. Vaccines give additional strength by reinforcement with antibodies. Tuberculin in some of its forms comes under the vaccine heading. Vaccines produce an active immunity, patients producing for themselves antitoxines. To combat toxines overintoxication should be avoided. A vaccine is a sterile culture of the organisms causing the disease for which it is to be used. There are no fixed rules as to dose. Begin low and increase gradually. Use clinical guides based upon observation of previous work performed with opsonic index as guide. Vaccine in violent cases of acute sepsis, cannot create resistance and therefore no effect is obtained. Small doses are best, repeated each fourth day. If negative phase appears, increase the intervals and lessen the dose. Vaccines are especially useful where the blood shows poor resistance. The differential white cell count is the best indication of the resistance of the patient. The general clinical condition is the guide to the dose.

Wright, of London, deserves the credit for awakening us as to the value of vaccine therapy, and for giving us its technic. Good results are being obtained from vaccines in all different affections characterized by germs, that is if not too acute and overwhelming. Vaccines improve the general condition, destroy infection, and decrease temperature. Vaccine therapy of tuberculosis consists of, 1, the tuberculosis vaccine; 2, secondary pyogenic infections by the specific bacterial product indicated by the character of the secondary infection. An exact diagnosis of the infection not always necessary. We used Sherman's vaccines, letter P, consisting of

Streptococcus	30,000,000
Pneumococcus	40,000,000
Staphylococcus aureus and albus each	100,000,000

given every fourth day by hypodermic injection.

Summary: No disagreeable reactions; slight decrease in temperature; slight gain in weight; no change in general condition.

Treatment No. 11. *Combined bacterial vaccines* (Van Cott). From the rapid and valuable action of these vaccines in such infections as tonsillitis, erysipelas, and puerperal septichemia, we were led to use this form of vaccine quite thoroughly. Our results were: No material change at the end of two months; no disagreeable reactions; tendency to diminish temperature; general gain in weight; an improved sputum analysis. It is undoubtedly a valuable treatment if persisted in long enough, but patients of the type we are working with must have their secondary infections eliminated more quickly than these vaccines could do. These vaccines are:

Streptococcus	50,000,000
Bacillus coli communis	100,000,000
Staphlococcus (aureus, albus, citrus)	500,000,000
Pneumococcus	100,000,000

Dose, 0.5 c. c. every fourth day for two doses, then one c. c. continued at four day intervals.

Treatment No. 11: *Toxines or filtrates.* Toxines or filtrates are used by many investigators in different conditions. Zycoff says that in cancer it is the cancerous toxine that causes constitutional decline. Dr. W. B. Coley has been using toxine in the treatment of cancer and carcinoma for nineteen years and is said to believe that the toxines either destroy the cancer cells completely or render the soil unfavorable for further growth. On this basis we thought of this treatment in tuberculosis. From toxines we get a constant hemolysis. In cancer, toxines were found to be prophylactic against recurrence in fifty per cent. of the cases. Toxines or filtrates may be given by inoculation, autoinoculation, or autotherapy. They have been used for centuries under organotherapy, isopathy, and more recently by inoculation, autoinoculation, or autotherapy. We believe toxines or filtrates injected into the system or transferred from one part of the system to another, do good except where there is already an overintoxication present.

Treatment No. 12: *Schafer's mixed infection vaccines.* This new therapeutic agent in the treatment of infections as described by Dr. A. F. Schafer in the *Therapeutic Gazette* for April 15, 1911, was used by us in our research quite extensively. The reactions from this treatment varied according to dose and the patient's resistance. In same cases as marked reaction would be obtained from 0.5 c. c. intravenously, as would be obtained from five c. c. in another patient. We found contrary to our advice on this treatment that reaction was not necessary, as injections even without reactions would lower the temperature and increase resistance. The reactions are in fact dangerous for moribund, terminal, and very weak cases, as they hasten the end in such cases. Repeated injections where there was not strength enough for reaction would finally bring about reaction, and if too strong a reaction it hastened death. Where there was reaction the patients were markedly improved mentally, and the temperature lowered, but they were severely aggravated as regards the vascular and respiratory systems until the third day. After many injections intravenously, the veins do not stand out so prominently and the intravenous method becomes more difficult. This is true of any such treatment in this disease. The intravenous method of this treatment in very weak, terminal, or moribund cases is dangerous. Subcutaneous injections, however, are not so and undoubtedly increase the strength of the patient, lower the temperature and prolong life. They are undoubtedly of value in septic or toxemic cases with proper doses, although they hasten the end in improper doses. The following reactions were noted: Dose intravenously from one half to one c. c., is sufficient, subcutaneously five and ten c. c. given without any severe reaction in some cases, but in others a reaction from almost any dose. Chill after intravenous use, none or slight to severe, and of five to forty minutes' duration; after subcutaneous use, generally no chill; perspiration slight, most marked on face and chest; vomiting, generally once if no pain in stomach; bowels moved, once or twice offensively; the face was drawn, suffering, anxious, and deathlike; patients slept well, but poorly when too frequent doses were given. As to pain, there was no relief, but aggravation, with dyspnea, cardiac and pleuritic. Temperature, pulse, and respiration after chill, all decreased to subnormal; but three hours afterward were all elevated. Improvement was most marked on the fourth day. This improvement, however, in our cases was not lasting. Many patients refused injections after several reactions, which are terrific and frightening. Others in the ward refused to take the so called chill treatment.

Summary: Improvement gained was transitory in our cases after as high as thirty-two injections; some patients were still *in statu quo ante*. Discontinued on account of reactions, which were very disagreeable. From an article by Dr. I. H. Alexander, of Pittsburgh, on secondary infections in pulmonary tuberculosis in the NEW YORK MEDICAL JOURNAL for October 5, 1912, we find that he reports rather favorable results from these vaccines.

Treatment No. 13: *Schafer's tuberculosis vaccine.* Given only to a few patients owing to its terrific reactions even in one drop doses. We are making another trial of this treatment.

Treatment No. 14: *Dr. Cocheu's filtrate.* Thinking that the same toxine or filtrate as the Schafer vaccine, but with known dose, might have less reaction and give better results, Dr. L. F. Cocheu, at my suggestion, at his own expense made up a filtrate from the ten microorganisms found by Doctor Hastings to complicate tuberculosis, according to Doctor Schafer's method. With these our reactions were less and the results similar:

Summary: Of but little value in our cases.

Treatment No. 15: *Dr. C. H. Duncan's autotherapy filtrate.* In various articles great prominence has been given to this form of treatment.[1]

Summary: After an extensive trial in various doses from 0.5 to five c. c., we considered this treatment in the same class as tuberculin, as the effects are almost identical and the tuberculin is much more scientific as to dose and convenience. Of little value in our cases.

Treatment No. 16: *Tuberculin.* The majority of physicians are at this time thoroughly acquainted with tuberculin and its effects, but the question has been asked so often whether it was useful at all in late stages of tuberculosis that we decided to give it a thorough trial to see if there would be any results worth while. Tuberculin is said to be a useful aid with mercury by causing hyperemia and softening the tuberculous areas by giving better penetration to the mercury. After mercury the patient can be given four times the previous amount of tuberculin without reaction. It is best to give them in alternation. We have already mentioned the work of Mendel, of Germany, with arsenic and tuberculin.

Summary: Tuberculin by mouth in doses of from 1/1,000 to 1/5 mg. in various cases over various intervals gave negative results in these patients. Of no value in second and third cases.

Treatment No. 17: *Tuberculin injections, one mg. to ten mg.* Results negative except disagreeable reactions from the larger doses.

Treatment No. 18: *Antistreptococcus serum.* From the great preponderance of streptococcus germs just before death we hoped the antistreptococcus serum might be of benefit though reports from Europe were to the contrary. We used antistreptococcus serum, from ten to twenty c. c. daily. Owing to the cost our work with this serum was not very extensive, but out of six cases treated one of which we had from the beginning following a typhoid attack, it was quite conclusive that this serum would not help us much in these cases.

Summary: Negative but further trial would be interesting.

Treatment No. 19: *Quinine in various doses.* Results negative; of no value.

Treatment No. 20: *Baptisia.* Results negative; of no value.

Treatment No. 21: *Formaldehyde solution.* From Potter's *Materia Medica Compend* we found that this powerful antiseptic, ranking next below mercuric chloride as a germicide and above it in being but slightly toxic to the higher animals, has been used in puerperal septichemia in a one to 5,000 solution, intravenously and successfully. We therefore tried this treatment in a number of cases, using a one to 6,000 solution. Results were of but little value.

At about this time in our investigation we were quite discouraged as to ever finding a treatment which would be of any use in this class of cases. We are indebted to an article in the *Medical Century* for April, 1912, by Dr. W. F. Maxwell, of Toledo, Ohio, for the next line of treatments undertaken. He brought to our attention a reprint by Dr. Z. L. Bahwin, of Kalamazoo, Mich., of an article read in Chicago in 1908 on the treatment of over 300 cases of tuberculosis all with a temperature of 100° F. or higher with only fifteen per cent. death rate by the use of a mixture of salicylic acid 37.5 per cent., guaiacol 12.5 per cent., and glycerin fifty per cent. in eight ounces of sterile water, used intravenously, asserting a marked amelioration and checking of all symptoms of this disease. It had even been given successfully to a tuberculous patient over four months pregnant. After unsuccessful attempts by two chemists to make up this mixture as reported, we sent west for the method and it was refused. In the reprint certain reactions and results were reported, principally profuse sweating and relief of dyspnea almost immediately after the injections. Knowing this we began working with the three ingredients and found that this same mixture, but using sodium salicylate which will dissolve in the amount of water stated, in place of salicylic acid which will not, would give us the same identical reactions as asserted for the above method.

Treatment No. 22: *Salicylic acid mixture.*

Sodium salicylate,	37.5 per cent.;
Guaiacol,	12.5 per cent.;
Glycerin,	50 per cent.

Dr. J. Hostman, of the College of Pharmacy, reports that no chemical change takes place in this mixture. We are using this mixture in fifty grain doses in 220 c. c. of sterile water.

Our reactions are, first, within a few seconds they begin to have a peculiar taste in the mouth, showing its quick penetration; next a flushing of the face and chest, next slight dizziness; perspiration often begins immediately before the injection is finished. We keep the patient in bed from four to twelve hours after this injection, when with sweating comes amelioration of all symptoms. Frequently there will be an appetite for breakfast the next morning, which is the exception in many of these cases. Dyspnea is very much relieved. Occasionally vomiting will follow, but we have found this is generally when there is undigested food in the stomach. The dull, lethargic, listless look immediately improves, and the patient, even the dying, present an appearance of well being. All the symptoms improve. It is a most gratifying treatment, compared to our experience with the foregoing twenty-one treatments in this class of cases. Our improvement in death rate, namely, from sixty-two per cent. to thirty-one per cent., is largely due to this treatment, which is undoubtedly the quickest and most satisfactory treatment for these secondary septichemic and last stage cases. Improvement was noted in temperature, sputum, weight, blood analysis, pulse, and respiration. Frequently the temperature was reduced to normal after four to six injections. The question now comes to us, does this mixture give the results or do they come from some one of the ingredients. We decided to find out.

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[1] See NEW YORK MEDICAL JOURNAL, December 14 and 21, 1912.

Treatment No. 23: *Salicin.* Antiseptic and antipyretic. Often used as a substitute for salicylic acid. Useful for obstinate diarrhea. Used intravenously fifty to 100 grains to 220 c. c. sterile water.

Summary: Antipyretic but discontinued; reaction too great.

Treatment No. 24: *Sodium salicylate,* 37.5 grains to 220 c. c. sterile water. Absolutely cannot be given. Most violent respiratory symptoms develop in from five to ten seconds.

Treatment No. 25: *Guaiacol,* from twenty-five to fifty grains in 220 c. c. sterile water intravenously. No reaction, except occasionally a patient will vomit. Should watch kidneys. Contraindicated in nephritis in large doses. Very similar results were obtained from the guaiacol alone as were obtained from the sodium salicylate, guaiacol, glycerin mixture, but with the odds much in favor of the mixture. This in all probability because of the profuse sweating, thus eliminating much of the toxemia. Care must be exercised as to the preparation of guaiacol used. In conjunction with this method we have prescribed the guaiacol by mouth in suppurating glandular and surgical tuberculous conditions and with marked improvement. By mouth great care must be exercised, as it easily caused gastric irritation to such a degree that even the odor nauseated. It is certainly a great aid and will assist materially in our fight against this plague. In connection with our results with guaiacol we are pleased to note that the *American Textbook of Surgery,* page 656, says that in the treatment of local tuberculosis with guaiacol the results are most gratifying. We wish to add that our results with it in systemic tuberculosis especially with the salicylate mixture are not only most gratifying, but that we believe that it is a specific for the secondary infections.

Treatment No. 26: *Vanadium.* Sodium vanadate in doses of two to five mg. is now under observation.

SUMMARY OF TREATMENT.

Treatment depends to a marked degree upon the stage of the disease. The tubercle bacilli cause less trouble and are more easily eliminated than the complicating mixed infection. All stages have the mixed infection to contend with. Immunity should be produced during childhood by avoidance of excesses and right living.

1. To get rid of the germs: Guaiacol mixture intravenously has given us our best results up to the present time.

2. To make the soil unfavorable for their growth: Tuberculin in early stages; it is of no value in later stages.

Vanadium, which we are now working with, we believe will be a useful treatment for making the soil unfavorable for growth in these last stage cases, possibly in all stages.

We have tried to give credit throughout this article for our different sources of information, but as much of our material was taken in notes from our reading, we have undoubtedly not mentioned many authorities whom we should. To all, however, we extend our thanks.

571 PARK AVENUE.

WHOOPING COUGH.

Some Interesting Data on Its Relation to Malaria.

By S. R. KLEIN, M. D., Ph. D.,
New York,
Formerly Professor of Histology and Embryology, Fordham University School of Medicine.

For the last twenty years many discoveries have been made on the microscope stage in regard to the protozoa of whooping cough. Belha, Henke, Kurloff, Czaplewsky, and especially Spengler, Jochman, and Krause, found a bacillus in the sputum of the patients, which resembles the influenza bacillus. Recently this has been called *Bacillus pertussis,* Ependorf. It was isolated in cases of bronchopneumonia, but could not be demonstrated in ordinary cases of pneumonia.

According to Ager the disease certainly spreads among children by contact, and Baginsky states positively that he has observed transmission through a third person. The virus seems to adhere to rooms and furniture, and one attack usually confers immunity. The literature on the bacteriology of this disease is as confusing as it is extensive; the most striking feature being the lack of unanimity of results.

Czaplewsky and Hensel (*Deutsche medizinische Wochenschrift,* xx, 23, p. 586) found a small, short, polar staining bacillus, slightly larger than the influenza bacillus, but which grew upon nonhemoglobin media. This organism was isolated from sputum on blood serum plates. Davis (*Journal of Infectious Diseases*) examined the sputum in sixty cases, and his observations point to the fact that there is almost constantly present an organism which, morphologically and culturally, is identified with the influenza bacillus, occurring in greater number than any other organism. This organism was not abundant during the spasmodic stage of the disease. It has been found several days before the whoop began, and as long as six months after the disease.

I had myself opportunity to examine a few cases of whooping cough in Wakefield, one of the most distant parts of New York. I must mention, at the same time, that Wakefield is well known for its "malaria grounds."

The bacillus of whooping cough found in children who have contracted the disease when malaria was also present, has been detected in much greater quantity, and is of immensely more dangerous character than other cases or those occurring in any other part of the metropolis. It is now certain that whooping cough develops quicker and to a greater extent in regions where malaria is a so called "home disease."

Macewen (*British Medical Journal*, 1908) successfully conveyed the virus to a healthy cat by feeding it with milk containing the sputum and vomited material from typical pertussis cases. The cat showed whooping cough seventeen days afterward. This experiment appears to show that cats may be the means of disseminating the disease. I tried myself to convey the virus to dogs, rabbits, and guinea-pigs, but without results. Some cases are mentioned where cats had contracted the disease even in five to six days.

Churchill states that a differential leucocyte count of the blood is very useful in the early stage of the disease. In most cases there is a lymphocytosis. I found in a few cases a large quantity of albumin and a heavy, white precipitate of uric acid in the urine.

Bendetti holds that the glycogenic function is lowered in pertussis and that very slight excesses of sugar cause glycosuria.

There was observed hemorrhage only in two cases under my treatment. In both cases the leucocyte count ran as high as 30,000.

565 EAST 242D STREET, WAKEFIELD.

APPENDICITIS OR NOT APPENDICITIS?

By HARRY A. SCHATZ, M. D.,
Philadelphia.

I desire to relate the experience I have had with a patient whose case presented symptoms which at one time two physicians pronounced to be those of mental derangement, while at other times they were pronounced to show marked neurasthenia associated with evidences of chronic gastric catarrh; and which case, after a history of suffering lasting for more than four years, was completely cured by an operation for appendicitis. One who has seen the sufferings and observed the actions of this patient as I have, must consider the effects of this operation as little short of miraculous. Here are the salient features of the history:

CASE. J. L., Jew, nineteen years of age, was brought to me for treatment in 1907. His symptoms and my examination pointed to a diagnosis of chronic gastric catarrh. But at times he was subject to attacks of abdominal pains which were more or less generalized, localized surely not in the appendicular region, in fact, more in the hypochondriac region, if at all. But the rigidity was general over the abdomen, and the patient would stretch and squirm and groan, and beat his head so that these evidences of mental anguish wholly overbalanced the meagre findings on physical examination.

I prescribed repeatedly for gastric catarrh, without affording him any permanent relief. Gastric lavage was not permitted. He was seen also by other private physicians, without any better results. Furthermore, as time went on, his behavior became more and more violent, so that his parents and the other members of the family were afraid of him. He acted like a maniac, beating his head, groaning, undergoing bodily contortions, and always reiterating the one complaint, pain in the abdomen. There was rigidity, but it was considered to be of nervous origin. There was no fever. Work was out of the question. He could not walk the street even without stopping at frequent intervals till his pains subsided.

After having suffered for about two and one half to three years, he visited a dispensary in this city, where they pronounced his ailment to be appendicitis and recommended operation. But on admission to the ward, his case was diagnosticated as neurasthenia. I advised against operation because there were no signs pointing to appendicitis, and to reassure myself as well as his family, I had him admitted to another hospital. Here, after a stay of a few weeks, he was discharged, no signs of appendicitis having been discovered.

Subsequently, his conduct at home became such that his parents feared for their own as well as their family's safety—he threatened to use a knife and to do violence to himself or to others. His parents were willing to have him removed to an institution where he would be under the proper restraint. Steps were taken to bring this about, but fortunately for him, it was never carried out. Some time later, in April, 1911, while riding on a wagon, this patient was seized with severe abdominal pains, and fell from the wagon in front of one of the hospitals of this city. He was admitted to the ward, operated upon for appendicitis, discharged about eight days thereafter, and has been perfectly well, free from all symptoms since that time, almost two years ago.

The hospital records show that he exhibited exaggerated mental symptoms and that the diagnosis at operation was chronic catarrhal appendicitis.

1331 NORTH FRANKLIN STREET.

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Abstracts and Reviews.

THE SIZE OF ORGANISMS AND THEIR CONSTITUENT PARTS IN RELATION TO LONGEVITY, SENESCENCE AND REJUVENESCENCE.*

By PROFESSOR EDWARD G. CONKLIN,
Princeton, N. J.

Variation in size between different living species is well known to be very wide, running from the ultramicroscopic organisms to mammals weighing many tons. What is more striking is that there is not infrequently seen, in a single species, a wide variation in size of individual members. In my studies I have come across a species of marine gastropods which live on shells inhabited by hermit crabs. In this species the females are much larger than the males, and, further, there is a race of dwarfs which live on smaller shells inhabited by dwarf hermit crabs. These dwarfs are only about one thirteenth the size of the normal, but are perfect in development and real sexual maturity and procreate precisely as do the full sized forms, giving rise to a race of dwarfs.

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*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, March 8, 1913.

The causes of the variation in size of organisms may be considered under several headings:

1. There are the hereditary or racial factors. These remain more or less constant for any given species and are almost solely a matter of inheritance. The inherited factors are the natural capacity for growth and its relation to the limits of growth, and the ratio which exists between the processes of assimilation and dissimilation. These factors are possibly of a chemical nature, but of this we know very little.

2. Environmental influences. In the case of the dwarf gastropods which live only upon small shells, if these are removed to large shells they will grow and reach the normal size of the species. In this case environment plays an important part, but in the majority of instances environment has but slight influence on the size of the organism.

3. There are several extrinsic factors influencing the size of the organism, among which may be mentioned the abundance of food supply; secretions of the glands such as the sex glands, thymus, pituitary, etc.; chemical factors; temperature; oxygenation; retention or removal of waste products; normal or abnormal extraneous stimulation or irritation. All of these factors are self evident except the last. By way of illustration of this we may cite the case of the removal of the dwarf gastropods from small to large shells. Here some external stimulus is undoubtedly the cause of the increased growth, or, rather, some external inhibiting factor was the cause of the dwarfing.

4. The rate and duration of growth has some influence on the size of the organism, for it is well known that generally the larger the organism the slower its growth. The cause of this phenomenon cannot be discussed here.

5. A last point is the size of the original germ cells, both ova and spermatozoa. If these are large the organism is likely to be large, and the converse is also likely to hold for many species. This factor is well illustrated in the case of certain rotifers which lay two sizes of eggs, a large and a small. From the large eggs large females are hatched, and from the small come the small males. The relation of the size of the germinal elements to the size of the organism is not constant, and the opposite phenomenon of large organisms arising from the small eggs is not infrequent. In general this factor also plays but a subordinate rôle.

In addition to variation in the size of the organism as a whole there may be variation in its constituent parts or organs, and in its component cells.

The variations to be found in the constituent organs are of two kinds, variation in size or variation in number. In the vegetable realm and in the lower forms of animal life, size of the organism is directly proportional to the number of constituent parts or segments. This is well shown in the case of tapeworms, which grow indefinitely by the increase in the number of segments. On the other hand, in the higher forms, the number of constituent parts or organs is constant for any given species, and differences in the size of the whole are due to differences in the size of the several constituent parts. The more complex the function of the part the less the tendency to multiplication.

The size of the body may also be dependent upon the size or the number of the component cells. The influence of these factors can be expressed axiomatically by the statement that the complexity of differentiation and the power of multiplication of cells stand in inverse ratio. The more complex cells may increase in size, but not in number; for example, muscle and nerve cells are perhaps the most highly differentiated of all and these are not more numerous in giant forms of a given species than in the normal, but the individual cells are larger.

The number of cells varies with the body size only in the case of nondifferential cell divisions.

Hertwig and his followers have held that there is a constant relation between the size of the nucleus and that of the cell protoplasm. This they have termed the *nuclear plasma ratio*. I have found no such constant ratio; in fact the ratio varies greatly at different stages in the same cell. The nucleus is quite variable in size, while the cell body is very slightly so. The ratio is variable even at the same stage in different cells of the same type. The growth of the nucleus is due to its assimilation from the cell plasma of achromatin and its size is directly proportional to the amount of achromatin in the cell. At the time of the division of the cell the nucleus again gives up its achromatin to the cell plasma and the process of growth starts anew.

Coming now to the question of longevity, it may be said to depend upon the relation existing between the processes of anabolism and catabolism. Life continues just so long as assimilation holds the ascendency over dissimilation.

Senescence is not constant for the entire organism and is thought to depend upon two groups of factors, the structural and the functional.

1. *The structural:* (a) Minott holds that a decrease in the size of the nucleus and an increase in the relative amount of protoplasm is a cause of senescence. This is probably incorrect for, as we have shown, the size of the nucleus is merely a matter of the abundance of achromatin in the protoplasm of the cell. Further, many of the cells which have been held by this school of observers to be senescent are precisely those which have the largest nuclei in relation to their cell plasma.

(b) A structural cause which does probably play an important rôle is an increase of the metaplasm and a decrease of protoplasm. This can be demonstrated readily.

2. *The functional factors* of senescence: (a) The accumulation of waste products is probably of considerable importance.

(b) A decrease in the interchange of the cellular products between the nucleus and the plasma of the cell.

These functional causes are essentially matters of adaptability and regulation on the part of the cell and its parts to the conditions of environment. An interaction between the nucleus and the cell protoplasm is essential to life, and an interruption of such interaction brings about senescence, while an increase of this interaction is the prime cause of rejuvenescence.

Therapeutical Notes.

Vaccine Treatment of Erysipelas.—W. H. Watters, in the *American Journal of Dermatology* for July, 1912, states his opinion that vaccines, both autogenous and polyvalent, have a decided and important place in the treatment of erysipelas. He treated thirty cases with a stock vaccine prepared from several patients and to which was usually added a number of strains of streptococci obtained from various other virulent infections. In addition, this treatment was supplemented by autogenous preparations whenever possible. The first dose was given as soon as the diagnosis was evident, and followed after one or two days by a second, third, or fourth. Five or ten million organisms were usually given at first; later, ten or fifteen million.

The vaccines seemed decidedly to abbreviate the course of the disease. In several cases where the prognosis had been very grave, their use was followed by convalescence. The vaccines also promised much in the prevention of recurrent attacks. Three of the thirty patients treated died, but in these the condition had been so desperate that no results could be expected. In three cases in which there had been repeated recurrences up to the time of treatment, no further attacks occurred.

Dental Disinfection.—The following combinations are advised in *Paris médical* for November 16, 1912, for this purpose:

I.

℞ Tincturæ iodi, ...
Tincturæ aconiti, . } ......ana ʒiiss (10 grammes).
Chloroformi, ...
M. ft. collutorium. Sig.: To be painted on the gum.

II.

℞ Potassii chloratis, ...gr. xxx (2 grammes);
Mellis rosæ, . } ....ana ʒiiss (10 grammes).
Glycerini, ...
M. ft. collutorium. Sig.: To be applied to the gum.

III.

℞ Phenolis, ...gr. xv (1 gramme);
Glycerini, ...ʒiii (12 grammes);
Aquæ destillatæ, ...℥viii (250 grammes).
Fiat solutio. Sig.: To be used as mouth wash.

Treatment of Herpes zoster.—E. Leullier, in *Quinzaine thérapeutique* for September 25, 1912, discusses the physical measures that have proved most effective in this affection. In the beginning and when the eruption is at its height the galvanic current is of most value, as it shortens the period of vesiculation, relieves pain, and tends to prevent subsequent neurotic trouble. As for the intensity of the current to be used, Leullier favors strong applications, e. g., a fifty to seventy milliampère current used for one half hour, which has appeared to him to give better results than weaker applications. Belot recommends that, with an electrode fifteen to twenty cm. in size, a current up to thirty or thirty-five milliampères be passed for thirty or forty minutes. Roughly, 1.5 milliampère may be used for each square cm. of the area covered by the electrode. Where there are ulcerations, the electrodes are not well borne; either they should be applied without the ulcers, or the latter previously covered with collodion.

The faradic current, applied by means of a fine wire electrode, acts well in relieving pain, but is itself at first painful, and does not exert much effect on the trophic disturbances. Hot air applications favor the desiccation of the vesicles and healing, but as regards the relief of pain, are more effective at a later period.

After the period of acute inflammation is past, neuritis alone being present, the high frequency current is frequently very efficient, and should probably have the preference over other measures. Good results have also been reported from the x rays in this stage, but the beneficial effect is by no means constant.

Formaldehyde Irrigations for Bladder and Kidney Infections.—Curtis F. Burnam, in the *Archives of Internal Medicine* for October, 1912, states that formaldehyde solution irrigations are especially valuable in cystitis associated with ammoniacal decomposition of the urine, such as occurs with enlarged prostate or tumor of the bladder. There are marked individual variations, however, in the tolerance of the vesical mucous membrane to formaldehyde, which are independent of the state of inflammation present. An acutely inflamed bladder is much more intolerant than a healthy one.

In chronic cystitis and in healthy bladders the author found it practicable to use solutions varying in strength from one to 3,750 to one to 7,500. Occasionally a bladder was met with which did not tolerate even the latter solution, but no cases came under observation which would not tolerate a one to 12,500 solution.

It was found the kidney pelvis, injected by means of a renal catheter, would tolerate solutions as strong as the bladder. No irritation in the kidney itself was ever noted after such an irrigation.

Prevention and Treatment of Nasal Synechiæ.—E. J. Moure, in *Revue hebdomadaire de laryngologie, d'otologie et de rhinologie* for October 26, 1912, refers to the fact that none of the procedures hitherto recommended for the prevention of intranasal adhesions after operations on the turbinates, e. g., the interposition of cotton, iodoform gauze, cardboard or celluloid plates, or gutta percha, between the raw surfaces, or cauterization with chromium trioxide, has given uniform satisfaction. He has found that thin sheets of mica may be depended upon to keep the apposed surfaces apart, even in the most obstinate cases, without causing any local irritation. This substance can be reduced practically to the thickness of tissue paper, can be easily sterilized by heat without melting or breaking, and is both malleable and elastic, so that it can first be formed into any desired shape, and then introduced into the nasal cavity bent upon itself, when by virtue of its elasticity it will straighten out, constituting a partition which will cover the septum from top to bottom. Once placed against the tissues, it is hardly distinguishable from them, owing to its tenuity. It does not in the least prevent the flow of secretions, and can hardly be considered as a true foreign body, so that healing takes place in a steady and normal manner on either side. Whatever are the modes of reaction of the mucous membranes after the operation, the cut synechiæ are prevented from recurring. The usefulness of the procedure was proved in a number of severe cases, in which synechiæ had previously regularly recurred, though the inferior turbinate had been subjected to wide resection and the usual precautions to prevent adhesion taken.

Treatment of Infections of Urinary Tract.—Berghausen, in the *American Journal of Dermatology* for August, 1912, discusses the use of vaccines in these conditions. In localized acute specific urethritis vaccines seldom cause a marked improvement, but experience tends to show that complications resulting from an extension of the process occur less frequently after their use. The resistance of the patient is specifically stimulated by them. When the general system has been invaded, moreover, a specific arthritis without suppuration developing, the vaccines are of distinct benefit in hastening the healing process, especially if Bier's congestive treatment or hot applications are employed in addition. In gonococcic peritonitis localized to the pelvis the author has seen rapid improvement follow the first injection of a vaccine. Some observers assert that vaccines can be of distinct value in chronic localized gonococcic conditions. In the writer's experience it has been possible to cause the so called "morning drop" to disappear, but no more; shreds, if they had been present previously, continued to be passed.

In severe acute colon bacillus infections, usually seated in the renal pelvis, but also involving the kidney itself and later the ureter and bladder, in cases where both sides are involved, or when an operation is not granted in unilateral infections, the exhibition of autogenous vaccines is of some value in lessening the symptoms, lowering the temperature, and shortening the course of the disease. The bacilli continue to pass, but their number is diminished.

In bilateral tuberculous infections of the kidneys, the excessive pain and urination may be relieved by tuberculin. Sahli appears to have been able to cure an early renal tuberculosis with it. While such a result is not ordinarily obtained, the use of tuberculin in this condition is frequently followed by decided improvement.

Treatment of Inoperable Cancer Cases.—Castaigne, in *Quinzaine thérapeutique* for September 10, 1912, commends the use of quinine as a palliative in inoperable carcinoma. He advises the employment of the intramuscular and oral routes of administration on alternate days. A one to ten solution of the bihydrochloride of quinine is used for the injections, and two to three c. c. of the solution are given each time. Little or no pain is produced by these injections, and local inflammatory phenomena never result. On the days intervening between those on which the injections are given, 0.5 gramme (7.5 grains) of the same salt of quinine is administered in capsules. If gastric disturbance results, it is better to use the injection method exclusively than to resort to quinine enemas or suppositories.

Almost constantly quinine thus administered will cause a marked diminution in the pain and hemorrhage, as well as an improvement in the general condition. In illustration of the results frequently obtained, the author cites the case of a woman suffering from recurrence of a cancer of the cervix, already in profound cachexia, in whom the use of morphine was rendered unnecessary by the quinine, the discharge ceased, and the fatal ending was postponed for four months. In a case of gastric cancer, expected to terminate within a week, life was similarly prolonged for eight months, and the general condition for a time remarkably improved. In a case of recurring breast cancer the ulcerations healed under the quinine, the patient only succumbing three months later to lung involvement. The author believes it worth while to use quinine in conjunction with the x rays or radium for the purpose of preventing recurrence after operation in cancer cases.

Treatment of Pruritus.—J. L. Bunch, in the *Practitioner* for September, 1912, states that the irritability of an itching skin can sometimes be diminished by very simple means, such as an evaporating lotion of equal parts of camphor water and *eau de Cologne*, daubed on every few minutes. The efficacy of this measure is increased if the skin has previously been sponged with very hot water, or a vapor or Turkish bath taken. When the pruritus is exensive, a starch bath to which two ounces of sodium carbonate, bicarbonate, or borate have been added often gives great relief. Sulphur baths suit some cases well.

In generalized pruritus phenol in lotion form, or a one to 1,000 solution of mercury bichloride, will often arrest a severe paroxysm of itching. The following lotion has given good results in the author's hands:

℞ Chlorali hydrati, }
Camphoræ, } ....āā ʒi (4 grammes);
Aquæ coloniensis, ...℥i (30 c. c.);
Aquæ, q. s. ad......................℥viii (240 c. c.).
M. ft. lotio.

Where there are many abrasions, it is better to use a weak solution of cocaine or other analgesic in combination with liquor plumbi subacetatis. A paint of methylene blue, four grains to the ounce, is sometimes successful, combined with pills containing one grain given night and morning. The following may be used as a protective and soothing lotion:

℞ Balsami peruviani, }
Zinci oxidi, } ....āā ℥i (30 grammes);
Glycerini, ...ʒii (8 c. c.);
Aquæ rosæ, q. s. ad..................℥viii (240 c. c.).
M. ft. lotio.

Powders are useful where there are abrasions and some oozing, and can be made up with various analgesics, but they are unsatisfactory if the object is to exclude the air or protect the skin from scratching. For such purposes preparations with Lassar's paste as base are preferable. Many patients scratch unconsciously during their sleep, with resulting troublesome local excoriation, especially in the aged. In these patients it is often necessary to order hypnotics or morphine suppositories.

Upon the internal administration of drugs in pruritus Bunch does not place great reliance, with the exception of aperients and intestinal antiseptics. Of the latter, he favors chiefly phenyl salicylate and related products. Severe cases necessitate hypnotics or narcotics such as sulphonmethane, chloral hydrate, or opium, which, by procuring a few nights of good sleep, will often prevent a serious breakdown in neurotic patients.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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THE PROPOSED AMENDMENT TO THE PRACTICE OF NURSING ACT.

In our issue for January 4th we commented editorially upon the recommendation of the New York State Nurses' Association to have the law on the practice of nursing so amended as to debar from practice all nurses who have not had hospital training. We held that many faithful women, well trained theoretically, became subsequently very efficient under the guidance of physicians for whom they nursed, and that before we could be convinced that the proposed amendment would not prove harmful to the public, we deemed it necessary to be shown, 1, that the State as a whole was supplied with a sufficient number of hospital trained nurses to meet the needs of all sufferers therein requiring such aid; 2, that in order to provide for the vast majority of patients, the small wage earners and the poor, who are now provided for by nonhospital nurses, an adequate number of hospital nurses would give their care for a moderate sum, say from eight to fifteen dollars a week. Although more than two months have elapsed since our comments were published, the New York Nurses' Association has failed to dispel our fears that the proposed amendment would prove, if adopted, a public calamity.

An investigation by members of our staff directly interested in two hospital nurse training schools, has, on the other hand, brought out interesting facts concerning the practical efficiency of nurses who, though well prepared theoretically to follow strictly the instructions of attending physicians in the sickroom, had not received hospital training. Out of a large number of letters sent out to ascertain the actual practical value of such nurses (all graduates of a school which, on close inspection, had been found by us to do eminently conscientious work), five hundred and twenty-two answers received, so far, from physicians practising in New York State, attest to their efficiency and, in most instances, in glowing terms. Moreover, and rather contrary to our expectations—for we started with a certain prejudice in favor of hospital trained nurses—but *two* physicians out of the five hundred and twenty-two expressed a preference for hospital nurses, while *twenty-seven* volunteered the information that they had found nonhospital nurses quite as efficient as their hospital trained sisters, and in some instances preferable. "Many, not some, but many of our nonhospital nurses excel in many ways the hospital trained nurse," writes one of our correspondents. This tends to suggest, as another physician expresses it, that "hospital training is not essential to a good nurse." We shall not enter into the merits of this question, our only purpose being to emphasize the fact that the women the nurses' association wishes to strike, and even to deprive of the title of "nurse," are rendering very efficient services.

This irrefutable conclusion entails another which, considered only from its humane aspect, should stay any hasty legislation tending to modify the law in relation to the practice of nursing. Ninety per cent. has been authoritatively given as the proportion of nonhospital nurses in actual practice. One tenth, then, of our nursing force, the twenty-five to thirty dollars a week type, wish to deprive ninety per cent. of our sufferers unable to pay such prices, of that form of trained nursing which assists so greatly the general practitioner to carry on efficiently his lifesaving mission. Indeed, while a large number of physicians are absolutely dependent upon nonhospital nurses for the proper care of their patients, "there is an urgent demand at all times for a moderate priced nurse who is efficient," writes one of our medical correspondents; "many patients could not have nurses, were it not for them," writes another; "they fill a great need in our rural communities," writes a third; "and any legislation which debarred them from practice would work a great hardship to the people of this vicinity," and, we would add, to all people of moderate means in the State of New York.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

The unsavory performance now going on in New York with a revival of a twenty year old method of attacking tuberculosis leads naturally to the thought whether the white plague will ever be cured by tuberculins, serums, *Immun-Körper,* cultures, or any similar preparation. The history of these so called specifics of which high hopes have been entertained is no more encouraging than that of many other supposed remedies for tuberculosis; they have all flashed up like the rocket and come down like the stick, as far as the pulmonary form of tuberculosis is concerned—and it is the pulmonary form which interests both physician and patient. Tuberculins, Koch's or Calmette's or their various modifications, have resulted in cures of cutaneous and glandular tuberculosis, forms which tend toward spontaneous cure, but no cure of phthisis is on record which cannot fairly be attributed to the diet. fresh air, and other agencies which are successful when used apart from any specific. Even the successful results in the first and early second stages are open to question when we recall the large proportion of subjects who show healed pulmonary lesions at autopsy, though the existence of tuberculosis at any time during life had never been suspected. That tuberculosis is eminently a self limited disease is well known. Furthermore, it is the custom in hospitals to select cases for treatment by tuberculin; cases usually which progress slowly, which do not exhibit high temperature, etc. Could not the cognoscenti tell many a story of hemoptysis, obstinate febrile reaction, or other grave accident following an injection?

From the serums of Maragliano, Marmorek, Lannelongue, Achard, Gaillard, Vallée, Jousset, Arloing, and others, what results have been obtained outside a few isolated surgical cases? Rénon and Guimard, Calmette himself, all firm believers at one time, have lost confidence. The apparently favorable results in renal tuberculosis we believe can be explained by the long remissions in this form of the disease, and there are surgeons who teach that some cases of renal tuberculosis tend toward spontaneous cure.

Spengler's *Immun-Körper* produce reactions similar to those of tuberculin; it is in renal tuberculosis again that these bodies are said to have produced their best effects. Not a great deal is known about this form of medication, not even its exact method of preparation; certain it is that it has no cure of phthisis to its credit. For a more detailed discussion of these "specific" remedies, however, we refer the reader to an article by Léon Bernard, in *Paris médical* for February 22, 1913.

As a matter of fact, pulmonary tuberculosis is itself still a mystery. Whereas typhoid fever or pneumonia, for example, recognized as infections, always produce the same series of phenomena, evolve, wax, wane, and undergo involution always in the same period, this is far from being the case in phthisis, which varies in its manifestations with the individual attacked. Nothing is more uncertain than the course of phthisis. The disease seems to be Nature's protest at dirt, darkness, and starvation, which open the door to infection, and the solid and trustworthy results we have obtained in its treatment are due mainly to combating these conditions by cleanliness, sunlight, and good food. It is important to put the patient's stomach in order, to inflate his lungs, to get him sleep and rest. When we see the patient early enough the disease fades away before these simple measures. What therapeutic agents we have are beneficial only as they help digestion and put on flesh.

Physicians should lose no opportunity of teaching their consumptive patients these truths, even if they lose them to the next miracle monger who passes their way. Education is bound to tell in the long run, and even the layman can be taught that no disease which comes from ages of neglect on the part of his ancestors, together with carelessness on his own, is going to yield to a few unaided shots from a hypodermic syringe. Let him have these, by all means, if he insists, but enforce upon him the truth that no broken down consumptive can cast off an overpowering disease, if deprived of the upbuilding forces of food and oxygen; if any specific is to win a plausible victory over innumerable millions of the bacilli of Koch, it must have as allies an army of healthy corpuscles coursing through the bloodvessels of a more or less robust physique.

If physiology and chemistry are some day to give us a genuine specific for pulmonary tuberculosis, we believe it will be along the lines of chemotherapy as already traced by Ehrlich for syphilis. It will not act as an entire cure in itself, but will always demand the cooperation of the great forces of Nature, together with a good nurse and a good cook.

PUBLIC HEALTH ADMINISTRATION THE PHYSICIAN'S DOMAIN.

One point brought out by the testimony given before the Special Public Health Commission appointed by Governor Sulzer has not, in our opinion, received the consideration which it merits. We refer to the fact that there are so few trained public health physicians, and that at present there is practically no course in public health in the medical schools. With public health administration gaining in importance from year to year, our medical schools, with three or four exceptions, continue either to ignore the subject or to content themselves with a few lectures supplementary to the work in bacteriology and hygiene. It is no wonder, therefore, that sanitary engineers are claiming positions as health officers, and nonmedical statisticians desire to have charge of vital statistics.

Every one conversant with the subject knows that public health work is becoming more pronouncedly medical from year to year. In marked contrast to conditions twenty years ago, the sanitary side of public health work, that is, the engineer's side, is gradually being subordinated, or else is being taken out of the health department entirely to be placed elsewhere. In this city, for example, the health department has nothing to do with the removal of rubbish and garbage, with sewage disposal, or with street cleaning. For this reason we believe that the administration of the public health should be regarded as peculiarly the domain of the physician. The public has a right to demand, however, that its health officials be specially trained, and we therefore urge upon the medical schools the provision of adequate courses for training physicians for a career in public health administration. Such courses should supplement the ordinary curriculum in medicine, that is, they should be postgraduate courses, and should embrace at least a year's training in laboratory methods, public health principles, sanitary science, vital statistics, and practical work in some efficient health department. Graduates from such courses should receive a special diploma. Does any one doubt that such training would have an enormous influence on the state of the public health?

DANGER IN UNPROFESSIONAL ANTIFAT TREATMENT.

A man, thirty-eight years of age, a heavy eater and beer drinker, suffering from progressive obesity for the past five years with the not uncommon accompaniments of dyspnea, vertigo, and somnolence, secured from a French pharmacist an antifat remedy containing thyroid extract. After taking this for three days the patient had added to his other troubles an edema which invaded the lower extremities and the scrotum and was accompanied by urgent dyspnea and pain in the hepatic region. An examination in the hospital to which the patient was taken, showed general anasarca, a hypertrophied liver, diminished urine without albumin, a dilated heart, and raised arterial tension. Rest, milk diet, and digitalis helped him considerably, but when presented to the Société de médecine du département du Nord by Pierret, says *Paris médical* for February 22d, there still remained marked râles at the bases, arterial hypertension, and edema about the malleoli. Where the heart is infiltrated with fat, rapid reduction in weight is fraught with danger; in such cases the hypotensive action of digitalis is very useful.

SULPHURIC ACID IN CARBUNCLES.

F. S. D. Hogg states in a letter to the *Lancet* for February 22, 1913, that since the statement some four years ago by Dr. J. Reynolds and Dr. Russell J. Reynolds of their treatment of staphylococcal invasions by the internal administration of sulphuric acid, he has employed no other remedy in the treatment of boils and carbuncles, except the usual protective dressings, and has had the most gratifying results. Improvement takes place quickly where suppuration has become established, and beginning mischief and secondary crops are promptly aborted. The writer reports a case of acne which had resisted treatment by other measures for thirty-five years, but which improved rapidly under sulphuric acid, and two cases of boils and abscesses in morphine habitués, one with intense itching, which yielded quickly. One case was complicated with pyorrhœa alveolaris, and the condition of the gums improved vastly. The sulphuric acid is given in twenty to thirty minim doses well diluted every four hours.

USE OF ETHER IN INFECTIONS.

Souligoux, noting Morestin's views on this subject, communicated to the Paris Société de chirurgie, on February 19th, his experience with over twenty years' use of ether in infected wounds, lymphangitis, and erysipelas, always with gratifying results. During the past year he used ether by intraperitoneal injection in the treatment of a case of septic peritonitis from intestinal perforation. He had given up hope of the patient, but the ether, as Souligoux is reported in *Presse médicale* for February 26, 1913, administered as a copious lavage, brought about a swift and permanent cure.

Marcille and Cunéo, at the same meeting, reported their own excellent results in cases of panaris and phlegmonous inflammation after the use of ether, although the latter confessed that he was not enamored of the idea of pouring ether into the peritoneal cavity.

BOTTLE METHOD OF RESPIRATORY GYMNASTICS.

According to *Presse médicale* for February 15, 1913, Pescher reported to the Société de l'internat des hôpitaux de Paris on January 23d that his method of respiratory gymnastics by means of a series of bottles continued to give him excellent results. Owing to its simplicity, its appeal to the patient, and its lack of cost, the method ought to be adopted in the daily practice of every physician. The effects were so valuable and so incontestable that the deviser expected it to be used as a matter of routine in the future in both surgical and medical cases, even by bedridden patients. We gave a description of Pescher's bottle method in our issue for December 28, 1912, sufficiently complete to enable any reader to install it.

OPERATING ON HYSTERICAL WOMEN.

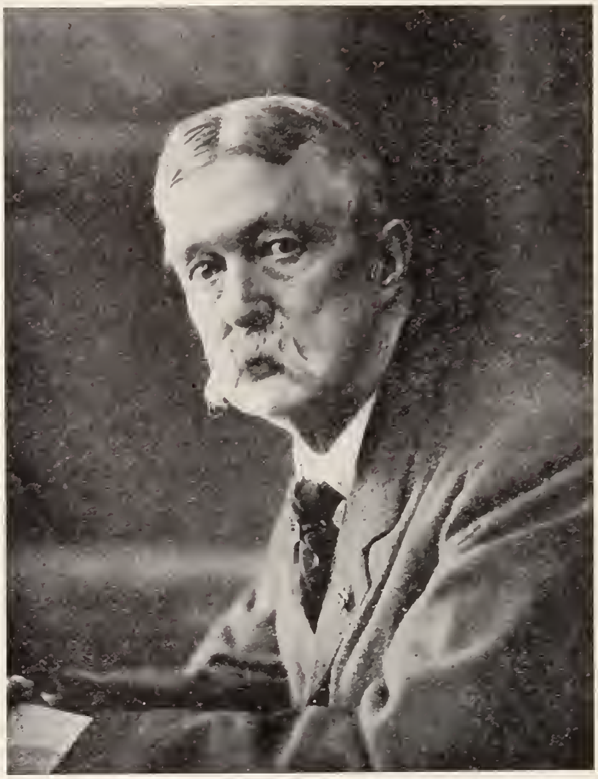
Picqué is opposed to operating on hysterical women. In a paper presented before the Paris Académie de médecine, on February 25th last, he advised his hearers never to operate on such a woman unless life was in grave danger. An operation, of whatever nature, constituted for such a subject a psychic traumatism, which, added to the physical traumatism, might give rise to dangerous mental reaction. In some few cases Picqué maintained, according to *Semaine médicale* for February 26, 1913, the removal of a definite lesion might be accompanied by the disappearance of symptoms directly attributable to it; it would be hopeless, however, to expect a profound modification of a hysterical dyscrasia by such an operation as ablation of the uterus, ovaries, etc.

Obituary.

JOHN SHAW BILLINGS, M. D., LL. D., D. C. L.,

of New York.

Dr. John Shaw Billings died on March 11th at the New York Hospital in his seventy-fourth year. He was born in Switzerland County, Ind., April 12, 1839, graduated from Miami University in 1857, receiving the degree of A. M. three years later, as well as M. D. from Ohio Medical College; conferred upon him later was the degree of LL. D. in 1884 from Edinburgh, in 1886 from Harvard, in 1896 from Buda-Pesth, in 1901 from Yale, in 1902 from Johns Hopkins, beside the D. C. L. from Oxford in 1889, and M. D. from Munich in 1889, and Dublin in 1892. He was demonstrator of anatomy at Ohio Medical College in 1860, and shortly after became assistant surgeon in the army, reaching the rank of lieutenant colonel and deputy surgeon general in 1864; subsequently he was medical inspector of the Army of the Potomac, and at the close of the civil war took charge of the surgeon general's library. Retired at his own request from active service, he became professor of hygiene at the University of Pennsylvania, and from 1896 till it was removed to its present site at Fifth Avenue and Forty-second Street, he was director of the New York Public Library. Doctor Billings was the author of the *National Medical Dictionary* and of the invaluable and unique *Index Catalogue* of the Library of the Surgeon General's Office, as well as of numerous scientific works, and was for many years a highly welcome editorial contributor to the New York Medical Journal.



Dr. John S. Billings,
Of New York.

News Items.

Doctor Friedmann in Canada.—According to newspaper reports, Doctor Friedmann treated fifty-six cases of tuberculosis at the Royal Edward Institute in Montreal, on Tuesday, March 11th. The demonstration was attended by fifty physicians from the hospitals and others engaged in private practice, among them being Dr. J. George Adami, professor of pathology in McGill University, who expressed himself as content to await results before judging of the value of the treatment. Others who attended the demonstration were from Quebec, Halifax, and Toronto, and deputations from every Province of the Dominion called upon Doctor Friedmann and invited him to prolong his stay and give demonstrations elsewhere. On Tuesday evening he went to Ottawa, on the invitation of both the Dominion and the Provincial governments, to attend the meeting of the Antituberculosis Association, where he will treat a large number of selected patients. On his return to New York Doctor Friedmann will treat patients in Mount Sinai Hospital, the Montefiore Home, and the People's Hospital. Official tests of the Friedmann cultures are being carried on in the hygienic laboratories of the United States Public Health Service in Washington, under the direction of Surgeon John F. Anderson, chief of the laboratories, who has been detailed by Surgeon General Blue to make these investigations, having been furnished cultures by Doctor Friedmann.

Physicians Protest against Cocaine Legislation.—At a meeting of the Society of Medical Jurisprudence, held in New York on Monday evening, March 10th, the members present went on record as protesting against all the various bills now before the legislature of the State of New York regulating the traffic in cocaine.

Prescriptions in English.—A bill has been introduced into the Nebraska legislature by Mr. Smith, which provides that English shall be used in the writing of all prescriptions, and forbids the use of any other language. A similar bill has been introduced into the North Dakota legislature by Mr. Davidson.

The Cleeman Dormitories of the University of Pennsylvania.—Plans are nearly completed for the $50,000 dormitory building of the University of Pennsylvania, and ground for the building will be broken next week. The new dormitory, which was bequeathed to the institution by Dr. Richard A. Cleeman as a memorial to his brother Ludovic C. Cleeman, will be built in the quadrangle.

Prescribing of Secret Remedies Prohibited.—A bill has been introduced into the legislature of the State of North Carolina making it unlawful for any physician or other person to prescribe or recommend any drug or preparation without knowing its true nature and composition. The prescriber is also required to make known the nature of the composition and is to be expected to do so by the patient.

Moving Pictures of Patients with Nervous Diseases.—At a meeting of the Samaritan Hospital Medical Society, held in Philadelphia, on Monday evening, March 10th, Dr. T. H. Weisenburg demonstrated a series of moving pictures of nerve patients. The discussion of the subject was opened by Dr. Samuel D. Ingham.

Clinical Society of the New York Throat, Nose, and Lung Hospital.—The annual dinner of this society will take place on Tuesday, March 25th, at 7:30 p. m., at the Hotel Imperial. This year the price of the dinner has been reduced to $3.50, which includes music and entertainment. Those who contemplate attending should communicate at once with the chairman of the dinner committee, Dr. R. Johnson Held, 616 Madison Avenue.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, March 17th. The following papers will be read: Lymphuria, a Clinical Phenomenon, by Dr. Heinrich Stern; Colon Bacillus Infection of the Kidney, by Dr. Winfield Ayres; Bilateral Nephrolithiasis, by Dr. Oliver C. Smith, of Hartford, Conn. Dr. Louis Heitzmann will open the discussion.

Meetings of Philadelphia Medical Societies to be Held during the Coming Week.—Monday, March 17th, Medical Society of Woman's Hospital; Tuesday, March 18th, North Branch of the County Society, Stomach Hospital Gastroenterological Society, and the Philadelphia Laryngological Society; Wednesday, March 19th, College of Physicians (Section in Otology and Laryngology); Thursday, March 20th, College of Physicians (Section in Ophthalmology), and the Northeast Branch of the County Society; Friday, March 21st, Southeast Branch of the County Society and the Jefferson Hospital Clinical Society.

A Symposium on Tuberculosis of the Urogenital Tract.—The next meeting of the Section in Genitourinary Surgery of the New York Academy of Medicine, of which Dr. Walter Brooks Brouner is chairman and Dr. Joseph Francis McCarthy secretary, will be held March 19th, at 8:30 p. m., in Room 44 of the Academy building. In addition to the reading of papers there will be a pathological exhibit of specimens of tuberculosis of the urogenital tract. Many interesting specimens will be shown. The papers of the evening will be as follows: Debatable Factors in the Surgical Discipline of Renal, Ureteral, and Vesical Tuberculosis, by Dr. Martin W. Ware; Tuberculosis of the Epididymis; Its Effect upon Testicle and Prostate, by Dr. J. Dellinger Barney, of Boston, by invitation; Urinary Findings in One Hundred Cases of Tuberculosis of the Urogenital Tract, by Dr. Frederic E. Sondern.

Popular Medical Lectures by the Bronx Medical Society.—The Medical Society of the Borough of the Bronx is presenting a series of public lectures on medical subjects on Tuesday evening of each week, in the Morris High School, 166th Street and Boston Road. The series began on January 7th and will close on March 25th. The subject for next week is general medicine, and the speakers are Dr. T. Joseph Dunn, whose topic will be Patent Medicine Fakes; Dr. Nathan B. Van Etten, who will speak of the Dangers of Self Medication, and Dr. Reynold Webb Wilcox, whose address will be on What Medicine Will and Will Not Do. On March 25th the general topic will be surgery, and the speakers will be Dr. Henry Roth, Dr. Parker Syms, and Dr. A. Ernest Gallant. These lectures were arranged by the Public Health Education Committee of the Medical Society of the Borough of the Bronx.

Women's Medical Association of New York City.—A stated meeting of this association will be held in the New York Academy of Medicine on Wednesday, March 19th, at 8:15 p. m. In addition to the presentation of pathological specimens and the exhibition of patients, the programme will include the following papers: Some Unusual Obstetrical Complications with Reports of Cases, by Dr. Frances Merriam Myers; Notes from Histories of Tuberculous Patients Seen in the Obstetrical Wards of the New York Infirmary for Women and Children, by Dr. Angenette Parry; Preliminary Study of the Paraffin Treatment of Perineal Wounds, by Dr. Caroline S. Finley. Dr. Augusta Vedin, Dr. Helen Baldwin, Dr. Marie L. Chard, and Dr. Augusta Rucker will participate in the discussion. Dr. Mathilda K. Wallin is president of the association and Dr. Esther L. Jefferis is corresponding secretary.

Personal.—Dr. George F. Butler, of Chicago, has been appointed general medical director of Mudlavia, Kramer, Ind.

Dr. Solomon Solis-Cohen has resigned as medical adviser to the Jewish Consumptive Institute in Philadelphia.

Dr. S. Weir Mitchell, of Philadelphia, was the guest of honor at the annual dinner of the Physicians' Club, of Chicago. He delivered an address on the Profession of Medicine in the War of the Rebellion.

Special Lectures at the American Medical College.—Dr. B. Merrill Ricketts, of Cincinnati, will deliver three lectures at the American Medical College of St. Louis, which is the medical department of the National University of Arts and Sciences, as follows: Thursday, March 20th, at 11 a. m.: Treatment of the Appendicular Stump (with lantern slides); Thursday, March 20th, at 4 p. m.: The Coccyx as a Causative Factor in Rectal and Genitourinary Diseases (with lantern slides); Friday, March 21st, at 4 p. m.: Endotracheal Insufflation with Experiments on Dogs. Physicians and medical students are invited to attend these lectures.

Conference on Industrial Education for Children.—At a sectional meeting concerning crippled children, held in connection with this conference, in New York, on March 8th, the special needs of cripples were considered. Dr. Douglas C. McMurtrie presided at the meeting and spoke of the historical development of care for the deformed and the experience in connection with trade training both in the United States and abroad. Other speakers were Mr. Charles H. Burr, superintendent of the city hospital and country branch of the New York Orthopedic Hospital, who told of the lessening necessity for industrial education in the work of his institution, as the chief need for young children was primary education; Dr. Charles H. Jaeger, who discussed the industrial training provided for adult cripples at the Trade School of the Hospital of Hope; Miss Florence Sullivan, who spoke concerning the work at the trade school for crippled boys and girls maintained by the Brearley League, and Miss Evelyn Goldsmith, who emphasized the necessity of industrial training for the graduates of special classes for cripples in the public schools. An interesting discussion followed, and a resolution was adopted recommending that the section be continued annually.

Resolutions Relative to the Practice of Nursing Adopted by the Hospital Conference of the City of New York.—At a special meeting of the Hospital Conference of the City of New York, held at the Hospital for Ruptured and Crippled, Tuesday evening, February 18, 1913, for the purpose of considering the proposed amendment to the public health law (now known as Senate bill 943) relative to the practice of nursing, the following resolutions were adopted:

Resolved: First, that we, as a conference, disapprove of the proposed amendment.

Second, that as the training of nurses concerns not only associations of nurses, but also physicians, hospitals, and the public at large; we recommend that the legislature appoint a committee on nursing composed of representatives of the State Nursing Association, the medical profession, and hospital trustees.

Third, that we recommend specific, rather than general, laws on nursing matters, and that no new restrictions shall be placed upon training schools without the sanction of the legislature.

Fourth, that copies of these resolutions be sent to the board of regents, the commissioner of education, the various boards of trustees of the private and public hospitals of the State, and all the medical and nursing journals circulated in the State of New York.

Fifth, that a committee be appointed to represent this conference, and to present these resolutions at any hearing which may be granted by the legislature to consider the proposed amendment, and to take such measures as may be considered desirable for the furtherance of the purposes of these resolutions.

This act appears to have two principal objects. The first is to prohibit any person not registered by the Regents of the University of the State of New York, from "practising" as a nurse. There is no definition of what is meant by "practising as a nurse," nor any penalty for violation of the statute. It appears to prohibit any person from acting as a "nurse" for a child. In the next place, the act gives to the Board of Examiners of Nurses (who are nominees of the New York State Nurses' Association) the power, not only to examine and certify nurses, but also the power to hear charges against nurses and to recommend to the regents the revocation of their licenses. It seems clear that such large powers should not be granted. The Hospital Conference, therefore, strongly disapproves of the pending bill.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

January 2, 1913.

Rhachitis.—H. Ribbert says that although the etiology of rhachitis is not yet clear, in its final analysis a series of observations point to the fact that on account of improper nourishment anomalies of metabolism set in which bring on the disease. From these, toxic influences act upon the skeleton which microscopically are seen to be retrogressive changes in the cartilage cells. The disintegrating and cartilage dead cells take a yellow stain with Hämalaun, van Giesen, and orange stains.

Technic and Application of Intercricothyrotomy.—A. Denker recommends in cases of the most acute laryngeal stenosis, an incision directly on the upper border of the ring cartilage in a transverse direction (intercricothyrotomy) in order to restore breathing rapidly and surely. This is done by incisions with a double edged knife made in different lengths and breadths. The operation removes the danger of immediate death, but does not take the place of either intubation or tracheotomy. It has a practical application for the general practitioner.

Local Anesthesia in Reposition of Subcutaneous Fractures and Luxations.—H. Braun says that local anesthesia in the improved present stage, particularly in the plexus anesthesia of the upper extremity according to Kulenkampff, is well fitted for the treatment of fractures and luxations. Even a simple injection around the fragments or about the displaced joint elements with the injection at the same time of the articular cavities has given good results. The reposition usually takes place painlessly, and in a successful plexus anesthesia the relaxation of the muscles is more complete than in narcosis. The experiences with fractures of the leg have thus far not been very favorable; those for the thigh are meagre. A special description is given for anesthetizing in luxations of the thigh.

Treatment of Sciatica by Epidural Injections.—Läwen reports twelve cases of sciatica treated with a one per cent. novocaine-bicarbonate solution with excellent results in some cases, in one patient the improvement lasting two years. Where brilliant results were not obtained the affection was probably not a true sciatica. The latter, particularly sciatica of the roots, is the kind most amenable to this treatment.

Blood Picture in Smallpox and Cowpox.—Erlenmeyer found that Kämmerer's blood picture, a marked increase of the mononuclears which are in reality lymphocytes, was seen in two cases of smallpox, while in four, twelve year old vaccinated children, no change in the blood picture could be made out.

Differences in the Blood Serum in Paresis and Dementia præcox.—Benedek and Déak, after numerous experiments on rabbits, were able to show that the serum of paralytics is poorly supplied with hemolysin antigens, while that of patients suffering with dementia præcox is richly supplied. The erythrocytes of rabbits vaccinated with the serum of paralytics have a decreased resistance to mercuric bichloride, the others an increased resistance.

Perirenal Hematoma Following Scarlet Fever.—Hering was unable to discover the cause, either by operation or at autopsy, of a fatal increasing retroperitoneal hemorrhage extending into the pelvis, coming on three weeks after the exanthemata of scarlet fever.

January 9, 1913.

Calcium Metastases and Calcium Gout.—Schmidt describes, and tries to account for the autopsy findings in a patient having calcification of the lungs, mucous membrane of the stomach, kidneys, the small vessels, the arteries of the pancreas and the uterus, and the heart muscles, in the absence of a diseased condition of the bones and the presence of marked chronic nephritis. The author is of the opinion that disturbances in calcium metabolism must be the underlying factor with which the nephritis in some unexplained way is intimately connected.

Typhoid Carriers.—Conradi designates those patients as primary carriers who have had a typhoid infection and still harbor the bacilli; and as secondary carriers those which have never had a recognized typhoid and yet harbor the bacilli. The first are the more dangerous to the community. The fact that typhoid is a local as well as a blood infection explains why five per cent. of the patients suffer chronically from infections of the bile ducts and infected metabolic foci in the kidneys. The uselessness of surgical therapy is evident. It remains to be seen whether chemotherapy will aid these cases. The author urges cleanliness and care as the only present means to prevent spreading the typhoid of the carriers.

Hypertension and Sugar in the Blood.—Port corroborates Weiland that nephritis with apoplexy, eclampsia, or uremia increases the sugar of the blood, which, however, lacks some further factor to produce glycosuria.

Influence of Salvarsan on the Hearing Apparatus.—Rimini, in treating eight cases at the beginning of the salvarsan era by injections, produced more or less severe auditory disturbances. These cannot be directly traced to the toxic action of the salvarsan, but are probably due to a lively reactionary inflammation of the latently luetic nerve. Therefore in applying salvarsan therapy the greatest caution is to be used in cases where the slightest defect in hearing is already present.

Nongonorrheal Ophthalmia neonatorum.—Credé and Hörder found in place of gonococci, which do not cause infection of the newborn as frequently as has been supposed, the presence of Gram positive diplococci, pneumococci, and bacteria coli. The inflammations caused by the pneumococci were particularly severe; but they, together with the inflammations caused by the other bacteria, are distinguished from the gonorrheal infections by the fact that the cornea remains intact.

Iodstarin and Iodine Preparations in the Treatment of Pulmonary Tuberculosis.—Perkik recommends the use of iodine and its preparations for treatment in cases of phthisis, even in those cases which are wholly free from lues. Iodstarin, a tasteless combination of iodine and a fatty acid having no side actions (symptoms of iodine poisoning only when given in very large doses) is rapidly absorbed and slowly excreted by the system.

January 16, 1913.

Blood Circulation in Functioning and Atalectic Lung Tissue.—Bruns found that the rate of flow and the amount of blood present at any one given time in collapsed and atalectic lung tissue is less than in the normal inflated lung. This accounts for the fact that in collapse of one lung the blood of the whole body does not become markedly poor in oxygen or richer in carbon dioxide. Therefore in pneumothorax therapy for tuberculosis we cannot have hyperemic action as has been supposed.

Examination of the Tuberculous.—L. Rabinowitch found that in forty-five per cent. of all persons suffering from tuberculosis, bacilli were present in the bile. In a relatively large number of the cases, the bovine type was present. In some cases the human type was demonstrated in the body, which leads to the supposition that the various atypical bacilli forms are transmutation products. This may explain why in children the bovine type is frequently met with, while in tuberculous adults the human form predominates. In the infected body a change seems to take place, but no mixed infection is present. In adult and child the excretion of tubercle bacilli with the feces points to the presence of the tubercle in the bile passages. Animals of this type show in the majority of cases a positive tuberculin reaction. Milk of such cows may be infectious.

Sexual Psychogenic Cardiac Neuroses (Phrenocardia).—Behrens asserts that phrenocardia, almost always a concomitant symptom of general nervousness, neuresthenia, or hysteria is to be regarded as a psychoneurosis conditioned by a sexual moment whose general symptoms are intense pain in the region of the apex, catching of the breath, and intermittent palpitation precipitated by the least stimulus. These symptoms may be masked by those of hysteria. The patients in the vast majority of the cases are women of sexually ripe age. Objectively the findings usually are normal or almost so. A form of spastic obstipation may be present. Sudden changes in the condition of the patient are noteworthy. The manifestations of this condition may occur in crises.

Causal and Symptomatic Treatment of Gonorrheal Processes in the Male; the Original Menzer Gonococcus Vaccine.—Erlacher believes in the efficacy of Menzer's gonococcus serum in the treatment of acute and chronic gonorrheal arthritis and also in a series of specific complications. Twice in acute gonorrheal sepsis results were satisfactory. From five to twenty-eight million gonococci were injected in single doses. It can also be employed for diagnostic purposes. Notwithstanding a local reaction, there was no rise in temperature or any other side action.

January 23, 1913.

Experiences with Mesbé.—O. Roepke says that mesbé, a new remedy advocated in pulmonary and laryngeal tuberculosis, an extract made from an American plant, is of unknown composition and of unknown therapeutic action. Its relation to tuberculosis is arbitrary. It is not a cure. Mesbé inhalations and drinking cures have been found worthless. The local application of mesbé in laryngeal tuberculosis produces no improvement and often causes objective and subjective unpleasant symptoms. Mesbé cures, notwithstanding reports to the contrary, are worthless in sanatoria and for the treatment of ambulatory patients.

Congenital Family Icterus.—E. Maliwa asserts that this is primarily a blood disease recognizable by anemia and typical changes in the erythrocytes. These changes are accompanied by a decreased resistance and the appearance of various staining elements. The icterus is pleochroic, the splenic enlargement spodogenous.

Increased Danger of Hemorrhage in Operating in Congenital Narrowness of the Aortic System.—Melchior urges the utmost caution in operating in these cases when the diagnosis can be made previous to operation and where it is not of vital importance to operate.

January 30, 1913.

Treatment of Furunculosis and Sycosis coccogenes with the Staphylococcic Vaccine Opsonogen.—L. Zweig speaks highly of this vaccine, having proved to his entire satisfaction that it produces excellent results in furunculosis and sycosis. In chronic cases of the latter disease he found it of great value. The results, of course, are not so surprisingly rapid as in furunculosis.

Clinical Tests with Isolated Substances of the Hypophysis.—S. Herzberg avers that hypophysin intensifies slow irregular uterine contractions. It does not produce contractions of long duration. It is harmless for mother and child, effective in any stage of labor without increasing post partum hemorrhage. It possesses all the advantages of the organic extracts of the hypophysis and is free from unpleasant side effects.

PARIS MÉDICAL.

February 22, 1913.

Cancer of Esophagus Treated With Radium.—Guisez had noted that radium obtained its best effects in cutaneous cancer and used it in esophageal cancer on account of the analogy between this and the cutaneous varieties, from both structural and evolutionary standpoints. Since Guisez has been able to use from ten to twelve cgm., he believes he has obtained genuine curative effects. He treated thirty-five patients and had at least palliative results in all; in about one third results have been good enough to permit normal feeding. Three cases, of which details are given, seem to be permanently cured. His apparatus is simple, consisting of tubes of radium surrounded by silver screens, four tenths of a millimetre in thickness and fixed in an olivary sound No. 16 or 18. He begins with one or two cgm., and as soon as toleration is established, raises the dose to five or ten cgm. Applications are made during séances lasting four or five hours, every second day; a minimum of thirty hours is demanded, in some cases sixty. Platinum may replace the silver screen, and the rays also traverse the one millimetre thickness of the gum sound. An enormous secretion of fetid saliva is an immediate result, attributable to the radium, for a plain sound does not produce this symptom. Augmentation of calibre in the esophageal stenosis is almost immediate. A fact worth noting was that microscopical examination of the growths after partial treatment showed marked change in their nature, evidence of malignance being lacking, although undoubtedly present at the first examination.

X Rays in Graves's Disease.—Perdrizet, noting in the literature the good results obtained by this method in Graves's disease, advises the use of tubes of medium hardness through which a current of half an ampère is passed, the distance between the focus and the skin being about sixteen mm. The skin should be protected by a layer of leather, six mm. in thickness. A treatment lasting twenty minutes once a week suffices at first, care being taken to irradiate both sides of the gland. Subsequently the treatments need be given only every two weeks, then every three weeks, etc. Erythema is a signal to interrupt the treatment for a time. Results have been most encouraging in the disappearance of nervousness, tachycardia, dyspnea, and trembling, and Perdrizet expresses the hope that they will be permanent.

PRESSE MÉDICALE.

February 8, 1913.

Bradycardia in Lead Colic.—C. Lian and E. Marcorelles recall the fact that Tanquerel and Planches, among 1,179 patients suffering from lead colic, had observed a heart rate of twenty to sixty a minute in no less than 678 cases. The cause of this bradycardia was investigated by the authors, who employed the newer graphic methods and the atropine test. The condition was found to be a true bradycardia in the sense that there are no extrasystoles. The whole heart is involved, i. e., there is no dissociation between the auricular and ventricular beats, and each ventricular beat is preceded by only a single auricular beat. The rate is increased by atropine. The bradycardia depends neither upon the arterial hypertension usually present, nor upon the abdominal pain, but appears to be due to the direct action of the poison either upon the trunk of the vagus nerve or its terminals in the cardiac sinus.

Treatment of Lymphorrhagia.—P. Sikora discusses the measures available for the arrest of lymph extravasation under various conditions. Traumatic lymphorrhagia, even when extensive, is generally recovered from after simple procedures such as packing, pressure, and cauterization of fistulæ. In exceptional cases, ligation of the injured lymphatic vessel is required. In lymphorrhagia of inflammatory or neoplastic origin, treatment of the cause is especially indicated.

Instrument Facilitating Suture of Vessels.—A. Leitao da Cunha describes a device consisting of a triangle of flexible steel each side of which is about two cm. long and five mm. wide and bears at its middle a projection, two cm. long, provided at its extremity with a steel button. One angle of the triangle is open, so that the device may be removed from the vessel after the suturing is completed. The object of the device is to hold the vessel walls apart in triangular fashion, to facilitate suturing. Three equidistant loops are passed through the ends of both of the vessels to be united and fastened, respectively, to the three buttons on the device. Vessel suturing can thus be done without an assistant.

SEMAINE MÉDICALE.

February 12, 1913.

Precoxal Osteomata.—F. Lejars discusses the pathology and operative treatment of newly formed bony masses anterior to the hip joint, generally preceded by trauma, and sometimes apt to be mistaken for osseous tumors of the femur or pelvis. He recognizes three types: 1. Osteomata derived from the bony skeleton itself, and the following fracture of the femoral neck, trochanter, pubis, etc.; 2, myosteomata, derived from the psoas, rectus femoris, adductors, etc., and which, after extending to the points of attachment of tendons, ultimately adhere to the bones; 3, myosteomata, ensconced in the muscles and devoid of secondary attachments. The author reports five cases, two of which were of the last named variety, and points out that in many instances an interval of two or more years elapses between the traumatism and the appearance of the mass. The treatment consists of operative removal of the bony growth in cases where it gives rise to increasing pain and functional disability. The excision should be as complete as possible, in order both to restore function to the joint and prevent further ossification from residual osteophytes. In cases of old fracture of the femoral neck with marked deformity, excision of the joint will, in some cases, have to be considered. This was done in one of the author's patients, and yielded good functional results.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

January, 1913.

Prognosis and Reduction of Dislocation at the Hip.—Roux, reviewing the ultimate results observed in twenty-one cases of hip luxation, some reduced by ordinary methods soon after the accident, others treated later by open operation, concludes that the late prognosis in these cases is not entirely favorable. Although occasionally the subsequent trouble may arise from osseous abnormalities existing before or as the result of the accident, and which might have been avoided by routine use of the x rays in these cases, the disturbance is usually due to imperfect restoration of the soft parts surrounding the joint. In adults, one should always be apprehensive of a posttraumatic deforming arthritis, which may appear at a long interval after the accident. The best way of preventing this and other untoward results is to keep all these patients under treatment, after the dislocation, for a longer time than has hitherto been the custom. In reducing hip luxations, Roux advises the following manœuvre, which permits of easy reduction, even where the patient's limb is unusually massive: With the patient anesthetized and lying on a mattress, the thigh is flexed to liberate the femoral head, and the operator's knee placed under that of the patient. Holding the patient's leg below the knee and at the ankle, the operator then applies force to it just as a laborer would lift a heavy shovelful of earth.

Pseudodiphtheria Bacilli in Otitis media.—Reh and Méroz found pseudodiphtheria organisms in the pus of over one half of the fifteen cases studied by them. While themselves not a factor in the causation of middle ear disease, they were always associated with pathogenic cocci. Their significance resides in that they may be confounded with true diphtheria bacilli in otitis induced by the latter, which form of otitis may constitute the sole clinical manifestation of diphtheria. The only fairly rapid procedure for distinguishing the two bacterial types is inoculation of guineapigs.

Tumor of the Heart.—C. Horneffer and P. Gautier summarize three cases already reported by Mérog and give in detail the history of a case of their own, in which the symptomatology was unusually clearly cut, owing to the absence of all complicating factors. In each of the four cases, the growth involved the left auricle. The special features by which such cases may be recognized during life was stated as follows: The dyspnea is out of proportion with the apparent degree of cardiac involvement, and shows paroxysmal exacerbations due to momentary blocking of one of the orifices. Brief syncopal attacks, with or without loss of consciousness, are to be similarly explained. Rapid loss of weight and strength is of diagnostic value. The area of cardiac dullness may be considerably enlarged, and a systolic murmur or reduplication of the second sound be noted, according to the situation of the growth. Irregularity of rhythm also appears to be frequent, and is but temporarily, or not at all, overcome by heart tonics. Especially distinctive, however, is the marked variability and disconcerting vagueness of the signs present. Multiple embolism, lung infarction, and sudden, unexpected exitus are also characteristic. An esophageal pulse tracing taken in the author's case, when compared with the jugular tracing, showed that the auricles were not contracting equally.

Examination of Sputum for Tubercle Bacilli.—G. Kaplansky compared the Ziehl-Neelsen, Uhlenhuth (antiformin), Spengler, and Much methods of examining the sputum in a series of 112 cases of lung tuberculosis. In 225 additional cases the first and second of these methods were alone compared. The author's conclusion is that the Ziehl-Neelsen procedure is at once the simplest, most rapid, and most exact of all methods. The Much method sometimes reveals a greater number of tubercle bacilli than the others, but in no case where the findings were negative by the Ziehl method were they positive with the former.

ROUSSKY VRATCH

January 5, 1913.

The Effect of Extracts from Goitres on Blood Pressure and the Isolated Heart.—A. A. Grube found that extracts from toxic goitre cause a lowering of blood pressure, and, in the majority of cases, an increase in the pulse rate with a reduction of its volume. The lowering of the blood pressure was caused by the lowering of the tonus and dilatation of the peripheral bloodvessels.

Pathological Anatomy of Some Internal Organs in Basedow's Disease.—A. N. Chrustaleff observed the following morbid changes in Basedow's disease: 1. Retrogressive changes and destruction of the specific elements of the ovaries; 2, marked hyperemia; 3, marked increase of connective tissue; 4, formation of cysts. The uterus and mammary glands undergo atrophy of the specific elements, which are replaced by fibrous connective tissue. There is also hyperplasia of the lymphatic system, the spleen, and the lymphatic glands. In the adrenals there is lessening of the cortical layer and hyperemia. The medulla is hyperemic and filled with eosinophilic granules. The heart, liver, and kidneys show evidence of marked parenchymatous degeneration. The alimentary canal is in a condition of follicular catarrh.

Preservation of Anatomical Preparations and Bodies in Hermetically Sealed Containers without Fluid.—I. M. Iosifom describes a method of preserving dry specimens and whole bodies in hermetically sealed boxes. The cadavers are previously injected with a solution of denatured alcohol, 5,000 c. c.; formalin, 400 c. c.; carbolic acid crystals, 200 grammes; and glycerin, 500 c. c.

BRITISH MEDICAL JOURNAL.

February 22, 1913.

Influence of Septic Infection in the Causation of Eye Disease.—B. T. Lang calls attention to the fact that in the majority of cases of scleritis, keratitis, iritis, cyclitis, and choroiditis the cause of the inflammation is obscure. Since physical injury is excluded, these cases have come to be regarded as due to the chemical effects of bacteria or their toxines. These bacteria or toxines must reach the eye through the blood stream. Lang states that direct evidence of the presence of bacteria in such cases is not usually obtainable and that, therefore, indirect evidence forms the basis of his opinion that many of these lesions of the eye depend for their origin upon the presence of some septic focus in the body, from which the exciting substance reaches the eye by the circulation. He reports abbreviated accounts of several cases illustrating his contention, and he draws his deductions from a total of 176 cases. In his experience the septic foci found lie in one of three situations: 1. Along the respiratory or alimentary tracts; 2, along the genitourinary tract; or, 3, on the skin or in a sinus leading from it. In many of the cases in this series cure of the eye inflammation was brought about solely by treatment directed to the removal of the septic focus or its sterilization. Lang suggests that senility and myopia do not cause choroiditis, as is so frequently stated, but that in each condition there is a reduced resistance of the choroidal tissues which renders them favorable sites for infection.

Vaccine Therapy in Chronic Bronchitis.—H. T. Gillett used autogenous vaccines in the treatment of eight cases of bronchitis, some acute, others chronic. The sputum is collected as free as possible from mouth contamination by cleansing of the teeth with sterile water and subsequent washing of the mouth and gargling of the throat with plain sterile water. The next sputum is to be expectorated into a previously boiled bottle. A little of the sputum is then washed and shaken up with sterile saline and one or two loopfuls are sown on agar, or other solid medium. From the growth of fifteen to thirty-six hours the vaccine is made up. The dose is regulated according to the response of the patient and is not controlled by opsonic tests. It is attempted, at each injection, to cause a slight reaction. All of the cases so far treated by Gillett have responded favorably.

Supraclavicular Anesthetization of the Brachial Plexus.—William F. Neil and Frederick Crooks believe this method to be convenient, free from danger, and one which permits of the performance of severe operations on the arm without pain of shock. They state that to obtain satisfactory anesthesia one should adhere strictly to the following points: 1. Definite paresthesia in the arm or hand must be obtained before any solution is injected. This is an indication that the needle has reached the region of the plexus. 2. The injection should consist of twenty c. c. of a two per cent. solution of novocain. 3. Usually from five to fifteen minutes is time enough to allow for sufficient anesthesia to develop, but at times it may be necessary to wait for as much as thirty minutes. The needle should be fine and should be inserted to the desired spot while detached from the syringe, in order to discover whether a vein has been entered. The solution must not be injected directly into a vein. To find the plexus the patient should be seated with his head turned toward the opposite side from that to be injected. The position of the subclavian artery is to be determined by palpation, and the needle is to be inserted just external to the artery. The needle should be four to five cm. long. It has been objected that there is danger of puncture of the subclavian artery. This is not at all likely, and it has been proved that puncture of this vessel with a fine needle, such as is used, produces no ill effects. If the instructions are not followed and the needle is inserted beyond the first rib, it is possible to puncture the pleura and inject the solution into the pleural cavity. Paralysis of the nerve trunks of the arm is possible, but it has been seen in only one recorded case and in this it was a temporary condition. Out of forty cases the authors report only four failures of the method to produce sufficient anesthesia.

LANCET.

February 22, 1913.

Transmission to Monkeys of Virus Obtained from English Cases of Poliomyelitis.—James McIntosh and Hubert Turnbull have succeeded in infecting monkeys with poliomyelitis from two cases of the sporadic disease. Both of the strains thus obtained have been transmitted in series through monkeys. These are the first recorded successful transmissions of the disease from man to monkeys in England in which the virus has been obtained from English cases of the disease. The authors suggest that this previous failure to infect monkeys was due to the fact that the infective agent is rather avirulent, as it is seen in England where poliomyelitis is only slightly epidemic. It has been observed that in the neighborhood of the London Hospital, whence the two original cases arose, there has gradually developed, in the last few years, a small and mild epidemic of poliomyelitis, arising from one or two sporadic cases. The authors suggest that in view of the apparent avirulence of the virus in the sporadic cases these cases are found only in those individuals who have a peculiar susceptibility to the disease, while an epidemic of the disease results only when the activity of the virus has become increased, either by a series of passages through susceptible individuals, or through some unknown cause.

Ptomaine Producing Bacteria in the Human Intestinal Flora.—D. M. Bertrand and A. Berthelot, by means of a special culture medium, succeeded in isolating from the intestinal tract of man an organism which is capable of producing ptomaine. By its morphology and cultural characteristics the organism is closely related to the bacillus of Friedlaender, and *Bacillus lactis aerogenes.* Its biochemical action on aminoacids is much more marked than is that of either of the two organisms to which it is similar. Its affinity for organic substances containing nitrogen is so special that it can be termed *Bacillus aminophilus intestinalis.* The ptomaine produced by this organism has been isolated and found to be B-imidazolethylamine, and is identical with that alkaloid as isolated from ergot by Barger and Dale. In addition to this bacillus, the authors have succeeded in obtaining from the human feces two others, different in some respects, but which can produce the same ptomaine by the same process. A point of particular interest is that it is always impossible to get a growth of one of these organisms from the feces of persons in very good health.

Therapeutic Action of Splenic Extract.—H. R. Harrower gives the following summary of the actions of splenic extract, as a result of the analysis of nearly fifty communications on the subject. Its value is due presumably to certain splenic hormones, on which, in a degree, the following phenomena are dependent: 1. Leucocytosis, phagocytosis, and possibly hemoglobin formation and iron metabolism; 2, tryptic digestion, thus directly increasing assimilation and nutrition; 3, intestinal digestion and the production of enterokinase; 4, the process of healing, both as regards the cessation of hemorrhage and the production of rapid connective tissue formation; 5, increase in the functions of the spleen itself. These actions are all held to be the grounds for the beneficial effects of splenic extract in pulmonary tuberculosis, and to them there is to be added the fact that the extract exerts an antagonism to the tubercle bacillus by an influence on its culture medium in the body, due to the production of a colloidal substance.

PRACTITIONER.

February, 1913.

Septic Infection of Joints.—Arthur E. Barker says that among the many nontraumatic ways in which joints may be infected through the blood stream, less attention has been given to the possible entrance of bacteria from the gums than the subject deserves. All are familiar with synovitis following gonorrhea or other forms of septic catarrh of the urethra and vagina, and with the arthritis of pyemia and of the acute fevers, such as scarlatina, measles, typhoid fever, and influenza. Pneumococcal infections of joints are also recognized, though not always definitely traceable to an attack of pneumonia. In many cases it may be difficult to trace the joint trouble, and it behooves us to examine closely into the state of the teeth and gums in every attack of synovial inflammation of nontraumatic origin. Even when synovitis follows a blow, a strain, or another form of nonpenetrating injury, we should examine the teeth, mouth, and pharynx for possible portals of infection, as the injury may be only the factor determining where a previous infection shall manifest itself. He reports four cases which he thinks may be taken as typical of hemogenic infections of joints. In some ways they contrast markedly with septic processes originating in joints as the result of direct traumatic inoculation. Although the fever is generally high at first, it is not persistently so; the local temperature is not so high, nor is the local redness so marked, as a rule. In the traumatic infections the general aspect of the patient is worse; he looks ill, and the pain is more severe. These differences seem to depend on the way in which the bacteria reach the joint. In the traumatic infections there is no mitigation of the poison; in the hemogenic infection the organisms have been in contact with living cells and fluids hostile to them, their powers of growth have been inhibited more or less, and their virulence is reduced. When they reach the joint they may still produce an inflammation, but they have a hard struggle. It is well to remember the three ways of possible infection when considering any particular case, the hemogenic, the direct traumatic, and the indirect traumatic, for both treatment and prognosis are considerably influenced thereby.

Rheumatism in Childhood.—F. J. Poynton says that rheumatism in childhood gives no definite type of fever, and may not even be febrile, but is of the opinion that it is a diplococcal disease which may be acute or chronic, febrile or afebrile, closely resembling tuberculosis in this respect. For this reason he wishes that we would discard as inaccurate the terms rheumatic fever and acute rheumatism. He thinks the infection due to a diplococcus belonging to the group of streptococci, placed between the pneumococcal strains and the pyogenic streptococci. As to etiology, he considers the disease to be greatly dependent on variable climate; sometimes it becomes almost epidemic; heredity is an important factor; females are affected more commonly than males. Infection takes place through the tonsils, and the infection may affect every tissue in the body. Postscarlatinal rheumatism he holds to be true rheumatism, the infection entering the system at the time of the scarlatinal sore throat. In the same way is explained rheumatism following measles and diphtheria. The diplococcus is minute and only feebly Gram positive. Treatment includes better housing and general surroundings and careful medical supervision. The question of enucleation of the tonsils is discussed at some length. Acute rheumatism may follow the operation, and if the child has had one attack the operation may not prevent another, but it diminishes the likelihood of future attacks. Many rheumatic children have sore throats, but not enlarged tonsils. Such throats need careful supervision, for deep foci of disease may remain and prove a source of danger.

Significance of Some Common Symptoms in Childhood.—C. V. Kebbell studies in succession cough, headache, sore throat, pyrexia, wasting, abdominal pain, laryngeal stridor, cerebral symptoms, convulsions, and vomiting. He emphasizes the importance of a thorough examination in all cases of illness in childhood, and the assistance to be gained from a careful inspection of the child, which, if not actually suggesting the disease, will often warn us of the severity of the case or that the child is really ill, in a doubtful case, and lead us to take a cautious view of the matter, rather than dismiss it as some trivial complaint. Frequently some disease, as of the heart or lungs, is discovered, though not suspected by the parents.

Bow Legs in Small Children.—Paul B. Roth divides these cases into the mild and the severe. The former are curable by splints or other apparatus, the latter require division of the bones. In mild cases a suitable splint should be applied and worn by the child while walking about. It should extend from the bottom of the shoe heel to the line of the knee joint, be applied to the inside of the leg and ankle over the sock and shoe, and be bandaged on firmly. The bandage should come well down on the outside and obtain a purchase from below the external malleolus. The splint is to be applied in the morning and removed at night. It should be worn for from three to twelve months and discarded as soon as the legs are quite straight. Severe cases are treated either by osteotomy of the tibia and fracture of the fibula, or by manual osteoclasis of both bones, in which the limb is grasped by both hands of the operator and broken by leverage over a suitable fulcrum. After a trial of both methods, Roth discarded osteotomy in favor of osteoclasis, the technic of which he describes at considerable length. In both classes of cases an antirrhachitic diet is maintained as long as the patient is under observation.

BOSTON MEDICAL AND SURGICAL JOURNAL

February 27, 1913.

Early Recognition of Tumors of the Bladder.—Arthur L. Chute believes that if we are to get better results in our treatment of bladder tumors we must see them earlier, and to do this we must impress upon the medical public two points: First, that any hematuria may be a sign of very serious bladder disease and should be looked upon with suspicion until its source and cause are clearly demonstrated; second, that the idea of the benign nature of bladder tumors should be combated, as a very large proportion are malignant from the start, in that they infiltrate the bladder wall and lead to metastases. Some that are apparently benign in the beginning tend later to infiltrate, while some that show no tendency to infiltrate tend to multiply and destroy life by hemorrhage, sepsis, and interference with the renal function. Until our knowledge of these tumors is greater we take too great a risk in assuming that any given bladder tumor is clinically benign, though probably a few are.

Value of High Frequency Cauterization in the Treatment of Vesical Papillomata.—Horace Binney says that high frequency cauterization is an important addition to our means of attacking vesical papillomata of the noninfiltrating type. It is free from complications or danger if properly applied, with the exception of hemorrhage, which appear to be rarely serious or troublesome. It avoids the danger of multiple recurrences, and the results are encouraging, though the cases are too recent for proof of cure.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

March 1, 1913.

Disappearance of Sugar after the Removal of Tumors in Diabetes.—Morris Manges reports two cases of prostatectomy in diabetics where the sugar disappeared, permanently in one, after the operation, recalling similar results in two other cases reported by Miller and Joslin. In all these cases the diabetes was severe, with marked acidosis. In the present state of our knowledge of the etiology of diabetes the writer avers that it is not easy to explain the disappearance of sugar after the removal of tumors, as the cases are far too few in number. He suggests that it is plausible that the operation removes some nervous or toxic irritant which in some unknown way disturbed the carbohydrate metabolism. A more important phase to him is the prognosis of operation on severe diabetes considered in the light of the four reported cases, which he considers far better than is generally believed, and which would lead us to advise operation in diabetes with tumors in the hope of beneficial effects on the diabetes itself. In the much feared acidosis he would differentiate the dangerous cases (in which the diacetic acid and oxybutyric acid tests are positive) from those in which there is no danger, no matter how intense the acetone reaction may be, if only the diacetic and oxybutyric acid tests are negative. In the former case prognosis should be guarded, and definite information can be furnished by the physiological chemist as to whether coma is impending or not, by determining the relations of the ammonia nitrogen to the total nitrogen excretion of the urine. When this quotient is low and within the normal limits, the immediate prognosis is good, and the danger from grave acidosis or coma after operation is not sufficient to prevent any necessary operation being done.

MEDICAL RECORD

March 1, 1913.

Cardiospasm and Idiopathic Dilatation of the Esophagus.—Max Einhorn described the well known symptomatology and diagnosis of these conditions in a previous paper. Neither cardiospasm nor idiopathic dilatation of the esophagus is absent if Meltzer's swallowing sound is found present either immediately or seven seconds after deglutition. Cardiospasm is frequently present if it is considerably delayed from twelve to twenty seconds after swallowing water, or if it is now delayed, and now absent. There is, as a rule, idiopathic dilatation of the esophagus if the sign is always absent, and bougies (43-48 F.) enter the stomach. Radiographs will confirm the diagnosis, and are valuable as aids. Mild cases of cardiospasm yield to a nerve sedative and also after the passage of larger bougies (43-54 F.) into the stomach. In severer cases of cardiospasm and in all cases of idiopathic dilatation of the esophagus, forcible stretching of the cardiac by means of a cardiodilator (up to size 8 to 10 cm. circumference) is necessary. The latter procedure has become a favorite in his hands on account of its excellent results.

Tibial Bone Transplantation in the Postoperative Mastoid Wound.—Milton J. Ballin urges the importance of several precautions. The postoperative mastoid wound must be free from purulent secretion and covered with healthy granulations. The wound must not be curetted or bathed with antiseptic solutions. Transplantation is always a secondary operation, to be done a week, ten days, or even longer (depending on the condition of the mastoid cavity) after the primary operation. Autogenous transplantation must be done, the bone flap to be taken from the patient's own tibia and always with its living periosteum attached. Injury of the periosteum must be avoided if the ultimate result is to be favorable, and in making the bone flap it must be handled as little as possible in order that injury and infection be avoided. This method should be used only in those cases in which a good vascular bed for the transplant is present, as a good blood supply is absolutely essential to success. The writer does not advocate this method as a routine, maintaining that it is of value only where there is a healthy granulating wound, producing a better cosmetic effect and curtailing the period of healing, and moreover doing away with the tedious packing and repacking of the wound required by the open method. General anesthesia is necessary for this operation, and exposure of the sinus and dura is not a contraindication to a bone transplantation. There is no danger of a retention of pus beneath the transplanted flap with a secondary infection of the surrounding structures, for union will not take place if there is suppuration beneath, and the bone will be exfoliated within a very short time, in which case the usual open method of treating the wound must be substituted.

Jung's Modification of the Freudian Theory of the Neuroses.—S. P. Goodhart explains that psychoanalysis has not a destructive, purely analytical purpose, but is rather constructive in an effort to synthetize the natural forces of the individual, leading him to find himself; to guide him into a path which will furnish a natural outlet for his creative ability, energy, or libido. It is an educational endeavor to upbuild, all which tends to develop the best within the individual, a scientific opposing force which rationally meets the demand that has given rise to the baneful influence of the various cults, isms, and all the demoralizing institutions of mental malpractice.

Warming Anesthetic Vapors Neither Useless nor Fallacious.—Raymond C. Coburn demonstrates that the practice of warming anesthetic vapors serves the best interests of the patient, standing the test of the most searching examination. The writer has searched official hospital records, clinical reports covering hundreds of cases, clinical reports which show a marked conservation of the patient's vitality when the anesthetic vapors are administered warmed, and, furthermore, that this is conducive to ultimate recovery.

Luetin Skin Test in the Diagnosis of Syphilis.—A. G. Rytina concludes that the luetin is entirely harmless and that it is specific. The technic, already comparatively easy, could be simplified by dispensing the full dose in sealed ampoules. A little practice and experience is necessary to make the application properly and correctly to interpret the mild form of positive reaction. It is mostly negative in primary and secondary untreated cases, but where previous treatment has been received a large proportion of positive reactions appear. It is practically 100 per cent. positive in congenital, latent, and tertiary syphilis, and positive in a large percentage of parasyphilitic cases. This test is less constant than the Wassermann reaction in primary and secondary syphilis, but possesses greater value as a diagnostic agent than the latter in tertiary, latent, and congenital cases and parasyphilis. Moreover, it has greater prognostic significance than the Wassermann test in determining when the cure of syphilis is complete.

Occupation as a Therapeutic Measure.—W. R. Dunton, Jr., points to the fact that although occupation as a remedial agent has been used in the treatment of mental cases for many years, in one asylum, as far back as 1830, its use has been much extended of late, so that a great many hospitals for mental diseases have resident or visiting teachers who give special courses in various forms of handicraft and also give individual instruction when desirable. The patient's individual taste and the exigency of the case naturally determine the best form of occupation, but string work, paper work, whittling, offer many possibilities in the way of interesting the patient. String work includes various forms of weaving, and patients, though bedfast, can manage the small frames, such as are used by small children. Hints as to varied occupations may be obtained for the asking at stores where kindergarten supplies are sold or by consulting some handicraft teacher.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

February, 1913.

Application of Iodine to the External and Internal Generative Organs of Women in the Treatment of Infections and Preparation for Surgical Operations.—J. W. Bovee calls attention to the well known antiseptic properties of iodine and recommends the technic as given by Grossich, in which emphasis is laid on the necessity of having the skin thoroughly dry. The disadvantages of the local application are the frequent and oftentimes severe dermatitis, owing to the use of too strong a solution, and to the fluid running in streams and coalescing. The alcohol then evaporates leaving deposits of iodine crystals. After much experimental work the author found that a 3.5 per cent. solution of iodine crystals in ninety-five per cent. alcohol was the weakest absolutely reliable preparation. Bovee recommends its use in the following conditions: 1. Acute infections of the vulva, vagina, urethra, and the whole of the endometrium; 2, acute peritoneal infections with proper limitations; 3, chronic conditions following infections of these structures and of the tubes, ovaries, and pelvic peritoneum; 4, in pelvic surgery requiring examinations, manipulations, or operations on or through the vagina; 5, in such procedures as require opening the cervical canal or uterine cavity from either the vaginal or peritoneal side; 6, as a routine method of preparation of the field of operation on all these structures, as well as the rectum. By doing away with the extensive scrubbing of the patient much time is saved, it having been determined that iodine requires a maximum of two minutes to prepare the field.

The Infant Pulmotor; an Apparatus for Artificial Respiration of Asphyxiated Newly Born Infants.—J. C. Edgar gives a brief but lucid explanation of the structure and use of the Draegen adult pulmotor as modified and reconstructed so as to be applicable to the infant, the chief change being that by the aid of a certain mechanism controlled by hand, the respirations can be so timed that a given number in a minute may be obtained. Also, what is important in asphyxia neonatorum, that the inspiration or expiration of the machine may be timed to coincide with the corresponding abortive attempt on the part of the newly born infant.

ANNALS OF SURGERY

January, 1913.

Endotracheal Insufflation Anesthesia.—Cotton and Boothby aver that endotracheal insufflation respiration is the only artificial method that absolutely provides for a sufficient aeration of the lungs, regardless of the respiratory movements of the patient, and that properly administered and safeguarded, it can be rendered devoid of intrinsic danger. As a consequence, they believe, anesthesia by this method is indicated whenever the operation is about to interfere in any way with the ability of the patient voluntarily to respire, and therefore it ought to be used in all endothoracic work and in extensive operations about the head, neck, and mouth. Of the various anesthetics to be used with this method, ether with air, preferably supplied with a foot pump, is the most applicable for general use; however, nitrous oxide oxygen with minimal quantities of ether may occasionally be the anesthetic of choice. To prevent deaths from emphysema, no matter what form of apparatus is used, it must be provided with a safety valve by means of which the endothoracic pressure cannot exceed fifteen mm. Hg.

Anesthetic Effects of Intravenous Injection of Paraldehyde.—Noel and Souttar feel that this drug has a future in both medicine and surgery. In minor surgery the patient passes through a short period of anesthesia into an easy and natural sleep. They mix from five to fifteen c. c. of paraldehyde with an equal amount of ether and dissolve the mixture in 150 c. c. of cold one per cent. salt solution. This is given after the method of a salvarsan injection. In five seconds the patient tastes paraldehyde; in ten seconds it can be detected on the breath; in forty seconds unconsciousness is complete; in ninety seconds the corneal reflex is absent and anesthesia is complete. In a case where six teeth were removed under ten c. c. each of paraldehyde and ether the patient was conscious in twenty minutes and had entirely recovered in half an hour.

Splenectomy for Traumatic Rupture.—A. M. Fauntleroy comments on the remarkable features of his case: First, the comparatively small hemorrhage for a complete transverse rupture, which he explains by the marked perisplenitis; and, secondly, the peculiar pain in the left shoulder, which symptom the author suggests may be a pathognomonic sign. The pain disappeared after operation.

Spontaneous Rupture of the Malarial Spleen.—L. Noland and F. C. Watson say that in the clinical and autopsy records of approximately 30,000 cases of malaria admitted to the wards of the Colon Hospital during the past eight years, they have only found three instances of spontaneous rupture. They draw the following conclusions: Spontaneous rupture of the malarial spleen occurs in rare instances; the spleen does not necessarily have to undergo a great degree of enlargement for spontaneous rupture to occur; very deep palpation or forcible percussion of the enlarged malarial spleen should be avoided; exploratory puncture of the spleen for diagnostic reasons is not without danger; the treatment is early tamponade or splenectomy.

Use of a Murphy Button to Effect Duodenojejunostomy after Gastrojejunostomy.—W. Bartlett successfully copes with the vicious circle following gastroenterostomy by the following method: After exposing the stomach, an incision is made in the anterior wall of this structure, allowing access to the gastroenterostomy opening in the posterior wall. With a hysterectomy clamp, one half of a Murphy button is introduced through the opening in the posterior wall into the duodenum, then the other half of the button is introduced into the jejunum. Two small incisions are now made in the intestinal walls, exposing the necks of the buttons. Then the two portions of the bowel contiguous to the gastroenterostomy opening in which the halves of the Murphy button have been placed are brought together and a short circuit is established by telescoping the two halves of the button.

JOURNAL OF INFECTIOUS DISEASES.

January, 1913.

General Gonococcus Infection in a Male Child without Evidence of Urethritis.—M. Nicoll, Jr., and M. A. Wilson report a case of arthritis in a boy, two and one half years old, from which gonococci were recovered. There had never been the slightest evidence of urethritis, as shown by discharge or difficulty in urination, during the patient's stay in the hospital, nor had the parents noted any such symptoms before his admission. A number of urethral cultures were made, from two of which were recovered colonies of Gram negative cocci morphologically identical with gonococci.

Origin and Action of Hemolytic Complement.—G. F. Dick states that the results of his investigations indicate that hemolytic complement is a proteolytic ferment which is either found in the liver or dependent upon liver activity for its presence in the blood.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

January, 1913.

Etiology, Pathology, and Treatment of Ovarian Cysts in Relation to Child Bearing, with Special Reference to Hemorrhage into the Cysts.—W. C. Jones says that the tendency of ovarian tumors is almost always to increase in size more or less and also, sooner or later, to undergo torsion, hemorrhage, gangrene, infection, or malignant degeneration. Hence in general, these cysts should be removed as soon as possible after they are discovered. One should be particularly careful not to let a woman pass into puerperium without first ridding her of the cyst. Most clinicians maintain that an ovarian tumor should be removed as soon as it is found. As to the choice of treatment, there usually is no room for doubt. So called expectant treatment in most cases amounts to practically no treatment at all. Aspiration has a very high mortality. Obstetrical operations have an enormous mortality, unless the obstructing tumor is removed before they are undertaken. Ovariotomy (usually abdominal) has a mortality far lower than any other procedure (less than five per cent. of all cases). Cæsarean section, if undertaken early, is an excellent procedure in certain cases.

Clawfoot, and How to Relieve It.—A. M. Forbes employs the following operation: After a subcutaneous plantar fasciotomy (with wrenching if necessary), he makes a horseshoe shaped incision on the dorsal surface of the foot, down to the extensor tendons, and a flap containing the tissues superficial to these is turned back on the dorsal surface of the tarsometatarsal articulation. The long extensor tendons are then detached from the phalanges and transplanted into the necks of the metatarsals.

Tendon Transplantation Operations.—H. P. Galloway states the following principles in tendon transplantations: 1. Perfect asepsis; 2, attachment of the transplanted tendon to the bone or periosteum is always more satisfactory than attaching it to another tendon or other soft tissues; 3, the tendon must be stretched moderately tight before being secured; 4, it must be fastened with suture material that will maintain its hold for several weeks; 5, a covering of subcutaneous tissue should be brought over it before the skin is sutured; 6, about six weeks should elapse before the transplanted tendon is allowed to function so that its new attachment may become sufficiently strong; further, the muscle should be systematically developed by massage and exercises and be carefully protected by mechanical means from overstrain for several months after the patient begins to use it.

Technic of Tubal Sterilization.—F. J. Taussig describes his operation as follows: The abdomen is opened by a small median incision and the uterine end of one Fallopian tube is seized with forceps. A suture is now passed through the uterine horn at the tubal insertion. Before tying this suture, the interstitial portion of the tube is cut away by a V shaped incision. Next, the tube is freed from its peritoneal attachment for a distance of about an inch and, a ligature having been thrown around the distal end, this free portion of the tube is resected. The layers of the broad ligament are then separated, and the end of the tube is inserted and secured there by a suture. The round ligament is now sewed by one or more sutures to the upper posterior surface of the uterus, thus closing over the point of the tubal insertion and the small space in the peritoneum of the broad ligament.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-eighth Annual Meeting, held at Chicago, Illinois. October 22, 23, and 24, 1912.

The President, Dr. Louis Frank, of Louisville, Kentucky, in the Chair.

(*Concluded from page 526.*)

Pancreatic Lymphangitis and Chronic Pancreatitis.—Dr. John B. Deaver, of Philadelphia, said that pancreatitis must still be studied with an open mind in regard to its etiology, particularly in respect to its relation to chronic inflammatory disease of the alimentary tract which resulted in retroperitoneal lymphangitis; that treatment was promising in the early stages and practically hopeless when the stage of interstitial deposit of fibrous tissue was reached; that the most promising field for treatment consisted in the means already devised for the treatment of chronic inflammation in the organs with which pancreatitis was commonly associated and upon which it appeared to be dependent; finally, that pancreatitis was common and not rare, that its presence should be suspected in all cases of obscure, upper abdominal indigestion, and that like other chronic inflammatory lesions of the abdomen when it was uninfluenced in a reasonable length of time by medical measures it should receive surgical attention along surgical lines.

Preoperative and Postoperative Treatment of Prostatectomy.—Dr. William N. Wishard, of Indianapolis, said that the more discriminating use of urinary antiseptics had been suggested by gastric and renal irritation, following the prolonged use of large doses of hexamethylenamine. If renal elimination was good, as shown by urinary analysis, prolonged use of urinary antiseptics was not imperative. Where the urine was alkaline and offensive in odor and pus present in considerable amount, it had seemed desirable to use the drug for several days before operation, and to continue its use guardedly for a few days afterward.

The average period of preparatory treatment required in the writer's cases, had been from one to two weeks, and while some cases had been operated in earlier, others had been maintained upon preparatory treatment for a much longer period. Whether a suprapubic or perineal operation was performed, liability to postoperative hemorrhage was much influenced by the carefulness with which enucleation was done. In median perineal operations, the writer has found much advantage from the use of a solid metal inflow and outflow tube devised by his assistant, Dr. H. G. Hamer. If a two way rubber tube was used, its walls should be as firm as possible, as pressure from packing within the wound and around the tube might occlude the outflow. On changing the dressing and removing the gauze packing the morning following operation, the metal tube above referred to was also removed and subsequently a single soft rubber drainage tube was used.

While incontinence might not follow suprapubic operations, a fistula might occur either after suprapubic or perineal prostatectomy. Careful and thorough excision of the cicatricial tissue and thorough curettement of the deeper portion of the fistulous tract, followed by suturing and the maintenance of drainage by an anchored catheter in the urethra, had been succeeded by prompt closure in all the few cases of persistent fistula which the writer had observed after suprapubic or median perineal prostatectomy. Two cases of fistula had been referred to him where an inverted V shaped incision and exourethral enucleation had been done, and in one of these, closure was secured, but in the other the fistula persisted and in both there was associated incontinence. Occasional occurrence of fisula, however, was not necessarily an argument against any form of enucleation. Permanent incontinence had not following in any of the writer's cases operated in by median perineal incision, although it had persisted for a greater or less length of time in some of them. Systematic and persistent use of dilatation of the prostatic urethra and vesical orifice with Kollmann's dilator had usually given prompt relief.

Symptomatology and Pathology of Prostatic Hypertrophy.—Dr. E. O. Smith, of Cincinnati, said the symptoms of prostatic hypertrophy were due either directly or indirectly to a mechanical obstruction to the outflow of urine from the bladder. The prostate gland, situated as it was around the proximal portion of the urethra and in very close relation to the bladder, could but interfere with the normal urine channel when it underwent changes that disturbed those normal relations. Increase in size and shape of the prostate would necessarily produce a mechanical change in the shape, length, or entrance into the urethra. Among the earliest changes noticed by the patient was the decrease of the force with which the urine was ejected. There was no projectile force that carried the urine away in a good stream. It was possible for a patient to have both a cord lesion and prostatic hypertrophy. This applied more particularly to patients who came during the early period of expected enlargement of the prostate.

As a result of the nature of the mechanical obstruction to the outflow of urine and the effect on the bladder, there was sooner or later a failure on the part of the bladder completely to empty itself, which was the beginning of residual urine. Acute, complete retention might come on suddenly without warning, following indiscretions on the part of the patient. From a prognostic viewpoint, probably the most important symptoms were those referable to the kidneys. The kidneys were affected either from back pressure, from infection, or both. Dilatation of the ureters and pelvis might follow long continued obstruction to urinary outflow, thus making a pressure on the renal parenchyma. Resulting from this was a functional insufficiency of the kidneys. The quantity of urine might not be diminished, but the urea and other products of elimination were below the normal.

It had been his observation that a great many, in fact a majority of patients troubled with prostatic hypertrophy suffered from marked mental depression. There were two general varieties of changes in the structure of the gland. One in which there was an increase in the so called glandular part of this structure and the other when there was but little tumor mass with greatly increased amount of dense, tough, fibrous tissue. In the open dissection of the perineum, the first part of the gland met was the posterior lobe which must be cut through before the real hypertrophy was reached. This bit of anatomical relation might explain some of the difficulties encountered by those attempting the open dissection method for the first time. Unless one got the enucleating finger into the capsule, the line of cleavage would be missed, and a very difficult task was made out of a comparatively simple one. The easiest place to find the line of cleavage was in the roof of the prostatic urethra.

Operative Treatment of Prostatic Hypertrophy.—Dr. Hugh Cabot, of Boston, said the object of prostatectomy was to remove the obstruction to urination with as little risk to life as possible, and as little damage to other structures and functions as might be. Only certain portions of the prostate were involved in the process known as hypertrophy. The prostate itself was compressed by the tumor and lay chiefly on the inferior and lateral aspects of the mass. The vesical and urethral aspects of the prostate in hypertrophy were covered only by the mucous membrane. The ejaculatory ducts lay wholly behind the tumor, which rarely, if ever extended further forward than the posterior border of the verumontanum. The prostate might be attacked by two routes, the perineal or the suprapubic. If the lower route was chosen, two quite distinct methods of attack still remained, the endourethral method of enucleation, and the transprostatic method, the operation of Young. Of the suprapubic operation there could hardly be important modifications except in technical details, as the attack was direct and head on. It was useless to deny that the mortality of suprapubic prostatectomy was higher than that following the perineal operation.

Briefly summarized, the relative merits of the suprapubic and perineal operations in their present state of development seemed to him to be these: The suprapubic route was the anatomically correct approach. It attacked the hypertrophied portion at the point where it could be reached with less destruction of tissue and with the greatest certainty of complete removal of the obstructing portion. It did less damage to other structures, interfered less with other functions, and was followed by fewer complications. It was more certain to result in cure. The perineal operation showed at the present time a definitely lower mortality. It was a more difficult surgical procedure no matter what technic was selected. It was more likely to do damage to other structures and functions and was less certain to result in cure. Of the various types of perineal operation that of Proust combining the prerectal incision with the endourethral enucleation was best adapted for the uses of the average surgeon.

Procedures Adapted to the Exposure of the Structures at the Base of the Skull.—Dr. Charles H. Frazier, of Philadelphia, said the majority of the contributions had dealt with the osteoplastic flap as a means of exposing the cortical surface, and the general surgeon was now fully equipped to do what once was intrusted largely to the specialist. The osteoplastic resection of the skull was designed solely for the uncovering of lesions occupying the more accessible regions of the brain, as of the frontal, parietal, or occipital lobes, and in so far as the various steps of the operation were concerned, they had been elaborated to a degree of accuracy and mechanical refinement that admitted of little criticism. There remained, however, structures within the cranial cavity which must be approached in other ways and by other methods, structures occupying positions at the base of the skull in the posterior, middle, or anterior fossa. These structures, situated as thev were beneath the cerebral or cerebellar hemispheres near the median line, were very much more inaccessible and required for their exposure the methods especially designed to meet the difficulties peculiar to each.

Beginning with the posterior fossa, occasions arose in which the endocranial division of the auditory nerve might be indicated, as in cases of persistent and intractable tinnitus or persistent and intractable vertigo of central origin. He had recently placed on record the case of an elderly lady upon whom this operation was practised, and would dwell here, therefore, only on the important technical features. The operation consisted essentially in a suboccipital craniectomy, unilateral in extent. For these operations on the posterior fossa, Meltzer's method of endotracheal anesthesia was a measure of safety which could not be overestimated, and to his mind should be regarded as indispensable in one's equipment for operations in this region. Prior to the introduction of this method he had observed, especially while operating for lesions in the cerebellopontile angle, how imperfect was the expiratory exertion and inadequate exchange of gases, when the patients were in the prone or face down position, and for this reason he preferred to place them on their side on an especially designed table. With endotracheal anesthesia, all the alarming respiratory difficulties vanished, and what he once regarded as a most serious venture in these operations had now become the simplest and the safest. For the exposure of the auditory nerve, one turned downward a flap sufficient to uncover as much of the occipital bone as lay below the superior curved line. From the level of the lateral sinus down to the foramen magnum, and from the emissary sinus to the medial line, the occipital bone was removed, uncovering one cerebellar hemisphere. One then followed the petrous bone till the internal auditory meatus was recognized into which would be seen entering the auditory nerve.

The mechanics of cranial surgery should not occupy too prominent a place in the minds of those engaging in this field. Of still greater import were the factors of safety, the observance and disregard of which made an endocranial operation a reasonable or an unreasonable risk. The high rate of mortality in past times was the outcome of too little regard for the refinement of cranial technic. The casual visitor to the clinic was amazed at the size of the exposure, but overlooked many of the features essential to success. The safest means of administering the anesthetic, the most effective means of controlling hemorrhage from whatever source, as the use of the muscle graft to check hemorrhage from the pial veins the mastery of the problems of brain displacement, the knowledge of the tolerance of the brain to exploration for subcortical lesions, these and others were some of the factors that made for good or evil results.

Arsenic in Therapy.—Dr. W. F. Barclay, of Pittsburgh, pointed out that the poisonous and injurious effects of arsenic in medicine induced peculiar susceptibility to its action and intolerance. The tolerance of mercury was limited by its poisonous effects, which were permanent. The same observation was true of arsenic and precluded its use and beneficial administration after its abuse. It was a well known truth based on actual observation and experience that mercurial poisoning or ptyalism induced intolerance and precluded the use of mercury in treatment of diseases. The susceptibility to the poisonous effect of mercury after toxicity had been induced forbade its further use even when it was indicated. The intolerance was manifested in disturbances in the entire digestive system, in loss of appetite, salivary excitation, increase in salivation, diarrhea, malnutrition, and impaired metabolism of the blood. A like tolerance of arsenic was induced by its misuse and abuse even of a more serious character in its immediate and remote effects. There could be no question of the evil results which followed the abuse of arsenic in reports and facts made known and accounts given to the profession of medicine by physicians capable to make accurate observations. The mention of a positive conclusion was that arsenic, combined so it could be used in medicine without poisonous or injurious effect, was chemical and therapeutical scientific skill in medical science. Excessive doses without rapid elimination were dangerous to life and health and of no therapeutic advantage. Mercury was analogous to its congener arsenic in the treatment of syphilis and was the acme of medical treatment in lasting permanent results. Arsenic, like iodine, modified syphilitic manifestations promptly, but never cured the disease. Arsenic in treatment of all skin lesions and diseases of the mucous and serous membranes was of great advantage and gave prompt and permanent results. Arsenic in the treatment of rheumatism was a specific in chemical combination which insured rapid elimination. No remedy was of more scientific interest, yet less understood in the profession of medicine.

Thyrogenic Origin of Basedow's Disease.—Dr. J. H. Jacobson, of Toledo, drew the following conclusions: 1. Basedow's disease could and had been produced experimentally in lower animals by the injection of thyroid pressure fluid, by the implantation of the thymus gland, and by the injection of the macerated thyroid gland. Gland symptoms resembling Basedow's disease could be produced in animals by thyroid feeding. 2. The evidence at hand indicated the close relationship between the thymus and thyroid gland. 3. The symptoms of Basedow's disease were due either to an excess or to a perverted secretion of the thyroid gland, with the primary disturbance existing in the thymus gland, the action of the thyroid being that of a multiplicator, according to the theory of Mikulicz. 4. Basedow's disease had been produced in man by the excessive administration of thyroid extracts and preparations of iodine. 5. There were changes in the thyroid gland, chemical, microscopical, macroscopical. which were characteristic of Basedow's disease. 6. Typical Basedow's disease or symptoms of hyperthyroidism, so called secondary Basedow's disease, occurred after, or in connection with other affections of the thyroid, such as simple and adenomatous goitre, cancer, and inflammation. 7. There was a characteristic blood picture in Basedow's disease, which disappeared after the surgical removal of a sufficient amount of the diseased thyroid tissue. 8. The successful treatment of Basedow's disease by measures directed toward the thyroid itself, as well as by serum therapy, proved the thyroid origin of the disease. 9. Basedow's disease could be cured by the surgical removal of portions of the gland in approximately seventy per cent. of all cases.

Surgical Importance and Treatment of Hyperthyroidism.—Dr. W. D. Haines, of Cincinnati, said that a tragedy which occurred in a patient's life two years previously had been followed by hyperthyroidism. The influence wrought upon the heart was discovered during a period of quiescence, the ash of a process whose identity became known only when again set in motion, this time, not by a tragedy, but by an acute infection—appendicitis. Relief of the appendicitis did not in any way benefit the hyperthyroidism; on the contrary, the excitement incident to anesthesia, operation, and hospital life would naturally tend to aggravate thyroid symptoms. Relief was finally obtained by removal of the right lobe and isthmus and ligation of the left superior thyroid artery. There was a very decided improvement in the heart's action following treatment and operation, the exophthalmos had almost entirely disappeared, and the patient remained comfortable despite a badly damaged heart.

A few other cases, including an acute cholecystitis, empyema of the gallbladder, and an acute salpingitis had been observed by the writer coexistent with hyperthyroidism, but the report of the one case would suffice to illustrate his purpose in bringing up this subject.

The frequency with which hyperthyroidism was associated with valvular lesions, compensatory hypertrophy, degenerative changes in the heart muscle, and clinically abnormal heart should admonish one to always be on guard for one of the protean manifestations of hyperthyroidism. He formerly did goitre operations through very short incisions, retracting the muscles in preference to dividing them. He now employed a long incision, dividing the sternohyoid and sternothyroid, and sternocleidomastoid if necessary for free exposure of the gland and its circulation. Time and certitude were thus gained, and if the muscle was divided well above the entrance of the nerve supply, say on a level with the junction of the middle and upper third and the ends carefully sutured, restoration of function would follow and the resultant cicatricial deformity would be such as would scarcely mar the contour of the neck. By working within the capsule, one would protect the parathyroids and the patient from the serious consequence following injury to these important structures. He used catgut as ligature material and never removed a hemostat without having first ligated the vessel which it controlled, irrespective of size. Finally, one should remember the neck as a privileged region and handle its structures with the utmost delicacy consistent with precision and celerity in doing goitre work.

Surgical Management of Exophthalmic Goitre.—Dr. W. D. Haggard, of Nashville, in reviewing the surgical management of exophthalmic goitre, said it was not contended that there was not a field for dietetic, hygienic, and therapeutic treatment. From a considerable experience, however, and from observation and reports of the work of those of very large experience, the writer believed, in common with many other observers, that the surgical treatment of this disease afforded the most effective and lasting benefit. It had stood the test of time far better than the purely medical management. The latter had been largely empiric. No matter at what time of life the early symptoms of hyperthyroidism developed, it was pretty satisfactorily demonstrated that reduction of the blood supply to the too active gland was a rational and effective method of treatment. The ligation of one or more of the thyroid arteries, under local anesthesia, constituted one of the most satisfactory methods of handling this disease. It might be likened to the early operation for appendicitis. It should have a very much wider application. Recognizing the progressive and threatening tendency of the malady, it was fortunate to have in pole ligation so safe, simple, and positive a method of permanent relief in the early cases.

Ligation was also indicated at the other extreme of the disease—when the patient was too ill for a radical removal of the hyperplastic lobe. It should be more generally understood that operation was not to be employed when the patient was in an acute exacerbation, or was rapidly growing worse; but, if by rest in bed, with the ice cap over the heart, exhibition of belladonna, etc., the patient could be got into satisfactory condition with the pulse below 120, the operation could be undertaken.

Mayo, in the first nine months of last year, performed 900 operations on the thyroid with a mortality of one per cent. For the exophthalmic cases, however, even in his skilled hands the mortality was more than threefold. Speaking of the end results, Crile said "no person died of the disease after leaving the hospital; one patient was made worse by the operation, otherwise every patient was either benefited or cured."

Kocher said that many patients knew what real mental quietude meant only after the fundamental relief by operation. There was no more brilliant surgical achievement than the restoration of these nervous and circulatory invalids to the pursuit of happiness and the paths of peace.

Urological Aspect of the Microscope as a Localizer of Disease.—Dr. Carl Lewis Wheeler, of Lexington, made a plea for a more thorough microscopical examination of the urine, studying the urinary findings under higher magnifying power (500 diameters) with an effort toward differentiating the various epithelia and other features found in urinary sediment, saying in this way we might locate and diagnosticate pathological lesions along the urinary tract. All morbid processes occurring within the urogenital tract were marked by the presence of pus corpuscles, and the location was determined by the character of the epithelia found. Normally, the only epithelia found in the urine were of the flat variety, in small numbers, coming from the bladder, while in the female might be seen flat epithelia from the bladder and vagina. The presence of all other epithelia was pathological. The diagnostic point in differentiating epithelia was absolute size, and the pus corpuscle was taken as a standard of comparison in differentiating the various smaller epithelia, such as came from the convoluted and straight collecting tubules of the kidney, ureter, kidney pelvis, and prostate. He reported numbers of cases in which the diagnoses were made from urinary findings alone, in the absence of any clinical history whatsoever, the diagnosis being confirmed by cystoscopy, ureteral catheterization, operation, or autopsy.

The ordinary methods of the study of the urine under the microscope, beyond the detection of casts, were faulty and almost worthless, and his paper was offered as a defense of the Heitzmann school of miscroscopical urinary diagnosis; for already, since the advent of ureteral catheterization, many authorities who had denounced Heitzmann's assertions, had deemed it wise slightly to modify their opinions.

Value of Direct Transfusion of Blood.—Dr. A. L. Soresi, of New York, stated that 449 cases of direct transfusion had been collected from publications and directly from hospitals, where surgeons had performed it. Transfusion was useful in 234 cases, and a failure in 215. Failures were due to lack of correct indications, lack of training to do useful work on the bloodvessels, to the fact that the physiologically correct technic had not been employed, and to the further fact that transfusion had been used too late. Transfusion had been employed in 217 cases of hemorrhage from different causes and was found successful in 158. The most successful cases were those of hemorrhages of the newborn and in hemophilia, where the blood was used also as a hemostatic agent. Transfusion was used in twenty-six cases of shock and collapse, in fifteen of which it was a failure. It was used in thirty-seven cases of pernicious anemia, which were all failures, the patients having at the best only a temporary improvement. It was used in the preparation of patients for surgical operations in thirty-nine cases, with seventeen failures; in sepsis from various causes, nineteen cases, with sixteen failures; in diabetic coma, three cases, all failures; in eclampsia, five cases, with three failures; in pellagra, thirty-five cases were reported in which it was used, and only fourteen failures were reported; in undiagnosticated conditions seventeen cases, with fifteen failures; in surgical cases of tuberculosis, seven times, with four failures; in carcinoma and sarcoma, sixteen cases, and none modified by the transfused blood; in exophthalmic goitre, four cases, all failures; in illuminating gas poisoning, nine cases, with six failures; in pneumonia, two cases with one failure; in Bright's disease, one case, a failure; in one case of starvation due to volvulus, successfully.

The author recommended the use of his cannula, because the bloodvessels were not traumatized, and thrombosis was avoided. Vein to vein transfusion, using the external jugular of the recipient and a vein of a limb of the donor; as soon as the bloodvessels were exposed, they should be kept moist and warm by pouring upon them a continuous stream of sterile warm saline solution.

Eczema as Seen by the General Practitioner.—Dr. A. Ravogli, of Cincinnati, said the general practitioner had to look upon eczema not as an incurable disease. Eczema was curable, when properly treated. It was wrong to starve the patients, forbidding articles of food without scientific ground. On the contrary, the patient had to be well fed in order to increase albumin in the serum to form antibodies to oppose the toxic elements. Only indigestible and badly preserved articles of food had to be avoided. The general practitioner had to renounce the false idea, or rather the superstition that washing and cleansing eczematous surfaces was injurious. The affected parts had to be cleaned and kept aseptic like other suppurating wounds. Solutions of bicarbonate or of biborate of sodium, or even a mild soap accomplished the purpose.

For an acute eczema bathing with a two per cent. solution of subacetate of aluminum was very beneficial. After bathing, the surface was covered with starch or talcum powder. For a papular and vesicular eczema applications of liniment of ichthyol, or of carbonate of zinc were useful. In recurrent vesicular eczema, painting the surface with tincture of iodine to sterilize the surface had given very good results. Rhagades must be touched with silver nitrate, from three to five per cent. solution. Many different preparations in the form of salves, pastes, gelatines, lotions, were recommended in textbooks, but the physician must familiarize himself with their use.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Albert E. Sterne, of Indianapolis; first vice-president, Dr. D'Orsay Hecht, of Chicago; second vice-president, Dr. Hugh Cabot, of Boston; secretary, Dr. Henry Enos Tuley, of Louisville; treasurer, Dr. Samuel C. Stanton, of Chicago. New Orleans was selected as the place for holding the next meeting.

Book Reviews.

[*We publish full lists of books received, but we acknowladge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Textbook of Human Physiology. By Albert P. Brubaker, A. M., M. D. Fourth Edition. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xii-736. (Price, $3.)

The fourth edition of Professor Brubaker's textbook more than sustains the high standard of its predecessors. Through condensation it was found possible to introduce considerable new matter without increasing the very convenient size of the volume. The new paragraphs which have been inserted in the various chapters contain facts relating to the mechanical movements of the stomach and intestines and the nerve mechanisms regulating them; the digestion and absorption of the proteins; the viscosity, specific gravity, and coagulability of the blood; the physiological mechanism of the heart and the properties of the cardiac muscle; the venous pulse; the auscultatory method of determining blood pressure; the modifications of the respiratory rhythm; the physiological action of the pituitary gland and the adrenals, etc. Brubaker's *Physiology* presents a great advantage over the majority of textbooks in that it is not overburdened with technical details, descriptions of complicated instruments, and other matter of interest to the physiologist but not to the general practitioner or student. It thus admirably fulfills its purpose without fatiguing the reader, and thereby facilitates his labor.

Arteriosclerosis, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By Louis M. Warfield, A. B., M. D. With an Introduction by W. S. Trayer, M. D. St. Louis: C. V. Mosby Company, 1912. Pp. 220. (Price, $2.50.)

The second edition of this contribution to our knowledge of a disease which is steadily increasing as a result of the stress and strain of modern life, contains many changes and additions, including two new chapters, one on the physical examination of the heart and arteries, the other on the relations of the disease to life insurance. The presence of the former seems unnecessary in a work of this kind, but—and this may be said also of a long chapter on the physiology of the circulation—the author doubtless felt that in order to convey adequately the subject matter bearing on the disease itself, a thorough review of these elementary questions was necessary. The book on the whole is a very readable one and gives an excellent summary of the classic interpretation of a malady which, as Trayer states in an introduction, "is fast coming to take a place near the throne once occupied by 'malaria.'"

A Textbook of Practical Therapeutics. By Hobart Amory Hare, M. D., B. Sc. Philadelphia and New York: Lea & Febiger, 1912. Pp. x-984.

The fact that fourteen editions of Hare's Therapeutics have found a successful market renders praise unnecessary. Much new matter has been introduced, including a chapter on the newer remedial resources, salvarsan, vaccine therapy, Bier's hyperemia, etc. It seems, however, as if some of the older subjects had been neglected, for we do not find under ergot, for instance, any reference to the presence of parahydroxyphenylethylamine and beta-imidazolylethylamine and other putrefactive amines, the importance of which, in the action of ergot, was shown by the investigations of Barger and Dale. These features will doubtless be added in the next edition.

Acromegaly. A Personal Experience. By Leonard Portal Mark. London: Baillière, Tindall & Cox, 1912. Pp. viii-160.

We gave editorial consideration to this work upon its first appearance in our issue for April 13, 1912. (P. 757). There is something very pathetic, as we then intimated, in this story of a physician who, as the victim of a disfiguring and painful disorder, records his feelings, his thoughts, his mode of life, how the disease has influenced that life, the various symptoms he experienced "from the seborrhea on his scalp to the trophic changes in his toes." Fortunately, for some fifteen or twenty years he failed to recognize his condition, though his many medical friends did. "The strange thing was," he writes, "that in my case, the only one not in the secret was poor Polichinelle himself, with his heavy jowl, his pot belly, his big hands and feet. It is a remarkable example of how what is obvious may be overlooked"—remarks which illustrate the author's fine character and fortitude. He finds it even a pleasure to lay his experiences before his colleagues, hoping that they be of some use, and to record some of the great kindnesses he has received from his brother practitioners. Although Doctor Mark does not pretend to present a scientific treatise on acromegaly, he nevertheless contributes a very valuable study of its symptomatology, including details which are not obtained from a layman in the course of even a careful examination. The book is therefore a valuable addition to our literature of the subject.

Les Produits biologiques médicinaux. Par P. Byla et R. Delaunay. Paris: Société d'éditions scientifiques et médicales, F. Gittler, directeur, 1912. Pp. viii-466.

Under this title is hidden a very interesting book from the viewpoint of the therapeutist. It treats of the use in disease of the various agents derived from plants and animals which in man may compensate for deficiencies in physiological constituents. Thus, under the heading of soluble ferments are considered pepsin, pancreatin, amylase, kinase, secretin, etc.; while under coagulating ferments are treated animal and vegetable labferment, fibrin ferment, etc. The whole gamut of oxydases, yeasts, albuminoids, and lipoids finds a normal place in the series of therapeutic agents studied, the whole ending with a comprehensive review of the present status of opotherapy, both animal and vegetable. It may safely be stated that over one half of this volume is made up of matter which the average textbook of therapeutics fails to treat. This endows it with special value as a work of reference, not only for the biological chemist, but also for the practising physician.

Les Médicamentes en clinique. Par le Dr. Scheffler, de Saint Etienne. Paris: Libraire O. Berthier, Emile Bougault, Succ., 1912. Pp. 330.

In this book of 300 pages, the author confines himself strictly to the clinical use of remedies. Their physiological action, from his viewpoint, may be totally different from their therapeutical effects, an assertion upon which he bases the belief that the former need have no place in the treatment of disease. This argument leads the author into clinical empiricism in the sense that the effects, good or bad, of what drugs he enumerates serve as the sole criteria for their use. While the book serves to portray satisfactorily the relative value of various remedies in practice, the author's plan deprives it of the scientific value which modern readers expect. Analysis of the manner in which a remedy produces its effects is almost a necessary accompaniment of a work on therapeutics nowadays, and to overlook this fact is to favor a heritage of the past which all serious workers are trying to eliminate as a distinct impediment to progress.

Du Strabisme. Par Dr. Pierre Lagleyze. Paris: Jules Rousset, 1913. Pp. 409.

This book can hardly be called a compendium of what is known in regard to strabismus, for, although the theories of others are discussed to some extent, it presents mainly the views of the author and the results of his personal observations. Many of these results should be taken into careful consideration, as the amount of material studied is large, but it is a pity that so little attention is paid to the theory, rather popular at present, that strabismus is caused in many cases by an imperfection in the power of binocular single vision, the controlling force that compels both eyes to be directed together at the same object, and to the efforts that are being made to develop this power in strabismic children. Some of the observations made would seem to uphold this theory, though no such inference is drawn in the book. For example, the authors found in an examination of 2,368 cases of convergent strabismus that the refraction was within .50 D of alike in both eyes in forty-nine per cent. of the cases of the monocular variety, and differed more than .50 D in fifty-one per cent., while in the alternating variety the corresponding figures were seventy-one and twenty-nine per cent. The visual acuity was determined in 968 of these cases and found to be exactly the same in 270, not the same in 698. The author devotes considerable space, not only to the relations of refraction and anisometropia to strabismus, but also to those of various other ocular conditions, and of precedent diseases, such as whooping cough and measles, in the study of its etiology. Under pathogeny the author deals with the static position of the eyes, convergence, the relations between refraction and vision, the nature of strabismus, and some of the theories that have been advanced concerning it. He maintains that the amblyopia found in two thirds of the cases of horizontal strabismus is congenital, never developed, always remains the same, neither increasing nor decreasing, and presents certain peculiarities relative to the dioptric condition of the eyes. In other words his views are diametrically opposed to those of ophthalmologists who believe in an amblyopia exanopsia. The third part of the book is devoted to treatment. Here the author discusses the curability of strabismus, the effect of glasses, and the efficiency of the various operations.

Entwicklung und gegenwärtiger Stand der Immunitätsforschung in Amerika. Von J. G. Fitzgerald, Berkeley, Cal. Herausgegeben von Prof. Dr. Wolfgang Weichardt, Erlangen. Stuttgart: Ferdinand Enke, 1912. Pp. 90.

Fitzgerald gives a brief résumé of the extensive literature published in America, in 1911, dealing with the question of immunity. It is well done and is valuable for purposes of reference. It would be still more valuable if there were an index but as it is a reprint from the *Jahresbericht über die Ergebnisse der Immunitätsforschung 1911* that adjunct is lacking.

Papers on Psychoanalysis. By Ernest Jones, M. D. (Lond.), M. R. C. P. (Lond.). New York: William Wood & Co., 1913. Pp. xv-432. (Price, $4.)

No enthusiastic Freudian has ever made a more rational or agreeable plea for the acceptance of this phase of psychopathological study than has Ernest Jones. The book is composed of various papers by the author, published for the most part in psychological journals. Read by the specialist they afford strong evidence in behalf of Freud's peculiar views; read by the general clinician they are likely to create a dangerous impression, unless it is distinctly borne in mind that herein is special pleading for conceptions by no means accepted by many leaders in psychopathology. Opposing views, the author asserts, are "prejudices against which it is the duty of the skeptical investigator to maintain a purely critical attitude."

Now, the general practitioner is not wholly without judicial faculties, though he may lack adequate training in psychopathology. This collection of evidence, when viewed as a contribution to advances in the subject as a whole, is valuable; perused with a strictly open mind, it affords an excellent survey of much that everyone interested in the art of healing needs to become aware of. Each one is permitted, by accepting the conditions imposed by the author, to form his own conclusions, especially if he takes pains to familiarize himself with the views of leading authorities in the whole broad field of psychopathy.

We are urged by the Freudians to accept the sex impulse as paramount in causation of psychopathies. Says Jones: "The strongest opposition to Freud's views undoubtedly centres around the significance he attaches to the sexual instinct. It should be remembered, however, that Freud combats the narrow conception of this that generally prevails; apprehends the expression in a much wider sense. From this point of view it will be seen that the importance he attaches to the [sex] instinct does not greatly differ from that of Schopenhauer's and Nietzsche's *Wille zur Macht,* Bergson's *élan vital,* Shaw's life force, and the vital impulse of so many writers, all of which are equivalent to what Freud terms *libido.* He replaces these metaphysical or poetical phrases by a scientific and biological one."

We may well commend the author's presentation of certain of the specialisms of Freud, *e. g.,* the word association method; his theory of dreams and their influence on waking life, as well as the fundamental and somewhat fetid exaggeration of the significance of sex impulses gone wrong.

If there is one thing at which clinicians of large experience are likely to balk it is the acceptance of the suppressed sex complexes as the fundamental cause of psychopathics. There is so much convincing evidence to the effect that the basis of psychopathies lies much farther back in primal impulses, the instinct of self preservation, fear of the actual, deadly, unceasing perils from without, ploughing effects in the consciousness till they become automatic terrors long before such endogenous and intermittent impulses as that of reproduction have had time or occasion to mould determination.

The Freudians exhibit an undue eagerness to force on us their assumption of the universality of the sex postulate, which at times savors of a suspicion that it is not provable. The way they emphasize their asseverations is needlessly final. Now the term *psychoanalysis* is a mighty good one, capable of a wide and general applicability.

All who undertake the responsibility of disentangling the phenomena of disordered consciousness use, or should use, psychoanalysis; a marshalling of all obtainable facts, subjecting them to critical survey, analyzing, grouping them in their bearings upon factors in psychic and somatic disabilities; and then should proceed to reintegrate, psychosynthetize, and apply the word in season with wisdom and force. It must not be overlooked that, valuable as it may be to find and eliminate a sex twist when it occurs, to hunt for it sedulously if it is reasonably suspected, it is deplorably dangerous and filthy ground to dig in; it may and often does induce bye suggestions of a perilous character; hence it is not to be lightly recommended, especially when other equally efficacious means are at hand.

BOOK AND MAGAZINE NOTES.

Not since the publication of Dr. J. Starke's *Alcohol; the Sanction for its Use,* nearly four years ago, have we seen such a work as *The Psychology of Intemperance,* by G. E. Partridge, Ph. D. (New York: Sturgis & Walton, 1912. Price, $1). It is a discussion of the alcohol question admirable in tone and style, not carried, the author states plainly, into the theory of ethics, but based upon scientific data. The book should be carefully read by physicians who above all others ought to have an accurate idea of what alcohol really means to civilization. Doctor Partridge has kept his temper admirably in arguing his thesis and has not been irritated by the flood of misrepresentation, misinformation, intolerance, and blindness to facts which have generally entered into the propaganda of the antis. He freely admits that there are individuals who should never touch alcohol, that the drug is possibly harmful physically to many, and that it is cowardly and wrong to seek refuge in narcotism when assailed by the problems of life. As to the saloon the author thinks it may well be replaced by a better kind of resort, but not one without alcohol; the saloon, like all other human institutions, has certain elements of good. The book is very interesting, and we commend to "moderate drinkers" the chapter on The State of Intoxication. The author closes with the question: "What . . . could be more completely wrong than to try to cure the drunkard by punishment and isolation, when his greatest need is a normal and social life?"

The Evil Eye, Thanatology, and Other Essays, by Roswell Park, M. D., LL. D. (Boston: Richard G. Badger, 1912), is a book which we can cordially recommend to our friends who like scholarly writing of a nonprofessional kind by their fellow physicians. Doctor Park goes far afield in these essays which show deep reading and original thinking, yet are presented in a clear and entertaining style. Most of the essays have made a previous appearance in medical and other periodicals, and a steady ripening in manner is perceptible if we know which essay to read first and their chronological order. Many surprises await the medical reader who does not stray often from his medical books, particularly in such an essay as that on Iatrotheurgic Symbolism, and here and there in our country will be found a relic of our early medical educational methods who will be outraged at his first acquaintance with facts that have been commonplace to scholars for several decades. We have only welcome for books like this from our colleagues and hope they will serve to encourage a much needed literary cultivation among a large number of too hastily made graduates.

Baa, Baa, Black Sheep! was republished in an evening paper a few days ago and we reread it with gusto. It is one of the best of Kipling's early tales and is written with a power and bitterness that seem to express a neglect by his guardians of the author's myopia when he was a child. It is a story of particular interest to physicians in showing how certain mental traits may originate and become profoundly engrafted in a neglected physical defect.

Meetings of Local Medical Societies.

Monday, *March 17th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Elmira Clinical Society; Hartford, Conn., Medical Society.

Tuesday, *March 18th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine; Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Psychiatric Society of Ward's Island; Medical Society of the County of Westchester; Clinical Society of the Elizabeth, N. J., General Hospital.

Wednesday, *March 19th.*—New York Academy of Medicine (Section in Genitourinary Diseases); Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society of New York; Northwestern Medical and Surgical Society of New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

Thursday, *March 20th.*—New York Academy of Medicine (stated meeting); German Medical Society (Brooklyn); Newark, N. J., Medical and Surgical Society; Aesculapian Club of Buffalo, N. Y.

Friday, *March 21st.*—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical and School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Saratoga Springs Medical Society.

Saturday, *March 22d.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society of New York.

Official News.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending March 8, 1913:

Heiner, R. G., Passed Assistant Surgeon. Detached from the *Connecticut* and ordered to Guantanamo Naval Station, Cuba. **Irvine, W. L.,** Assistant Surgeon. Detached from Guantanamo Naval Station, Cuba, and ordered to the *Connecticut.* **Kaufman, J. B.,** Passed Assistant Surgeon. Ordered to the Atlantic Reserve Fleet.

Births, Marriages, and Deaths.

Married.

Craig—Budd.—In Philadelphia, on Wednesday, February 26th, Dr. John Percy Craig, of Chester, and Miss Anna Burwell Budd. **Pahlas—Pings.**—In Denver, Colo., on Thursday, February 27th, Dr. Henry M. Pahlas and Miss Bertha Pings. **Stevenson—Torpey.**—In Buffalo, N. Y., on Tuesday, February 25th, Dr. H. Burton Stevenson, of Baltimore, Md., and Miss Katherine Torpey. **Van Orden—Owen.**—In Oakland, Cal., on Saturday, February 22d, Dr. Lincoln Van Orden and Miss Helen Owen.

Died.

Bergengren.—In Lynn, Mass., on Friday, March 7th, Dr. Frederic Wilhelm Alexis Bergengren, aged seventy-two years. **Bigelow.**—In Detroit, Mich., on Monday, February 24th, Dr. Delno M. Bigelow, aged thirty-eight years. **Blair.**—In Philadelphia, on Saturday, March 8th, Dr. James Edward Blair, of Burlington, N. J., aged fifty-one years. **Bohannan.**—In St. Louis, Mo., on Thursday, February 27th, Dr. Charles Alexander Bohannan, aged seventy years. **Cross.**—In Dunsmuir, Cal., on Sunday, February 23d, Dr. Hugh Cross. **Doyle.**—In St. Joseph, Mo., on Tuesday, February 25th, Dr. Thomas H. Doyle, aged seventy-three years. **Dunn.**—In Louisville, Ky., on Friday, February 28th, Dr. Jesse T. Dunn, aged forty-five years. **Evans.**—In Pasadena, Cal., on Friday, February 28th, Dr. Albert J. Evans, of Lockport, N. Y., aged eighty-eight years. **Foy.**—In Yonkers, N. Y., on Wednesday, March 5th, Dr. Michael Henry Foy, aged thirty-nine years. **Hesse.**—In St. Louis, Mo., on Wednesday, February 26th, Dr. Amale Hesse, aged sixty-eight years. **Holmes.**—In Rahway, N. J., on Sunday, March 2d, Dr. Charles B. Holmes, aged sixty-five years. **Hull.**—In New Brunswick, N. J., on Thursday, March 6th, Dr. Henry A. Hull, aged eighty-one years. **Hurt.**—In Boonville, Mo., on Monday, February 24th, Dr. Peyton L. Hurt, aged sixty-eight years. **Kadison.**—In Chicago, on Wednesday, February 26th, Dr. Albert P. Kadison, aged seventy-three years. **Kimberley.**—In Brooklyn, N. Y., on Friday, March 7th, Dr. Augustus Greene Kimberley, aged eighty years. **McElwee.**—In Macon, Neb., on Saturday, March 1st, Dr. Francis M. McElwee. **Molkup.**—In Chicago, on Saturday, March 1st, Dr. Frank C. Molkup, aged forty-two years. **Phillips.**—In Bear Lake, Pa., on Thursday, February 20th, Dr. A. P. Phillips, aged eighty years. **Schilling.**—In Newark, N. J., on Saturday, February 22d, Dr. William Schilling, aged eighty-eight years. **Selover.**—In Trumansburg, N. Y., on Tuesday, February 25th, Dr. John R. Selover, aged eighty-nine years. **Silverberg.**—In Los Angeles, Cal., on Saturday, February 22d, Dr. George M. Silverberg, of Chicago, aged fifty-two years. **Trezise.**—In Brooklyn, N. Y., on Tuesday, March 4th, Dr. John Davies Trezise, aged fifty-one years. **Trolinger.**—In San Antonio, Texas, on Thursday, February 27th, Dr. Henry J. Trolinger, aged sixty-three years. **Wakefield.**—In Warren, Me., on Thursday, February 27th, Dr. John Morse Wakefield, aged sixty-one years. **Washington.**—In St. Louis, Mo., on Tuesday, February 25th, Dr. Edgar J. Washington, aged thirty-six years. **Wessells.**—In Canajoharie, N. Y., on Sunday, March 2d, Dr. Silas A. Wessells, aged sixty-one years. **Willis.**—In Waltham, Mass., on Saturday, March 1st, Dr. John Warren Willis, aged eighty years. **Woodson.**—In Rushville, Mo., on Wednesday, February 26th, Dr. Lyman R. Woodson, aged forty-three years.

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Original Communications.

ARTIFICIAL PNEUMOTHORAX.*

Indications and Contraindications.

BY S. ADOLPHUS KNOPF, M. D.,
New York,
Professor of Medicine, Department of Phthisiotherapy, Post-Graduate Medical School and Hospital.

Artificial pneumothorax is an operation which consists in filling the affected side of a tuberculous chest with sterilized atmospheric air or some gas, oxygen or nitrogen, for therapeutic purposes. Experience has shown that by producing collapse and compressing the affected lung, the production and absorption of toxines resulting from mixed infection are greatly diminished. When the affected lung is put at rest there is, concomitant with the diminution and total disappearance of the mixed infection, a constitutional improvement. The diminution or disappearance of cough, improvement of appetite, normal temperature in not a few instances, and the seeming arrest of the disease, are the results obtained by the production of artificial pneumothorax. The gas which has been found preferable for this purpose is nitrogen, because it is absorbed less rapidly than any other.

Under what conditions are we justified in suggesting to our patient the advisability of this operation, which, though in itself simple, is not entirely free from danger, accidents, and unpleasant sequelæ? The more serious accidents are rare, however; perhaps not more frequent than the accidents from anesthesia, and one would surely not condemn the use of chloroform, ether, or any other anesthetic because of an occasional accident.

My personal experience is still very limited, but what I have seen, heard, and done myself, and the perusal of the literature at my disposal, enable me at this time to make the following statement concerning the indications for the production of artificial pneumothorax:

First, it is indicated in all such cases as have not improved under ordinary hygienic, dietetic, climatic, and symptomatic treatment. Such cases are as a rule moderately or far advanced.

Second, it is indicated in those earlier cases in which there is no improvement because of mixed infection, or lack of recuperating powers, or when for other often inexplicable causes the condition remains stationary or the progress is particularly slow.

Third, it is, of course, indicated in all rapidly progressing cases whether they are treated in institutions or at home, and in no matter what climate.

Fourth, it is indicated for all patients of the moderately or far advanced type, within or without institutions, who are discontented, feel that not enough is being done for them, and who are desirous to have artificial pneumothorax tried.

Last, but by no means least, artificial pneumothorax is indicated in uncontrollable hemorrhage or chronic sanguineous expectoration.

Before speaking of the contraindications, I wish to state emphatically that bilateral involvement, if one lung is considerably and the other one much less involved, is not a contraindication to the production of artificial pneumothorax. Those of us who see a good many tuberculous cases, in private or hospital practice, will admit that tuberculosis strictly limited to one side is rare in patients who have had the disease for any length of time or long enough to have induced them to seek institutional treatment. In my service at the Riverside Hospital Sanatorium, where we take care of more than 300 cases in the second and third stages of the disease, I do not believe that we have a single individual where the tuberculous lesion is absolutely confined to one side. Most of the cases I have seen operated in or have operated in myself have had bilateral lesions, and as far as immediate symptomatic improvement is concerned, every one of them showed gratifying results.

Casts and albuminuria are not necessarily a contraindication, but, of course, one must be guided by the general condition of the patient. When the lesion of the less affected side is a basal one, some authorities consider this a contraindication. In the opinion of Doctor Lapham, who has perhaps had a larger experience in this kind of work than any other physician in the United States, this condition is not an absolute contraindication, and the production of artificial pneumothorax is permissible because of the relief which it gives to the patient.

There are, of course, decided contraindications to the production of artificial pneumothorax:

First, an extensive involvement of both lungs.

Second, when there is so much cavitation in the affected lung that there is danger of the needle entering a cavity.

Third, dry pleurisy or pleurisy with effusion.

Fourth, myocarditis, other serious cardiac complications, or serious renal complications.

Fifth, any pulmonary tuberculosis complicated by any constitutional disease which in itself is sufficient to inhibit all possible chances of recovery.

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*Read before the Section in Medicine, New York Academy of Medicine, February 18, 1913.

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Sixth, when the patient, in no matter what stage of the disease, is too apprehensive and strongly objects to the performance of the operation, it should not be resorted to.

In conclusion, I wish to make a precautionary statement. That artificial pneumothorax is a valuable adjuvant in the treatment of pulmonary tuberculosis is now an established fact. Such men as Forlanini (1), Spengler (2), Brauer (3), Saugman (4), and others of Europe; Murphy (5), Trudeau, Baldwin, James Alexander Miller, Lapham (6), Robinson (7), Floyd (7), Balboni (8), Hamman (9), Sloan (9), and many others in our own country have given it the stamp of an authoritative procedure. Yet, in view of the possibility of an accident (not necessarily in the primary filling, for experience has shown that they most likely occur in subsequent fillings), every practitioner should protect himself by procuring the written consent of the patient, parent, or guardian before resorting to the operation.

There are various accidents that may occur, such as air embolism, cardiac or pleuritic shock resulting in failure of respiration, spasm of the glottis, aphonia, and inability to cough. Hemorrhage or subsequent neuritis, owing to the injury of a bloodvessel or nerve, may also occur. Pleurisy with effusion has also been reported in a number of cases resulting from artificial pneumothorax (10). Emphysema, though more annoying than dangerous, is also an occasional complication. Weiss (11) reported a case of fatal pneumonia in the other lung, notwithstanding that nitrogen was withdrawn.

There is no question in my mind that, with the view of avoiding the various accidents as far as possible, the technic can be much improved, the operation made even safer than it is already, and the subsequent fillings made absolutely without danger. It is owing to the genius of my coworker and friend, Dr. Mary E. Lapham, of Highlands, N. C., that the idea of a permanent opening in the chest cavity for the purpose of refilling was suggested to me. Being somewhat apprehensive of the possible complications arising from a permanent opening in the chest, we sought the advice of a man who is considered the master of experimental surgery, Dr. Alexis Carrel, of the Rockefeller Institute. We also took counsel with Professor Franz Torek, of the Post-Graduate Medical School, surgeon of the German Hospital, and obtained the valued advice and guidance of Dr. Thomas A. Smith, the surgeon of the Bellevue, Willard Parker, and Riverside Hospitals. Although fully aware of the difficulties which beset us, with the advice of the men with whom we have been able to counsel, and particularly Doctor Smith, who has promised us his continued cooperation, we hope to be able to report progress ere long.

One cause of accidents in primary as well as subsequent fillings can, I believe, be avoided. I refer to the distress which the patient sometimes feels, manifesting itself in anxiety, intense dyspnea, or cardiac pains and which is due to the expansion of the nitrogen which had been injected at the temperature of the room. The much higher temperature of the thoracic cavity causes the gas to increase considerably in volume. To do away with this accident I suspend a coil of metal tubing over an alcohol lamp through which tubing the nitrogen gas is passed before it enters the pleuritic cavity. I have heard of pneumonia being produced by the inhalation of cold oxygen, hence I would also suggest that when oxygen is chosen for the gas to be injected for the production of artificial pneumothorax, it should be passed through a heated coil of metal tubing, after extinguishing of course the alcohol flame to avoid any possibility of explosion.

I am willing to confess that up to about a year ago I was thoroughly skeptical about the immediate as well as about the ulterior results of artificial pneumothorax as an addition to our armamentarium in phthisiotherapeutics; but what I have heard, seen, and learned during the past months concerning this procedure, while it has not made me so wildly enthusiastic as to consider it a cureall, has convinced me that artificial pneumothorax will often help when all other means have failed. I consider that all those who have the cause of the consumptive sufferers at heart cannot feel too grateful to the pioneers in this field because they have given us a means of lessening the sufferings of tuberculous invalids, rendering them comfortable and free from many distressing symptoms, and in not a few instances bringing about an arrest of the disease.

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16 West Ninety-fifth Street.

ARTIFICIAL PNEUMOTHORAX.*

Technic and Results.

By Mary E. Lapham, M. D.,
Highlands, N. C.
Physician, Highlands Camp Sanatorium.

When a tuberculous lung is well compressed by filling the pleural cavity with nitrogen, the distention of the cavity is shown by the bulging of the ribs, by the rotary breathing as if the other half of the thorax moved around a fixed point, and by a deep, hollow resonance which often extends well over on the other side.

This resonant, hollow, empty space is obtained at the expense of the lung, which is driven up into the smallest possible bulk and held there like a dried sponge, absolutely immobile and incapable of expansion. As the lung becomes smaller and smaller, the râles disappear and the breath sounds become suppressed or assume a metallic character, finally changing to the sound of a drop falling into a space surrounded by metal or to a sharp, metallic clink.

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*Read by invitation before the Section in Medicine, New York Academy of Medicine, February 18, 1913.

To all intents and purposes the lung is not there, but is practically removed, and while it is held firmly compressed connective tissue infiltration converts the tuberculous lesions into clean, healthy scars. In such an anatomical recovery there is nothing to cause a relapse. At the autopsy nothing is seen but scars. There are no tubercle bacilli threatening resumption of activities, no tuberculous foci shut up in encapsulated areas. All is clean and safe and corresponds to the physical signs given after recovery and reexpansion of the lung. *A priori*, it seems unlikely that any portions of the lung that had been destroyed could be replaced, and yet after reexpansion normal resonance and breath sounds have appeared in lungs in which before compression nothing but râles and altered breath sounds could be heard. In several instances I have found it difficult to detect any difference between the reexpanded and the other lung. It seems to be proved beyond question that compression of the lung does not injure the normal portions and that the diseased portions are singularly benefited.

The clinical results are no less marked than the physical. As the pressure of the nitrogen crowds up the lung, the decomposing masses are forced out through the mouth, so that, at first, there may be pain, higher temperature, increased coughing, and expectoration. As the bloodvessels become compressed the lung gets drier and there is less production and absorption of toxines. A dry lung with little circulation of air or fluids does not favor the growth of tubercle bacilli. As their activities are extinguished, the expectoration lessens and the temperature falls. In typical cases all signs of disease in the lung disappear. There is no more high temperature or cough or expectoration of tubercle bacilli, and after about a year it is safe to allow the lung to reexpand and resume its function.

Balboni says: "It is absolutely essential for the success of the treatment that the pneumothorax be maintained of such a volume and tension so as to squeeze out and practically dry the lung of all secretions." The maintenance of this volume and tension is the key note to success and is therefore the main point of technic discussed in this short paper.

If dullness and altered breath sounds persist over any part of the lung, we know that adhesions are preventing its compression. In using pressure to break up these adhesions we must avoid the too sudden application of too much force, or we may tear a bloodvessel in the adhesions, or pull away the surface of the lung where these adhesions are attached, or we may force the thin surface of the lung inward over a cavity until it breaks. Many cases reported as failures because of empyema or pulmonary fistulæ or tension pneumothorax, might be explained in this way. Later on, the condition of the other lung may forbid too much nitrogen in the pleural cavity.

The pressure of the atmosphere over all the other bloodvessels in the body and the absence of this pressure in the thoracic cavity make a powerful mechanism for favoring the return of blood to the heart. As soon as the returning blood gets inside the thorax it relieves the rest of the circulation of just so much pressure. When the nitrogen in the pleural space presses upon the mediastinum and the returning bloodvessels, one of the most important factors in the mechanism of circulation is injuriously affected. Too much intrathoracic pressure impedes the return circulation and threatens stasis of the gastrointestinal circulation which may cause insomnia, anorexia, cardiac distress, neurasthenia, hysteria, and a host of other troubles. The other lung may become so congested as to cause wet râles and frothy sputum, and this edematous infiltration must be relieved by reducing the intrathoracic pressure, or bronchopneumonia may result.

Trouble with the other lung may not develop until several days or even weeks have elapsed. For some time its bloodvessels may stand the strain of all the blood passing through them, and we often read that the patient did well up to such a time when the other lung broke down and the recovery was lost. The other lung needs constant examinations to detect the first signs of an edematous infiltration.

Chilling and too much exercise must be carefully avoided until it is certain that the other lung is not concealing a hidden, deep lesion or peribronchitic infiltration which does not manifest itself by physical signs until too late.

If we do not apply enough pressure to break up the adhesions around a cavity or the surface of an upper lobe, we know that we are losing our efforts and accomplishing nothing because the dullness and breath sounds persist. To keep up enough pressure to extend the resonance without injuring the patient is the problem.

In these cases we have found the daily estimate of what is needed and the daily injection of enough nitrogen to meet these needs to be the most satisfactory way of overcoming the difficulties. As the nitrogen is absorbed and the dullness returns, we replace it by the resonance of nitrogen. In this way we have succeeded, with infinite pains and time, in compressing the lung and breaking up adhesions that were seemingly invincible.

A fine hypodermoclysis needle is preferable to a large needle in these cases. In severe bilateral cases with great general exhaustion and poor condition of the heart and other lung, we have found the use of oxygen instead of nitrogen to be of great benefit.

When nitrogen causes dyspnea and cardiac distress, oxygen may give the same relief that the introduction of an intubation tube does to a child struggling for breath. There is a sensation of ease and well being, and the patient goes to sleep very much as the child does.

After the insertion of the tube the use of oxygen promises to extend the usefulness of the method to cases too difficult for nitrogen because it has a tonic, strengthening influence instead of the depressing one of nitrogen.

As Doctor Knopf has stated, most of the accidents have occurred after the first injection of nitrogen. It is for this reason that we have labored during the past few months toward bringing about a safe method for a permanent opening into the pleural cavity and have sought the best surgical council we could obtain. With Dr. Thomas A. Smith's guidance and cooperation in the work here in New York, and our continued experimentation in Highlands, Doctor Knopf and I hope soon to be able to report progress.

I cannot close this short paper without expressing most grateful appreciation of the courtesy extended to me by Professor Hermann M. Biggs, the general medical officer of the department of health, and to Professor S. Adolphus Knopf, senior physician of the Riverside Hospital, for giving me the opportunity of seeing, studying and working in the Municipal Sanatorium at Otisville and the Riverside Hospital of New York.

HIGHLANDS CAMP.

SHORTENING THE UTEROSACRAL LIGAMENTS

*By the Vaginal Route in Procidentia uteri with a Report of Ten Cases.**

By HERMANN GRAD, M. D.,
New York,
Assistant Surgeon, Woman's Hospital.

The various degrees of procidentia uteri, whether first, second, or third, have the same etiological factors. In the parous woman the conditions are the same as in the nulliparous, but the prolapse in the former has been brought about by different agencies than in the latter. In both types of prolapse the cause remains the same, namely, the failure of action of the normal uterine supports. In the parous woman, the integrity of the ligaments becomes destroyed by traumatism, hence loss of function; while in the nulliparous woman, the uterine supports fail to function because the ligaments supporting the uterus and annexa have not developed sufficiently to take up the proper function. In one case we have traumatism, while in the other we have a lack of development of the uterine supports as a cause of the uterine prolapse. Doubtless in many cases both causes are operative in bringing about a condition of prolapse.

THE LIGAMENTS.

The female generative organs are maintained in the pelvis by virtue of their ligaments. They are so well known that they need but a mere mention. They are the broad ligaments, the round ligaments, the uterosacral, and the vesicouterine ligaments. Besides, there is another ligamentous structure of great importance in maintaining the uterus in a normal position in the pelvis. This structure is not a ligament, but a fascia. Extending from the bony pelvic frame, it bridges the pelvic cavity and gives support to the contents of the pelvis. It gives support to the bladder, the rectum, the female generative organs, the bloodvessels, lymphatics, and nerves. The fibres of this fascial structure mingle with the fibres of the fascia of every muscle in the pelvic diaphragm. Mingling as it does with the fascia of the muscles composing the pelvic diaphragm, it becomes a very strong fibrous structure of great functional integrity and considerable elasticity. It is this fascial structure, designated as the pelvic fascia, that holds the uterus in its normal position in the pelvis. The aforementioned ligaments determine more the position of the organ, as well as contributing partially to the support of the uterus. Their functions may be summarized as follows: The round ligaments act as guy ropes, preventing a retrodisplacement of the fundus of the uterus, and when the fundus has become displaced by a distended bladder, it is the function of the round ligaments to antevert the organ again into a normal position. The uterosacral ligaments maintain the cervix in a fixed position, contributing largely in holding the uterus in a state of anteversion. These ligaments are also important points of support of the uterus. The broad ligaments determine the position of the uterus laterally. They give little or no support to the uterus, but they lend protection to the bloodvessels and lymphatics of the pelvis, and in addition, hold the Fallopian tubes and ovaries in a physiological position in the pelvis.

THE PELVIC FASCIA.

That the pelvic fascia is the structure of great importance in holding the uterus in position in the pelvis can be readily demonstrated on the operating table in doing a hysterectomy. It is in the experience of every gynocologist that after the broad ligaments have been severed, the round ligaments tied off, the uterosacral ligaments cut away, the uterus still maintains a perfectly normal position. It is because the pelvic fascia has not, as yet, been severed. Witness the strong fascial attachment that is encountered in clamping off the parametrial tissues, in performing a Wertheim operation for carcinoma of the uterus. After the ureters have been laid bare and isolated from the parametrium, the bladder dissected up from its bed, the uterus remains in perfect position because the pelvic fascia has not been disturbed. The vagina, alone, does not prevent the uterus from being drawn up, but the pelvic fascia does. So soon as the parametrium is clamped and severed, the uterus and vagina can be drawn up and the curved vaginal clamps readily applied.

In every case of procidentia, whether partial or complete, this pelvic fascia has suffered a loss of its integrity. This loss of integrity may have resulted from traumatism or lack of develoment. During parturition, the pelvic fascia must of necessity be subjected to considerable traumatism. This is the case even in physiological labor. In pathological labor it may be greatly increased. Traumatism of the pelvic fascia in labor is the great cause of procidentia. Prolapse of the uterus, however, depends on many other factors beside that of traumatism of the pelvic fascia. It will depend also on the functional integrity of the other uterine ligaments enumerated. The pelvic fascia may suffer a considerabel degree of traumatism, yet no prolapse of the uterus will result, because the integrity of the uterosacral, round, and broad ligaments has not been destroyed. The uterosacral ligaments and the round ligaments still hold the uterus in a state of physiological anteversion, and intraabdominal pressure cannot come into play to destroy normal physiological relations. Intraabdominal pressure is an important factor in the causation of the prolapsus of the uterus. Once the uterine ligaments permit a retrodisplacement of the uterus, the intraabdominal pressure comes into play and favors conditions which result in a prolapse.

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THE VESICOUTERINE LIGAMENTS.

Attention must also be called here to that part of the pelvic fascia which is designated by anatomists as the vesicouterine ligaments. This part of the fascia, in addition to that of giving support to the uterus, has the function of serving as a shelf upon which the trigonum of the bladder rests. A cystocele will result if this part of the pelvic fascia is destroyed. As a rule, when this part of the pelvic fascia has suffered destruction, other parts of the fascia have also been so severely traumatized as seriously to interfere with its function as a whole. Nevertheless, there are many cases where only the vesical portion of the fascia becomes weakened or destroyed with the formation of a cystocele alone. Here, again, intraabdominal pressure comes into play as a cause of the cystocele.

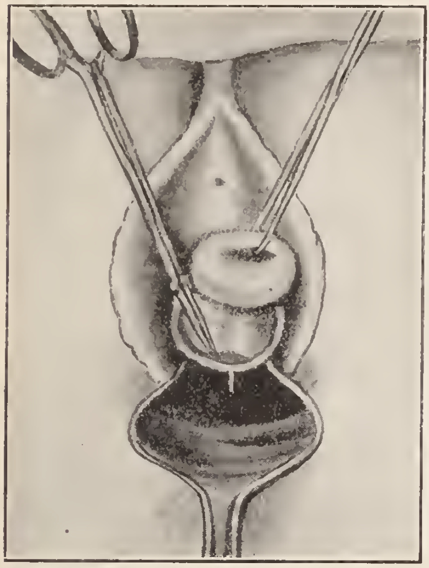

FIG. 1.—Circular incision of the cervix; uterosacral ligaments clamped off on right side.

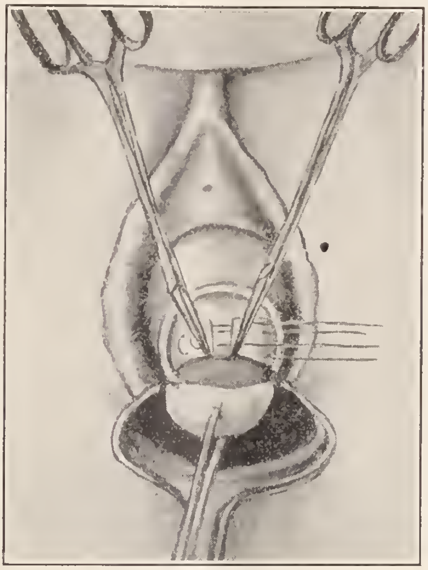

FIG. 2.—Uterosacral ligaments brought around the cervix; sutures introduced.

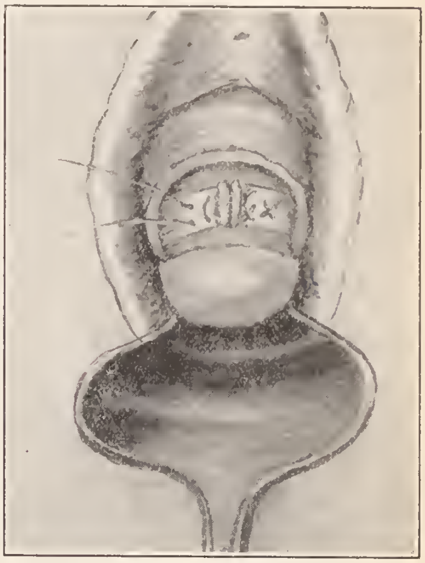

FIG. 3.—Uterosacral ligaments sutured to the cervix in front.

THE PERINEUM.

We have still another point to consider with conditions which favor the occurrence of prolapsus uteri. It is the so called perineal body, whether it is functionally integral or not. The perineum has nothing to do with the support of the uterus, but it has a tremendous effect on the ligaments that support the uterus. The perineum is essentially a musculotendinous body capable of powerful muscular contraction. By its contraction it gives support to the ligaments which hold the uterus in position, preventing their possible overstretching during moments of increased intraabdominal pressure.

During the act of coughing or sneezing, or during the acts that increase intraabdominal pressure, the uterus and all the contents of the pelvis are forcibly pressed downward. During these moments, the perineum is reflexly excited and responds to the stimulus by a powerful contraction, thereby aiding the uterine ligaments and preventing their overstretching. When the perineum is not functioning, having been destroyed by traumatism, the increased intraabdominal pressure has to be overcome by the ligaments alone, and after some time, these structures will finally give way, and prolapse of the uterus will result. It is for this reason that in every case of procidentia the perineal body needs attention, and when destroyed, its restoration of function by surgical means is an important step in the cure of procidentia uteri.

THE CERVIX.

The cervix plays no inconspicuous rôle in prolapsus uteri. By its laceration, the pelvis fascia suffers from traumatism and loss of function, depending on the extent of the injury. If the laceration in the cervix has been deep, extending into the layers of the broad ligaments, perhaps, the pelvic fascia will also suffer injury and loss of function. If the laceration in the cervix is of a moderate degree, the pelvic fascia may escape injury entirely.

The cervix plays also an important rôle in the surgical treatment of prolapsus. In an amputation of the cervix, the very nature of the operation is such as to tend to restore the continuity of the pelvic fascia which has been severed by the laceration in the cervix. In decades gone by, when prolapsus uteri was treated by an amputation of the cervix, plastic operations on the anterior and posterior wall of the vagina, the success which attended these operative efforts depended very largely on the fact that the pelvic fascia was restored by the amputation of the cervix. It is essential, therefore, in the surgical treatment of procidentia, to restore the laceration in the cervix by union, or else to amputate the cervix entirely.

SHORTENING THE UTEROSACRAL LIGAMENTS.

Having briefly outlined our conception of the normal uterine supports, and how they are affected in procidentia, I shall endeavor to bring to your attention an operation on the uterosacral ligaments which finds a fertile field of application in many cases of prolapsus uteri. This operation of vaginal shortening of the uterosacral ligaments was described by Dr. Henry Jellett, of Dublin, and published in *Surgery, Gynecology, and Obstetrics* in August, 1911, page 206. The cuts are also from his paper. In his paper, Doctor Jellett says: "In general terms, the operation consists in exposing the uterosacral ligaments at their insertion into the uterus, in cutting them off the uterus, and in bringing them round in front and below the cervix, and at the same time shortening them, as may be found necessary, so that they become again a support to that part of the uterus."

Vaginal shortening of the uterosacral ligaments is an operation that deserves consideration in the practice of gynecology. It is an operation that can claim for itself a definite anatomical basis. Although the operation disturbs the normal anatomical relations because it brings the ligaments in front of the cervix, whereas, normally, they are behind; nevertheless, the operation accomplishes just the condition we wish to bring about in prolapse of the uterus.

Contrary to the views of the older anatomists, the uterosacral ligaments are not purely peritoneal folds, but have firm fibrous tissues as their structural integrity. These ligaments are folds of tissue of firm consistence, capable of maintaining considerable pressure and weight. They are doubtless one of the important ligaments that support the female generative organs. The uterosacral ligaments are a part of the so called transversalis fascia, which lines the abdomen and the pelvic cavity everywhere. These ligaments maintain the cervix of the uterus in a position in the pelvis best suited for the maintenance of a condition of anteversion of the uterus. Arising from the bony pelvic floor on either side of the sacrum, they gently curve toward the median line and are inserted in the posterior surface of the cervix, where they become mingled with the connective tissue of the uterine wall. The fibres of the fascia, extending around the cervix, completely encircle it and thus form a firm ligamentous attachment, which supports the uterus with its annexa. The uterosacral ligaments are not thin ligamentous structures, cordlike in appearance, as they are seen when the abdomen is opened, but they are really parts of the fascial structure, which is flattened out and includes within itself all the muscular structures that make up the so called pelvic diaphragm. It is true that when the abdomen is opened and the uterosacral ligaments are seized with forceps or spongeholders, they merely appear as folds of peritoneal tissue, which is endowed with considerable elasticity. In reality, these folds are only the edge of a strong fascial sheet which extends in a circle about the pelvic floor and sends filamentous structures to the sheets of the muscles of the so called perineal body. In front of the uterus this same fascial sheet forms a so called vesicouterine ligament, upon which is stretched out the bladder trigonum.

Picturing in one's mind the fascial sheet which extends from the bony structure of the pelvis and completely encircles the uterine cervix, it will be readily seen that if this fascial sheet, having become overstretched or torn in parts, is shortened by some operative procedure, it will of necessity raise those organs to which it is attached to a higher level. This is exactly what is being done by the so called shortening of the uterosacral ligaments. In shortening up these ligaments, we must bear in mind that not alone are these ligaments shortened, and thereby made tense at the free border, but the entire pelvic fascia is shortened thereby and made more tense.

There has been a great diversity of opinion expressed about the histological structures of the so called uterosacral ligaments. According to some, these ligaments are nothing more than two layers of peritoneum, lying on a basement membrane. Others maintain that fibrous structures are found in these apparently peritoneal folds. Still others hold that the uterosacral folds contain muscular fibres and connective tissue. Dr. Berry Hart says (*Allbutt's System of Medicine*): "The uterosacral folds are two ridges of peritoneum inclosing muscular fibre and connective tissue: they pass one from each side of the isthmus uteri, outward and backward toward the second and third sacral vertebræ." Deaver (*Surgical Anatomy*) says: "The uterosacral ligaments are flat muscular bands, which extend from the uterus at the level of the internal os, beneath layers of the rectouterine ligaments, to the sides of the sacrum, opposite the lower borders of the sacroiliac articulations. In the first part of their course, they are in relation with the lateral walls of the pouch of Douglas and finally run on either side of the rectum, near the junction of the sigmoid and the upper portion of the rectum."

It is very evident that conflicting are the views held at present about the structure of the uterosacral ligaments. It is very clear that histological studies are wanting on the ligaments of the uterine supports.

If muscular fibres are present in the uterosacral ligaments, they must be so scarce in amount as to escape recognition. I have not been able to satisfy myself of their presence. Reasoning from analogy, I cannot see why the uterosacral ligaments should contain muscular fibres. The function of muscular tissue is not that of support. It would be waste of energy to assume that function. The supporting structure in the animal economy is always of the nature of fibrous tissue. Fibrous structure is endowed with two important properties, great tensile strength, and great elasticity. Muscular fibres have entirely different properties, hence different functions. The great tensile strength and elasticity of ligamentous structure is well adapted for the function it assumes in supporting the uterus and its annexa. When the uterosacral ligaments are acting normally, and the uterus is in normal position of anteversion, with every inspiration, on account of increase in the intraabdominal pressure, the uterus descends to a lower level in the pelvis than it finds itself during the period of quiescence. The uterosacral ligaments allow this descent of the organ, which they support by virtue of their elasticity. At the end of inspiration, intraabdominal pressure ceases to act, and the uterus and annexa rise again to their normal level by virtue of the elasticity of the uterine supports. This is the reason why we see an up and down excursion of the anterior wall of the vagina synchronously with inspiration and expiration, with a patient in the Sim's position and with the perineum retracted with a Sim's speculum.

THE SURGICAL TREATMENT OF PROLAPSUS UTERI.

The surgical treatment of prolapse of the uterus has changed materially in recent years, and to-day the operations that are performed for the cure of this condition can be divided into two classes:

1. Those operations having in view the formations of adhesions of the uterus to other parts in such a way as to hold the organs in the pelvis and prevent a prolapse out of the vagina.
2. Those operations which shorten the uterine supports and in that way keep the organ from prolapse.

Both types of operations find application in prolapse of the uterus. The multiplicity of the operations that have been recommended for procidentia simply attest the fact that no one single operation is applicable in every case of procidentia. There are doubtless cases of procidentia uteri that will yield very readily to so simple an operation as that of ventrofixation. Then there are other cases where this operation will accomplish absolutely nothing. Cases of procidentia may also be divided as far as the surgical aspect is concerned into two classes:

1. The cases that are past the menopause.
2. Cases that are still in the menstrual period.

For the class of patients that are past the climacteric and have uteri that are small and have undergone the changes incident to the menopause these will yield readily to the so called interposition operation. The fundus of the uterus is attached under the pubic arch, the bladder having been stripped up and made to rest on the osterior surface or on the fundus of the uterus. As a rule, a cure is effected in these cases by this simple operation. When the uterus is enlarged, either by neoplasm or inflammatory changes, the operation of interposition is not applicable; because, on account of the size of the uterus, it cannot be made to remain under the pubic arch, where the operation places it. In these cases a hysterectomy is called for, and the broad ligaments are made to serve the purpose of a shelf, upon which the bladder is made to rest, and to which the vaginal tissues can be attached.

In many cases where the uterus harbors one or more fibroidal tumors, a myomectomy may be performed first, and the uterus then interposed, or a wedge of tissue can be removed from the uterus and the remainder of the organ used for the interposition operation.

In patients still menstruating, or in the childbearing period, the operation of shortening the uterosacral ligaments is very applicable. The operation is performed as follows:

A circular incision is made around the cervix, as in a vaginal hysterectomy. This incision is met by a vertical one in the median line on the anterior wall of the vagina. The bladder is stripped up freely. If the operator chooses to shorten the round ligaments at the same time, he may do so by entering the peritoneal cavity in front of the uterus. The round ligaments are seized and shortened in an appropriate manner, after which the peritoneum is closed, anteriorly or not, just as the surgeon chooses. The bladder, having been stripped up from anterior wall, the latter is trimmed to a desired extent in order to repair the cystocele that has existed. Before the final closure of the incision in the anterior wall of the vagina, search should be made for the so called pelvic fascia, which will be readily identified. This fascia is stitched with a few interrupted chromic gut sutures, making a shelf for the bladder to rest on. This part of the operation having been completed, a search is now made for the uterosacral ligaments, which can be found readily, in the majority of cases, by grasping the loose tissue behind the cervix. This tissue is severed from the cervix, and by a litttle dissection the uterosacral ligaments are identified. Should this procedure fail in finding the uterosacral ligaments, the peritoneum may be opened posteriorly and search made for the ligaments by palpation. Once they are located, they can be traced to the cervix and loosened up sufficiently to reach around the uterus and be stitched to the cervix in front. The uterosacral ligaments, having been prepared, the cervix is amputated. The degree of amputation will depend on the length of the cervix. If the cervix is short, only a small portion is removed, and if it is long, a larger piece will need to be amputated. The cervix, having been amputated, the uterosacral ligaments are then stitched in such a manner as to become attached to the anterior surface of the cervix. The effect of this is that the cervix is drawn backward toward the sacrum by the shortened up ligaments, which becomes very apparent during the operation. If the cervix is not drawn back by the ligaments, the operator may be assured that the uterosacral ligaments have not been properly identified. The ligaments having been attached, as described, the cervix is covered with a flap of vaginal tissue as in any ordinary operation for amputation of the cervix. The anterior wall of the vagina is now closed in the usual manner, and the case is ready for the restoration of the peritoneum and cure of the rectocele.

In my hands the perineal restoration is best accomplished by the so called Watkins-Haynes operation, which consists of stripping up the posterior vaginal wall from the rectum, laying bare the levator ani and transversus perinei muscles. These muscles are then stitched together in the median line. The redundant posterior vaginal wall may be removed in any manner, shape, or form the surgeon wishes, after which the perineal body is closed, as is done in the Emmett operation.

The operation of shortening the uterosacral ligaments by way of the vagina is not a difficult one, and as a rule is readily performed. The ligaments are easily found, and no difficulty will be encountered in attaching them firmly to the cervix of the uterus. In some cases, however, their identification is not made so readily. The result of this operation is surprising; it raises the uterus at once to its proper level, anteverting it to a degree which varies with each case. In some cases the anteversion of the uterus is very marked and in others it is so to a less degree.

I have been pleased with the result of this operation, and take pleasure in reporting my first ten cases that you may judge for yourself the success with which this operation is attended:

CASE I. Mrs. R. G., aged thirty-one years, married thirteen years; has had four children; the last child two years ago. She was suffering with a complete prolapse of the uterus. The cervix was deeply ulcerated. There had been a complete prolapse since the birth of her last child. She got about with difficulty. She was admitted to the Woman's Hospital and operated upon in January, 1912. On account of the age of the patient, being in the childbearing period, and anxious to have children, I decided to submit her to the operation of shortening the uterosacral ligments described and so ably presented to us by Doctor Jellett, of Dublin. The following operation was performed: Circular incision of the cervix; uterosacral ligaments clamped off and cut away from the uterus; Vertical incision of the anterior wall of the vagina in the median line from the meatus urinarius, down to the cervix; bladder freely dissected up; under the dissected up flap of the anterior wall of the vagina, deep sutures were inserted to approximate the pelvic fascia anterior to the uterus, so as to form a shelf for the bladder to rest upon; the cervix was then amputated low down; uterosacral ligaments were then sutured to the cervix in front; the anterior wall of the vagina trimmed away, and closed up with interrupted chromic gut sutures. The operation was finished by repairing the lacerated perineum by the Watkins-Haynes method.

The patient made an uneventful recovery from the operation and was again seen in May, 1912 at which time the following note was made about her condition: Anterior wall of the vagina was in normal condition, no bulging, except to a very slight degree near the meatus. Cervix pointed backward into the hollow of the sacrum. Uterus was anteverted, fundus plainly palpable behind the pubes. Anterior and posterior walls of vagina were in close contact. She was again seen in October last, and her condition found satisfactory. The operation of shortening the uterosacral ligaments proved in her case, a most satisfactory one in curing her of prolapsus uteri of the third degree.

CASE II. Young woman, aged twenty-three years; admitted to the Woman's Hospital, April 22, 1912. She was married only one year, and had a child seven months before admission to the hospital. She had a complete third degree of prolapsus, with a very large cystocele. Her cervix was badly lacerated. The operation consisted in a longitudinal incision of the anterior wall of the vagina, freely dissecting up of the bladder wall; pelvic fascia sutured with chromic gut; low amputation of the cervix; uterosacral ligaments shortened, and sutured to the anterior face of the cervix; the perineal laceration repaired by the Watkins-Haynes method, with the removal of the redundant portion of the posterior wall of the vagina. Uneventful recovery followed the operation. Before leaving the hospital, an examination showed that the uterus was in good position, that the anterior and posterior walls of the vagina were in contact. The procidentia was cured. She was not seen but she was heard from, and reported herself cured of the prolapsus.

CASE III. Woman, forty-two years old; nineteen years married, and had six children. She had a third degree of prolapse with lacerations of cervix and perineum and cystocele. Her operation was the same as in the previous case. The uterosacral ligaments were shortened, the cervix amputated, the perineum repaired and relieved of the cystocele by dissecting up the bladder wall from the vagina, and coaptating the pelvic fascia so as to form a shelf for the bladder to rest on. The operation proved a success in her case and her physician reported recently that the patient had remained well up to date.

CASE IV. Woman, thirty-nine years old, also married nineteen years and had six children also. She had a second degree of prolapse, laceration of the cervix and perineum. The uterosacral ligaments were identified and dissected out and shortened under some difficulties. The peritoneal cavity had to be opened posteriorly and the uterosacral ligaments traced from the sacrum outward. She had a deep, narrow vagina restricting the space for manipulation. The cervix was amputated and the perineum repaired. The mild degree of cystocele was also attended to at the same time. The operation resulted in a cure of the procidentia, and when the patient left the hospital, the uterus was found in good position, although not anteverted as completely as in some of the other cases.

It is to be noted here that the resulting anteversion of the uterus following this operation of shortening of the uterosacral ligaments varies greatly with each case. In some cases the position of the organ is ideal; in others the anteversion is not complete; and still in others the uterus may have a tendency to a partial retroversion. But be it observed also that in all cases of shortening of the uterosacral ligaments, the uterus is prevented from prolapse by raising the organ to a high level in the pelvis.

CASE V. Very large, fleshy woman, forty years old, married twenty years, and had seven children. She had a third degree of prolapsus, a very large cystocele, a moderate rectocele, and a very badly lacerated cervix. The prolapsus made its appearance five years ago. She was admitted to the Woman's Hospital and was operated upon last July. The anterior wall of the vagina was widely opened up and the pelvic fascia was as carefully coaptated as possible. In dissecting out the uterosacral ligaments, it was found that the right one was much longer than the one on the left. A very high amputation of the cervix was performed, because it was intended to make the uterus as light as possible. A perineorrhaphy of the Watkins-Haynes type completed the operation. A smooth recovery followed, and the results were most excellent. After the parts were thoroughly healed, the uterus was found in a fair degree of anteversion and firmly anchored in the pelvis.

CASE VI. Thin, wiry woman, of forty-three years, married twenty-three years, and had four children. She had a complete prolapsus, vagina completely everted with a hernia of the entire contents of the pelvis. Cervix was badly lacerated, and the perineal body was completely destroyed. In this case, the operation of shortening of the uterosacral ligaments received as severe a test as was possible, because all ligamentous moorings of the uterus were gone. The operation proved a success in her case. A very extensive operation had to be performed, because of the completeness of the prolapse and extensiveness of the hernia. The dissection on the anterior wall of the vagina was very extensive, in order to liberate the bladder wall; the amputation of the cervix was moderate. The uterosacral ligaments were found with some difficulty. The peritoneum had to be invaded in their search but when found, they proved very serviceable. A Watkins-Haynes type of perineal restoration, followed by an Emmett butterfly operation on the posterior wall of the vagina completed the work. Before the patient left the operating table, an examination disclosed that the uterus had resumed a condition of anteversion in the pelvis. An uneventful recovery followed the operation.

The patient was examined at my office three days ago and the following conditions were found: Inspection showed a normal looking introitus; no signs of any prolapse on bearing down; anterior and posterior walls of the vagina were in contact; on palpation cervix was plainly felt; it was in good condition. About half of the cervix was still present; the uterus was firmly moored in the pelvis; the fundus was not completely anteverted; there was no tenderness in the pelvis, and the patient considered herself cured. In this case, the operation certainly accomplished everything that could be desired.

CASE VII was of a very interesting patient, operated upon eight months before admission to the hospital, at another institution. She was thirty years old, married twelve years, and had one child. Her prolapse was of the third degree, with complete eversion of the vagina and hernia of the pelvic contents. Her first operation for procidentia had completely failed. Being obliged to support herself, and unable to do so on account of her infirmity, she was greatly distressed in mind, and skeptical about the result of a second operation. Her cervix had been partially amputated and the perineum repaired. Evidently nothing was done to her cystocele at the previous operation, because no scar was visible on the anterior wall of the vagina.

The operation performed on her was the same as described in the previous case. The uterosacral ligaments were located and dissected out with some difficulty, and on account of the previous amputation of the cervix, an extreme degree of shortening of the anterior and posterior walls of the vagina resulted. The Jellet operation proved a success in her case, and I never had a more grateful patient. She came to my office last month, and on examination I found the uterus securely moored in the pelvis with no tendency to prolapse. The uterus was not completely anteverted, even with the bladder empty, but was prevented from prolapse by the shortening of the uterosacral ligaments. The vagina was very short. Her menses were normal. She was free from pain and able to earn her living as a house maid.

Case VIII. Woman, forty-three years old, married eighteen years, and had five children. She had a second degree of prolapsus and stated that her prolapse was only of six months' standing, although for many years a prolapse showed itself on the slightest provocation or at straining at stool. She also had a small fibroid in the posterior wall of the uterus. Her operation consisted in making an incision in the anterior wall of the vagina, dissecting up the bladder, incising the peritoneum in the anterior cul-de-sac, delivering the fundus of the uterus into the vagina, so as to bring the fibroid into view. The tumor was then enucleated and the incision in the uterus sutured. The uterus was returned into the peritoneal cavity. The opening in the peritoneum was not closed. The pelvic fascia beneath the bladder wall was coaptated with buried catgut sutures. The uterosacral ligaments were then shortened, the cervix was amputated, the cystocele repaired, after which the closure of the perineum completed the operation. The operation accomplished all that could be desired.

Case IX was, to me, an unusually interesting case. It was that of a nulliparous woman, twenty-four years old, had a second degree prolapse with an overstretching by intact hymen. The prolapse occurred very suddenly and although the uterus was repeatedly replaced, the prolapse recurred. As is usual in these cases, she had an elongated cervix, but not excessively so.

I determined to shorten the uterosacral ligaments in her case. A painful McBurney point also called for the ablation of her appendix. The operation in this case, consisted in a circular incision of the cervix, laying bare a generous portion of the cervix, dissecting out the uterosacral ligaments, bringing them around the cervix and attaching them to its anterior surface. The circular incision was then closed without amputating the cervix. The abdomen was then opened in the median line, and the appendix ablated. In this case, an opportunity was afforded me to see from above the success with which the uterosacral ligaments could be shortened from below.

The patient was placed in an exagerated Trendelenburg position so as to afford a thorough inspection. The uterosacral ligaments stood out well, drawing the cervix toward the sacrum, and elevating the uterus. On account of the relaxed condition of the broad ligaments, and the round ligaments, it was deemed advisable to shorten the latter one, and accordingly I performed a Webster-Baldy operation, fully to antevert the fundus of the uterus. A smooth recovery followed the operation. The patient was seen a short while ago, and her condition was most satisfactory.

Case X. Woman, thirty-six years old, married fifteen years, and had five children. This patient noticed the procidentia four years ago. She had constant pain in the rectum. Her prolapse was of the second degree. A deep laceration of the cervix existed and a moderate degree of laceration of the perineum. She had but a mild extent of a cystocele. The cystocele was first attended to, the cervix was amputated, the uterosacral ligaments were easily located and shortened. The operation was completed by suturing together the torn parts of the lavator ani muscle and perrineorrhaphy.

The patient left the hospital in an excellent condition and as nothing further was heard from her, I believe she remained in good condition.

CONCLUSIONS.

The Jellet operation of vaginal shortening of the uterosacral ligaments in procidentia uteri deserves a place among the carefully selected gynecological operations. It is based on definite anatomical basis.

The uterosacral ligaments are fascial sheets that are able to support the uterus and annexa in the pelvis.

The operation of vaginal shortening of the uterosacral ligaments is devoid of danger, can be easily performed, is practical in application, and brings desired results.

Vaginal shortening of the uterosacral ligaments is an operation that can be combined with other operations, such as shortening of the round ligaments. It is an operation that my experience and my good results with it permits me to recommend it most highly.

TABLE OF CASES.

	Hosp. No.	Date (1912).	Age.	Mar'd.	Child.	Degree of procidentia.
1	7424	January 26	31	12	4	Third
2	7971	April 22	23	1	1	Third
3	8107	May 14	42	19	6	Third
4	8367	June 27	39	19	6	Second
5	8390	July 1	40	26	7	Third
6	8411	July 8	43	23	4	Third
7	8440	July 7-12	30	12	1	Third
8	8663	August 26	43	18	5	Second
9	8731	September 19	24	Single Mar'd		Second
10	8906	October 9	36	15	5	Third

The operation was a shortening of the uterosacral ligaments in all cases except No. 8, in which a myomectomy was performed.

159 West 120th Street.

HOMOSEXUALITY.*

Its Psychogenesis and Treatment.

By Isador H. Coriat, M. D.,
Boston.

The sexual aberrations in man, or the deviations from the normal sexual impulse, may be divided into two types, the inversions or deviations in relation to the sexual object, such as homosexuality, and the deviations in reference to the sexual aim, such as fetichism, sadism, and masochism. Both types are of great pathological and forensic importance. Since the inversion or rather the special types of homosexuality alone concern us here, we shall direct our attention to the analysis of these particular deviations. The clinical aspects of homosexuality were first noticed and fully dealt with in the publications of Krafft-Ebing, Moebius, Moll, von Schrenk-Notzing, and Havelock Ellis. While the work of these investigators served to clear up the general symptomatology of these disorders, it remained for Freud[1] and Sadger[2] to analyze the essential nature of the condition and trace out its psychogenetic roots in the sexual life of man.

Sexual inversion or homosexuality may be divided into the complete and incomplete types. In the complete inverts, the sexual object must always be of the same sex, while the opposite sex either does not at all stimulate the sexual craving or may actually arouse a feeling of disgust. In the incomplete inverts, the sexual craving may be manifested for both sexes indifferently, or only occasional episodes of inversion may occur, particularly when the normal sexual object is for the time being inaccessible. To the first class belong the true homosexuals or urnings, to the second those guilty of homosexual acts occurring for example among soldiers in camp or among sailors while on long sea voyages. In the complete inverts, or true homosexuals, the individual may actually fall in love with one of his own sex and in so doing experience the same emotions as in genuine, heterosexual love. Here the homosexuality is clear, while in the incomplete types, hidden mechanisms may mask the sexual perversion. Consequently, in these latter cases, true homosexual love does not exist, and the inverted sexual acts take place merely to satisfy a physical craving.

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*Read before the New York Psychoanalytic Society, November 26, 1912.

[1] S. Freud: *Drei Abhandlungen zur Sexual-Theorie*, 1910.

[2] Sadger: Fragment der Psychoanalyse eines Homosexuellen, *Jahrbuch für Sexual-Zwischenstufen*, ix, 1908.

The inversion, however, contrary to the statement of Krafft-Ebing, is in my opinion never congenital. Although subjects will frequently state that they have been homosexual as long as they can remember, yet a psychoanalysis may demonstrate that the inversion originated through a definite unconscious mechanism which took place at some early period of the subject's sexual life. The fact that the origin of the inverted sexuality can be established only through a minute psychoanalysis will explain the earlier theories concerning a congenital origin of these disorders before the period that psychoanalysis began to be applied to these cases. Neither can the loose term degeneration be used to explain these conditions, because many homosexuals do not show the slightest evidence of what are usually termed degenerative stigmata, and furthermore, many so called degenerates are absolutely free from symptoms of inverted sexuality. In addition, among the ancients, homosexuality was a frequent manifestation and that at the highest period of Greek and Roman culture and civilization. We need only refer to the so called boy love of ancient Greece, which at that period was interpreted merely as an idealizing of ordinary sexuality. Concerning this tendency von Schrenk-Notzing states as follows:[3] "From the way in which boy love first manifested itself in Athens and Sparta—when it was most intimately connected, during the golden age of Greece, with the greatest works of art and science, and that without endangering in any way masculine strength and activity displayed in numerous wars and in the games—it is clear that this was not yet a degenerative transformation of the man into a woman upon the basis of neuropathic disposition, even though sensual passion, frequently enough, may have surpassed the bounds of morality and law." The Greek poets sang of boy love and even in modern poetry, such as in the sonnets of Michel Angelo and of Shakespeare and in the poetry of Walt Whitman, homosexuality is idealized; surely in these cases it cannot be interpreted either as an evidence or as a manifestation of degeneration.

In addition, a homosexual, insane, or neuropathic heredity cannot be incriminated, because the condition appears just as frequently in those who are free from any hereditary taint. This does not imply that a neurotic makeup may not predispose to the unconscious mental mechanism which makes homosexuality possible of development.

If it can be proved that homosexuality is neither congenital nor transmitted through heredity, the prognosis for the cure of these conditions must be looked upon as far less gloomy than if the older theories are admitted, particularly so in the light of the recent advances in psychoanalytic treatment. In addition, sexual inversion cannot be interpreted as a "sport" form in the light of certain modern theories of heredity (DeVries), neither can it be compared with such congenital anomalies of the nervous system as color blindness or colored hearing, or the rather poetical but far fetched explanation of Ulrichs, that in sexual inverts a male body coexists with a female soul. Any sound explanation of homosexuality, it appears to us, must be based upon data which prove that the condition arose through an unconscious mental mechanism at some early period of the individual's sexual life. These data can be secured only through a careful psychoanalytic study of individual cases, and it is the purpose of this paper to present such detailed observations.

The modern theories of sexuality then will direct our attention to three possibilities of the development of the condition which may be secured through psychoanalytic investigation:

First, the theory of bisexuality in childhood in which one aspect of the sexuality through external influences or internal conflicts was developed and stimulated at the expense of the other; second, the unconscious development of a sexual fixation for the mother (Œdipus complex); and, third, as a type of compensation mechanism originating in adult life in a subject previously heterosexual. I am able to report cases corresponding to these three possibilities.

Of these, the development of the Œdipus complex is the most important. This Œdipus complex, as I have shown in a previous publication, may also be directly responsible for many psychoneurotic disturbances.[4] This complex not only appears in the psychoneuroses, but also can be demonstrated in works of literature and art. For instance, it appears in *Hamlet*, in *Œdipus Tyrannus*, and in *Coriolanus*. The artist Segantinni in some of his paintings showed this infantile erotic attitude toward his mother, thus demonstrating that he was never able to break completely away from the mother complex.[5] The tenderness and femininity of some homosexuals is due to the maternal influence exercised during the childhood of the subject. The repression of the incest trend may be so associated in the unconscious with shame and guilt due to moral feelings that it becomes impossible for the subject to arouse his sexual libido with the opposite sex, because of this unconscious fixation. As a compensation the sexual feeling can be aroused only by the same sex, and thus the homosexuality arises. Masturbation in childhood with homosexual fantasies is rather a result of this unconscious Œdipus complex and not the cause. Thus when the unconscious Œdipus trend becomes transformed into consciousness, homosexuality results. This Œdipus complex may also dominate the unconscious mental processes of normal individuals; for instance, in some instances of bachelors who marry only after the death of their mother or in those individuals who marry relatives or women resembling their mothers. Sometimes, during childhood, this Œdipus trend may be intense, like Freud's case of Hans, who, according to Freud, was really a "little Œdipus."[6] This is the mental mechanism of the development of homosexuality—the love for the mother becoming so powerful and dominating that it occupies the field of consciousness to the exclusion of all other heterosexual tendencies. Moll[7] is skeptical concerning this Œdipus trend in childhood and says; "But, generally speaking, when a child exhibits an intimate and caressive affection for its mother, we shall not incline to think of the processes of sexual life," yet on the contrary, he is forced to admit "that in these caressing inclinations sexual elements are intermingled."

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[3] A. Von Schrenck-Notzing: *Therapeutic Suggestion in Psychopathia sexualis*, 1895.

[4] Isador H. Coriat: The Œdipus Complex in the Psychoneuroses, *Journal of Abnormal Psychology*, vii, 3, 1912. See also Brill, The Œdipus Complex, New York Medical Journal, November 2, 1912.

[5] For a complete discussion of this question, see the recent book by Otto Rank, *Das Inzest-Motiv in Dichtung und Sage*, 1912.

TREATMENT.

The best treatment for homosexuality is prevention. Prophylaxis should start with the child. Children should not be exposed to overexuberant attention from their parents. A psychic weaning from the mother is far more important than a physical one.[8] When we come to consider the therapeutics of homosexuality, two forms of treatment can be used. In the first place, hypnosis has been successful in a large number of instances, but there seem to be certain cases in which the unconscious complex is so firmly rooted that hypnotic suggestion fails to remove it. As a rule, these patients are very difficult to hypnotize, and in many cases hypnosis merely removes symptoms and does not influence the mental mechanism which made the homosexuality possible of development. Thus there always remains the possibility of further outbreaks of the homosexual trend. In these cases psychoanalysis, both as a method of treatment and of uncovering the unconscious mechanism, is indicated. In fact in some of my cases where hypnosis succeeded in bringing about either no amelioration or merely a transitory one of the condition, a later psychoanalysis was successful in effecting a cure. In some conditions, also, I have found a combination of hypnosis and psychoanalysis very effective, Now in these homosexual cases what evidence have we that the psychoanalytic technic is proceeding successfully? Not only from a moral or ethical standpoint, but also because of the danger of acquiring a venereal disease and thus adding to the misery of the already unhappy subject, we should hesitate to advise coitus with a puella as a test of the success of the therapeutic procedure, in fact advice of this kind appears absolutely unnecessary, because the dreams furnish us, not only the best, but the most incontrovertible evidence of the result of treatment. Homosexual individuals are troubled with dreams which are either literally homosexual or contain elements of a disguised Œdipus complex. If the psychoanalytic treatment is successful the literal homosexual and Œdipus dreams gradually disappear and are replaced by dreams that are neutrally sexual; finally, as the treatment successfully proceeds, the dream life becomes distinctly heterosexual. Thus the dreams of homosexual individuals not only furnish the material for reaching the unconscious mechanism of the homosexuality, but are of decided prognostic value. The cases which I wish to report not only show these unconscious mechanisms, but likewise demonstrate the part played by dreams in the prognosis of the condition.

Although in some homosexual individuals the unconscious resistance to normal sexual relations may appear only during the actual act of coitus, with consequent failure, yet even if this circumstance is considered, we are not warranted in prescribing such a test. If the dream life becomes heterosexual and if the sexual day fantasies become normal, particularly if these are accompanied by the physical phenomena of sexual excitement, these in themselves will prove the disappearance of the homosexual trends. Marriage, obviously, cannot be advised until the subject is absolutely cured, and the proof of this cure lies in the disappearance of the unconscious mental mechanism which led to the homosexuality with the appearance of normal dreams, rather than in the actual test of coitus with a puella. No method of psychotherapy can hope to change the secondary sexual characteristics which occasionally appear in homosexual individuals. These secondary sexual characteristics, however, do not form an integral part of the homosexual disorder, because they may appear in individuals whose sexual craving is normal. They are caused rather by perversions in the secretions of the ductless glands, particularly the hypophysis and the pineal gland. Before the modern investigations began to be applied to the ductless glands it was quite natural that when a homosexual individual possessed, in addition, these secondary sexual characteristics, that the latter should have been interpreted as part of the homosexual disorder. It appears, however, in the light of recent investigations, that these characteristics (feminism, enlarged hips and pelvis, breast development, lack of beard, etc., in male individuals) are rather accidental combinations than a genuine result or cause of the homosexuality.

The diagnosis of a pure case of homosexuality presents but few difficulties. In the incomplete inverts, however, the diagnosis is more difficult and may be definitely established only through careful analysis. In still other cases, the homosexual tendencies are completely hidden within other mental mechanisms, such as in paranoiac conditions and compulsion neuroses. The resistance to homosexual wish fantasies may lead to paranoiac states and this transfer makes the treatment and the unravelling of the mechanism very difficult. On the contrary, I have observed several women with compulsion neuroses (psychasthenia), in which the analytic method of treatment demonstrated that the nervous disturbance arose from homosexual fantasies and repressed homosexual wishes.

Case I. W., age forty-five years, married. According to his statement, had had homosexual impulses with occasional homosexual acts, as far back as he can remember. Evidently, the inversion had been incomplete, because with difficulty, he had been able to have normal coitus, although with incomplete libido, both before and after marriage. In the homosexual acts, the libido had been completely satisfied, whereas in normal coitus, the satisfaction had been incomplete. During his early youth and continuing up to the time of marriage, there had been considerable masturbation, at first associated with mental images of men, but as he grew older women also entered into these autoerotic fantasies, although at all times the images of men predominated. In the dreams, also, the sexual dream images were always those of men. Homosexual acts had been fairly frequent before marriage, the attraction being for men who were physically well built. Sometimes in normal coitus, in order to acquire a complete libido he had been compelled to call up the mental images of good looking men. On a number of occasions, the homosexual craving had been so predominant, that he sought public urinals in order to make chance acquaintances with athletic looking men. Nakedness in men and likewise in sculpture, had been a great source of sexual attraction for him.

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[6] S. Freud: Analyse der Phobie eines 5 jährigen Knaben, *Jahrbuch für psychoanalytische und psychopatologische Forschung*, 1909.

[7] A. Moll: *The Sexual Life of the Child*, 1912.

[8] Isador H. Coriat: Psychoanalysis and the Sexual Hygiene of Children, *The Child*, January, 1912.

A psychoanalysis of this case, conducted through dreams, disclosed a well marked Œdipus fantasy, dating from the earliest years of childhood, thus contradicting the subject's idea that his sexual inversion was congenital. It is interesting to note, as confirming the effect of this Œdipus complex upon the patient's sexual life, that his wife possessed many characteristics of his mother. The marriage did not take place until several years after the death of the subject's mother. In this case also, the change in the character of the dreams during the course of a successful psychoanalysis, was of great prognostic value.

The psychoanalysis disclosed the following data. As a boy, the patient was the subject of overexuberant attention from his mother, he was made the "baby" of the family, and his mother, both literally and metaphorically, "clung" very closely to him. He was greatly more attached to his mother than to his father, although he never showed any open hate or hostility toward the latter. His younger brother, on the contrary, was more attached to his father. Up to the age of eight years, he was subjected to strong feminine influence, in that he was the subject of his mother's overexuberant attentions and he was placed in school in a class of girls, his mother believing that the influence of girls would be more refining, as she considered that boys had a pernicious influence on one another. In order to please his mother he would often imagine himself as a girl and this imagery also entered into his day dreams.

Before the patient came under psychoanalytic treatment, the sexual dreams, sometimes associated with emissions, were purely of a homosexual nature. As the unconscious mechanism of the homosexuality was brought to light by means of dream analysis, the dreams showed an interesting and characteristic change. At first they slowly became sexually neutral and, finally, as he progressed toward recovery, purely heterosexual, in either case, either literal or symbolic. The latent content of a number of dreams showed in addition the strong unconscious Œdipus complex, which was the mental mechanism responsible for the development of the homosexuality. In this case, as in others of my series, it was thought best to record some of the most prominent dreams in the chronological order of their occurrence, first, as showing the prognostic value of dreams in a successful psychoanalysis, and second, the gradual unravelling of the mechanism of the Œdipus fantasy. After a few distinctly homosexual dreams had been analyzed, and after an improvement was noticed as taking place in the homosexual impulses, the following dream was recorded:

It seemed that he was at a house party, apparently a birthday party, at which there were a number of men and women. During the act of greeting his host he squeezed the latter's hand in what seemed to him an unusual manner, and his host returned the greeting in a similar manner. Then his host seemed to serve some ice cream moulded in the shape of pyramids. Finally some cream was given him by his host, which portion had partially melted and collapsed. An analysis of this dream demonstrated that the host resembled a man with whom he had had a homosexual affair some years previously. The pyramids of cream in this case represented a phallic symbol, while the melted pyramid of cream stood for a lack of erection in the presence of a man toward whom he felt a sexual attraction. Thus the dream instigator was an actual event in the subject's life. The unconscious symbolism of the dream represented the beginning of a negative attitude toward homosexuality.

Following this there were two dreams in which a negative attitude toward homosexuality was prominent. In one of these there was a refusal to perform a homosexual act, thus representing an unconscious wish for normal sexuality. In another dream which took place shortly afterward, there was a distinct example of transference or *Uebertragung*. In this dream the subject recommended that another homosexual friend go to Dr. C. in order to be cured by psychoanalysis, and he stated in the dream that he already had been cured by this method. A few nights later there occurred a distinct bisexual dream. The subject appeared to be dressed in old clothes and on his head was a woman's hat adorned with artificial green leaves and pink roses. In this dream he felt that he ought to change the hat for a man's hat. Then the dream suddenly shifted to a scene in which he attempted a homosexual act with a little boy, but the latter became frightened and refused to yield. In the first part of the dream there was a bisexual feeling due to the already beneficial effect of the psychoanalysis. The analysis, however, had not yet reached the point where the benefit was permanent, therefore the tendency toward heterosexuality in the first part of the dream was transitory and changed to the distinct homosexual tendency in the second portion. Since the first portion of the dream represented the wish for a normal sexual feeling and the second for an abnormal feeling, this type of dream symbolized the unconscious struggle for normal sexuality.

For a period after that, during the course of the analysis, the patient noticed a gradual increase in the number and intensity of normal heterosexual images. A few homosexual dreams which took place were very fragmentary and at times mixed with normal sexual elements, were absolutely devoid of a sense of sexual pleasure, and were not followed, as in the past, by a homosexual libido the day after the dream.

In addition, several dreams took place in which there appeared the Œdipus complex in childhood already referred to. As a rule this type of dream was much disguised and highly symbolized. For instance, in one dream of this type a snake crawled over his body, the reptile having been released from a trunk by the subject's mother. Other dreams were also recorded, in which, through a process of condensation, he confounded his wife and mother in the sexual act. A very interesting example of this process was the following dream: He seemed to be in the room of a girl whom he seemed to recognize as one with whom he had attempted sexual relations about the age of puberty. His mother appeared to be present and he seemed to identify her with something sexual. At this point of sexual identification of his mother, there was a displacement, and she quickly changed to the girl, a beautiful example of the moral effect of the censor acting upon the unconscious Œdipus complex.

In another dream, he seemed to be ill in a hospital and bandaged around the abdomen. A man who was physically repulsive to him and at the same time unrecognized, attempted to take off the bandages, it seemed to the subject, in preparation for a homosexual act. Thereupon he started to run, but found it impossible to do so, and felt himself, as occurred in so many dreams, firmly rooted to the ground. Then a woman, who seemed to be the subject's wife, came along and they escaped into a garden and started to fly around. They were both pursued by another woman, also flying, who seemed to be the subject's mother. On analysis, we find that this dream represented a strong heterosexual wish, and the disgust with the man is an example of the increasing homosexual disgust resulting from treatment. The act of flying also represented a wish for freedom from homosexuality. In flying with the first woman (wife), away from the second woman (mother), there is symbolized the breaking away from the unconscious incest trend to normal sexuality. Thus this dream not only represented a wish for normal sexuality, but also concealed the childhood Œdipus trend. Since the patient's mother never cared to have him marry while she lived because of her strong attachment to him, he respected this wish, thus repressing the normal sexual instinct. Consequently, he found relief for his sexual craving in homosexual acts or fantasies as a reaction from the Œdipus trend. A few nights later he had another dream in which the dead body of his mother seemed to fall upon him and he struggled to get out from under it. This struggle was successful. Here again this dream symbolized the gradual subsidence of the Œdipus complex, while the dead body of the subject's mother actually stood for the death of the mother complex, from which for years he had tried in vain to emancipate himself. Finally, however, this complex disappeared under psychoanalysis and with it the homosexuality.

Case II. X, aged twenty-eight years, had been effeminate and attracted to his own sex so far back as he could remember. As a child he was predisposed to play girls' games. Even at puberty this feeling did not change, and women and girls had never had the slightest sexual attraction for him. One or two attempts at coitus failed. Shortly after puberty he masturbated for a time, but always associated the act with images of young or good looking men or boys, never of women or girls. The sexual dreams had always been homosexual. On several occasions, there had been homosexual acts with complete and satisfactory libido. In this case as in the first, the voice was effeminate. In his homosexual acts and reveries and even in his dreams he always played the part of a woman. Sometimes the dreams were literally homosexual. On other occasions the homosexuality was concealed under a mass of symbolism. For a time hypnosis was used in treatment for the condition, with only a transitory affect. A psychoanalysis was then begun which effected a gradual transference to normal heterosexuality. As in the first subject, the dream analysis disclosed the origin of the homosexuality in an Œdipus complex which developed during childhood.

Dream: He appeared to be walking on the street with his mother and they met a woman, a relative of the family. Then suddenly a third woman came upon them, and he was planning to introduce her to the woman who was his relative, but he could not remember her name. Finally he said to the woman: "I will find your husband, we will take you to him," whereupon she replied: "Never mind him, I don't care where he is." Then the second woman went away and he with his mother and the first woman (who appeared to be the relative) walked along the street. Thereupon the younger woman began to hug and caress him in the presence of his mother, at which attention he became much disgusted and wondered what his mother would think of it all.

Analysis shows this dream to have contained an exquisite Œdipus fantasy. It developed during the analysis of the dream that the young woman who was with his mother, was actually his mother at about the age when the subject was born. In the dream also there was a process of doubling, as is frequently found in myths, in that his mother appeared to be at the same age as she actually was, while the young woman appeared to be his mother when she was young. The subject's mother was actually living. The young woman in the dream was very beautiful and appeared older than the subject. A process of condensation also took place in this young woman, in that she appeared to be the wife of one of the subject's most intimate friends plus a combination of the subject's mother when young as remembered from her photographs. To this friend's wife he was attracted in a way which no other woman had ever attracted him, because she resembled his mother. The emotion of this attraction, however, for moral and ethical reasons, had been suppressed, but the suppression appeared in the dream in a condensed and at the same time a doubled form. As a child he thought his mother very beautiful and was very much attracted to her. To his father, however, because of his dissipation, the child developed an open hate and hostility and so ashamed was he of his father's behavior that he would tell others that he was only his stepfather. Any transitory attraction that the subject may have had for the women in his adult life was always for women who resembled his mother and who possessed her mental or moral characteristics. There had never been any homosexual attraction for men who resembled his father.

In his homosexual fantasies, when a child and in adult life, the subject was always passive and imagined himself to be a woman. The maternal influence was so strong that the subject acquired many feminine characteristics. The doubling of the principal figure in the dream represented an unconscious wish that his mother be young again, so that he might admire her as he did in childhood. This literal wish feeling also occurred in dreams of one other of my reported cases which showed the Œdipus complex. The young woman in the dream who "appeared" to be a relative of the subject, by the processes of doubling was actually his closest relative, in fact his mother. Her refusal to be taken to her husband, who in the dream appeared in a vague way to be the subject's father, was a symbol of the hatred of his mother for his father. The embarrassment when the young woman began to hug and kiss him was probably reminiscent of the maternal overaffection, while the emotion of disgust which appeared in the dream was the unconscious reaction against incest complex. The subject frequently thought that if he could care for women in the same manner that he cared for his mother, this would solve the problem of his homosexuality.

The analysis of a number of other dreams disclosed homosexual fantasies concerning dead male bodies. As the analysis proceeded and the homosexual condition disappeared the nature of the dreams began to change. At first they contained heterosexual as well as homosexual elements and, finally, parallel with a distinct lessening of craving for men, the dreams contained either clear heterosexual episodes or disguised wishes for marriage and children. For instance, the following dream was recorded as containing elements referring to the latter wish: He seemed to enter an underground tomb in which he saw the skeletons of several children. As he came out of the tomb the tip of a flag pole appeared in front of him out of a mound covered with grass and gradually grew longer and longer until the entire pole was visible. Here the underground tomb signified the uterus and the children inside the tomb symbolized pregnancy. The flag pole was a phallic symbol and its gradual lengthening represented a wish for normal coitus and children.

Case III. Y, aged forty years, had been married a number of years and had several healthy children. As a child there was considerable masturbation. The homosexual tendencies and acts did not appear until several years after marriage. In this case, as in the second, hypnotic suggestion was only partially successful in overcoming the homosexual trend and only after the application of the psychoanalytic treatment was a cure effected. The psychoanalysis disclosed the following data and cleared up the interesting question as to how a man who was distinctly heterosexual up to and during the first part of his marriage, later became homosexual, particularly since the homosexual craving, after its development, completely dominated his normal sexual impulses.

The first homosexual experience occurred several years after his marriage. Because of a deformity of the chest he was a sensitive and delicate child and dreaded exposing himself to other boys, particularly while bathing at the private school which he attended. The erotic fantasies associated with masturbation during childhood were always those of women. At the time of his first homosexual episode he found that this means of gratification afforded him the same satisfaction as normal indulgence. He was early sent to a private school composed of girls, where few boys were admitted. Later he began to admire asceticism (owing, he thinks, to the influence of a friend), and began to feel that seeking the society of girls was a form of manly weakness. For his mother he had great admiration, and confided in her his early habits. He was informed by her that the habit was productive of many mental and physical disorders, so that later he ceased to confide in his mother and continued his practices in great secrecy. Certain passages in the Bible referring to sexual uncleanliness greatly impressed him, in fact so much so that whenever his hands even accidentally touched his genitals, he would wash them, a kind of compulsion mania having a distinct sexual etiology. As I have recently pointed out, this compulsion mania for washing the hands, which were thought to be contaminated, thus transferring an unpleasant complex to an indifferent act or symptom, also took place in Lady Macbeth.[10]

Finally, when he was admitted to a boy's school he was looked upon by the other boys as being bashful and effeminate. It developed that at the time of his first homosexual act after marriage his wife was ill with some uterine disorder, therefore he deliberately refrained from coitus. The sexual craving was strong, however, and he chose homosexuality to satisfy his libido, as he felt that this did not involve infidelity to his wife. Therefore in this case the homosexuality arose as a compensation mechanism to satisfy the repressed sexual craving. Possibly also the development of certain effeminate traits which took place during childhood may have acted as an unconscious complex which partially determined the choice of homosexuality. The inversion not only satisfied his craving, but also acted as a compensation or rather an excuse that he must not overstep the bounds of law and morality to satisfy his sexual instincts.

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[10] Isador H. Coriat: *The Hysteria of Lady Macbeth*, 1912.

The dreams of this case strongly symbolized his childhood tendencies and the mechanism by which his unconscious complexes gradually forced him into homosexual acts. The analysis was conducted entirely through means of the dreams.

416 Marlborough Street.

PSYCHIC CONSTITUTIONAL INFERIORITY.

Some Fundamental Conceptions.

By Morris J. Karpas, M. D.,
New York,
Assistant Resident Alienist, Psychopathic Department, Bellevue Hospital.

In this preliminary communication I desire to set forth the fundamental conceptions of psychic constitutional inferiority. According to many authorities, the group of psychic inferiority is restricted to the intellectual domain only, and no recognition is given to the other two faculties, emotion and volition, which are equally important. In order to obtain a better grasp of this subject, it will not be amiss to refer to the structural elements of the human mind in their normal relations.

Roughly speaking, the human mind is composed of three important faculties—emotion, volition, and intellection—and each of these faculties may be divided into groups and subgroups. In order to establish a proper adjustment of the mental organism these faculties must harmoniously balance. A concrete example will serve as illustration.

Suppose Mr. A walks on the street and sees a man being run over by a truck. It is necessary for him to evince an adequate emotional response; a certain amount of activity—will power; and a proper judgment in confronting such a situation. If, on the other hand, Mr. A's emotions are entirely out of proportion to his volition and intellection, by seeing such an accident he would become emotionally unbalanced, and in the meantime the unfortunate subject would be deprived of proper attention. Again, if Mr. A's volition should be entirely out of proportion to the other two faculties, he would show considerable activity, but without definite aim. Then again, should his intelligence be so remarkably developed at the expense of the other two faculties, he would most probably stop, pondering over the physiology and pathology of bleeding and the mechanics of the accident, and in the meantime the unfortunate man would die of hemorrhage. If you take the other extreme, say, Mr. A's emotions are much lowered, or his volition is not fully developed, or again, his intellectual sphere is defective, the mental reaction in such a case would be decidedly abnormal. We are taking the extremes to illustrate pathological mental states.

These illustrations prove that an inferiority in the psyche need not be a defect in the mechanism of the intellectual sphere only, but it may also involve the other faculties as well. The following definition of psychic constitutional inferiority may be offered: *By psychic constitutional inferiority we mean a defect (usually congenital) in the emotional, volitional, or intellectual sphere, more than one faculty may be affected. As a result of this there is a loss of mental equilibrium to such an extent as to make one incapable of adjusting himself to environmental influences.*

Hence, mental inferiority should be divided into groups—emotional, volitional, and intellectual—and mixed types, combinations of two or more forms.

Emotional form. This form of psychic constitutional inferiority includes a wide range of mental pathology. It would be difficult to outline a complete classification of emotional inferiority, but for convenience we may divide this group into two main classes, hypoaffective and hyperaffective. The first may again be subdivided into two classes, the "shut in" personality (Hoch) and the seclusive make up with irritability and outbreaks of petulant and uncontrollable fits of passion.

The shut in personality can be demonstrated in a large majority of cases of dementia præcox. However, it should be remembered that there are individuals with such a personality that do not develop deteriorating psychoses, but are rather susceptible to neuroses. They are seclusive; have but few friends and are not infrequently called misanthropes; indulge in numerous fantasies, and are fond of speculative reveries; and lead at times an abnormal sexual life, perhaps a bit perverse or inverse, and rarely marry. By reason of this peculiar mental make up they repress their experiences. It is rather interesting that they seem to get on very well in their own way, and rarely come in conflict with their environment. It is important to note that they are usually fairly well developed intellectually, and the question arises whether or not the overpreponderance of the intellectual energy helps to compensate for the deficiency in emotional activity.

The second class is the seclusive personality that is subject to tantrums. In some cases an element of intellectual inferiority or neurasthenoid features may be in the foreground. Such subjects are prone to exhibit a transitory pyschosis, which usually expresses itself in excitement, not of a dementia præcox reaction, but rather of indefinite trends, perhaps simulating an epileptoid outbreak. The prognosis for the episode is usually good.

The hyperaffective group embraces the manic and hysterical constitution, to which no allusion is necessary. However, it is desirable to refer to the hysterical temperament without clearly cut somatic conversions and with relatively little complex fixation. Such individuals become readily upset; cry easily; grow excitable and irritable; and in them under adverse circumstances may develop a transitory psychosis, which is usually of short duration. Indeed, in the psychopathic wards of Bellevue Hospital one sees such cases very frequently. In some instances paranoid trends and suicidal tendencies may develop, but in such cases one finds a recent trauma, possibly of a sexual nature, that is responsible for the outbreak.

Brief mention must be made of the nervous temperament, that is, that class of individuals who are sensitive, hyperactive, irritable, unstable, and display considerable intensity in their undertakings, but with relatively good intellectual endowment. This type of constitutional inferiority I was able to demonstrate in a majority of cases of general paralysis.

There is another type of the hyperaffective form of psychic constitutional inferiority, which lacks manic and hysterogenic trends. These subjects are usually sulky, morose, irritable, and excitable, and frequently give vent to uncontrollable temper, and at times become abusive and assaultive. It is possible that in such cases the volitional faculty may also be at fault.

Volitional form. This form of mental inferiority is one of the most striking in the field of psychopathology. It is lamentable that such individuals come more often under the care and attention of courts than under the observation of physicians. The characteristic feature of this type of psychic inferiority is a reduction of will power, and in some cases the character may show some alteration. They become easily influenced by suggestion, which, however, is not lasting; they are unable to control their impulses, and not infrequently commit gross sexual acts and other crimes; they yield to temptations and are inclined to lie and deceive; they are easily influenced by bad environment, and immoderately "worship at the shrines of Venus and Bacchus;" they frequently come into conflict with their environment and become decidedly antisocial; and, moreover, they are subject to uncontrollable fits of passion. It is rather interesting that these individuals are usually intelligent and educated, and there is no congenital defect in the intellectual faculty. Individuals of this class are frequently known as "the black sheep of the family." Without exaggeration it may be said that a large majority of our criminals, tramps, vagrants, prostitutes, chronic alcoholics, habitués of drugs, and the like, come under this class. Many are of good lineage and are not burdened by hereditary taint. It is very important to recognize these types of mankind in the early developmental stages, and every possible effort should be made to adjust them to such an environment as will offer the least temptation in life.

Intellectual form. The intellectual form of psychic constitutional inferiority includes a large territory of mental retardation, ranging from idiocy to a mild degree of mental enfeeblement. In the majority of cases uncontrollable temper or defective will power, or both, are observed. The intellectual defect may express itself in the combinative faculty, or in the higher association centres, or again, a general and uniform reduction of the entire intellectual organism may occur. It is not within the province of this paper to offer a classified symptomatology of this type of mental inferiority, but suffice it to say that this is one of the most obvious forms of psychic inferiority which rarely passes unnoticed by trained observers in psychopathology.

PSYCHIC CONSTITUTIONAL INFERIORITY IN RELATION TO MENTAL DISEASES.

It will not be amiss to emphasize that constitutional inferiority is the foundation of many (if not all) forms of psychoses. The question arises what specific type of psychic inferiority determines the nature of a mental disease. Meyer and Hoch showed that in manic depressive insanity and dementia præcox the mental make-up is quite characteristic. Likewise, hysterical outbreak and paranoid conditions develop in certain personalities. In a majority of cases of general paralysis I have found a peculiar form of nervous temperament in which, in addition to syphilis, is prone to develop this fatal disease. Recently, Mattauschek and Pilcz have made very important investigations regarding the fate of 4,000 luetic officers of the Austrian army and found that only 4.67 per cent. of them became paretics. This confirms the view that syphilis alone is not sufficient to produce general paralysis. It appears to me that to the syphilologist it would be important to recognize the nervous temperament of such individuals and institute timely prophylactic measures.

A large number of cases of alcoholic psychoses are evidently engrafted upon a peculiar type of personality, and the habitués of drugs invariably display striking psychopathic trends. If more careful study could be made of the mental make-up of other forms of psychoses, it would be possible to define other types of psychic inferiority in such patients.

It must be borne in mind that not in every form of constitutional inferiority a psychosis develops. This could be confirmed by the clinical material in the psychopathic wards of Bellevue Hospital, where during the year large numbers of cases of psychic constitutional inferiority are admitted, but are not committed to the State hospital because in the legal sense they are not insane. Under the present state of affairs treatment in a State hospital would be infinitely better than confinement in reformatories, prisons, and other similar institutions.

DIAGNOSIS.

The diagnosis of psychic constitutional inferiority is not difficult to make, provided the life history of the patient is thoroughly investigated.

It is important to accentuate the fact that there are two types of mental inferiority, *relative* and *absolute*. By the former we mean a type of inferiority which may be considered as such in a certain environment, but which, under different conditions, would not be so regarded; for instance, a Russian peasant may be looked upon as an inferior in an American commonwealth, whereas in his own community he may be regarded as a very respectable member. By the latter (absolute) is meant a striking defect in the mental organism irrespective of one's environment.

The anamnetic data should be obtained from the patient's parents, or other relations, or both; additional information from ministers, teachers, and friends, is very important. It cannot be too strongly emphasized that a thorough history of such cases is necessary from the point of view of differential diagnosis. There are cases of mental infirmity without psychotic manifestations, which in the absence of an anamnesis are often mistaken for constitutional inferiority.

The recognition of psychic constitutional inferiority in the developmental stage is of prime importance; the sooner the process can be arrested the better is the outlook for the organism to adjust itself to an environment. How many backward boys, unruly pupils, and juvenile delinquents are unjustly punished and deprived of timely medical treatment!

It is impossible to offer definite guides by which we can diagnosticate the wide, broad range of psychic retardation. The mental organism should be viewed and gauged in different ways: first, in relation to itself; second, in relation to its environment; and third, in relation to its capacity of adaptation to various conditions. No single test or symptom should be considered pathognomonic, but the case should be regarded as a whole. We have various intellectual tests which aid us greatly in recognizing intellectual infirmity.[1]

PROGNOSIS.

Generally speaking, the prognosis of psychic constitutional inferiority is poor, but under proper treatment and reeducation, especially in the earliest stages, considerable good can be done, the process can be arrested, and the individual adapted to an environment suited to his peculiar type of mentality.

TREATMENT.

Early recognition and proper treatment of psychic constitutional inferiority is extremely important, especially from the standpoint of prophylaxis as applied to mental diseases and other forms of psychic degeneracy. In some instances segregation of such types of mankind would be highly desirable. One must remember that at the present time these cases are treated, or rather maltreated, in reformatories, workhouses, penitentiaries, or other penal institutions. It can be readily seen that such influences are highly detrimental to this class of patients; instead of assisting them to find adjustment in a healthy environment, they are thrown into a society where their abnormal tendencies become more and more accentuated, thus promoting further mental deterioration. Many of them become habitual criminals and spend most of their lives in prisons; others end their lives at the scaffold; others become dependent upon society and become its parasites; and still others become chronic alcoholics and habitués of drugs. If these unfortunate pieces of humanity were correctly understood and their malady early recognized, crimes would be reduced to a minimum; prisons would be open only to casual criminals; and the amelioration of the race at large would be highly assisted.

It should be borne in mind that at the present time we have no institution for the care and treatment of psychic constitutional inferiority. It is necessary to establish a hospital with trained psychiatrists, pedagogues, and sociologists, where such cases should be carefully studied and educated along certain definite lines. The object should be to enable them to become fairly efficient members of certain communities adequate to their mental capacity, and not to make them permanent dependents upon public institutions; in other words, *to adapt them to the simplest possible environment to which the mental organism can adjust itself without detriment.* At the present time it is very important to have competent psychiatrists connected with our kindergartens, schools, and colleges, for the purpose of examining the pupils and detecting mental deviations from the normal. In such a way we could institute early treatment for such cases.

ADDENDUM.

BINET AND SIMON'S TESTS.[2]

Three Years of Age.

1. To point to mouth, nose, and eyes.
2. To repeat a sentence of six syllables and a number of two digits. *The cow gives us fresh milk. 23; 67.*
3. To name objects and persons on a plain picture.
4. To give surname.

Four Years of Age.

1. To name common objects used in every day life.
2. To repeat a number containing three digits.
3. To state whether a boy or girl.
4. To compare two lines; which is the longer of the two (one is 2 inches and the other is 2¼ inches)?

Five Years of Age.

1. Which of the two objects is heavier?
2. To repeat a sentence of ten syllables. *The teacher praises diligent pupils.*
3. To count four coins.
4. To place two triangles to form a rectangle.
5. To copy a square with pen and ink.

Six Years of Age.

1. To show the right hand and left ear.
2. Is it forenoon or afternoon?
3. To give age.
4. To carry out three commands.
5. To repeat a sentence of sixteen syllables. *The cat lurks for the mouse and catches it suddenly in a leap.*
6. What is a table, horse, rose? (It is required that the patient should explain the use of such objects.)

Seven Years of Age.

1. To describe a picture.
2. To recognize incomplete figures.
3. To copy with pen and ink the following: "The small Paul."
4. To count thirteen coins.
5. To count fingers on the right and left hand and both hands.
6. Drawing of a rhomboid figure with pen and ink.
7. Recognition of foreign coins.
8. Repeating a number of five digits.

Eight Years of Age.

1. Addition of five well known small coins.
2. Recognition of colors—red, yellow, green, and blue.
3. Count backward from 20 to 0.
4. Write from dictation: "The sun shines."
5. Give the difference between a butterfly and a fly; wood and a glass; bone and meat.
6. To repeat a short story (at least two things should be correctly reproduced

Nine Years of Age.

1. Give the day of the week, date, and year.
2. Repeat the days of the week.
3. Put in order according to weight five small boxes.
4. A small box was bought for twenty cents; to give change from one dollar.
5. What is a table, a horse, and a rose (a short description is required)?
6. To reproduce a short story (at least six correct things to be given).

Ten Years of Age.

1. Repetition of months.
2. Knowledge of various kinds of coins.
3. Form a sentence of three words which are not very easily chosen; two sentences are permissible, but they must have a meaning.
4. Easy intelligence tests; e. g., *What do you do if you miss a train? What would you do if you were accidentally struck by a friend? What would you do if you broke a thing which did not belong to you?*

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[1] These tests are given at the end of the article.

[2] Borrowed from Raecke's book, *Grundriss der psychiatrischen Diagnostik*, 1912.

5. Difficult intelligence tests; e. g., *What would you do if, on the way to school, you found that the time was getting short? What should one do before deciding important matters?*

6. What should one do if he is asked about a person whom he does not know well? Why should one excuse a bad act committed in temper and not premeditated? Why should one be judged by his actions and not by his speech?

Eleven Years of Age.

1. Criticise the following absurd statements: *I have three brothers; Paul, Ernest, and myself.* Is it correct? Why not? How should you say it?

Recently a body was found in the woods which was cut up into eighteen pieces. Some people believe that suicide was committed. Is it possible?

Yesterday I read in the papers of a railroad wreck without bad results—there were only forty-eight deaths. What do you think about it?

2. Compound one sentence from three words.

3. Name at least sixty words in three minutes.

4. Give examples for the following: When one sympathizes with another; when one is just; when one is envious.

5. Out of ten loosely connected words form a complete sentence with a meaning.

Twelve Years of Age.

1. To repeat a number with six or seven digits.

2. To repeat a sentence of twenty-six syllables: *Yesterday mamma and papa visited my dear old grandfather who was sick in bed for twenty days.*

3. Give three words to rhyme with one word in one minute.

4. Questions pertaining to combinative faculty.

5. *My neighbor just now received strange visitors—a doctor, a notary, and a priest.* What do you think happened there?

Mr. Johnson took a walk in the woods and he suddenly became so frightened that he could not move. He ran to a policeman and told him that he saw a nest on a tree. What do you think about it?

6. Describe and interpret a picture.

ZIEHEN'S INTELLIGENCE TESTS.[3]

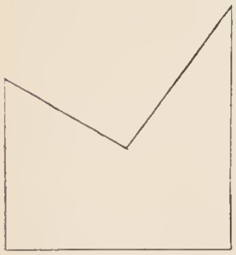
I. *Retention.*

(1). Old impressions: These are tested by questioning the patient as to his personal and family history, school knowledge, etc.

(2). New impressions: (a) Repetition of numbers and letters; for instance, 1869, 79581, 834596, 41927561. An ordinary individual can repeat without difficulty six numbers; the *Korsakoffs* usually can retain three numbers; paretics repeat four numbers. Inability to repeat three numbers usually indicates a grave intellectual defect or dissociation.

(b) Repetition of an example, which is given at the beginning of the séance.

(c) Reproduction of objects, colors, or pictures. The following figure is usually exposed for fifteen seconds; later covered for fifteen seconds and then patient is asked to reproduce it.



(d) Reading and relating of a short story which has definite point.

(e) Pair words, which usually have some relation to each other, are given to the patient. After a pause, a member of the pair words is named and the patient is requested to reproduce the corresponding one.

Garden—large.
House—small.
House—yellow.
Picture—nice.
Dress—white.

II. *Abstraction.*

This is divided into four parts:

1. Specification and generalization.
2. Definition.
3. Differentiation.
4. Exemplification.

(1'). Specification:

To what class of the animal kingdom do the following belong: Eagle, ant, goose, chicken, turkey?

Name animals which have wings, bill, and lay eggs, etc.

(1"). Generalization:

Name different kinds of birds.
Name different kinds of rivers.
Name the furniture you know.
Name different kinds of instruments.

(2). Definition:

What is jealousy?
What is gratitude?
What is hatred?
What is a butterfly?
What is a horse?

(3). Differentiation:

Differentiate between an ox and a horse; child—dwarf; bird—butterfly; ladder—steps; lie—mistake; avarice—economy; box—basket.

(4). Exemplification:

What is worse, lie or mistake, and why? Give an example of gratitude; jealousy; avarice; envy.

III. *Reproduction.*

Association test. Fifteen words are given. Ziehen employs the following words:

Forest, Disease, Sin, Sweet, Run,
Red, Small, Father, Poison, Death,
House, City, Jealousy, Wedding, Fish.

At the end of the séance the first three are repeated; after twenty-four hours and one week, respectively, the other words are repeated.

IV. *Combinative activity.*

The ability to combine higher mental processes—the foundation of judgment faculty.

(a) Recognition of former objects and persons.

(b) Grasp on new environment.

(c) To explain the meaning of certain pictures.

(d) To give the moral of a fable, for instance, the dog and the manger; the lion and the mouse, etc.

Writer's modification of the fable; puts the following questions:

Of what does this fable remind you?

How would you act if you were placed in the same position?

(e) Ebbinghaus's method: To supply missing words or syllables in a sentence; for instance:

There was — — merchant — — had — child; — barely laden — then making — — upon —, in — he had — all — wealth, in — hope — making — great — when — news — that — were lost.

(f) Ziehen's modification of Ebbinghaus's method: to complete unfinished sentences:

If the soup is burned;
If it rains;
If Jack Johnson had lost.

(g) The alphabet and picture block method:

Patient is requested to compose certain words or form pictures or objects.

(h) Masselon's test: Formation of sentences out of two or more words:

Cat—mouse—cellar.
Hunter—fix—woods.

(i) Proverbs: (Fincke) To explain the meaning of certain proverbs.

Strike while the iron is hot.
Many cooks spoil the broth.
Do not look a gift horse in the mouth.

(j) Bourdoun's method for testing attention.

Patient is asked to point out certain letters or syllables in a senseless composition.

(k) Arithmetical test.

$X + 25$ equals 40; what is X?
$X - 15$ equals 50; what is X?
$X \times 5$ equals 45; what is X?
$X \div 9$ equals 7; what is X?

(1) Backward association.

Enumeration of week days and months; counting from 20 to 1, etc.

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[3] Reprinted from Remarks on Neurology and Psychiatry in Berlin, with Special Reference to Ziehen's Intelligence Test, by Morris J. Karpas, M. D., *State Hospitals Bulletin*, December, 1910.

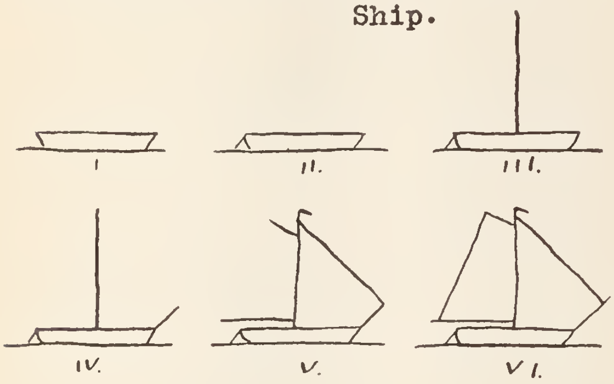
OTHER TESTS.

(1) Which is heavier, a pound of lead or a pound of feathers?

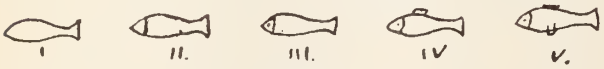
(2) There were twenty-four birds on a tree; one third was shot down; how many remained seated?

(3) Heilbronner's method: Recognition of rudimentary outline drawings of certain pictures; for example:

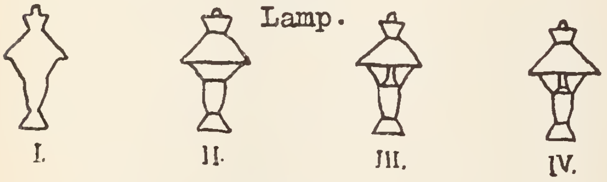
Ship.



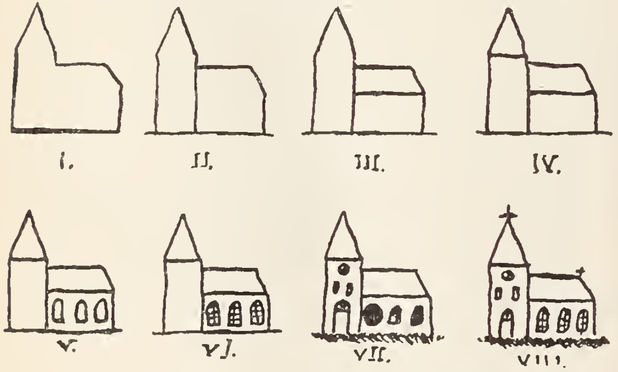
Fish.



Lamp.



Church.



(4) Rosenfeld's rhythm test: The patient is asked to imitate the rhythm of a sound which is produced by striking a glass with a metal rod.

Bellevue Hospital.

EXPERIENCES WITH NEOSALVARSAN.*

The Intramuscular Method.

By Joseph Kaufman, M. D.,
New York,
Assistant Attending Genitourinary Surgeon, People's Hospital; Clinical Assistant, West Side German Dispensary, German Poliklinik, and St. Mark's Hospital, Outpatient Department.

We have had about nine months' experience with neosalvarsan and there are several questions which we are now in a position to answer with a reasonable amount of assurance. As to the value of arsenic in the treatment of syphilis, whether in the form of salvarsan or neosalvarsan, there is no longer any question. As to the nonrealization of Ehrlich's hope that here we had a therapia sterilisans magna, there is no longer any doubt.

The ease of its preparation for administration brings neosalvarsan into the class of remedies that every practitioner can use. Its perfect solubility in freshly distilled water, giving a neutral or slightly alkaline solution ready for injection, does away with the somewhat complicated preparation necessary for the administration of salvarsan.

We have yet to determine: 1. Is neosalvarsan as potent as salvarsan? 2. What is the best way to administer the drug?

In over fifty cases occurring in the service of Dr. Abraham L. Wolbarst at the West Side German Dispensary and in the writer's private practice, we have been able to study the action of neosalvarsan, and we can say that our results with the newer drug have been quite as satisfactory as with salvarsan. One of these cases is worthy of special mention, as illustrating the potency of this remedy.

Case. G.Mc., aged forty years, laborer; primary sore appeared December 15, 1911. Diagnosis of syphilis was not made until January, 1912, when a marked secondary eruption appeared. Salvarsan, gramme 0.6, was given intravenously with the disappearance of the lesions within seventy-two hours. One month later the patient received another intravenous injection, followed in three weeks by still another (each 0.6 gramme). A specimen of blood examined one month later showed a doubtful Wassermann reaction. One week later, the patient returned with complete loss of vision in the right eye. Examination showed an intense chorioretinitis. He was put on vigorous mercurial treatment, large doses of potassium iodide (grains 180, three times daily) and the usual local measures, with absolutely no improvement. During this period, over three weeks, the patient was salivated several times.

Neosalvarsan was then injected, intramuscularly (Wolbarst method) with immediate improvement. Three weeks later he had another intramuscular injection with still more marked improvement. At the present writing, while his vision is not perfect, he is able to distinguish objects and read large print with the affected eye.

What is the best way to administer the drug? When salvarsan was first brought out, the intramuscular method, advocated by Alt and Wechselmann, was generally used. The severe pain, abscess formation, and tissue necrosis stimulated the search for another method of administration. Schreiber, Iversen, and others then suggested the intravenous method, which has proved to be a great advance on the original method of administration.

Experiments conducted about this time showed that when the drug was given intravenously, all the arsenic was eliminated in from four to eight days, while after an intramuscular injection traces of arsenic were found in the urine for several months. This, in itself, was very suggestive. Ehrlich then recommended that salvarsan be given three or four times at short intervals.

Since April, 1912, we have been experimenting at the clinic with neosalvarsan, in the hope of devising a painless intramuscular method. We have found that lesions clear up after intravenous injections as if by magic, but the therapeutic effects in the average case are not lasting. Results after the intramuscular injection are slower, but we have found them to be surer and more trustworthy.

There are other objections to the intravenous method. While it is a comparatively simple thing to plunge a needle into a distended vein, anyone who has had any extended experience with this method remembers cases which defied his customary skill, the infiltrations, the hematomas, and the hurt to one's personal pride. The disfigurements following the cutting down on veins when that procedure was necessary are also not to be forgotten.

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*From the Service of Dr. Abr. L. Wolbarst at the West Side German Dispensary.

In our first experiments at the West Side German Dispensary with the intramuscular method, we simply dissolved the neosalvarsan in five c. c. of sterile distilled water and injected it into the gluteal muscles. The exquisite pain and marked induration proved that we would have to adopt some other method of preparation.

Doctor Wolbarst then devised the following method:

> The powder is mixed in a mortar containing three or four c. c. glycerin (c. p.); to this is added a few drops of one per cent. beta eucain or alypin solution in distilled water. The suspension has now been converted into an almost clear watery solution. The buttocks are painted with iodine, and four spots are located, two in each buttock, into which one c. c. of the solution is injected and slight pressure made by the hand. The patient is not confined to bed.[1]

The only possible objection to this method is that severe pain may follow the injection. But the question of pain is such a peculiar one that as a symptom it must be considered relative rather than absolute. Some patients have complained bitterly of pain, but they are usually neurotic patients, to whom any procedure is painful. Many others have suffered absolutely no pain whatever. Some patients have had pain at only one of the four puncture sites. Many patients have told us that there was not much more pain than after an injection of salicylate of mercury.

In none of the cases has there been any necessity of keeping the patient in bed. A slight stiffness is the chief complaint, and this passes off in a few days. Sometimes the pain appears on the fourth or fifth day.

As to ultimate results, we are not in a position, after so short a time, to make any positive statements as to the curability of syphilis with the means at our disposal. It is only when a great many years have passed that we shall be able to speak positively and authoritatively. At present we must be content to bring our patients to a point where the clinical symptoms are negative and where repeated examinations by competent and careful serologists disclose persistently negative Wassermann reactions.

At present in our dispensary service we are treating our patients with neosalvarsan, injected intramuscularly after the method of Doctor Wolbarst. We give our injections, where possible, at monthly intervals until the Wassermann reaction is negative and repeated examinations show it to remain so.

In private practice we are giving our patients three intramuscular injections at monthly intervals and following these with a series of salicylate of mercury injections.

CONCLUSIONS.

1. One injection is not to be considered curative.
2. Neosalvarsan is quite as potent as salvarsan.
3. The intramuscular method is more effective clinically than the intravenous.
4. Its effects are far more lasting than the intravenous, though not so rapid.
5. The pain attendant on the injection, where there is any, is not a valid objection to this method.
6. With aseptic technic there is no danger whatever of abscess or necrosis.

Our thanks are due to Doctor Wolbarst for the privilege of studying and reporting these cases, and to Dr. B. W. Key for the eye examinations in the case referred to above.

119 East Tenth Street.

SURGICAL CATHARSIS.*

By S. B. Overlock, M. D.,
Pomfret, Conn.
Surgeon, Day Kimball Memorial Hospital.

A man who now presents anything pertaining to the abdomen should crave pardon from an audience of medical men. This subject has been written upon so often, so thoroughly, so exhaustively and completely, during the last twenty years, that at first thought it might seem that nothing further really pertinent to the subject could be said. The literature of this subject is composed of reports of individual cases by the occasional operator and of the most elaborate theses by the masters in surgery, of experimental work by the laboratory student and vivisectionist, and the brilliant achievements of the clinician and pathologist. Admitting, if need be, that the last word of weight in the matter has been said, the importance of abdominal lesions is so prominent, both from their frequency in practice and the high mortality in neglected or incorrectly diagnosticated cases, that anything offered to the profession relative to the subject may be considered legitimate.

The use of cathartics in intraabdominal lesions is of equal interest and of equal importance to both surgeon and internist. The use of cathartics to stimulate function in an uninjured intestine will not, however, be considered here. This belongs more properly to the internist. The discussion is to be confined to the preoperative and postoperative use by the surgeon and their use by the general practitioner in the so called "acute abdomen" before the patient is transferred to the care of the surgeon.

Of all the various classes of drugs used in medicine, cathartics were, no doubt, among the earliest employed. This was due to two principal causes; the early idea of purification of both soul and body that is coexistent with earliest religious history; and, second, that the results of catharsis were so evident to the senses. The casting out of devils and the casting out of foul humors from the body bear a striking similitude. The results of catharsis are evident to touch, sight, and smell; hence their use came about as a natural sequence of the reasoning process in primitive man. The removal of bad looking and foul smelling excrement from the body by the use of cathartics was to him a striking example of purification. The curative results many times, in various ailments from melancholia to functional intestinal obstruction, was so marked that there was a real reason for their use, added to the primary idea of purification. The result of all this has been to fix in the minds of not only the laity but also the profession, an unbounded faith in cathartics. The production of catharsis has become almost a condition *sine qua non* in the treatment of nearly every diseased or suspectedly diseased condition. To procure this the most powerful drugs have been employed, and their use has been most indiscriminate.

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[1] Wolbarst, *Medical Record*, July 27, 1912.

*Read at the semiannual meeting of the Connecticut State Medical Society, Willimantic, October 17, 1912.

The effect of cathartics in general depends on the irritating quality of the drug used. This is sometimes a property of the drug *per se*, and sometimes the drug must be acted upon and combined with the intestinal secretions before it becomes an irritant and capable of producing expulsive effort on the part of the bowel. In addition, there are drugs which produce expulsive effort by increasing muscular action of the intestine through stimulation of the nervous system. On the whole, however, a cathartic must be regarded as an irritant, whether it produces its effect by coming in direct contact with the mucous membrane of the alimentary canal, or indirectly through its influence on the nervous system, after having been introduced into the human body.

For sake of further definition, I will repeat in part something already said. The use of cathartics is of interest to the internist in regulating the function of a normal bowel. By this term, normal bowel, is meant in this connection a gut whose functioning power is impaired, but in which no gross lesion is present or threatened. This phase of the use of cathartics is to be left out entirely in the discussion. In so far as the surgeon is concerned, the use of cathartics may be divided into two groups: Use in preparation for operation, and in securing evacuation after operation.

It is but a few years since that every patient who was to be subjected to an abdominal section was required to undergo a prolonged and thorough catharsis as a routine practice. It was thought absolutely necessary that the intestinal tract be swept and garnished to the fullest extent possible. This, together with the elaborate and complete toilet of the external abdomen, should have exhausted any except the most robust.

The result of this internal cleaning process was this: The patient came to operation with a lame intestine, its mucous membrane roughened and congested by maltreatment, its secretions depleted or exhausted, its musculature weakened, its nerve filaments either stimulated to excitability and irritability, or beyond this point to that of absolute inaction from overstimulation. Is it possible to conceive a condition more favorable to intestinal paresis, the formation of volvulus, adhesions to raw surfaces left by operation, and consequent postoperative obstruction? Anyone who has been doing abdominal work for ten years or more will tell you that he sees much less of postoperative complications now than when rigorous preoperative catharsis was in full use. This is, no doubt, in part due to improved technic, but the greater part is due to modified preoperative catharsis.

It is admitted that an empty gut is desirable in intraabdominal work. But it is proper here to inquire what is meant by an empty gut. While following an active catharsis a gut may be completely empty of fecal content, it is likely to be widely distended with gas, and a gut fully distended with gas is much more difficult to control than when distended with fecal material. Everyone can recall repeated instances in emergency work where the patient came to operation without preoperative catharsis, with a gut full of fecal matter, where the postoperative progress was perfectly satisfactory and uneventful. In fact, the large majority of these cases do well. The small intestine, when there has been no cathartic administered, is filled with liquid material. Its contents consist of food in solution, provided no unmasticated or absolutely indigestible substance has been ingested. The solid part of the fecal stream is in the large intestine, mostly refuse material after the body has appropriated most of the liquid and soluble portion as pabulum for nutrition. The contents of the large intestine can be quite thoroughly removed by enemeta. Why, then, disturb the equilibrium of the patient by rigorous catharsis?

In cases where the operation is elective and consequently sufficient, time can be taken for preparation of the patient, a mild cathartic given three or four days before the date of operation, putting the patient on a diet leaving but little residue, allowing water freely, giving an enema every morning to wash out the large intestine, should bring the patient to the operating table in good condition. Added to this, some drug may be given to arrest or modify intestinal fermentation. It is very doubtful, however, if any single drug or combination of drugs influences fermentation in any considerable degree when given for this purpose.

In postoperative catharsis the surgeon of to-day is not so strenuous as his predecessors. The patient is not, as formerly, put on calomel on the second day, to be followed by a saline, irrespective of the condition of the stomach. Yet the question arises, Are we not still too persistent in our efforts to secure an early action of the bowel after abdominal section? The seeming necessity of this is so impressed upon us by custom and tradition that we always feel a sense of relief when a "down through movement" has been secured. If a bowel has not been materially disturbed by the operation, there should be no necessity for haste in procuring evacuation. If any portion of the bowel is paretic, it is a question if ever a big or often repeated doses of physic overcomes this paresis; certainly, if there is present postoperative mechanical obstruction it does no good and is often or always injurious.

After an abdominal section, for no matter how small a thing it may have been, even an interval appendix, the intestinal canal has been disturbed in its function, and injured by the traumatism of the operation. Nature, with our aid or forbearance, whichever way it may be put, has placed the wounded and bruised bowel in splints by throwing out an exudate at the seat of injury. If a bone is broken and the surrounding soft tissues are injured, we attempt to keep it protected by immobilization for a time, until Nature has had an opportunity to rearrange the structures disarranged by traumatism. Later we may use massage to aid circulation of the part, to assist muscles to resume action in their normal planes, and to prevent crowding of nerve trunks, but at first we invariably aim to give the injured part rest. Why should not a gut be allowed the same consideration, why hurry catharsis and too early create exaggerated peristalsis in an organ injured by operation? The word injured is used advisedly in this connection. Gross damage is not implied, but the term is used to convey the idea that, no matter how carefully a gut may be handled, whether or not its lumen is entered, the gut must be disturbed for the time being, both in function and structure.

In discussing the use of cathartics in the so called "acute abdomen," it may be worth while at the start to note the changes which the treatment of peritoneal infection has undergone during the last half century. It is mentioned here from the fact that the symptom complex known as acute abdomen in the large majority of instances, unless these symptoms are relieved by operation, becomes a peritonitis, possible or actual. In the treatment of peritonitis, during the above mentioned period, the gamut has been run up and down from "putting the bowels in splints," "narcotizing the patient to within an inch of his life," up through the rigorous use of salines, and then back again somewhat toward the original proposition. There is this marked difference to be borne in mind, that our predecessors used the opium splint with the *fons et origo mali* undisturbed, while the surgeon of to-day attempts to remove the cause as the first step in treatment, even though he allows opium in aftertreatment.

No man would think for a moment of giving a cathartic if he knew there was present, in a given case, a perforated gastric or duodenal ulcer, a perforated appendix, or an opening in any other part of the alimentary canal from any cause whatsoever. Yet, how many times is the surgeon told, when a case comes to operation, that a cathartic has been given, often drastic and in heroic doses. The profession at large has not yet learned that in many instances of localized intestinal lesion, like an inflamed appendix, for instance, that "purgation means perforation" and resulting complications and often death of the patient as a result. This dictum of one of the most celebrated surgeons of the day, "purgation means perforation," should be constantly and firmly fixed in the mind of everyone who is practising medicine or surgery.

In no class of cases is there required more care in observation of symptoms, or more careful judgment in interpreting the meaning of these symptoms and drawing correct conclusions therefrom than in the acute abdomen. To distinguish between a case in which the patient is suffering acute pain from ptomaine poisoning, or from the presence of some indigestible substance in the alimentary canal, and one suffering pain from some organic lesion in some part of it, requires the most painstaking examination, the most careful consideration of symptoms, and the most thoughtful weight of evidence in each case presented. In the one a cathartic is indicated; in the other most markedly contraindicated.

Deaver and many others have described at length the points to be considered in differential diagnosis between the two conditions, but any man when brought into contact with an acute abdomen may have in many of these cases reasonable doubt as to with which condition he has to deal. In an acute abdomen from any cause, there may be high temperature or may not be, pulse rate may be increased in both conditions, usually is, but may not be present in either; usually there is initial vomiting in both. The older the textbook consulted, the more minutely and exactly will the symptomatology in differential diagnosis be given, and the less reliable will it be found in practice. Before the era of modern abdominal surgery and the exploratory incision, the elder diagnosticians elaborated widely in subdivisions, abdominal lesions, and the special symptoms attending each of these. At the present time the most astute surgeon does not feel that he has committed an unpardonable error should he suspect a low gallblader and find a high appendix on opening the abdomen, neither would he feel otherwise than that he had done a good office for his patient should he diagnosticate a suppurating gallbladder and find a hemorrhagic pancreatitis at operation. In an acute abdomen, exploratory section in experienced hands should do no harm; cathartics, given without any more definite reason than to see if a movement of the bowels can be obtained, often hasten or are the principal factor in producing disastrous results. To a surgeon, in the interest of his patient, an exploratory section is much more satisfactory than a purely problematical or doubtful diagnosis and a resulting post mortem examination. And while it sometimes happens that an exploratory abdominal section is of no more benefit to the patient than an autopsy, it should be more satisfactory to both the patient and his friends. In justice to the patient with acute abdominal symptoms, a cathartic should never be administered until a decision has been reached as to whether he is suffering from disturbed function or organic lesion.

The most reliable symptom of acute abdominal lesion is involuntary rigidity. Everyone should make special effort to train himself to recognize this symptom. In every ease of abdominal pain the patient will render tense the abdominal muscles during a paroxysm or during manipulation unless his attention can be distracted or he can control himself in this respect when directed to do so. In a nervous person who has in mind the possibilities of some impending abdominal trouble, of which the laity know so much at present, this is often almost impossible. However, during a careful and unhurried examination, there will come a time, even if only momentary, when the voluntary contraction can be eliminated. Involuntary rigidity is what is left behind when the will is not acting and over which the will has no control. If present it is the best evidence of acute intraabdominal lesion. Do not understand that this is always present in these cases or can always be demonstrated. The seat of lesion may be so deep in the abdomen that the peritoneum just below the abdominal muscles has not yet become sensitized and the muscles are not yet acting on the defensive. A deep posterior appendicitis illustrates this condition. Here deep tenderness must be the principal symptom on which to base the diagnosis.

The foregoing statement in regard to rigidity must be somewhat modified in the acute abdomen of the traumatic variety. In this a blow has been received over the abdomen and the question to be decided is, whether or not there has been sustained a rupture of gut or injury to any other viscus. In these cases, very early, there may be stiffness of the muscles themselves, due to the direct force of the blow upon them, and this early rigidity may not be diagnostic of visceral injury. If this initial rigidity persists beyond a few hours, it becomes a true involuntary rigidity and is of diagnostic import. In a "traumatic abdomen" there may be no rigidity at first, but it may come on hours or days later. This is due to the fact that the gut may be simply bruised at first, to break down later through necrosis of the bruised area and then involuntary rigidity ensues. This occasional sequence of processes and symptoms in the "traumatic abdomen" emphasizes what has already been said in regard to administration of cathartics.

This is not in any way intended as a contribution to the literature of therapeutic nihilism. Drugs should always be used and that to their full power to meet conditions when indicated. A therapeutic nihilist is a cripple, floundering in the way, meanwhile calling to the passers by that he has thrown away his crutches. What is here written is intended as a suggestion to the surgeon that it may be best and possible further to modify preoperative and postoperative catharsis; and a plea to both the surgeon and general practitioner to study thoroughly conditions before administering cathartics in the "acute abdomen."

REMOVAL OF MUCOCELE OF APPENDIX.

By J. W. Kennedy, M. D.,
Philadelphia.

I feel that the removal of a mammoth appendix should be of sufficient interest to the profession to justify a somewhat detailed report.

Case. The patient, a male, aged forty-eight years, had complained of paroxysms of right sided pains for a period of twenty-five years and to use his own words his "stomach never was right"; just another instance of the stomach being the central target for all inflammatory lesions, acute or chronic, of the abdomen. The patient had been treated for three supposed attacks of typhoid fever and an indefinite number of acute attacks of appendicitis. Did the patient ever have typhoid? If so, what effect might enteric fever have as to the etiology of the mucocele of appendix? We have had a good number of patients treated for recurring attacks of supposed typhoid from whom the removal of the appendix ended the typhoid history. I am of the opinion that the appendix bears relation to the etiology of typhoid, the organ being a storehouse for the impending typhoid infection. The patient came to the Joseph Price Hospital with all the cardinal symptoms of an acute appendicular abscess; temperature 103° F., pulse 110 with a large, tender mass in the appendicular region.

The removal of this appendix was a trying and tedious procedure. It was difficult to recognize any line of dissection between the ascending colon and the appendix. The organ extended from its attachment at the head of the cecum to the right kidney. During the dissection of the appendix, I ruptured the organ, permitting the escape of the mucoid matter, which much resembled calf's foot jelly. There was no pus present, so it was hard to account for the acute history of pain, high temperature, accelerated pulse, etc. The appendix, upon its removal, measured eight and a half inches in length and eight inches in circumference. When I excised the appendix from the cecum, there was sufficient opening into the bowel to have inserted my four fingers. The accompanying drawing is one half the size of the specimen in preservation. The patient made an uninterrupted recovery. We are indebted to Dr. E. A. Case for the following laboratory report:

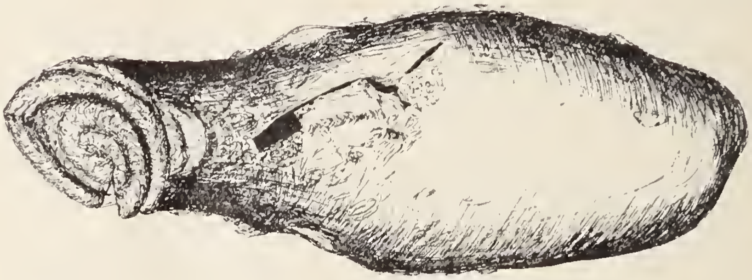

Fig.—Appendix, one half the size of specimen in preservation.

> The specimen is a sausage shaped cystic mass, larger at one end than the other. The proximal extremity measures fifteen cm. long by 4.5 cm. at its greatest diameter. There appears to be a bit of mucosa from the cecum attached to the proximal extremity about the orifice of the appendix, which orifice was very small, just admitting a small probe. The outer surface is roughened by attached fibrous tags, probably adhesions. Wall measures three to five mm. in thickness and is firm. The contents of the cyst consists of a jellylike material, not unlike that seen in ovarian cystomata.
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> The microscopical examination shows that the normal appendicular tissue has disappeared, the wall consisting of connective tissue, which at the outer surface includes some areolar tissue and internally is more or less necrotic, with shreds of mucus resembling fibrin, but giving the reaction for mucoid material. Many polymorphonuclear leucocytes, fragmented nuclei, eosinophiles, plasma cells, and mononuclears may be seen infiltrating the wall, and in many places there is a moderate but distinct endothelial hyperplasia. Doctor McFarland concludes that the specimen is of inflammatory origin, the inflammation probably causing obstruction with the retention of mucoid material and the development of the mucocele. No evidence of malignancy could be found. Diagnosis: Mucocele of appendix (inflammatory in origin?).

241 North Eighteenth Street.

THERAPEUTIC POSSIBILITIES OF MANUAL ADJUSTMENT.*

By R. Kendrick Smith, M. D.,
Boston,
Orthopedic Surgeon, Boston Polyclinic.

Modern medicine is rapidly putting into practice the adage "treat the patient, not the disease." To remove the cause is the keynote of the modern method of treating disease, in contradistinction to that prevalent custom of the past, symptomatic treatment. When we found the statement in medical works, and it must be admitted that it was too often, "treat the symptoms as they arise," we knew it meant that science had not solved the riddle of the particular disease under consideration. Nowadays more frequently do we find this rule superseded by advice to search for some underlying causal factor.

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*Read at the annual meeting of the American Association of Clinical Research, Academy of Medicine, New York, November 9, 1912.

"Structure precedes function," is the motto of those diagnosticians whose philosophy includes a mechanical pathology. If histology is a study of microscopic normal anatomy, and pathology a study of microscopic diseased anatomy, then it follows, according to the mechanical or anatomical school of practice, that morbid anatomy is a primary factor in etiology, hence adjustment of this morbid anatomy is a logical therapeutic procedure. Granting the logic of this contention, merely for the purpose of this paper, let us consider the subject of mechanical diagnosis of the cause of perverted function, and the methods of application of the technic of adjustment as a therapeutic measure.

At the last session of the American Medical Association no subject received more lively attention and caused more earnest discussion than the question of the absolute necessity of establishing a department of physical therapeutics in medical schools. Eminent speakers declared this was a vital measure, owing to the growth of therapeutic nihilism in the profession, the widespread loss of faith by the public in medicines and surgery, and last, but not least, because of the phenomenal growth of osteopathy and other methods of treatment. The equipment of all the great general hospitals with elaborate and expensive Zander apparatus and various other physical appliances, also shows the trend of modern medical thought.

A school for postgraduate instruction in spondylotherapy has been established, and several editions have been published of a work with the same title, describing a new school of practice based entirely upon mechanical, electrical, and thermal stimulation of spinal nerve centres. The first annual convention of the American Association for the Study of Spondylotherapy is announced for this month (November, 1912).

To-day the orthopedist and the surgeon are both extending the limits of their fields and including the treatment of innumerable organic and functional disorders which no one would have dreamed of classifying under their specialties a few years ago. It is natural for both specialists to conceive disease from the mechanical standpoint. They are mechanics, and the better mechanics they are the more radical and far seeing they will become in the application of their philosophy to the treatment of disease.

But there comes a parting of the ways. The surgeon is looked to for operative interference, for the use of the knife. The orthopedist is appealed to for the construction of apparatus to be worn for corrective purposes and for surgical operations upon bones and joints, and for static purposes and for the prescribing of gymnastics, massage, etc. Now we come to the plea set forth in the title of this paper, namely, "manual adjustment." The surgeon cuts with his knife and the orthopedist moulds with his plaster casts. But is there not something left undone? Are they not limiting both their field of diagnosis and their therapeutic procedures? Why neglect the most perfect of all instruments? What knife or plaster has the intelligence of the human fingers? Every patient is a case in himself. Routine treatment is becoming a thing of the past. The skillful operator has brains in the ends of his fingers.

What palpation is to diagnosis, manual adjustment is to therapeutics. When all is said and done, does not the skillful diagnostician finally resort to the court of last appeal, his fingers? Does he not feel of the patient again, bearing in mind all the laboratory findings and the past history, in order finally to size up the situation and form his conclusions? Conversely, is it not instinctive, actually to take hold of an ailing body and attempt to fix it?

Anatomy and physiology are mechanical, and the microscope shows us that pathology is nothing more or less than the mechanism of disease, so it can be argued most logically that the scientific treatment for faulty mechanical conditions, be they macroscopic or microscopic, should be mechanical. The general practitioner of medicine readily grants the orthopedist his field for the correction of gross deformities, and in this latter day revolution in practice is even considering that mechanics may be a factor in disorders of nutrition due to ptoses, etc. But, unless he has permitted his scientific imagination to soar a bit, he may not be willing to admit the efficacy of mechanical treatment for remote, obscure, systemic or organic diseases. Yet it is not mechanical physicians alone who have admitted the possibilities of adjustment for diseases of internal organs. For instance, no less a person than Richard Cabot, in the last edition of his *Case Histories in Medicine,* published last year, made a startling statement regarding that most intractable and tragic disease, angina pectoris. He said: "A masseur or an osteopath sometimes cures or greatly relieves patients whom regular practitioners have failed to help. We are much in need of further light in this direction." Dr. Henry R. Harrower, of Chicago, in the discussion of a paper which it was my privilege to read at a recent session of this association, declared that he had personally witnessed the reestablishment of cardiac activity in apparently moribund cases of pneumonia by the application of percussion to the spine in the upper dorsal area. At the same meeting, a member from Ohio astonished his hearers by stating that he had been cured of a chronic appendicitis by osteopathic adjustment of a lower dorsal vertebra, after a number of physicians and surgeons had failed in their treatment and had appealed to the knife as the court of last resort. Dr. Albert Abrams, of San Francisco, cites innumerable cases of great variety, including such unbelievable instances as aneurysm of the aorta cured by spinal treatment.

In last week's number of the NEW YORK MEDICAL JOURNAL the doctors Cyriax, of London, in an article replying to certain statements made by the writer before this association, cites countless eminent European authorities in support of various mechanical stimulations and inhibitions of the abdominal sympathetic "for the treatment of a very large number of both thoracic and abdominal complaints, including cystitis, paralytic bladder conditions, irregular menstruation, impotence, leucorrhea, prolapsus ani, catalepsy, dyspepsia, chronic gastritis, etc." While the doctors Cyriax disagree with the writer over the question of priority of such application of mechanics for visceral disease, the latter would pay the highest tribute to the splendid work done by these English specialists in their method, and would raise only the question of the relative value of the two different procedures in question. Their method is confined exclusively to mechanical treatment of the nerve centres themselves, while the writer has always emphasized instead the far greater value, for permanent results, of the adjustment of the skeletal structures which are found often to cause intereference with the nerves at their spinal origin or to create vasomotor interference with the arterial or venous supply of the sympathetics.

In Chicago the A. T. Still Research Institute is now established in a building of its own and has an endowment of a quarter of million dollars contributed by osteopathic physicians for the exclusive purpose of research along the lines of structural derangement as a cause of disease and adjustment as a therapeutic agent.

As an instance of one of the frequent causes of mechanical derangement of the skeletal structure, and one of the sort of cases which can be definitely traced from the standpoint of etiology, symptomatology, and therapeutics, because the exact date of the causal factor can be so definitely fixed, stand conspicuously those static skeletal lesions produced secondarily to prolonged general anesthesia. These conditions are usually overlooked because the attention of the attending physician, the consultants, and the surgeon is focused upon the complaint which has been found sufficiently serious to necessitate surgical interference. Take, for instance, this case: Two years ago the patient had a successful abdominal operation; complete loss of memory has persisted ever since, but no consultant has ascertained why. No consultant has ever made any complete physical examination to ascertain the cause, but all have confined their attention to the field of the surgical operation. A week ago this case was examined from the mechanical standpoint, disclosing the fact that upper cervical mobility was markedly limited in every direction. In the two upper cervical articulations there were adhesions and specific subluxations. Radical reduction was successful, adhesions easily were broken down, and mobility was restored in one operation. It was my pleasure to see this case two days ago and to receive the report that memory is returning rapidly.

On this same line, it was interesting to hear Doctor Roberts at the New York Post-Graduate Hospital, only yesterday reiterate the statement that relaxation of articulations, particularly the sacroiliac, frequently occurred during prolonged general anesthesia and particularly during the enforced recumbency of convalescence, resulting in severe subjective symptoms. Doctor Goldthwaite, of Boston, has also called attention to this point. In the orthopedic department of the Massachusetts General Hospital the writer was shown a practical prophylactic device. A plaster of Paris mould is taken of the patient's dorsal, lumbar, and sacral area before operation, and covered with felt. The patient rests in this firm cradle during the operation and during convalescence, thus preventing relaxation, strain, or subluxation and the consequent backache and weakness. The writer always uses this procedure in major surgical cases, finding it particularly important in cases where the stirrups are used for a prolonged period, as this position flexes the thighs to the extreme and consequently rotates the pelvis backward, obliterates the lumbar lordosis, and brings great strain on the sacroiliac ligaments.

Doctor Rogers, in a clinic at the Massachusetts General Hospital this summer, said that in his researches he had never found a single case of primary sciatica, every case being secondary to sacroiliac strain. He declared that in his belief there were no cases of primary sciatica.

The most severe case of "renal colic" which it has been the fortune of the writer to see, one attended by a dozen members of the staff of a great Boston hospital, where surgical interference was the unanimous advice after exhausting all other regular procedures, was cured instantly by manual adjustment of the ninth dorsal vertebra, which was palpably out of its normal position. Frequent reports during the past five years are that there has been no recurrence of the colic and the patient has been in robust health.

In the New York Orthopedic Hospital, outpatient clinic, yesterday, the writer observed that in the many cases examined there was always a relation between the vertebral pathology and the complaint.

What, then, is the therapeutic possibility of manual adjustment? For answer take a bird's eye view of the body as a whole, not the classical method of inspection, but from the viewpoint of the mechanics of the body rather than from the conventional standpoint of so called physical diagnosis, which means an attempt to name a disease, rather than an endeavor to find errors of static or motor mechanics.

Inspect poise, posture, gait; find the centre of gravity, record overdevelopment or underdevelopment, spasticity or atrophy, mobility or immobility, ankylosis or stretched ligaments, local anesthesia or hyperesthesia, etc. Estimate the values mechanically. Get the proper sense of proportion. What is the general picture, not by the traditional clinical method, but from the standpoint of human mechanism? Where is the greatest strain, dorsal, abdominal or pelvic? Is visceral ptosis an obvious factor?

Most vital should be the observation of the central spinal axis. Use the plumb line. Do not take the superficial method of trying with the plumb line down from the upper cervical region to ascertain the vertical alignment, but the reverse. With the plumb line in the cleft of the buttock, follow it upward with the eye to see if the spinous processes are in alignment with it. Do not be satisfied with the consideration of lateral deviation only. Consider most carefully the anteroposterior curves in relation to the centre of gravity. You cannot have alteration of the normal anteroposterior curves without a loss of equilibrium, resulting in chronic muscle strain in the endeavor to compensate and maintain poise. Alteration in these curves upsets the support of abdominal viscera, strains mesenteric attachments, permits ptosis and the innumerable complications resultant therefrom.

A much neglected factor in mechanical diagnosis in general practice is the costal alignment. Much more is dependent upon the maintenance of an equal distance between the ribs than might be expected at first thought. The normal slant of the ribs predisposes to their sagging when there is lack of tonicity or underdevelopment of the intercostal muscles, and the mobility of the costovertebral articulations is so great that trauma is a frequent cause of slight derangement of individual ribs. Either sagging or individual displacement may cause pressure on intercostal nerves. While at first thought the general practitioner might not expect anything more than a local neuralgia or neuritis from such a condition, it can easily be seen how this pressure could, if continued, result in a reflex disturbance of the corresponding spinal segment and through it, by the anterior nerves, an actual change of function of organs whose nerve supply emanates from this section of the cord, or, in other words, a visceral disease.

From the general inspection, the mechanical physician proceeds to a more detailed examination of the supporting structures. He examines by superficial and deep palpation the comparative position of each vertebra, and tests thoroughly the degree of mobility of each vertebral and costovertebral articulation. The function of a joint is motion. Each joint has certain normal degrees of mobility. Alteration of mobility is a change of function and is, therefore, pathological. The significance of this pathological condition is not confined to the joint itself. Its importance is far reaching. When the diagnostician discovers altered function in a joint he should at once consider to what degree it can interfere with adjacent nerve structure, and what effect that interference may have upon organs controlled by such nerves.

Completing the mechanical diagnosis, the problem of adjustment becomes more a matter of art than of ironclad rule. Manual adjustment can no more be taught didactically or by textbook than can surgery. It is an art. Arriving at the diagnosis by the most scientific means of mechanical analysis, manual correction becomes a matter of personal skill in the accurate and delicate application of force with the fingers for the purpose of securing the greatest mechanical advantage with the certainty of avoiding injury, yet of accomplishing a distinctly corrective change in the relative position of lever and fulcrum.

In the discussion of previous papers upon this subject in the sessions of this society, the point has been raised that mechanical therapeutics was indicated in mechanical conditions and contraindicated in all other conditions. Is not this begging the question? If histology and pathology have been correctly defined, are there any conditions of the living organism which have not a mechanical aspect?

Attending physicians are glad to secure the assistance of specialists in many conditions, and if manual adjustment offers a new and better method of correcting some conditions hitherto not considered mechanical, surely this will be welcome news, and the operators in this specialty will be placed in the list available at the doctor's call.

19 Arlington Street.

UNCONSCIOUS IMPAIRMENT OF VISION.*

Serious Conditions of which Patients are Unaware.

By S. E. Pendexter, M. D.,
East Orange, N. J.,
Assistant Ophthalmic Surgeon, New York Throat, Nose, and Lung Hospital.

The object of this paper is to call the attention of the general practitioner to that vast army of visual defectives, who, not realizing the seriousness of their condition, neglect to have their vision tested, and grope about this world, with surprising agility however, with poor vision which could readily be improved or perfected. The writer advisedly omits those cases of asthenopia and mild degrees of astigmatism, which more often give rise to symptoms such as headache or vertigo. Also for the sake of brevity this paper will be limited to refractive errors.

Many patients do not realize that their vision is only half that of normal, or that they are blind in one eye without knowing that they have never had all the pleasures and benefits of binocular vision. The near sighted or myopic eye sees well within a certain range, and magnifies near objects. The ciliary muscle is at rest when the patient looks at a certain distance, but beyond this distance all objects appear blurred. Such a patient is like one constantly in a dense fog. Often these patients do not realize what they miss because they have never been able to see well at a distance. To illustrate this I will mention a certain case, that of a companion, whose eyes I examined eleven years ago. To my surprise, I found that his vision was only 20/40. He had 1.5 diopter of myopia in each eye. This patient had been without glasses until he was nineteen years old, when the foregoing correction was given him. His vision, formerly 20/40, became, with the proper correction, 20/20. He did not realize how much he was hampered until he began to wear glasses, when he said that he never knew that the world was so beautiful. He has worn the glasses ever since.

I will now cite a case of a higher degree of myopia which was neglected for seven years after the age when the eyes were needed for study at school.

Case I. J. V., aged twelve years, April 24, 1911. Had to stand within a few inches of the test card in order to see it at all.

O.D.-12.00 D.S.-1.00 D.C. ax 180.
O.S.-10.00 D.S.

The correction, which is about three fourths of the actual error, brings the patients vision up to 20/50.

In the following case the eyes were neglected even longer.

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*Read before the Clinical Society of the New York Throat, Nose, and Lung Hospital, December 10, 1912.

Case II. J. J. C., aged thirty-one years. August 8, 1912. Realized that he could not see well, but had never worn glasses. The vision in each eye was 6/200.

O.D.-7.00 D.S. } Vision 20/40.
O.S.-7.00 D.S. }

Frequently the ophthalmologist is amazed to find how many years patients have groped about in partial blindness, when a pair of glasses would have relieved their unfortunate condition.

There is another error of refraction which also causes the patient to have a blurred vision. Such patients never observe a distant landscape nor a printed page except in a distorted form. The writer refers to the different varieties of astigmatism. Astigmatism is often accompanied by severe headache, and the sufferer is advised to have his or her eyes refracted, yet the oculist is constantly observing cases of simple, compound, or mixed astigmatism of a marked degree in which no history of headache is given. The following cases illustrate this:

Case III. F. E., aged sixteen years, August 5, 1912. Vision in each eye was 20/40. The patient had been advised by the school physician to have her eyes examined, but neglected to do so. But now (August 5, 1912) she was unable to obtain a certain position until she procured glasses to enable her to see better.

O.D. + 1.50 D.S. + 1.50 D.C. ax 105.
O.S. + 1.50 D.S. + 1.50 D.C. ax 105.

With the proper correction her vision was 20/20.

Case IV. E. L. H., aged twenty-five years, July 30, 1906. Vision = 10/70.

O.D. + 1.50 D.S. — 5.50 D.C. ax 180.
O.S. + 1.50 D.S. — 5.50 D.C. ax 180.
Vision with correction = 20/30.

This patient used to have no discomfort without his glasses, but he now prefers to wear them on account of the better vision afforded by them.

Case V. F. C. W., aged fifty years, August 30, 1912. Vision in each eye was 10/70.

This patient had five diopters of myopic astigmatism in each eye, axis oblique, and presbyopia which required a correction of + 2.00 D.S. to read. The patient had no discomfort and refused to wear glasses for distance.

These patients do not see normally at any time without glasses, for they are unable to overcome the distortion caused by symmetry of the refractive media of the eye by any action of the ocular muscles. The inability of these patients to overcome their error by the action of the muscles of the eye accounts for the lack of strain on the ciliary muscle and its nerves, hence the absence of symptoms.

Far sighted or hypermetropic patients are also often unaware of their visual defects. In fact these patients usually think that their vision is good, or at least they become so accustomed to the constant strain upon the ciliary muscles necessary to see at any distance that they do not complain of the eyes becoming tired. But with the higher degrees of hypermetropia the ciliary muscle is unable to accommodate sufficiently to overcome the hypermetropia and the patient's vision necessarily is very indistinct. Although at no distance does the hypermetropic eye see with the ciliary muscle at rest, yet these patients, with an active accommodation, are able to see at a distance and nearby surprisingly well. To exemplify this, let any of us who are under the presbyopic age place minus two or three spheres in front of both eyes. The vision may be 20/20. Hypermetropia is undoubtedly to the patient the most elusive of all refractive errors.

Why then do such patients consult an ophthalmologist? A child is sent by the school physician. The patient has a conjunctivitis, beginning presbyopia, some coincident malady, or an examination for employment reveals the imperfect eyesight. Then the patient learns of his defective vision, perhaps late in life, for the first time. The following illustrate typical cases of hypermetropia:

Case VI. H. R., aged eleven years, March 14, 1911. Sent to the clinic of the New York Throat, Nose, and Lung Hospital by the school physician. He said he could read writing on the black board at school. Vision = 20/50.

O.D. + 5.00 D.S. + 2.00 D.C. ax 90.
O.S. + 5.50 D.S.

With the proper correction the vision was 20/20 in the left eye, and 20/100 in the right eye.

Case VII.—J. C., aged sixty-two years, August 5, 1912. Complained only of being unable to read. Vision = 20/40.

O.U. + 2.00 D.S. for distance.
O.U. +5.00 D.S. for near vision.

The vision with correction is 20/20. Reads J. No. 1.

Now we will consider those cases in which there is a marked inequality in the state of refraction of the two eyes, or anisometropia. In these cases also the patient may have a marked error of refraction in one or both eyes without any serious symptoms. The patient may be practically blind in one eye, but is not cognizant of the fact because of good vision in the other eye. Both eyes may be defective with an unequal degree of the same refractive error or because of two or more entirely different conditions of ametropia. An interesting case of this class is as follows:

Case VIII. A. M. C., aged forty years, July 25, 1905. Vision = O.D., limited to a few inches, O.S., 20/30.

O.D. — 8.00 D.S.
O.S. — 1.50 D.S.

This patient was perfectly satisfied without wearing glasses, and refused to do so. He saw at a distance with his left eye and read with his right eye.

These cases should not be neglected, especially those in which the error of refraction in one eye is so great that the eye is little used, for the defect may go from bad to worse until the eye is hopelessly blind.

An ametropic condition which is often neglected is that which usually accompanies squint or strabismus. Cross eyes or divergent eyes are often made straight by nonoperative treatment, such as the wearing of glasses, judicious instillation of atropine, exercise of the squinting eye or its muscles, the use of the stereoscope, or other instrument for inducing binocular vision or by combining these methods. Neglect in these cases not only increases the disfigurement, but the squinting eye may become amblyopic, and the ultimate prognosis as regards the restoring of binocular vision becomes progressively worse. These patients constantly consult the oculist because of the squint, not on account of the refractive error which is now recognized to be the common cause of their strabismus.

The foregoing cases, picked somewhat at random, show that a patient may have practically any error of refraction and to a marked degree without being aware of defective eyesight. The writer wishes to emphasize the fact that a moderate error of refraction, especially with a close application of the eyes, is the one that patients complain about bitterly, while a serious impairment of vision often gives the patient no discomfort save that he (often unknowingly) is partially blind.

It is interesting to note that among one thousand consecutive patients examined at the New York Throat, Nose, and Lung Hospital, 442, or forty-four per cent., disclosed an error of two or more diopters. This class is the one in which patients often complain of no symptoms and are unaware of their defective eyesight. To conclude, the writer would advise that the general practitioner insist on having the vision of all patients tested whether they complain or not.

6 South Arlington Avenue.

EPIDEMIC CEREBROSPINAL MENINGITIS.

With a Description of Some Atypical Symptoms.

By Miley B. Wesson, B. S., M. D.,
El Paso, Texas.

While studying a small series of epidemic cerebrospinal meningitis cases, I was impressed by the fact that the cases reported in the literature presented only the classical symptoms, so this paper will deal primarily with the confusing, atypical ones. It will include a brief description of symptoms, method of diagnosis and treatment, along with a more detailed account of several atypical cases.

The present epidemic in the southern States seems to belong to that series which started in New York in 1904, extended to Germany in 1905, to France in 1908, and to Texas and adjacent States in 1911. The disease was reported in Dallas in October, and though it rapidly spread over the State, El Paso was exempt till March, 1912, at which time a thirteen year old girl took sick with meningitis four days after her arrival from Shreveport, La., where the disease was prevalent.

The weather was warm throughout the time of the local epidemic, with the exception of a few scattered cold days. Following each of these changes in temperature, coryzas were prevalent, which seemed to stir up latent organisms in the nasopharynx of certain individuals, and a few days later three or four cases of meningitis would appear in different portions of the town. In only two families was more than one member attacked; in one a baby was taken sick three days after the mother; and in the other, the mother had the disease three weeks after her child was well—and she had given negative nose and throat cultures when the child's quarantine was raised.

We found the most constant symptoms to be a relative rigidity of the neck, Kernig sign, vomiting, and fever. The first symptom was present in every case, as was the Kernig sign, though the latter often did not show until the second day. Vomiting was not present in two cases; and there was an absence of fever throughout the illness in the same number.

The first afebrile case was cured after five doses of serum; while the second one received only one injection of ten c. c. serum, over the protest of the mother, further treatment being refused. After a three months' interval, the child is apparently well, with the exception of a limitation of motion in the knee joints. Another case, seen in consultation, became afebrile after one injection of forty c. c. serum. Because of this (in spite of the bacteriological findings), the original diagnosis of "rheumatism" was reverted to and further treatment refused. The commonly described bladder, eye, and peripheral nerve sequelæ developed (in the sequence named), and the patient is still bedridden and helpless at the end of six months.

I had two patients with hyperpyrexia (seen late in the disease), temperature 107° and 107.8° F. respectively. The former died within twelve hours, but the latter had temperature lowered to 103° F. (following iced alcohol sponge), where it remained until death occurred two days later.

No positive diagnosis of epidemic meningitis was made till a smear from spinal fluid had been examined for Gram negative intracellular diplococci, and the findings confirmed by a culture. Treatment, however, was not withheld pending the microscopical report, for whenever clinical symptoms are sufficient to warrant a lumbar puncture, an injection of serum is justified.

Three lumbar puncture findings (in cases clinically meningitic) require interpretation: 1. Cloudy fluid; 2, limpid fluid; and, 3, "dry taps." Examinations of cloudy fluid always showed meningococcus in both smears and cultures. Whereas in the limpid fluid practically no pus cells or organisms could be found (even in centrifugalized specimens), though cultures were all positive. A "dry tap," when puncture is properly done and the lumen of the needle is not occluded, is nearly always due to either a lack of pressure sufficient to cause flow through needle or a fibrinous condition of the spinal fluid. If the obturator is withdrawn from the trocar with a slight jerk a small amount of fluid will generally be aspirated. The wet obturator tip is then stroked over blood serum in culture tubes. Sometimes a flow can be started through the trocar by aspirating with a hypodermic syringe. Out of 184 lumbar punctures in suspected meningitis cases, sixty-four were "dry taps" and sixty of these gave positive cultures.

The mortality of this series of thirty cases was practically twenty-five per cent., including those cases moribund when seen. The prognosis was good in *all* cases with a cloudy spinal fluid, in which treatment was begun early in the disease; whereas it was uniformly bad in the four cases with clear fluid, irrespective of promptness in administering serum. The Mexicans, in spite of their squalid surroundings, seemed to be more resistant, and responded to treatment better than the whites.

All serum was given by the gravity method: a Quincke lumbar puncture needle, fourteen inch piece of gum tubing, and a small funnel, constituting the apparatus used. I never found any need for a general anesthetic, the injection being practically painless, the patients being held with the back well arched by means of a bandage passed around the neck and under the knees. The amount of fluid removed at a puncture is of little help in determining the quantity of serum to inject. Numerous times we were able to give twenty c. c. following a dry tap, whereas after the removal of 140 c. c. we were able to replace only ten to fifteen c. c. If too much serum has been injected, or with too great rapidity, there will be a complaint of pain in the legs, if the patient is conscious, or a twitching if he is unconscious. During the administration of serum the funnel is frequently lowered to the level of the needle, so as to permit the fluid under pressure to siphon back; and pressure should always be equalized in this way before withdrawing the needle.

I did not find it practical to always use a sphygmomanometer, because of resisting patients. However, I was fortunate in having used a mercury manometer on three patients when they went into collapse. There was no difference in the readings before, during, or twenty minutes after the collapse.

Cultures were made at each lumbar puncture as a matter of routine, and serum was injected daily till the spinal fluid was sterile. In fulminating cases serum was given every six hours. The temperature should be ignored as an indication of when to stop administration of serum, as a normal temperature does not mean an absence of the meningococcus.

The untoward effects from the use of serum were collapse and urticaria; I had no deaths within ten hours of an injection. Collapse is best treated by siphoning back the serum and keeping up artificial respiration; small doses of atropine and epinephrine are of help. Urticaria was seen in several cases. In one patient, during an injection, wheals suddenly developed and the entire body became bright red; the subcutaneous administration of epinephrine caused both urticaria and redness to disappear at once. In another case, sixteen hours after an injection of serum, there was a marked edema of head and extremities, accompanied by a giant urticaria. The lips were so swollen that the mouth could not be closed, and the scalp was thrown into immense longitudinal ridges. The entire phenomenon disappeared in a few hours. No treatment was used except sponging with a ten per cent. solution of menthol in alcohol to relieve itching.

The following cases illustrate points not generally mentioned in descriptions of this disease, but which were commonly seen in this series. The first case is reported to call attention to how misleading the temperature is as an indicator to the state of disease—there being positive cultures on four days after temperature was normal. It also illustrates another common phenomenon; on the day following the initial injection of serum there was a very small amount of fluid removed (or a dry tap), on the succeeding day there was a profuse flow, and similarly, alternating throughout the disease.

Case I. S. R., Mexican, male, nine years old. On March 16th was given thirty c. c. serum by family physician, and temperature became normal. Received no further treatment till I saw case on March 26th, when there was a marked opisthotonos and Kernig sign.

Date.	Temperature(F.).	Fluid removed.	Serum injected.	Culture.
March 26........	104.5	60 c. c.	30 c. c.	+
March 27........	102.5	5 c. c.	28 c. c.	+
March 28........	102.5	50 c. c.	30 c. c.	+
March 29........	98.6	3 c. c.	20 c. c.	+
March 30........	99.0	20 c. c.	20 c. c.	+
March 31........	98.0	......	20 c. c.	+
April 1..........	98.0	......	......	..
April 2..........	98.0	10 c. c.	15 c. c.	+
April 3..........	98.0	40 c. c.	20 c. c.	—

Discharged cured, April 13th; treatment, eight injections, or a total of 183 c. c. serum.

Case II. Mrs. W. C. W., white, twenty-eight years old. Sick four days with severe headache, nausea, and painful stiffness of neck (which was first noticed when she attempted to button her shoes). When I saw patient she was comatose, had stertorous breathing, rigid neck, Kernig sign, petechial rash, temperature 103° F., and she was apparently moribund.

First tap removed 60 c. c. cloudy fluid (smear and culture +). Four injections of serum were given in first twenty-four hours, at end of which time patient was rational and her temperature normal. On third day temperature rose to 100° F., and patient complained of headache, so another injection was given. Cephalagia and fever disappeared on the following day; treatment comprised five injections, or 80 c. c. serum.

This case illustrates the value of injection at short intervals in apparently hopeless cases, and also the necessity of injection in spite of "dry taps."

Case III. P. G., female, white, four years old. Taken sick May 8th, 9 a. m., with vomiting which continued at intervals all day; 7 p. m. temperature 98.6° F.; 8 p. m. temperature 101° F.; May 9th, 6 a. m. rash brightened and tentative diagnosis of scarlet fever made by family physician; 11 a. m. rash began fading and disappeared in a few hours. I saw case in afternoon; temperature 104° F., no Kernig sign. An almost imperceptible difference in the rigidity of the neck in two examinations, four hours apart, caused injection of serum in spite of an improvement in clinical symptoms, forty c. c. of perfectly clear spinal fluid was removed. Meningococcus was recovered in culture; centrifugalized specimen showed practically no pus cells. Slight rigidity of neck and suggestive Kernig sign on morning of May 10th; death occurred at midnight. Temperature ranged from 103° to 105° F. throughout course of disease, and neither drugs nor baths affected it. Serum injected three times (45 c. c.), and fluid withdrawn was clear each time as already described. On night of second day of illness patient began to show signs of fear, resented noises and bright lights, and refused to drink. At this time resemblance of symptoms to those of rabies was remarked. Capillaries of skin lost tonicity twenty-four hours before the end. Opisthotonos and macular rash appeared half an hour before death, along with cephalic cry.

I regard this as a true fulminating case in which the poison paralyzed the autonomic centres, and so acted that there was not sufficient resistance even to cause formation of pus. The poison is comparable in toxicity and action to that of rabies, and the prognosis is equally bad.

Case IV. A. McC., male, white, four years, sick five days. When first seen, with family physician, was in a moribund condition, having continuous convulsions; right side of face paralyzed, rigidity of neck and positive Kernig sign.

Date.	Time.	Temperature(F.).	Fluid removed.	Serum injected.	Culture.
May 17.......	7:00 p. m.	103°	90 c. c.	20 c. c.	+
	11:45 p. m.	102°	30 c. c.	10 c. c.	+
May 18.......	3:00 a. m.	Patient rational			
	9:00 a. m.	101°	140 c. c.	35 c. c.	+
	5:00 p. m.	102°	140 c. c.	19 c. c.	+
May 19.......	9:00 a. m.	102.5°	140 c. c.	15 c. c.	+
	5:00 p. m.	104°	90 c. c.	15 c. c.	+

More frequent injections were not given because of parental opposition. Macular rash and Hippocratic facies appeared on second day. Patient became comatose and died on morning of fourth day.

With first puncture 60 c. c. of limpid fluid was obtained: when flow had practically ceased patient was placed in an upright position and with a sudden gush 30 c. c. of blood tinged amber fluid appeared, which had apparently been walled off. Microscopical examination showed large lymphocytes to predominate, with a few scattered leucocytes containing diplococci. At all other punctures, the spinal fluid was amber colored and turbid.

Case V. R. P., male, white, age eleven; sick two days. Seen August 17th with vomiting, Kernig sign, orthotonos, temperature 105° F. and acute retention of urine, due probably to an old phimosis, which necessitated catheterization throughout illness. Temperature was normal and culture negative on seventh day. On the following day fever reappeared, respirations became rapid, and bronchial breathing with râles was present over right upper lobe. Five days later process had extended to upper left lobe. Pneumonia remained central (average respiration 38, temperature 104° F., pulse 140), clearing up by lysis, temperature becoming normal on September 13th. No sputum could be obtained for examination, so we have to assume that we were dealing with a meningococcic infection of the lungs.

In two other similar cases of this series, seen late in the disease, when the resistance of the patients became low, the spinal cord was reinfected from the lungs and the patients died. In one of the cases the spinal fluid was clear and sterile for sixteen days before reinfection.

On the theory that it would stimulate the formation of antibodies, three full doses of a commercial meningobacterin were given on succeeding days. There were no anaphylactic signs and the general average of temperature was permanently lowered one half degree; no more vaccine could be obtained, hence no positive conclusions can be drawn as to its value in this case.

Three lumbar punctures were done during the course of the pneumonia, and prophylactic doses of serum given, but the fluid was found to be sterile each time. The heart became enlarged with the advent of pneumonia, and a diastolic murmur appeared along the left sternal border. This cleared up with convalescence.

Nervousness is the most difficult symptom to combat in these pulmonary cases; tremors become choreiform in character and grow worse with the progress of the disease. In this patient we were able entirely to control them with hydrotherapy and large doses of brometone.

The patient is now (October 12th) entirely well and shows no bad signs of any kind from his illness. Fourteen injections, or 225 c. c. of serum were used.

SUMMARY.

1. The only early constant diagnostic sign is a *relative* rigidity of neck.
2. A clear spinal fluid indicates a bad prognosis.
3. The temperature is a misleading criterion as to state of disease; treatments should be continued till spinal fluid is sterile.
4. Method of injection should be by gravity; amount of fluid withdrawn bears no relation to size of dose of serum, which should be determined by: (a) the rate of flow of serum; (b) amount of discomfort caused patient, and (c) quantity that can be given without using pressure.
5. Serum should be given at least once a day, and in severe cases every six hours.
6. Vigorously treated cases, if seen early, will have no bad after effects.

404 Roberts-Banner Building.

THE EFFECT OF DIPLODIA ZEÆ AND SOME OTHER FUNGI UPON SOME PHOSPHORUS COMPOUNDS OF MAIZE.*

By Howard S. Reed, A. B., Ph. D.,
Blacksburg, Va.,
Professor of Mycology and Bacteriology, Virginia Polytechnic Institute.

In a recent paper[1] the writer has called attention to the presence of the fungus, *Diplodia zeæ* upon maize and to the possibility that this fungus may play a rôle in the etiology of pellagra. Data were presented showing that following the growth of the fungus a toxic substance was generated in the maize which was believed to be similar to or identical with the "pellagrozein" of Lombroso. The investigation of protein constituents of mouldy maize is still under way, in the meantime some data have been secured upon the relation of phosphorus compounds of maize.

The idea that spoiled or mouldy maize may contain larger amounts of inorganic constituents would seem to be a logical assumption, since it is well known that the active respiration of the moulds and bacteria oxidizes large amounts of the carbon compounds. Black and Alsberg[2] found, however, that a badly spoiled maize was not always characterized by a high ash content, although in Italy a high ash content is regarded as significant.

The object of this contribution is to bring together some data on the presence and possible significance of inorganic phosphates in maize inoculated with pure cultures of mould fungi, along with some samples of moulded commercial corn.

The fact that a water extract of mouldy maize contained more material precipitable by basic lead acetate than the water extract of sound maize was noted in my earlier work. Following this suggestion an investigation of the phosphorus compounds was in progress when the noteworthy paper of Crawford[3] appeared. His conclusions are: "The chief poisonous principle in certain cottonseed meals is a salt of pyrophosphoric acid. In some this salt seems to be a simple one, presumably inorganic, while in others it is more complex, perhaps an organic one."

Without discussing *in extenso* Crawford's work, it may be said that he has found no entirely satisfactory way for distinguishing between the salts of pyrophosphoric acid and salts of other forms of phosphoric acid, but from their chemical and biological effects he regards them as pyro salts.

Near the time at which Crawford's paper appeared, the work of Forbes[4] was published, giving an account of methods of analysis which seemed likely to prove of value in the study of maize and the changes in it due to fungi. Where this method was used the procedure was as follows:

Ten gramme samples were extracted with 300 c. c. of 0.2 per cent. hydrochloric acid for three hours in stoppered flasks with frequent shaking. The extracts were easily filtered through dry filters and 250 c. c. of each withdrawn and precipitated by the addition of 15 c. c. of magnesia mixture and 15 c. c. of strong ammonia. The following day the magnesium precipitate was filtered out and carefully washed on the filter, first with 2.5 per cent. ammonia, then with 95 per cent. alcohol. The inorganic phosphates were separated from this precipitate by extraction overnight in 100 c. c. of 95 per cent. alcohol containing 0.2 per cent. of nitric acid. After filtration through a dry double filter, 75 c. c. of the extract was pipetted out and evaporated to moist dryness. The residue was then dissolved in dilute nitric acid and the phosphorus determined gravimetrically in the usual manner.

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*Paper No. 19. From the laboratory of Plant Pathology, Virginia Polytechnic Institute, Blacksburg, Va.

[1] The Fungus, Diplodia, as a Possible Factor in the Ætiology of Pellagra, New York Medical Journal, xci, 164, 1910.

[2] O. F. Black and C. L. Alsberg: The Determination of the Deterioration of Maize with Incidental Reference to Pellagra, *Bulletin 199*, Bureau of Plant Industry, U. S. Department of Agriculture, 1910.

[3] A. C. Crawford: A Poisonous Principle in Certain Cottonseed Meals, *Journal of Pharmacological and Experimental Therapeutics*, i, 519, 1910.

[4] E. B. Forbes, A. Lehman, R. C. Collison, and A. C. Whittier: Methods for the Quantitative Estimation of Inorganic Phosphorus in Vegetable and Animal Substances, *Bulletin 215*, Ohio Agricultural Experiment Station, 1910.

The acid alcohol extraction is believed by Forbes to give satisfactory separation of the organic and inorganic phosphorus compounds. After some preliminary studies the following analyses were made, using the methods described by Forbes:

Sample I, weighing ten grammes of air dry, was sound, finely ground maize.

Sample II, weighing ten grammes of air dry meal upon which *Diplodia zeæ* had been grown for four months. The meal had been sterilized and inoculated and the fungus grown under pure culture conditions in a cotton plugged bottle. After being air dried the meal had been ground fine in a porcelain mortar. Both samples of meal were originally taken from the same source.

The analyses made by the foregoing methods gave in sample I inorganic phosphorus, calculated as P_2O_5 0.0192 per cent.; in sample II, inorganic phosphorus calculated as P_2O_5 0.9488 per cent.[5]

From this analysis it appears that the growth of diplodia on the meal for four months increased the inorganic phosphorus nearly fifty times. This increased inorganic phosphorus must arise from the degradation of organic phosphorus and alter by so much the value of maize for food purposes.

Investigation was also made of maize meal which had supported a pure culture growth of diplodia for fourteen months. This meal was completely blackened by the action of the fungus and had lost considerably in weight. As before, the samples were finely ground in a mortar and air dried. The purpose of this examination was to compare the extract obtained with dilute hydrochloric acid with that obtained by the action of pepsin and pancreatin:

Sample V was 50 grammes of diplodia meal digested in 300 c. c. of 0.3 per cent. hydrochloric acid.

Sample VI was 50 grammes of diplodia meal digested in 300 c. c. of 0.3 per cent. hydrochloric acid containing 0.2 gramme pepsin. Both samples were kept in the incubator at a temperature of 37° C. After twenty-four hours each sample received 0.5 gramme salicylic acid to retard the growth of microorganisms. Sample VI was then neutralized with soda and then received 0.2 gramme pancreatin and one gramme anhydrous sodium carbonate. Both samples were then returned to the incubator for another twenty-four hour period. After the pancreatin had acted twenty-four hours, both extracts were filtered through paper with washing. The filtrate was divided into two equal portions and the phosphates of one portion were precipitated by adding 50 c. c. of strong ammonia and 50 c. c. magnesia mixture. In this case I did not attempt to separate the inorganic phosphorus. The magnesia precipitate was filtered out, washed with 2.5 per cent. ammonia, then dissolved in 150 c. c. of dilute nitric acid, and the phosphates determined as pyrophosphate. The results showed the following proportions:

Sample V, 0.315 per cent. P_2O_5; Sample VI, 0.300 per cent. P_2O_5.

The figures thus show quite close agreement for the two methods of extraction. While showing considerably less phosphate than sample II (mouldy meal) analyzed by Forbes's method, they are still much greater than sample I (sound meal).

The other half of the original filtrate from each sample was precipitated with basic lead acetate. Both precipitate and filtrate were treated with hydrogen sulphide and the lead sulphide filtered out. The solutions resulting were evaporated to moist dryness on the steam bath. After standing for some time the residues were dissolved in water, filtered, and used for trials on rabbits. The following were used:

V. The material precipitable by lead acetate.
V. The material not precipitable by lead acetate.
VI. The material precipitable by lead acetate.

The preparations from sample V were each fed to two different rabbits. That from VI was injected subcutaneously into a rabbit. Each one represented twenty-five grammes of the original substance. No bad effects were apparent in any of the rabbits. It has been found, however, by Sturli and others, that rabbits are not as susceptible to mould poisons as other animals, e. g., mice, therefore it cannot be positively stated that these products are altogether nontoxic.

Waiving for the present the question of toxic organic substances in moulded meal, experiments were carried farther upon the increase in inorganic phosphates. Whether or not the fungus is a factor in the etiology of pellagra, there are deep seated biochemical changes wrought by the fungus infection. As the fungus grows it consumes much of the organic material in respiration. The extent to which this loss may occur is shown by the figures in Table I, which were collected during the progress of the work.

TABLE I.

Showing Loss of Weight in Corn Meal Infected with Diplodia zeæ.

No.		Time.	Per cent. of original weight lost.
1.	Sterilized corn meal control.......	56 days	4
2.	Infected corn meal................	56 days	29
3.	Infected corn meal................	92 days	47
4.	Infected corn meal................	200 days	55
5.	Infected corn meal................	200 days	60

From these figures it will be quite apparent that there was a great loss in the food value of the meal, due to the combustion of organic compounds by the fungus.

A more critical test of the amount of decomposition effected by the fungus was afforded by the determination of the amounts of inorganic phosphorus in the meal before and after the growth of the fungus. A series of analyses was made and is reported in Table II.

TABLE II.

Showing Samples, Methods of Analysis and Percentage of P_2O_5. in Samples of Corn Meal.

No.	Source.	Method of analysis.	Per cent. P_2O_5.
A	Commercial air dry corn meal.......	Forbes	0.0192
B	Diplodia meal 4 months old..........	Forbes	0.9488
C	Diplodia meal 14 months old.........	0.3% HCl.	0.315
D	Diplodia meal 14 months old.........	Pepsin-pancreatin	0.300
E	Sterilized corn meal.................	Forbes	0.118
F	Diplodia meal 56 days old...........	Forbes	0.215
G	Diplodia meal 92 days old...........	Forbes	0.249
H	Aspergillus meal 92 days old........	Forbes	0.255
I	Mouldy corn (top of cargo).........	Forbes	0.1224
J	Mouldy corn (20-50 cm. deep)......	Forbes	0.0474

Samples A and B should be considered together. The analysis of the former represents the phosphorus of a mill sample of corn meal; that of B represents the same after having been wet and sterilized and used as a culture medium four months.

Samples C and D were from another culture on corn meal. The principal object in making their analysis was to get a comparison of the amounts of phosphoric acid extracted by hydrochloric acid and by digestion with pepsin and pancreatin. As shown in the table the differences were not material.

Sample E showed much more inorganic phosphorus than A. This may be referred to two conditions; first, a different sample of corn meal was used; and, second, the meal was moistened, sterilized in the autoclave, and kept for fifty-six days.

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[5] It gives me pleasure to acknowledge the assistance of Dr. W. B. Ellett in all this work, especially in the phosphorus determination.

Samples F and G show an increased amount of inorganic phosphorus in comparison with E, which was from the same sample of meal and treated similarly, except for inoculation with diplodia. The culture, ninety-two days old, had apparently liberated somewhat more inorganic phosphorus than the culture analyzed at the end of the fifty-sixth day.

Sample H was from a ninety-two day corn meal culture of *Aspergillus fumigatus,* obtained from the laboratory of Parke Davis and Company. The analysis shows that about the same amount of inorganic phosphorus was here liberated as in the case of the ninety-two day diplodia culture. The comparison is not without interest since many observers have implicated *Aspergillus fumigatus* with the etiology of pellagra.

The analysis of samples I and J possesses peculiar interest because they are samples of mouldy commercial corn. They were obtained through the kindness of Dr. J. W. T. Duvel, of the Department of Agriculture. They were taken from a car of spoiled corn which had been about three weeks in transit (November 29th to December 22nd). When the car was opened the surface layers had a temperature of 62° C. and every grain was badly infected with a variety of mould fungi, among which species of aspergillus and penicillum could be recognized. Sample J, taken from twenty to fifty cm. below the surface, was subjected to anaerobic conditions and was not infected with the moulds which grew in the upper layers. The lower layers were, nevertheless, subjected to heating. The grains were dull mahogany in color and quite brittle.

Unfortunately there was no uninfected sample of maize to serve as a control, but an idea of the chemical changes wrought by the moulds may be gained by comparing the inorganic phosphorus content of the two samples. Sample J was clearly not infected with moulds, whatever organisms of an anaerobic character may have been present. In sample I the inorganic phosphorus content is between two and three times as great as in the less mouldy sample J.

It is entirely possible that the mould fungi might absorb the degradation products of organic phosphorus compounds and use them in their own metabolism, in which case these compounds would seem to disappear with further lapse of time. The analyses of samples B, C, and D would suggest such a condition. The cultures after fourteen months' growth contained about one third as much inorganic phosphorus as those which were four months old. It seems quite possible that the increased growth of the fungus and the process of forming spores would use a part, at least, of the inorganic phosphorus liberated by the fungus. The metabolism of the fungus would in that event convert the phosphorus into organic compounds characteristic for that particular fungus. In this connection it seems worth while to consider the possible formation of some specific organic phosphorus compounds and their pharmacological effect. Especially would this be important in regard to the formation of phosphorus compounds sensitive to light. It is well known that the lesions and erythemata of pellagra appear almost entirely upon portions of the skin exposed to light. The assumption might logically be made that there is some substance in the body of the pellagrin which is sensitive to light, and, when acted upon, produces the local effects so characteristic of pellagra. This substance might be supposed to be derived from the action of the mould fungi upon maize.

From the foregoing data it would appear that *Diplodia zeæ* and other fungi grown upon corn meal liberate material amounts of inorganic forms.

Corn meal infected with diplodia loses in weight, the loss increasing with the age of the culture.

Aside from the question of the possible toxicity of any of the inorganic phosphates thus liberated or their possible rôle in the etiology of pellagra, the data show what is interpreted as a marked deterioration in the food value of the maize, due to the degradation of organic phosphorus and other compounds. As the fungi continue to grow they may take up a portion of the inorganic phosphates, possibly to form bodies having toxic properties.

Therapeutical Notes.

Treatment of Burns.—R. P. Stoops, in the *Therapeutic Gazette* for October, 1912, states that he has used the liquor cresolis compositus U. S. P. in over one hundred cases of burns, and believes its virtues should be more generally known. His procedure is as follows: The affected surface is first bathed with a one per cent. warm solution of the liquor cresolis in water until the débris have been removed and the parts are anesthetic. Blebs are next punctured and the serum expressed, and finally strips of gauze or, in the case of large burns, strips of paraffin paper, smeared with an abundance of petrolatum containing one per cent. of the liquor cresolis applied to the burned area. Cotton and bandage are used as a covering. The dressing is allowed to remain four or five days, after which it is renewed according to indications.

The preparation is advantageous in that it causes no pain at its first application; that it does not coagulate albumin exuding from the tissues or contained in the blebs, and that, although discoloration of the urine must be watched for, as with picric acid, poisoning is much less likely to occur than where a saturated solution of the acid referred to is used. In a case of almost universal burns in a child it was found possible to relieve all suffering by smearing the outside of the underclothing with the petrolatum mixture, and having the patient wear the garments turned inside out.

Treatment of Ophthalmia neonatorum.—Aaron Brav, in the *Therapeutic Gazette* for October, 1912, states that although it is well, if possible, to determine the condition of the cornea in an incipient case of ophthalmia neonatorum, the lids should never be forced open when there is marked swelling and blepharospasm, for very often harm will be done to the cornea. Cold compresses, an important feature of the treatment, will soon reduce the swelling and spasm, and the cornea can then be inspected. The compresses must be applied constantly day and night for the first three or four days, and must be changed every five minutes. They not only improve the condition, but also serve to draw the parent's attention to the gravity of the disease, and as a reminder for the application of other medicinal agents at regular intervals.

For cleaning purposes the author advises the use of a one to 10,000 mercury bichloride solution, with which the conjunctival sac is to be irrigated every half hour for the first two days. The essential point is, not the antiseptic value of the drug, but the thoroughness with which the discharge is removed. The solution is best applied from an eye dropper; the fountain syringe, sometimes employed, is unnecessary, and diverts too much of the attention to its own control rather than to the cleansing process.

A solution of an organic silver salt may be given to the family to instil immediately after washing the eye. The germicide *par excellence* is silver nitrate, which should, however, be applied by the physician himself, once daily, in one per cent. strength. The solution should not be instilled into the conjunctival sac, but carefully applied with an applicator, such as a toothpick wrapped with absorbent cotton. The conjunctiva is gently everted and just smeared with the solution, care being taken to avoid the cornea.

The author continues this treatment for a week, then discontinues the bichloride solution and substitutes a solution of zinc sulphate, one grain to the ounce, with which the conjunctival sac is irrigated every hour or two. This is done because very often there is a mixed infection, which readily yields to the zinc. This is used for one week, during which time the silver applications and instillations are continued. The eye is then usually quiet, and a saturated boric acid solution is ordered, to irrigate the eyes three or four times daily for about two weeks. It is important not to stop treatment too early, lest an exacerbation with corneal involvement and loss of an eye subsequently occur.

When corneal involvement is suspected the cold compresses must be replaced by warm, moist ones. When ulceration occurs it is best to use a simple, nonirritating, warm eye lotion. The application of silver nitrate should, however, be continued. Atropine should be instilled three times daily, and if there is ulceration, iodoform powder dusted upon the area affected. Operative procedure is contraindicated in these cases. It is best that all these cases of corneal involvement, even where the latter is only suspected, should be turned over to the specialist.

Treatment of Pernicious Vomiting in Convalescence from Typhoid Fever.—A. Khoury, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, October 24, 1912, reports the case of a girl of eighteen years who had suffered from typhoid fever for over ten weeks. Early in the period of convalescence there appeared vomiting, which remained uninfluenced by a large variety of drugs, diet, and saline injections. Gavage gave relief for only twenty-four hours. Remembering the persistent vomiting that occurs in adrenal insufficiency, as well as the initial vomiting and evidences of myocarditis and low arterial tension that had featured in the case under treatment, the author decided to administer epinephrine. Forty drops of the one to 1,000 solution daily by mouth proved useless, but when one milligramme of epinephrine was injected daily in two doses, the vomiting spells soon became less frequent, and in forty-eight hours had entirely ceased. The injections were continued for three days more. The author advises that this measure be tried in all cases similar to that reported.

Treatment of Diabetes mellitus.—Kolipinski, in the *Monthly Cyclopedia and Medical Bulletin* for August, 1912, states that in the general treatment of diabetes he uses no medicinal agent except the following saline purgative, which he administers when the patient is constipated, has hemorrhoids, or is obese, or where it is desired to reduce the body weight.

℞ Sodium phosphate,
Sodium sulphate, . } ....of each ℥iv (120 grammes).

Dissolve by shaking in a quart (1 litre) bottleful of cold water.

This solution is a saturated one, and a small amount of the salts remains undissolved. The dose is a wineglassful in a tumblerful of cold water, fifteen or twenty minutes before breakfast or supper. This combination acts in thirty to forty-five minutes, with great certainty, and it has no depressant action like that of magnesium sulphate or the waters containing it. The salts may be taken once or twice a day or two or three times a week, according to indications, and for an indefinite period.

Another useful formula is:

℞ Sodium chloride, ...ʒiii (12 grammes);
Sodium bicarbonate, ...ʒiv (16 grammes);
Sodium sulphate, ...℥iiiss (112 grammes);
Sodium phosphate, ...℥iv (128 grammes).

Dissolve by shaking in a quart (1 litre) bottleful of cold water.

This combination is taken in the same manner as to quantity and time as the first. Its action is somewhat milder, its taste is more pleasant, and it is slightly antacid.

Treatment of Lichen urticatus.—H. G. Adamson, in the *Clinical Journal* for September 18, 1912, states that while this affection is supposed to be due to gastrointestinal disturbance, the eruption will often persist even after the child has been carefully dieted. Nevertheless, there is no doubt that disturbances of the digestion make the eruption worse, and one should always insist upon proper feeding, suited to the age of the child, and upon the avoidance of raw fruits, sweets, etc. Hydrargyrum cum creta, one half grain, may be given every evening, and sodium carbonate or a bismuth mixture the next day. Antipruritic lotions may also be prescribed. A useful one is the following:

℞ Liquoris picis alkalini (N. F.)
Liquoris plumbi subacetatis, } āā ʒss (2 grammes);
Glycerini, ...ʒi (4 grammes);
Aquæ, q. s. ad....................℥viii (240 grammes).
M. ft. lotio.

The child should be lightly clad at night, and the bath should be given in the morning rather than at bedtime.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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NEW YORK, SATURDAY, MARCH 22, 1913.

THE GERM OF ACUTE POLIOMYELITIS OR INFANTILE PARALYSIS.

Dr. Simon Flexner's reported discovery of the germ of infantile paralysis, or better, acute poliomyelitis, since the disease occurs also in adults, will fittingly crown a series of painstaking researches if it stands the crucial test of time. A virus has been known to be present in various tissues, notably the cerebrospinal system, the nasopharyngeal mucous membrane, the tonsils, and the mesenteric and salivary glands, which, as is the case with that of rabies, passes readily through the Berkefeld, Chamberland, and Reichel filters. Yet Landsteiner and Levaditi noted that, after its passage through the latter, the virus lost some of its virulence, the incubation period in monkeys was prolonged, and the animals recovered with relative frequency. This left the question open as to whether the pathogenic agent which penetrated the filter was an organism or its toxine. Flexner and Lewis found some evidence that the specific organism, though unidentified, multiplied in mixtures of broth and monkey serum. Levaditi, and subsequently Roemer, had observed a small oval or round corpuscle which was stainable by Loeffler's method. Dixon, Fox, and Rucker also found in cases of acute poliomyelitis an organism which differed morphologically from any previously described. The anaerobic organism now identified by Flexner, owing to its minuteness and other attributes, meets satisfactorily various peculiarities shown by the virus, including its filterability.

Of practical interest in this connection is the fact that although the virus has been found in many structures other than the nervous system, the only region in which it occurs with any degree of constancy is the nasopharyngeal mucosa. When we recall that it is killed by comparatively weak disinfectants, such as a one to five hundred solution of potassium permanganate, a one per cent. solution of menthol in oil, a one per cent. solution of hydrogen peroxide, etc., prophylactic measures through local treatment offer some promise. Again, the fact that hexamethylenamine is excreted into the cerebrospinal fluid, even when administered by the mouth, has afforded hope of results through internal medication. If to this we add the likelihood that a serum will probably follow the identification of the germ, we may entertain reasonable hope that before very long another of humanity's foes will have been controlled.

CIVIC SPRING CLEANING.

Health Commissioner Lederle of New York has recommended a spring housecleaning on a scale never before attempted "and with little expenditure of public funds." According to his plan the other metropolitan departments and bureaus would cooperate with the health department as would also all civic organizations, especially those in which women are active, and the public in general.

Here is an excellent plan which should extend to all our communities, rural as well as urban, the hamlet as well as the gigantic municipality. We offer here a few further suggestions: Before April let closets, bureaus, nooks, and crannies everywhere in the household, be thoroughly renovated, in order to insure detection of hibernating flies; in April the overwintering mother is likely to start the summer season's transmission of the tubercle bacillus, the typhoid bacillus, etc., with an initial laying of a hundred or more eggs. We aim now not so much to swat the fly as to starve him, to remove the filth in which he breeds and gets his being. The public press gives its columns generously to such ends. Newspapers indeed are invaluable in their influence; how much better were it if they would give more space to disease prophylaxis and less to the pitiless exploitation of a consumption serum the efficacy of which is absolutely problematical, and of cancer "cures" which cannot cure any cancer.

During the winter months, in most communities, all kinds of refuse accumulates to an unusual extent; therefore, at snow melting time, the civic housecleaning should be most industriously entered upon. The manure heap is the lying-in chamber of from ninety to ninety-five per cent. of fly mothers; it should receive especial attention. But barns, chicken yards, closets, privies, hog pens, must be cleaned up and kept ever clean. In the household all food must be covered and screened; only from the best kept households is the fly absent. And alleys and the immediate environs of houses must be kept clean. Screens (eighteen meshes to the inch, to keep out mosquitoes as well as flies) are essential for all windows, and for dining room and kitchen doors. Garbage cans, rubbish heaps, bedding, straw, waste paper, rags, vegetable matter, and all refuse tending to fermentation must be attended to.

Obviously and above all must the fly be kept out of the sick room, especially where there are sufferers from contagious diseases. Flies must be kept from the vomit and excreta of typhoid patients, which must be destroyed or disinfected according to well known rules, and from abscesses and discharging wounds in surgical cases. All hospitals, dispensaries, and sanatoria must be flyproof. As for mosquito extermination, no spot which may contain a teaspoonful of still water can safely be overlooked.

A burning interest in municipal sanitation must be kindled in the breasts of grocers, bakers, fruiterers, butchers, fish dealers, especially those who expose food for sale on the street, hotel and restaurant proprietors, factory owners, and perhaps most of all milkmen who keep horses. Horse manure must be promptly removed from the streets, also dead animals; and streets must be constantly washed and kept clean.

One uncleanly householder may keep a whole district flyridden and perhaps pestilent, no matter how well all others have done their duty; wherefore, especially in villages, the problem becomes a neighborhood problem; and the neighbors of that untidy delinquent have to be disagreeable to him until he sees the error of his ways and acts accordingly. Any nuisance in the neighborhood should be at once reported to the authorities, who should (if the occasion warrant) be made uncomfortable until they act; maintaining a nuisance has been held to be a misdemeanor, to be punished as such.

The time is now ripe for education in municipal house cleaning. The genial lecturer on hygiene and sanitation, armed with his box of lantern slides, his harmless little jokes interspersing his gory facts, should be abroad in the land. Travelling prophylaxis exhibits are provided by some State departments. Placards announcing the communal house cleaning should decorate store windows, should replace those of beauty shows in our country towns. Women's clubs and leagues and farmers' and teachers' institutes should busy themselves with the problem. Let sermons be preached on the cleanliness which often leads straight to godliness.

THE PART PLAYED BY VASCULAR ANOMALIES IN THE PRODUCTION OF HYDRONEPHROSIS.

Compression of the ureter by a bloodvessel is quite as important in the production of an hydronephrosis as that resulting from a fibrous band. The vascular anomaly, considered as a causative factor of hydronephrosis, acts by external compression in the same manner as the viscera in normal relationship to the renal gland. Usually, it is a branch of an abnormal renal artery, occasionally a vein, which passes in front of or behind the ureter and compresses it. More frequently the vessel produces a sharp bend in the ureter, and for this to take place the artery must have both an abnormal position and course.

When the kidney is irrigated by vessels following the classical and anatomical relationship to the ureter, it would be well nigh impossible for the latter to be compressed by a vessel, even in marked displacement of the renal gland, but an abnormal position of the vessel can exercise its effects of ureteral compression from the very beginning of life, so that an hydronephrosis results which, from the start, will take on the characters of either an intermittent or open hydronephrosis. The abnormal artery compresses the ureter at each systole, producing a mild irritative process at the point at which the vessel crosses the tube, and this will be followed sooner or later by an inflammatory process—a ureteritis or periureteritis, the consequences of which will be the transformation of an open hydronephrosis into a closed one. When this occurs marked renal disturbances arise.

The vascular anomaly is not always the primary causal factor of the hydronephrosis; in some instances it only intervenes by keeping up an already developed process. The particular abnormal arrangement of a vessel may cause the bend in the ureter to be permanent, just as in the case of a periureteral adhesion, and may result in an accidental or spontaneous displacement of the kidney. This fixity is the factor in play in the production of hydronephrosis in movable kidney.

It has been said that the part played by the bloodvessels in hydronephrosis is always secondary, always passive. It is undoubtedly true that their compressive action arises only when the renal pelvis has acquired some size, transforming an open hydronephrosis into a closed one, but it is not to be doubted either that the production of hydronephrosis can be attributed to an existing vascular anomaly, when no other etiological factor can be discovered.

The persistence of Müller's and Wolff's ducts is infrequent, but in a few instances of hydronephrosis they appear to have played a preponderant part in the mechanism of the production of the lesion. The ureter has been discovered bound around by a fibrous band, which undoubtedly was the vestige of the Wolffian duct, and by its persistence resulted in urinary retention in the renal pelvis.

DAMAGED GOODS.

It has been generally recognized that the audience before which *Damaged Goods* was produced at the Fulton Theatre on March 14th was precisely the kind of audience least in need of the lesson which the play teaches—that syphilitics should not marry until the Wassermann reaction is most certainly negative. In spite of its sensational language and one powerful climax, we doubt if the play would appeal to the general public. To compare it, as Mr. Wilton Lackaye did, to *Uncle Tom's Cabin,* was inapt, as the latter has every element of a popular drama. With the exception of the climax of the second act, already referred to, M. Brieux's production is more a tract than a play, but in this scene the writer chose for a moment to show his ability as a playwright and, after two acts of preaching, it exploded before the astonished audience like a bomb. What follows in the third act is in the nature of an epilogue. Probably *Damaged Goods* will always have to find special audiences and many of these may be surprised to find that it is in no sense a crusade against sexual immorality, but simply against syphilis; in fact, the play seems, above all, to be intended as an appeal to syphilitics to be careful, and, secondarily perhaps, as a plea for legislation to forbid men from marrying till they can present a clean bill of health. If it accomplishes so much it will not have been produced in vain, and the members of the Medical Review of Reviews Sociological Fund will deserve the thanks of the community.

PELLAGRA.

In the *Public Health Reports* for March 14th was published the conclusion of a very interesting article by Dr. R. M. Grimm which began in the issue for February 28th. The author was able to see a number of pellagrins and study the development of the disease. There were three communities upon which his report is based, one in Kentucky, one in South Carolina, and one in Georgia. Beside the relationship between food and pellagra which seems to be a real one, the possibility of some insect playing a part in the dissemination of the disease should not be overlooked. As to the question of food there are three ways which have to be considered: The character of the food may act only in predisposing to conditions which will favor the development of the disease, or certain articles of food may act as the real exciting agent, or the food acts only as an exaggerator of the symptoms. Again, certain articles of food may act in all three ways. The article gives a number of very instructive illustrations; those accompanied with maps especially deserve a good deal of credit.

We see that more cases are found among the whites than among the negroes, and the females of each race show a larger percentage than the males; while among the married and widowed pellagrins the females predominate. The single pellagrins were equally divided among the sexes. As to age we see that most cases develop between the twentieth and fortieth year. The rate of insanity was higher among the negroes than among the whites, and higher among males than among females, while the mortality was highest among colored females and lowest among white females, the negroes giving a higher percentage than the whites. As to environment more cases occurred under conditions of poverty than of comfort. Very important is the final conclusion: Pellagra is more prevalent than is ordinarily supposed, even by physicians practising in pellagrous communities, and there are many persons with symptoms of a mild condition who do not ordinarily come to the attention of the physician.

SPOONFULS OF MEDICINE.

An editorial note in the *Lancet* for March 1, 1913, draws attention to the fact that the teaspoon does not always contain exactly sixty minims, has varied in capacity, in fact, from sixty to 120 minims, and it comments with approval on the action of an Australian medical society which has recommended the various pharmaceutical organizations to request pharmacists to write the doses of medicines dispensed by them in ounces and drachms instead of spoonfuls, and to advise their patrons to secure properly graduated medicine glasses. The *Lancet* has before pointed out that in these days of standardized preparations teaspoons and tablespoons are obvious anachronisms.

WORK WITH SPENGLER'S BODIES.

Presse médicale for March 5, 1913, summarizes a report from *Scalpel et Liége médical* for February 23d of a paper read before the Clinique centrale de Liége by Daco, in which he gave his results from injection of Spengler's *Immun-Körper* in four cases of tuberculosis. These comprised a case of bilateral pulmonary infection in a woman, thirty-five years old, in whom treatment for four months was absolutely negative as to results; a case of double phthisis in a man of forty years, in whom three months' treatment was considered to have improved the general condition, but in whom developed an albuminuria which was attributed to the treatment; a case of sacral osteitis, in a woman of fifty years, in whom this condition was soon succeeded by renal then pulmonary involvement which carried off the patient; and, finally, a case of renal tuberculosis in a man, aged thirty-seven years, who has been treated since July 18th and who is reported to be on the way to a cure.

RADIUMLIKE ACTION OF MESOTHORIUM.

A letter from Vienna, in *Semaine médicale* for March 5, 1913, mentions a report made to a local society by M. L. Freund on the action of mesothorium in lupus. The patient was a young girl, and the experimenter placed a tube containing sixteen milligrammes of mesothorium on one part of the lesion and a second tube containing an equal quantity of radium on another part; the effects were exactly parallel. Adrenal extract was found to augment the action of mesothorium by its property of producing anemia. The rays were modified by the interposition of a screen of silver or aluminum.

Obituary.

PRINCE A. MORROW, M. D.,

of New York.

Doctor Morrow died on March 17th at his home, 66 West Forty-fourth street, New York, aged sixty-six years. He was born in Mount Vernon, Ky., in 1846, obtained his early education at Cumberland College and Princeton College (Ky.), and graduated in medicine at New York University Medical College in 1873. In 1880 he received the degree of A. M. from the same university. After study in Europe, he began practice in New York and became clinical lecturer in dermatology and subsequently professor of genitourinary diseases at his alma mater; he was visiting surgeon to the Charity Hospital, consulting surgeon to Bellevue Hospital, outdoor department, and attending physician to St. Vincent's Hospital. In 1888 he began a special study of leprosy, traveling through the Southern States, the Hawaiian islands, Mexico, and California. He was for ten years editor of the *Journal of Cutaneous and Genitourinary Diseases.* Of late years he had given much of his time to the American Society for Sanitary and Moral Prophylaxis, of which he was president, and he contributed numerous articles on these subjects to the NEW YORK MEDICAL JOURNAL and other scientific publications. For many years he was a valued editorial contributor to this JOURNAL, and was greatly esteemed by members of the staff. Doctor Morrow is survived by a widow, two sons, and a daughter.

News Items.

Changes of Address.—Dr. S. R. Klein to 818 East 216th Street, New York.

Northern Medical Society.—A meeting of this society will be held on Wednesday evening, March 26th, at 8:45 o'clock, at 12 Mount Morris Park West, and a cordial invitation is extended to all members of the medical profession to attend. Dr. Herman Grad will present reports of some interesting gynecological cases, and Dr. S. A. Tannenbaum will read a paper on the Relation between Sexual Abstinence and Nervous Disorders.

A Pasteur Institute in St. Louis.—It is reported that a Pasteur Institute will be established in St. Louis, under the direction of Dr. R. B. H. Gradwohl. At present cases of rabies are treated at the City Hospital, but the laws permit only residents of the city to receive treatment there, patients outside of the city having to go to Chicago for treatment. The new institution will be conducted along the lines of the New York Pasteur Institute.

Chicago College of Physicians and Surgeons Presented to Illinois State University.—On Thursday, March 6th, the College of Physicians and Surgeons was presented to the University of Illinois, becoming the medical department of that institution, and the trustees have asked the legislature for an appropriaion of $100,000 a year for the support of the department. The State institution absorbed the entire college, its faculty, students, building, and equipment.

An Epidemic of Influenza in Vienna.—According to press despatches, the Austrian capital is suffering from an epidemic of influenza, statistics of the health department showing that half a million cases have been reported during the past three months. Physicians, hospitals, and nurses are being overtaxed, as whole families seem to be attacked simultaneously. The disease is of a particularly virulent type, with serious aftereffects. It is believed that milder weather will stop the spread of the epidemic.

Meetings of Medical Societies to be Held in Philadelphia During the Coming Week.—Monday, College of Physicians (Section in General Medicine), and St. Agnes Hospital Clinical Society; Tuesday, West Philadelphia Medical Association, and St. Mary's Hospital Clinical Society; Wednesday, County Medical Society; Thursday, Pathological Society; Friday, Neurological Society, County Society (South Branch), Northern Medical Association, and Medical Club Directors.

Neurological Department of Mount Sinai Hospital.—Announcement is made of a gift of $120,000 from Messrs. Samuel and Harry Sachs, for the support of free beds in the neurological department of Mount Sinai Hospital, in memory of Joseph and Sophie Sachs. A new ward has been opened in this department for children suffering from nervous diseases, and the men's and women's wards have been enlarged. One of the new buildings which the hospital is about to erect will be designed with special reference to the requirements of a thoroughly equipped neurological institute.

A Symposium on Nephritis.—The next meeting of the Section in General Medicine of the College of Physicians of Philadelphia, to be held on Monday, March 24th, will be devoted to a consideration of modern views of nephritis. Dr. R. M. Pearce will discuss the Newer Concepts of Nephritis; Dr. A. E. Taylor, Uremia; Dr. Alfred Stengel, the Cause of Edema in Nephritis; Dr. Hobart Amory Hare, the Treatment of Renal Dropsy; Dr. James Tyson and Dr. Alfred C. Wood will discuss the Operative Treatment of Nephritis, and a general discussion will follow. All physicians who are interested in the subject are invited to attend.

Clinical Lectures and Demonstrations at the Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital, Second Avenue and Nineteenth Street, announce that a course of clinical lectures and demonstrations will be given in the outpatient hall of the hospital on Wednesday afternoons, at 4:15 o'clock, from April 2d to May 14th, inclusive. The first six lectures will be given by Dr. L. Duncan Bulkley on Surgical Diseases of the Skin, and the last lecture in the course will be given by Dr. William Seaman Bainbridge on Surgical Treatment of Malignant Diseases. These lectures are free to the medical profession, on the presentation of professional cards.

Rochester, N. Y., Academy of Medicine.—The officers of this organization to serve for the year 1913 are as follows: President, Dr. Charles E. Darrow; vice-presidents, Dr. Lee A. Whitney, Dr. Leighton R. Cornman, Dr. LeGrand A. Walker and Dr. Clayton K. Haskell; secretary, Dr. Edward L. Hanes; treasurer, Dr. Wesley T. Mulligan. The work of the academy is divided into four sections as follows: Section I, General Medicine, Dr. Lee A. Whitney, chairman, Dr. Willard H. Veeder, secretary; Section II, Surgery, Dr. L. A. Walker, chairman, and Dr. G. G. Carroll, secretary; Section III, Obstetrics, Dr. L. R. Cornman, chairman, and Dr. James K. Quigley, secretary; Section IV, Public Health, Dr. C. K. Haskell, chairman, and Dr. John M. Swan, secretary.

Plague in the Philippine Islands.—The chief quarantine officer and director of health for the Philippine Islands reported on January 8th that the total number of cases of plague reported in the islands from the beginning of the outbreak in June, 1912, to December 25, 1912, was 58. Of these cases 50 occurred in Manila and 8 in Iloilo, the last case in Iloilo being reported on September 16th and at Manila on December 25th, since which time no case of plague has been reported in the Philippine Islands.

Smallpox in Mexico.—The following statement regarding smallpox conditions on the west coast of Mexico was received recently by the United States Public Health Service: Smallpox is present in almost every town on the west coast of Mexico, but in only a few districts has the disease assumed a serious epidemic form and in these districts measures have been taken to prevent its spread. Foci of smallpox are reported in thirty-seven localities, in most of which the disease being present in isolated cases. The localities in which serious conditions exist are the Yaqui Valley, which is badly infected, the mortality being greatest on isolated plantations, where the deaths number hundreds, and the Navojoa district, where the disease has been endemic for two years. A recent outbreak occurred in the vicinity of Tepic with fifty reported cases and a high fatality rate.

Resolutions on the Death of Dr. Kingman B. Page.—At a recent meeting of the medical board and the board of directors of the People's Hospital, the following resolutions were adopted:

WHEREAS, Death has suddenly ceased the activities and affiliations in life of our late colleague, Kingman B. Page, M. D., be it

Resolved, That in his untimely decease the medical board and board of directors and allied organizations of the People's Hospital in the City of New York have sustained a lasting personal and professional loss, and be it

Resolved, That in his demise we feel the absence of one whose professional enthusiasm was a real inspiration, whose loyalty to the People's Hospital was a treasured example, whose devotion to the science and art of medicine was an elevating impulse and whose self sacrifice in the service of fellowman was a humanitarian principle, and be it

Resolved, That a copy of these resolutions be spread upon the permanent records of the medical board of the People's Hospital in the City of New York, and that an engrossed rescript of them be forwarded to the bereaved family in token of sympathy and fellowship in sorrow and affliction.

Committee on Resolutions.
VICTOR COX PEDERSEN, chairman;
WALTER BROOKS BROUNER,
DANIEL S. DOUGHERTY,
JOSEPH KAUEMAN,
MAX LANDESMAN,
SOLOMON ROTTENBERG,
SIMON STRAUSS,

Executive Committee.
IGNATZ M. ROTTENBERG, president;
ANTHONY BASSLER, secretary.
JOSEPH BIEBER,
JULIUS BRODER,
J. PRESCOTT GRANT,
MAXIMILLIAN LEWSON,
SAMUEL SPIEGEL.

Resolutions on the Death of Dr. Archibald E. Isaacs.—The Eastern Medical Society of the City of New York has passed the following resolutions on the death of Dr. Archibald E. Isaacs:

WHEREAS, We have learned with deep sorrow of the death of our beloved member and former president, Dr. Archibald E. Isaacs, whose kind disposition and sterling qualities, and whose ability, earnestness, and devotion to duty have gained for him the regard, esteem, and affection of the members of the Eastern Medical Society, and

WHEREAS, Dr. Archibald E. Isaacs was one of the founders and former president of the society and as one of its active members, he has at all times given freely of his counsel, time, and efforts to promote the interests and welfare of the Eastern Medical Society, and

WHEREAS, His professional ability and skill and his selfsacrificing service in behalf of the poor have earned for him a position of honor and distinction in the medical profession and have gained for him the love and esteem of the laity; be it

Resolved, That the society record the sentiment of its members that by the untimely death of Dr. Archibald E. Isaacs, a worthy, distinguished, and inspiring career has been cut short, the cause of humanity has lost an ardent champion, the medical profession an exemplary member, and the Eastern Medical Society an enthusiastic and earnest worker, and be it

Resolved, That the society extend its sincere condolence to the sorrowing family in their loss of a loving son and husband and devoted father, and be it further

Resolved, That a copy of these resolutions be spread on the minutes of the society and that a copy be sent to the bereaved family and the medical press.

Committee:
DR. L. J. LADINSKI,
DR. A. A. HIMOWICH,
DR. D. ROBINSOHN,
DR. J. BARSKY, ex officio.

A special meeting of the Medical Board of the Beth Israel Hospital called for the purpose of taking action on the death of Dr. Archibald E. Isaacs, was held at the hospital, on March 14, 1913, at 2 o'clock. Resolutions of similar import to the foregoing were unanimously adopted, and signed by Dr. J. Ladinski, acting secretary, and D. J. E. Reinthaler, president. The board also resolved to attend the funeral in a body.

A State Hospital for Tuberculosis in Rhode Island.—The State of Rhode Island has appropriated $150,000 to provide for the erection of a tuberculosis hospital, and work on the building will be started as soon as plans can be prepared. It is said that there are hundreds of patients in the State waiting for admission to such an institution, and at the present time there are in Rhode Island 2,000 advanced cases of tuberculosis, with a total of 300 beds to accommodate them. The new building will provide accommodation for about half the total number of patients during the next year, but no provision has been made for a possible increase in the number of cases. During the year 1912 there were 1,000 deaths from tuberculosis in the State. Newport has a special fund for the care of advanced cases at home and for the care of a few at the Holy Ghost Hospital for Incurables in Cambridge, Mass.

Opening of the Phipps Institute.—The new building of the Henry Phipps Institute of the University of Pennsylvania, at Seventh and Lombard Streets, Philadelphia, will soon be ready for occupancy. It is expected that the formal opening will be held within the next month, but as yet no definite date has been set. The object of the institution is the study, prevention, and treatment of tuberculosis, and, roughly speaking, the three sections are to a greater or less degree distinct from each other. The laboratories, where research work along modern lines will be conducted under the direction of Dr. Paul A. Lewis, occupy the wing toward the east; the "treatment" or hospital department ocupies the third, fourth, and fifth floors, while the main parts of the first floor and basement are devoted to the dispensary, lecture hall, library, and museum, that is, to the educational and sociological aspects of the work. The second floor and a part of the third are devoted to quarters for the staff. The main building is three stories in height, the fourth being set back on two sides, and the fifth set back still further at each end. This terracing or setting back of each succeeding story is for the purpose of forming uncovered decks for the open air treatment of patients. On the fifth floor is a large open air ward, open to day classes of both sexes. The equipment and apparatus are thoroughly modern and complete in every respect, and excellent safeguards against fire have been provided. Taken as a whole, the new building is very businesslike. Nothing essential has been sacrificed for economy and nothing superfluous has been added for effect. Dr. Charles A. Hatfield is the director of the institute.

Examination for Assistant Surgeons in the United States Public Health Service.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 B Street, S. E., Washington, D. C., on Monday, April 7, 1913, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service as释 internes in hospital for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work. In addition to a physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive $2,000, passed assistant surgeons $2,400, surgeons $3,000, senior surgeons $3,500, and assistant surgeons general $4,000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade is allowed. All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address: Surgeon General, Public Health Service, Washington, D. C.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

January 6, 1913.

Formation of Circumscribed Tumors by Abdominal Fat Necrosis and Subcutaneous Splitting up of Fats.—H. Küttner reports two cases which began with the usual drastic symptoms of abdominal fat necroses, but instead of leading to the usual pathological changes, produced solid circumscribed tumors, in the first case simulating a tumor of the gallbladder, and in the second a chronic inflammatory or malignant tumor of the intestine. His third case presented a circumscribed tumor of the mamma, caused by the splitting up of fats.

Therapy in So Called Uncontrollable Hemorrhage of Infants.—K. Blühdorn was able promptly to control hemorrhage in three little patients suffering with melæna neonatorum, abdominal purpura, and hemorrhage from the navel in sepsis with pernicious icterus, by the injection of diptheritic serum and the internal administration of calcium chloride. The author makes a plea for thorough tests of this method and wants reports of the results.

January 13, 1913.

Paralysis Following Extension Treatment of Fractures of the Femur.—M. Weichert noticed a series of paralyses of the peroneal and lateral cutaneous nerves following the extension treatment of fractures of the femur. These are caused by the excessive stretching of the sciatic root, due to the heavy weights and the extension and elevation with light weights. Since employing the principle of Zuppinger's semiflexion method he has noticed no paralyses.

Ehrmann's Frog's Eye Phenomenon in the Blood Serum in Psoriasis.—A. Sommer observed the following interesting fact: When the irides of frog's eyes are placed in the serum of healthy human beings the pupils soon dilate, but when immersed in the serum of those suffering with psoriasis they remain contracted. The author believes this to be due to the lack of an epinephrinelike substance in the blood serum of those afflicted with psoriasis which prevents the dilatation of the pupil.

Synthetic Hydrastinin and Its Application.—H. Offergeld has tried synthetic hydrastinin in uncomplicated primary and secondary uterine hemorrhage and found it very satisfactory. Its action is particularly excellent when given prophylactically for some time before hemorrhage begins, and in cases with virgin uteri. Hemorrhage during pregnancy is not to be treated by this drug because of the uterine contractions that it produces. It is less poisonous, more effective, and palatable than hydrastis and much cheaper.

Tabetic Coma.—R. Ehrmann shows by a series of experiments and observations that diabetic coma is a specific butyric acid poisoning. Such acids act as cerebral poisons upon respiratory vasomotor and cerebral centres. When the action of the butyric acid is concentrated upon the vascular system a cardiovascular form of coma results. The action of sodium carbonate and sodium bicarbonate in coma is due to a more rapid and more thorough washing out of the butyric acid, also to the stimulating action of the vasomotor system.

January 20, 1913.

Lipoid Chemistry of the Blood.—Bürger and Beumer describe an original detailed method of determining the distribution of cholesterin and cholestrinesters and lecithin in blood serum. They found that in every serum there is a varying but considerable part of the total cholesterin in the free form; the least is thirty per cent. of the whole total cholesterin. The highest amount of cholesterin and lecithin are found in diabetic liphemia and cholemia. The amounts were below normal in pernicious anemia, severe chlorosis, and inanition. Röhman and Pighini's supposition that the free cholesterin of the serum bears a causal relation to the Wassermann reaction has not been substantiated.

Nystagmus in Fevers.—Czyhlarz found, as Beck and Biach also had found, that the majority of patients with high fever show distinct signs of nystagmus. In typhoid, nystagmus appears usually after the second week and has a tendency to remain after the subsidence of the fever. In the fever of tuberculosis nystagmus is rare, but it does appear in scattered cases of even the nonmiliary type.

Surgery of Cavities.—G. Baer suggests that in cases of cavities an extrapleuritic pneumolysis with secondary plastic filling in of the cavities by paraffin be tried. Even a partial cleaning out is sufficient to influence the cavity favorably. The results may be enhanced by opening the cavity a second time, as is shown in the case reported. The fact that the bony thorax remains intact gives this method an advantage over Wilm's operation or Friederich's thorocoplasty.

January 27, 1913.

Clinical Experiences with Adamon in Irritations of Acute Gonorrhea.—Treitel recommends adamon for diminishing the painful symptoms in acute gonorrhea. It is given in tablet form, two tablets dissolved in water of 0.5 gramme each between 5 and 6 p. m., and two more an hour before retiring.

WIENER KLINISCHE WOCHENSCHRIFT.

January 2, 1913.

Parasitic Action of Atoxyl and Neosalvarsan.—L. Arzt and W. Kerl show that by adding lecithin to atoxyl the parasitic action of the latter is increased, while the parasitic action of neosalvarsan is decreased by the addition of lecithin. One hour after the intraperitoneal injection of atoxyl or neosalvarsan trypanozoid substances may be found in the blood. In the experiments the neosalvarsan has a stronger parasitic action than the atoxyl.

Enchondroma of the Helix.—Zografides reports the case of a girl, twelve years old, who complained of pain in both ear lobes a year ago. They became swollen and abscesses formed. After the pus was drained off, a swelling remained on both sides which gradually changed into a circumscribed tumor resembling cartilage. The histological examination of a section of the extirpated tumors showed the picture of an enchondroma consisting of elastic cartilage.

Hexxal.—Kowanitz found the action of this drug, composed of formaldehyde and salicylate, excellent in all forms of cystitis. It is said to possess three advantages over urotropin—it is more rapid in its action, it has greater analgesic properties, and it is pleasant to take.

January 9, 1913.

Benzol Treatment in Leuchemia and Other Blood Diseases.—Pappenheim says that according to the animal experiments of Selling, the doses of benzol which have been given up to the present time are too small to exert a retarding influence on the formation of bone marrow cells. In larger doses there is danger of injury to liver and kidneys. Benzol is less effective for the treatment of leuchemia than the emanating substances; the action is less intensive, less elective, and less constant than is the case with the radioactive substances. The gastrointestinal effects of the benzol should not be treated too lightly, as they are probably due to injury to the mucous membranes.

Cutaneous Reaction of Syphilis.—Fischer and Klausner have found a substitute for Noguchi's luetin, which is obtained with difficulty. The watery spirochete extract is made from the lungs of children suffering with hereditary syphilis, which is used for the cutaneous reaction according to the method of Noguchi. Syphilitics in the first and second stages do not give the cutaneous reaction. On the other hand, all cases in the third stage and those with hereditary syphilis react without exception. There were negative reactions for metasyphilitic and other diseases. This reaction will probably become pathognomonic for the third stage of syphilis.

Prognosis in Infantile Tuberculosis.—Lawatschek believes that for the prognosis in infantile tuberculosis, beside localization of the tuberculous foci and the age at which infection takes place, we must consider the severity of the initial infection and the probability of recurrences. In this manner infants who have become infected after birth and whose infections are repeated may succumb more readily than those who have been infected congenitally or *intra partum* with only a few bacilli, and then protected from reinfection. The earliest positive cutaneous reaction was obtained in an infant, twenty-eight days old, and one of thirty-eight days.

January 16, 1913.

Dorsal Auscultation of the Heart and Bloodvessels.—L. Kurt demonstrates that under normal conditions the heart sounds may almost always be heard in children dorsally, but seldom so in adults. They are more distinctly heard to the left of the vertebral column than to the right. The accent is usually on the second sound. Then follows a detailed description of the accurate localization of the dorsally heard heart sounds and murmurs.

Intramuscular Injections of Defibrinated Human Blood Serum for the Treatment of Anemia.—Zubrzycki and Wolfsgruber injected from twenty to thirty c. c. of fresh defibrinated human blood serum into the gluteal region of exsanguinated patients for the purpose of stimulating the formation of blood. Excellent results were obtained in all the cases. The blood picture changed favorably. The improvement in the general condition kept pace with the improvement in the blood picture. When strict asepsis is observed the blood injections are not unpleasant or dangerous.

January 23, 1913.

Physiology and Pathology of Digestion and Resorption in the Light of Modern Serological Teachings.—Buettner suspects the imperviousness (dependent upon the vitality itself) of the epithelium of the small intestine for complex protein molecules (peptones) and for dissolving native protein. The liver furnishes the second protective agency. When both these barriers are destroyed the foreign protein finds its way into the circulation and exerts a pernicious influence (anaphylaxis). The mucous membrane of the large intestine seems to possess no protective agency to prevent the absorption of peptones, probably because the large intestine is not called upon to harbor complicated protein molecules or genuine proteins. The fact that no anaphylactic symptoms result when enemata, containing complicated protein molecules are given, is probably due to the action of the liver.

Salvarsan.—O. Kren says that judging from the numerous tests of the salvarsan in the dermatological department of the Vienna University clinics it is to be considered as an extremely effective antisyphilitic, whose application profoundly influences the course of syphilis. Its therapeutic worth is greatest when given in the primary stages. In these cases of fresh scleroses with negative Wassermann reaction, it is capable of inhibiting the eruption of secondary symptoms with few exceptions. A few of these cases have been under observation for over two years and have remained free from secondary symptoms. In scleroses where the serum reaction is positive, the absence of secondary symptoms is less frequently observed. Salvarsan acts very favorably in the third stage and in hereditary lues, less favorably in the secondary stages; in the latter the administration of small, gradually increasing doses is especially to be recommended. Contraindications exist in cases with increased blood pressure, severe nerve affections, diseases of the ear, especially the middle ear. There is no particular danger in applying the remedy in cases not presenting these contraindications. Its neurotropic action is very small when compared with other arsenic preparations.

LYON MÉDICAL.

February 9, 1913.

Neurotropic Properties of Salvarsan.—A. Morel and G. Mouriquand report an experimental study of this question, which has a direct bearing on the untoward nervous phenomena sometimes appearing after salvarsan injections. The amounts of arsenic found in the brain, including cerebellum, medulla, and cranial nerve roots, were no greater than in untreated animals, though in one instance the combined medulla and spinal cord showed a slight excess. Almost always, on the other hand, large amounts—up to 0.14 per cent.—were found in the liver. The kidneys contained only a relatively small amount, sometimes only a trace. The bile and heart, in the one instance in which they were examined, showed 0.2 per cent. and 0.083 per cent., respectively. These results do not agree with those of Mouneyrat, who concluded that salvarsan was distinctly neurotropic.

PRESSE MÉDICALE.

February 15, 1913.

Origin of Hemolysins.—C. Achard, C. Foix, and H. Salin review recent experimental work, including their own, bearing on this subject. The conclusion reached is that the property of producing hemolysins does not belong to any single organ, or even to any definite type of cell. The spleen is only a relatively small factor in an extensive hematolytic system, and all cells capable of phagocytosis can secrete hemolysins. Kupfer's cells in the liver, the pulmonary endothelium, the mobile or potentially mobile cells in the connective tissue spaces, and probably the endothelia of serous cavities and vascular channels are capable of exerting this function. The secretion of hemolysins beginning after the onset of phagocytosis continues wherever the large phagocytic endothelial cells or macrophages congregate, but it is not limited to these areas, as any cell in the body, free or fixed, which has acted as a phagocyte, can likewise secrete hemolysins. The production of hemolysins and the phagocytosis of erythrocytes thus appear to be merely two phases of the same function.

Modified Tests for Acetone and Diacetic Acid.—S. Bonnamour and A. Imbert recommend the use in Legal's test for acetone of a reagent consisting of ten grammes of glacial acetic acid and ten cubic centimetres of one to ten solution of sodium nitroprusside; kept in a dark colored bottle this solution does not deteriorate for several months. The test is performed by adding to fifteen c. c. of filtered urine in a test tube twenty drops of the reagent and overlaying the mixture with ammonia water. The presence of even one part in 2,000 of acetone causes a purple ring to appear at the surface separating the two fluids. Gerhardt's test for diacetic may be rendered much more sensitive than usual by proceeding as follows: Dilute the urine with four parts of water; to the resulting fluid add, drop by drop, ferric chloride solution diluted one to ten. Normal urine, or urine containing acetone alone, will show only a white cloudy precipitate; urine containing as little as one part in 10,000 of diacetic acid, on the other hand, will give a purplish black cloudy precipitate. These tests are both convenient for bedside use. It is important to test for diacetic acid in diabetic cases, as acetone may be present without glycosuria, and does not independently imply a tendency to diabetic coma.

February 19, 1913.

Functions of Bile.—H. Roger discusses this question in the light of recent experimental work. The biliary secretion contains no digestive ferments, but exerts a zymosthenic influence, i. e., it augments the action of certain enzymes—the pancreatic amylase and the intestinal lactase. It possesses the property of attracting from within the intestinal cells the ferments elaborated therein, notably invertase, and thus plays an important rôle in the digestion of certain sugars. It cooperates in the digestive process and the absorption of fats. It exerts a special action on the albumins and peptones, which it first precipitates from acid solutions and later redissolves. Although devoid of bactericidal properties, it hinders intestinal putrefaction by favoring the growth of certain microorganisms, such as the colon bacillus, at the expense of the anaerobes, which are the chief factors in putrefactive processes; by diminishing the secretion of ferments elaborated by the bacteria themselves, and by hindering the action of bacterial ferments on substances susceptible to fermentation. It lowers the activity of toxic products of bacterial origin. Finally, it prevents the coagulation of mucous by the mucinase present in the intestine; disturbances in the secretion of bile are accountable for certain forms of mucomembranous enteritis.

MÉDICA SEMANA.

January 23, 1913.

Study of Nasal Tumors.—Cruz Correa says that the etiology of some of the nasal tumors is, in many cases, impossible to determine. Many anatomopathologists are prone to admit that such tumors result from anomaly, that is, an irregularity in the development of the anatomical elements which form the tissues. Ziegler gives the name tumor to all new formation that has a tendency to develop under the influence of a congenital anomaly. He establishes four groups to classify these tumors: One for those which have by origin local malformation of the tissues, in which group are included many osteomas, cylindromas, angiomas, gliomas, sarcomas, adenomas, and many teratoid tumors because they are remains of fetal formations. In the second group he includes all tumors consecutive to traumatic lesions. In another group, the third, he embraces all tumors which grow from granulation tissue with a subsequent production of cicatricial tissue; in the fourth group he includes the tumors whose development is due to the impaired regression of the phenomena to which the elements which compose the tissues are submitted. The modern classification of these tumors has a tendency to group them according to their blastodermic origin, having established two principal groups; one for the tumors composed of connective tissue, and another for the epithelial growths.

Reducing Power of the Liver.—Fernández points out that since Ehrlich averred that the hepatic cells possess a strong reducing activity, the reducing power of the liver has come to be considered an unquestionable fact. Pflüger showed that from one litre of bile can be extracted, by vacuum, 188 c. c. of carbonic anhydride and 564 c. c. by the action of acids. It is a fact that a large quantity of the urea eliminated is due to the oxidation in the liver of the aminoacids of the albuminoid matters. Abelous and Biarnes have proved that the liver is one of the glands that possess great oxidizing power, and Wohlgemuth is of opinion that this transforming power of the liver is not due to the hepatic cell, but to the ferments contained therein. The author, after laborious experiments, says that in his opinion this reducing power of the liver has been somewhat exaggerated.

Prostatotomy.—Sarrallach says that in the etiology of hypertrophy of the prostate there are three essential factors: Congestion, inhibition, and impediment to the free passage of urine; the other factors are only secondary. The author concludes by saying that after the prostatotomy is performed there always remains a portion of prostatic tissue, and that some authors, like Cuneo, believe that what is removed is not the prostate, but adenomatous juxtaurethral neoplasms of glands of the posterior urethra independent of the prostate.

Danger of a Sudden Change from a Horizontal to a Vertical Position in Acute Diseases.—Léduc states that we have no specific treatment for a number of acute diseases, therefore the physician must guarantee the care of the organs and the regularity of their functions until recovery is assured. The principal factor in the preservation of life is the circulation, so the resistance of the heart is one of the main symptoms on which to base a prognosis Léduc says that the most frequent and by no means the least danger for the heart is a sudden change of the patient from the horizontal to the vertical position. It is frequently observed when a healthy individual rises suddenly to assume a vertical position, the heart yields, the blood pressure is lowered, and the brain becomes anemic, consequently dizziness and vertigo are manifested. The author believes that a sudden change of a patient to a vertical position lessens the probabilities of cure in cases of severe fever and many acute diseases.

LANCET.

March 1, 1913.

Surgery of the Thyroid Gland (*Lecture I*).—James Berry deals first with exophthalmic goitre and says of the thyroid in this condition that the gland presents a solid, almost homogeneous appearance, which is constant and typical in all cases of well marked disease. He believes it easily recognizable at operation by mere inspection. In his experience, in every case of exophthalmic goitre, the thymus has also been enlarged, sometimes to a very great extent, weighing several ounces. He believes that it probably plays some important part in the pathology of the disease. He does not agree with the frequently made statement that the demonstration of an enlarged thymus constitutes a contraindication to operation for exophthalmic goitre. Regarding the parathyroids, he says that it does not matter in the least whether the portions of the thyroid removed contain the parathyroids or not; if only enough of the healthy thyroid tissue is left, tetany will not develop. Evidence is introduced to controvert the opinion that the parathyroids have special functions, and Berry holds that they are merely collections of undeveloped thyroid tissue which, after the removal of the thyroid gland, or a great part of it, are capable of developing and of taking on the functions of this gland. The exophthalmos of the disease is due to an accumulation of fat in the orbit, and never to any other cause. One of the most important symptoms for an early diagnosis of this disease is the fact that the patient always seems to suffer with the heat and has to be lightly clad on account of this subjective sensation. Concerning the medicinal and other nonsurgical forms of treatment, Berry believes that the former, the medicinal, does nothing to cure, but that rest, enforced and prolonged, is of considerable value, chiefly, if not solely, on account of its beneficial effects on the heart. He has found that a diet consisting largely of milk is often of noticeable benefit and that the use of considerable sodium chloride also seems to cause improvement in certain cases, both of which may possibly depend upon some action of the mineral salts, the metabolism of which seems to be deficient in the disease. The serum treatment of Beebe is regarded as having some beneficial effect, especially in early cases, but it is in no way a final remedy.

Typhoid and Paratyphoid Vaccination with Live Attenuated Vaccines; Mixed Vaccines.—Aldo Castellani prepares the attenuated live vaccines of typhoid and paratyphoid by growing the avirulent strains of these organisms for twenty-four hours in broth at 35° C. These are then attenuated by exposure to 49° or 50° C. for one hour. The first dose is of 500 million; the second of twice this amount, at an interval of a week. By both human and animal experiments these vaccines have been shown to be innocuous, and they are believed to be more efficient than the killed vaccines. Their keeping properties are fairly good, and even when stored at room temperature, they tend to lose in numbers of living organisms with time. Dysentery and cholera vaccines can also be prepared in much the same way, but for the dysentery vaccine broth should not be used. It should be replaced by peptone water to prevent the development of very painful infiltration at the site of injection. The use of these living attenuated vaccines is associated with rather more intense reactions, both constitutional and local, than are seen after the killed ones; but this is compensated for by the greater immunity which these confer. The author does not offer any considerable statistics from observations on man in support of this contention.

Perforation of Gastric or Duodenal (Pyloric) Ulcers.—Edred M. Corner sums up his examination of forty cases and five years of the literature relating to gastroenterostomy in this condition as follows: 1. Many subjects of the perforation of gastric ulcer are benefited by gastroenterostomy. 2. Secondary, that is, after the patient has recovered from the immediate dangers of the perforation, gastroenterostomy appears to be better than a primary. So far as the operation is concerned, Corner calls attention to the frequency with which one encounters such marked sogginess of the region of the perforation that the suture material cuts through and fails to hold, even during the operation. In view of this he has employed a method of closing the perforation by means of the omentum, which is held in contact with the region by two or three sutures. The site is then drained by means of gauze or a cigarette drain, which is removed after thirty-six hours. His results with this method have been excellent, chiefly on account of the great saving of time and consequently of shock.

Contraction Ring as a Cause of Dystocia.—Clifford White gives the following table of differential diagnosis between the contraction ring and the retraction ring:

Contraction Ring.	*Retraction Ring.*
I. Localized thickening of the wall of the uterus due to the contraction of the circular fibres over a point of slight resistance, most frequently over a depression in the child's outline or below the presenting part.	The junction of the thinned lower uterine segment with the thick retracted upper uterine segment.

Contraction Ring.	*Retraction Ring.*
2. The uterine wall at the site of the contraction ring will therefore be thicker than it is either above or below.	The uterine wall above the retraction ring is much thicker than it is below it.
3. The wall below is neither thinned nor overdistended.	The wall below a retraction ring is both thinned and overdistended.
4. The presenting part is not forcibly driven into the pelvis.	The presenting part is or has been jammed into the pelvis.
5. The child may be wholly or mainly above the contraction ring.	Part of the child must be below the retraction ring.
6. The body of the uterus above the contraction ring is usually relaxed and not tender.	The body above a retraction ring is tonically contracted and hard.
7. Round ligaments are not tense.	Round ligaments stand out.
8. A contraction ring may occur in the first, second, or third stage of labor.	A retraction ring practically always occurs late in the second stage of labor.
9. A contraction ring does not vary in position as labor goes on.	A retraction ring gradually rises as retraction of the upper uterine segment proceeds.
10. A contraction ring is rarely felt on abdominal examination.	A retraction ring may frequently be felt per abdomen.
11. The patient's general condition is good.	The patient's general condition is bad.
12. Causation: premature rupture of the membranes; intrauterine manipulations.	Causation: obstructed labor.

The treatment of the dystocia caused by a contraction ring has been tried along many lines, but White believes that only the following points are worthy of serious consideration: The possible use of chloral hydrate, and occasionally inhalation of amyl nitrite has also relaxed the contraction. The ring may in some cases be dilated; sometimes it is possible to accomplish this manually, but usually the use of instruments must be resorted to. It is also possible, at times, to complete labor in some cases by the aid of traction with forceps. In every case in which there is a ring around the neck of a dead child cleidotomy is indicated. Cæsarean section is the indication when there is a ring below a living child.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 6, 1913.

Diverticulitis.—Joseph Stanton reports five cases of inflammation of Meckel's diverticulum that have occurred in his practice within the past two years. The symptoms may be said to be those of a left sided appendicitis. The points he makes are that this is not a rare disease, that recurrent attacks of left sided abdominal pain with tenderness and tumor formation, in the absence of any active urinary disturbance, are usually due to inflamed diverticula, that as a focus of chronic irritation it may be a starting point of cancer of the sigmoid. and that surgical removal is the only perfect cure.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 8, 1913.

When is Operative Treatment Indicated in Chronic Dyspepsia?—William H. Wathen insists that there is but one treatment that can cure the inveterate dyspepsia caused by calloused gastric or duodenal ulcer, and that is surgical. While the symptoms may subside under other treatment, by diet, rest, and correct hygiene and sanitation, the disease is not cured; the symptoms will return in due time, especially in the case of duodenal ulcer. While the treatment of these cases is operative, we must always be able, when the stomach or duodenum is exposed, to demonstrate, by sight or touch or both, the presence of the ulcer. As the ulcer has invaded all the layers of the walls this can be done. If no ulcer can be seen or felt, the abdomen should be at once closed. unless some other pathological condition is found. The writer adds that ninety per cent. of gastric ulcers are found in the lesser curvature, and that ninety per cent. of all duodenal ulcers are in the first inch of the bowel; that twenty-five per cent. of calloused ulcers are in the stomach and seventy-five per cent. in the duodenum, and that gastric ulcer is multiple in about six per cent.; and that seventy-five per cent. of gallstones are in women, and twenty-five per cent. in men. Free hydrochloric acid in excess is found in every case of duodenal ulcer at some more active phase of the disease, and this is practically true in gastric ulcer, but to find this excess frequent examinations are necessary at different stages of the disease. Free or occult blood will be vomited or found in the feces, in every case of duodenal ulcer, and in all or nearly all cases of gastric ulcer, if the examinations are repeatedly and carefully made. While ulcer of the pyloric canal of Jonnesco is relatively infrequent, the writer found in two cases operated in open perforation, just proximal to the pyloric vein.

Results with Tuberculin (Dixon's) in Advanced Chronic Ambulatory Tuberculosis.—A. P. Francine and H. J. Hartz report eleven cases, with histories, in which the tuberculin treatment was used. The writers were thoroughly familiar with the course of health in the cases described for a long period of time. These eleven cases were, with one exception (a glandular case), of an advanced chronic fibroid type, which had shown a fairly good resistance while under treatment, but the patients were unable to work and showed progressive diminution in health, weight, and strength. This deterioration was at least checked in every case while tuberculin was being used. Every patient was distinctly improved in health and, during or following the course of tuberculin, was able to resume and remain at regular work, so that the tuberculin at least seemed to be the sole added factor bringing about the improvement. Apparent cure marked the case of glandular tuberculosis. While tubercle bacilli disappeared from the sputum in several of the cases during the treatment, the majority still showed the presence of tubercle bacilli even after the full course of injections. The disappearance of râles was an indication of distinct improvement in the local condition of the lungs. Tuberculin proved a valuable therapeutic measure in this series of cases of advanced chronic tuberculosis, where there was fair resistance, with little or no fever. The reactions with Dixon's tuberculin (tubercle bacilli extract) were uniformly mild and without untoward influence on the course of treatment. In the preparation of all tuberculins there is an effort to retain the favorable toxines of the bacillus and to eliminate those that are harmful to the human organism; the writers express the opinion that for general use, especially in ambulatory cases, a preparation of mild potency and toxicity is safer and more desirable. Dixon's fluid was found to be a safe and effective tuberculin of this type.

Poisoning by Lithium.—S. A. Cleaveland, during an investigation on the action of uric acid, took rather large doses (two grammes) of lithium chloride, and experienced toxic symptoms differing in some respects from the usual phenomena of lithium poisoning. The notable features of the case were marked muscular and general prostration, the occurrence of vertigo, and eye and ear symptoms resembling those of cinchorism and the entire absence of gastrointestinal symptoms. Two or three doses (from sixty to ninety grains per diem) were sufficient to induce the condition noted.

Intestinal Obstruction.—Alexius McGlannan, from a clinical study of 181 cases of intestinal obstruction, observes that however subtle may be the exact cause of death in these cases, there can be no doubt that accumulated matter in the occluded bowel is extremely toxic and plays an important part in the induction of toxemia. It is necessary, therefore, as the symptoms of toxemia are present, that an outlet be provided for this accumulated material by making an opening into the bowel above the obstruction. The general condition of the patient will determine whether further action is necessary, but this removal of toxic material is the first thing to be done, and if neglected the patient is robbed of about half of his chance for recovery.

Dispensary Abuse and Its Elimination by Organization and the Application of Sociological Methods.—A. R. Warner concludes from a study of this subject that the problem of dispensary abuse exists and must be solved. The initial step in the solution must be the creation in every dispensary of an executive head, having sociological training and interest, having with his assistants final authority to decide upon admissions and having full control of all the functions of the dispensary, except the medical treatment of the patients admitted. The opportunities for preventive medicine and general social service will be developed by this executive staff. To assist in the practical work of meeting the problem there should be a system of classified or gradual admissions and gradual or modified refusals. In one dispensary such a system has been followed with satisfactory and pleasing results; no objectionable features have appeared, and much good has been accomplished.

Deafness Following the Use of Salvarsan.—C. A. Clapp reports a case of deafness following the intravenous injection of 0.6 gramme of salvarsan. The writer is in doubt whether this condition is due to the large dose of arsenic or to the liberation of large quantities of endotoxines, or shows that the drug has not reached the deeper tissues. However, it is a fact that the occurrence of deafness has increased since the use of this remedy, three cases having come under the writer's personal notice within the last two years.

MEDICAL RECORD.

March 8, 1913.

Thorium X in the Treatment of Pernicious Anemia.—Francis E. Park calls attention to the voluminous literature concerning radium and its achievements, adding that little has been published in this country about the sister element, thorium. He describes the physical and therapeutic properties of thorium, and especially its efficiency in the treatment of pernicious anemia, exemplifying the latter by the history of a case under his care treated by this agent. The patient had edema of all the dependent parts, dyspnea upon the slightest exertion, anorexia, feeble digestion, and a blood count of 1,200,000 red corpuscles. During the first three weeks the writer combined the use of thorium with an electric treatment of the long bones and solar plexus, which had given good results in previous cases. The patient failed steadily, and it occurred to the writer that the electricity was in some way neutralizing the effect of the thorium emanations, so it was discontinued. The patient at once began to gain in a very decided manner, and in four weeks he was walking about as vigorous as ever; edema entirely gone, digestion and appetite fine, and a blood count of 4,800,000 red cells which one week later went to 5,280,000, the blood picture being normal. The remedy was given almost entirely by the vein, 20,000 Maché units being injected with a glass syringe and a 27 gauge needle, into the median basilic vein, every other day, without causing any irritation. The writer asserts that the evidence is irrefutable that in thorium we have the most potent remedy to aid that is yet known to science, whether thorium x proves to be a specific or not for pernicious anemia. Many years must elapse before one can positively say whether such a case is permanently cured.

Rationale of the Use of Adrenalin in the Treatment of Asthma.—Carey P. McCord believes it reasonable to conclude that adrenalin increases the lumina of contracted bronchioles, which dilatation is probably the basis for the beneficial action of adrenalin in the treatment of asthma. This dilatation is produced, whether the remedy is used subcutaneously, intravenously, or endobronchially. While the action is transient, it is, nevertheless, very effective in relieving an acute attack. The subcutaneous method is apparently the most transient. The administration is simple and is followed by no untoward secondary effects.

Necessity of Early Institutional Treatment in Mental and Nervous Diseases.—F. H. Barnes emphasizes the fact that one of the first principles of the treatment of the insane is to remove them from the environment associated with the origin or the progress of the disease, and to present to them an entire change of scene and of all surrounding influences, so as to interrupt the morbid train of thought and remove those diseased imaginations which distress the patient. The writer is convinced that the time has come when the profession must become a unit and educate the laity to the necessity of placing their relatives in a proper environment at the earliest possible moment, so as to avoid the results of long delay as seen in all institutions.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

February, 1913.

Relation of Anaphylaxis to Immunity and Disease.—Victor C. Vaughan states that all the problems of protein sensitization have not been solved. The specific ferments elaborated by living cells are determined by the proteins brought in contact with them, but little is known of these bodies called ferments. It is a curious fact that small doses have no such effect. The writer holds that the toxines are ferments, and if this is true the subject of the etiology of disease is greatly simplified. In conclusion the writer promulgates what he believes to be two biological laws: 1. When the body cells find themselves in contact with, or permeated by, foreign proteins they tend to elaborate specific ferments which digest and destroy the foreign proteins; 2, when body cells are attacked by destructive ferments they tend to elaborate antiferments the function of which is to neutralize the ferments and thus protect the cells.

Chronic Purpura, and Its Treatment with Animal Serum.—Henry L. Elsner and F. M. Meader call attention to chronic purpura, place on record the histories of two cases of the disease, and report the results of treatment with animal serum. In the first case the animal serum received a long and fair trial, and they are convinced that its effects were purely symptomatic and not curative and that, beside its effect in controlling the hemorrhagic lesions between the injections, the serum exerted a decided tonic and exhilarating effect. This patient is still suffering from chronic purpura, the pathogenesis of this case as of others is clouded, there being probably an underlying constitutional disturbance; furthermore, the injection of the animal serum controls her symptoms better than any other known remedy. The second case, so far as evident symptoms of chronic purpura are concerned, notwithstanding its former chronicity during a period of six years, seems to be cured. In the light of their experience, the study of literature, and animal experimentation, the writers suggest, to prevent annoying anaphylaxis, that injections of serum be made during ten day periods, the dose and number of injections to depend on a close study of the effect of a safe initial and second dose. The large doses suggested by some authors are unnecessary. In "sporadic" hemophilia and acute purpura the writers have had definite and permanent cures. In chronic purpura permanent cure is less frequent. The serum of the bovidia produces violent reactions (fear, rigors, cyanosis, and vomiting) and is not recommended. Rabbit serum is preferred, as it is easily obtained and is effectual. In an emergency antidiphtheritic serum may be used until a fresh rabbit serum is available. Its use is suggested in hemophiliacs forty-eight hours before any needed surgical operation.

The Factor of Fatigue, with Reference to Industrial Conditions.—William A. White pleads for the recognition of the so called social diseases, for a realization that the problem of the various industries, as that problem is concerned with the health of the workers, is broader than that of ordinary physical disease, as it touches the whole question of society, and presents for consideration the neuroses and psychoneuroses as indications of a social disease and not one of the individual. In this class of diseases we have a point of attack upon abnormal social conditions and by their study we learn the best methods of approaching the faulty social conditions which they express and which may be incident to the industrial conditions under consideration. The psychoneuroses become a good barometer of certain social states depending upon industrial conditions, and many of the specific manifestations of illness are outward indications of certain types of undesirable social conditions.

The Stethoscope in Physical Diagnosis.—Henry Sewall concludes that the sounds heard in auscultating the chest are a mixture of visceral and mural vibrations, of which the latter, especially in the lower parts of the musical scale, may greatly preponderate in intensity, but clinical interest usually attaches only to the former. A firm pressure applied to the bell of the stethoscope will muffle and render more or less inaudible the quasi adventitious sounds due to sympathetic vibration of the chest walls. The stethoscope must transmit by pure air conduction, and its chestpiece must not itself sensibly take up the chest wall vibrations, if we would thus annul the sound from mural vibrations.

Clinical and Experimental Investigation of the Therapeutic Value of Camphor.—James D. Heard and Richard C. Brooks's clinical experiments showed that camphor dissolved in oil and injected subcutaneously in doses as large as fifty grains, failed to produce any definite results, as the variations in pulse and blood pressure were so inconstant as to be valueless as showing a relation to the drug. Clinical fibrillation of the auricle in man was uninfluenced by the drug, and apparently contradicted the laboratory observation, that perfusion of the isolated cat's heart with camphor may remove fibrillation, but is probably explained by the fact that the dose was greater in the perfusion experiments than was possible in the clinical observations, and that the condition of fibrillation in the normal heart was artificially induced. Furthermore, different animal species and varying ages even of the same species show marked differences in regard to fibrillation. In one laboratory experiment, a stimulating effect upon the circulation was observed, due probably to the fact that the animal was emaciated and moribund and possibly not possessed of sufficient glycuronic acid to combine with the camphor. The writers conclude that while camphor may be active in disorders accompanied by an abnormally small glycuronic acid content, and while experiments demonstrate that the drug has a favorable effect upon heart muscle poisoned by chloral, muscarine, or strychnine, nevertheless, one should not rely on camphor as a cardiac stimulant nor fear it as a toxic agent in the doses employed by the writers and under the conditions studied.

AMERICAN MEDICINE.

January, 1913.

Acute Gastroenteritis in Young Children.—Boyce W. Knight states that diarrhea in the young child is brought about by one of two causes—diminished absorption of water by the intestines, increased secretion of fluid from the intestinal mucous membrane, or a combination of both. In the greater number of cases it is due to diminished absorption from the intestinal tract. The bacteriology of summer diarrhea is not yet solved, but the writer believes the condition is simply an intoxication caused by putrefactive bacteria. The predisposing cause, according to Seibert, is the prolonged exposure of the milk during transportation to temperatures above 60° F., thus favoring rapid bacterial growth and the formation of toxines. Others attribute the condition to the exposure of the body to a high temperature (above 85° F.). The writer believes that neither condition is entirely to blame, although the continued exposure of the infant to high temperature lowers the power of resistance and also the power of digestion and allows the intestine to fall an easy prey to irritation and infection. As to treatment, the writer does not approve of the idea of discontinuing all nourishment for from twenty-four to forty-eight hours, as he considers that the child's vitality is sufficiently low, without depriving the system of needed nourishment. Milk is, however, discontinued in all forms, and a diet of veal or chicken broth, barley water, or best of all, one of the dried cereals containing milk foods is prescribed. Prolonged irrigations, except during the first twenty-four hours, are not approved. One or two colonic irrigations with sterile water at 100° F. suffice. With the exception of small doses of salol or calomel, and one or two drachm doses of castor oil every morning, the use of drugs is not commended.

ANNALS OF OPHTHALMOLOGY.

January, 1913.

The Sociological Aspect of Errors of Refraction.—William Zentmayer considers the bearing of refractive errors in its relation to conservation of vision, to efficiency of labor, as a factor in education, and in the moral development of the child, to workingmen's compensation laws, and as a factor in safeguarding human lives. After dealing with each of these headings separately he makes the following suggestions: 1. As affections of the eyes that may lead to incurable blindness, and consequently to an economic loss and a possible tax upon the community, may have their origin in, or be aggravated by, errors of refraction, such errors, when producing symptoms, should be corrected at once. 2. It would aid in the efficiency of labor and prove an economic saving for corporations or others with large office forces to require of applicants an examination of the eyes by a competent ophthalmologist and to insist upon the correction of such errors as should in his judgment be corrected. 3. The examination of the eyes of school children should be compulsory by State law. Such an examination should be made in a thorough manner by a competent ophthalmologist and not, as is done in most cities, by physicians, nurses, and teachers, who in a perfunctory manner endeavor to ascertain only the vision, and this under conditions which give entirely untrustworthy results. 4. As it seems possible that certain types of epilepsy may have a reflex ocular origin, this question should be made the subject of further careful institutional study. 5. In consequence of the adoption in many States, and the probably final adoption in all, of workingmen's compensation laws, it is of the utmost importance to employers to have the eyes of their employees and applicants for positions examined by competent ophthalmologists and, where subnormal visual acuity exists as the result of errors of refraction, to have it brought to normal by correction of the error. 6. A campaign of education of the public to the danger of intrusting the examination of the eyes and the treatment of defective vision to those whose only qualification is their assurance, and whose only aim is the successful accomplishment of a business transaction, should be inaugurated through the columns of such papers as hold the public good above commercialism.

ARCHIVES OF INTERNAL MEDICINE.

February, 1913.

Effects of Chronic Passive Congestion on Renal Function.—L. G. Rowntree, R. Fitz, and J. T. Geraghty found albuminuria to be almost a constant accompaniment of experimental, passive, renal congestion in dogs; casts were usually present, and red blood cells appeared where the congestion was of considerable degree. The excretion of lactose was the first to become affected by increasing grades of chronic passive congestion, then the excretion of salt and iodide, and lastly, that of phthalein. The phthalein test gives the most reliable information concerning the degree of renal insufficiency and is the test of greatest prognostic importance in chronic passive congestion, a marked decrease in phthalein excretion being invariably associated with signs of renal inadequacy, with ultimate death. Lactose, while of least value in revealing the degree of functional impairment, is of the greatest value in detecting its existence, i. e., from the diagnostic rather than the prognostic standpoint. The excretion of potassium iodide is usually prolonged, and that of sodium chloride is decreased where marked passive congestion is produced. Partial obstruction of the renal vein is not invariably associated with decreased urinary secretion.

Experimental Study of Poison Oak.—E. von Adelung states that while the poison oak, poison ivy, and poison sumach differ botanically, their juices seem to be chemically identical. The toxic principle of rhus, while nonvolatile, can poison at a distance by means of mechanical carriers, such as pollen, plant hairs, or other dust from the plant. The author found experimentally that the principle cannot be conveyed through a layer of cotton by a current of air. It is not destroyed by subjection for one hour to 100° C., and is carried, potent, by the smoke from burning rhus plants. The dermatitis is purely a local affection, and is not spread by the blood or lymph, or by the serum of the blebs. A permanent aqueous suspension of the alcoholic solution of the toxine can be prepared and remains toxic. Absolute immunity in man is improbable, and experimental immunity in animals is not yet demonstrated. Since animals cannot be killed by the pure toxine, it is impossible to demonstrate an antitoxic effect on the part of serum of animals given repeated doses of the toxine. The simplest prophylactic measure against rhus poisoning is to wash well with soap and hot water as soon after exposure as possible. Anointing the skin with cottonseed oil before exposure, and washing this off within a few hours with soap and water, renders prophylaxis fairly certain. The following remedies have therapeutic value: Hot water, ichthyol collodion (five per cent.), potassium permanganate (hot, two per cent. solution), magnesium sulphate (saturated solution), and tincture of iodine (ninety drops of water mixed with ten drops of the official tincture).

Experimental Eosinophilia.—W. W. Herrick found in guineapigs that a notable eosinophilia could be developed by the intraperitoneal injection of an aqueous extract of *Ascaris lumbricoides*. The substance causing it is a protein. The eosinophilia cannot be produced when the animals are immune to the extract, and its occurrence may therefore be considered evidence of previous sensitization. There is a possible relationship of these facts to the problem of bronchial asthma.

INTERSTATE MEDICAL JOURNAL.

January, 1913.

Further Observations on the Treatment of Human Cancer with Intravenous Injections of Colloidal Copper.—Leo Loeb, H. N. Lyon, C. B. McClurg, and W. O. Sweek report a further series of nineteen cases of human cancer treated with repeated injections of colloidal copper. The history of these cases confirms essentially their former conclusions. Rapidly growing tumors which lead to extensive metastases in the internal organs are not amenable to this treatment. In a large number of cases the effect of the injections gradually decrease. This method, however, causes a gradual, although partial, retrogression of the large majority of inoperable cancers, provided they have not reached the final stage of the disease. *Per contra* the writers believe that the method is too slow in its action to render probable a cure except in a few cases. It is too early to predict the ultimate fate of the patients who are now under treatment.

Influence of Intravenous Injections of Various Colloidal Copper Preparations upon Tumors in Mice.—Leo Loeb, Moyer S. Fleisher, W. E. Leighton, and O. Ishü have found experimentally that three of the five copper preparations which they have used have shown an influence upon mouse tumors, viz., colloidal copper, copper casein A., and copper casein D., while the two remaining preparations (copper casein B. and copper casein C.) showed no influence. While the action of the three preparations is similar they differ slightly in efficiency. The influence of copper casein D. seems to be most marked; that of colloidal copper only slightly greater than that of copper casein A. which latter is the weaker.

Examination of the Cerebrospinal Fluid, Particularly with Reference to the Precipitive Reaction.—Oscar Berghausen attaches to the examination of the spinal fluid the greatest importance, both diagnostic and prognostic, in all cases where symptoms referable to the central nervous system do not quickly subside. In syphilis of the tract we have nearly always an increased cell count, increased globulin, or a positive Wassermann reaction. One or all may be present. When all of these are negative, syphilitic involvement of the central nervous system is absent, although another system may be affected. The reduction test with diluted Haines's solution is present in practically all cases. In the series of cases reported by the writer it was absent only in one case of paresis (reaction repeated), and in one case of acute cerebrospinal fever. At the height of an acute attack of meningitis it seems to disappear, only to reappear when the intensity of the symptoms abate. For clinical purposes the writer condemns the precipitive reaction as it is too delicate. He would limit its use to those instances where proof is desired that a given fluid or serum is of human origin.

Dietetic Treatment of Ileocolitis.—Clifford G. Grulee asserts that in these cases the choice of a diet is narrowed down to one that will not affect adversely the workings of a very much deranged internal metabolism, and which will, at the same time, form the least suitable medium for a bacterial infection of the colon, if such exists. To this he adds a second postulate, that food for these cases must be nonirritating to the large and small intestine. The writer suggests the use of the proteid of cow's milk (casein precipitated by chymogen or pepsin), suspended in a five per cent. gelatin water; for four or five days a week, subsequently adding a certain amount of buttermilk in place of the gelatin water, and finally returning to a whole milk mixture. Drugs of any sort are rarely used. Colonic flushings are condemned as harmful. There are two ideas in this line of treatment, first, to reduce, so far as possible, any metabolic disturbance, and second, by this reduction to keep up the general resistance of the child to such a degree that colonic infection may be overcome.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

January, 1913.

Anaphylactic Reaction of Plain Muscle in the Guineapig.—H. H. Dale found that plain muscle from an anaphylactic guineapig, freed from all traces of blood and serum, is extremely sensitive to the specific sensitizing protein administered to produce the condition of anaphylaxis. The virgin uterus, especially, exhibits increased tonus in response to extreme dilutions of the antigen. The effect is practically immediate, and is not a mere exaggeration of the reaction which normal plain muscle gives to fresh sera in general, for purified proteins can be obtained which have no effect on normal plain muscle, but are as toxic for the anaphylactic plain muscle as native proteins. No general anaphylactic response of plain muscle has as yet been demonstrated in other animals. Evidence now at hand is to the effect that in the rabbit an anaphylactic reaction of the heart muscle is as predominant as is the unstriped muscle effect in the guineapig, while in the dog it has been clearly shown that the primary effect is in the liver, no anaphylactic shock taking place after this organ has been excluded from the circulation.

Action of Histamin upon Surviving Arteries.—H. G. Barbour showed that histamin or beta-iminazolylethylamin, one of the active substances in ergot, directly applied to excised rings of the carotid, mesenteric, and coronary arteries, always brings about contraction of the vessels. The effect on the coronaries is opposite to that of epinephrine, which dilates them.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, October 21, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

New Method for the Direct Transfusion of Blood; Its Possibilities, Theoretically Considered.—Dr. Alfred Kahn said that it was only within late years that transfusion had been at all on a practical basis. At the present time there were two good methods for connecting vessels, the suture method and that by mechanical means; and each had its advantages and disadvantages. As to the method of which it was his purpose to speak, he had been unable to find anything in the literature of transfusion dealing directly with the idea underlying it. For want of a better name, he would call it continuous transfusion, or transfusion between two or more subjects. Continuous transfusion was to be carried out in the following ways: 1. Transfusion between two persons, or cross transfusion. The artery of the donor was to be connected with the artery of the donee, and artery of donee with artery of donor; so that the blood would flow from subject A to subject B, and back from B to A; making a crossed and complete continuous circulation. Instead of making an artery to vein or vein to vein connection, as in the method of Dorrance and Ginsburg, now generally practised, and ligating the ends of the two ends of vessels not entering into the transfusion, all ends of vessels were to be used. Thus, the blood was to flow from the upper end of the artery of the donor to the lower end of the artery of the donee, and vice versa. The veins might possibly be made use of in the same way (vein to vein), but it was doubtful whether the transfusion could be kept up for as long a time as where the artery to artery method was employed. 2. Transfusion between more than two subjects. Here a connection was to be made, say, between the left arm of A and the right arm of B, another connection between the left leg of C and the left leg of A, and still another connection between the right leg of C and the right leg of B; making a complete circulation. The connection in each instance was from artery to vein, and the idea was to allow healthy blood to flow from the donor to the recipient. After it had remained in the latter's body for a longer or shorter period, according to the object of the transfusion, the condition of the patient, etc., the return vessel was to be unclamped and the blood allowed to flow back to the donor. This would enable the donor to retain his strength, and at the same time permit the patient's diseased or weakened blood to pass through a healthy body, where it received fresh sustenance, and then return to the diseased body. This method would secure an unlimited supply of fresh blood, and for an indeterminate length of time. It had all the advantages of the present method, with the additional advantage that all the organs of the healthy subject participated in the act.

The therapeutic possibilities of direct blood transfusion had been clearly set forth by other writers, especially Hartwell, and Cole and Winthrop had reported a series of cases of pellagra in which this was employed with excellent results. As to the additional possibilities of continuous transfusion, if our laws of immunity, as now recognized, were correct, the possibility of curing most of the infectious diseases through this method could well be imagined. In this connection he had in mind the transfusion of blood, from a person immune (through a natural or acquired immunity) to a certain disease, to a person suffering from such disease, especially where the transfusion could be continued back and forth from one to the other; thus allowing the blood to be acted upon by healthy immune organs. Again, continuous transfusion might be employed as a means of nutrition. Of course, this would be an extreme measure, but the method possibly had a future before it in cases where a patient was unable to take food, as after gastrointestinal operations, or where a patient was unable to digest his food. Third, there was the possibility of administering by this means a general anesthetic to a patient to be operated upon, through the medium of a healthy individual. This applied particularly to operations on the upper air passages and the thoracic organs. Fourth, in cases where the respiration or circulation failed during a general anesthesia, continuous transfusion might be tried as a last resort. Fifth, it might be employed (after other means had failed), for the purpose of exciting circulation and respiration in the newborn. Among the disadvantages of continuous transfusion were the possible necessity of having the blood of three subjects.

The Effect of Drainage on the Prevention of So Called Typhoid Perforation.—Dr. Forbes Hawkes said that it too frequently happened that the surgeon was called upon to operate on a patient suffering from typhoid fever complicated with a diffuse purulent peritonitis arising from one of the ulcers, which later on had given way, allowing the fecal material to be scattered broadcast in the general peritoneal cavity. The mortality records of such cases, even in the hands of the most skillful and experienced operators, was deplorable. In a general way, the longer the time that had elapsed between the production of the pus in the peritoneal cavity and the operation, the less was the chance of recovery. From the time that the condition first came to be recognized as a surgical one special attention had been devoted to the early recognition of this so called perforation. It was soon found, however, that in many cases there was no symptomatic line of demarcation between a purulent peritonitis arising from the ulcer and the giving way of the ulcer with the escape of fecal material into the peritoneal cavity. But a so called preperforative stage of the disease was conceived of, and attempts were made to recognize such a stage as a sharply defined one.

What, then, was this so called preperforative stage? It was simply that of the peritonitis which began about the site of the ulcer and progressed with it. Its symptoms, therefore, would be simply those of this peritonitis, and the peritonitis would assume either the dry or the wet form, with adhesive or fluid exudate according, apparently, to the nature of the infection. One, then, might say that this sounded very simple. Unfortunately, however, they did not see such lines of recoveries reported. They were not to be found in the literature on the subjct, and for a very good reason. This early peritonitis was not being recognized as it should be by medical men in general. It seemed to be recognized only by men who had devoted much time to this special matter and who had the opportunity of constantly handling a large general abdominal service. A sufficient number of early cases had been reported to justify the statement that an early exploratory operation, with the establishment of proper drainage, seemed to exert a beneficial influence in several ways: 1. If the fluid exudative type of peritonitis was found, the drainage would either arrest it or convert it into the dry, exudative type. 2. The relief of tension would favorably affect the peritoneal inflammation there, as it did elsewhere; stopping it entirely in the mild cases, hindering the development of pus in others, and localizing the pus in or near the drainage tract in the more severe cases. 3. The ulcers themselves seemed to be favorably influenced by the peritoneal drainage.

Local anesthesia seemed best for some cases. The shock of simple opening of the peritoneal cavity, and introducing a drain into the right iliac fossa or into the pelvis, ought not to be a marked one. If we waited until pus was produced in the peritoneal cavity our patient's chances of recovery would probably be diminished by at least fifty per cent. The patients with free feces in the peritoneal cavity almost all died.

Dr. Victor A. Robertson said it seemed to him that this diagnosis of the preperforative stage offered many difficulties, and personally he was free to confess he had never been able to recognize it. We should look for its occurrence at the end of the third week, when the sloughs from the intestinal ulcers were beginning to separate, but it was possible later in the disease, and even when convalescence had begun. There might be a local inflammation of the serosa, with slight adhesions, which would give the symptoms of which Doctor Hawkes had spoken.

The important matter was not so much to decide positively on perforation, or even impending perforation, but that some abnormal abdominal condition was developing which required operative interference. If exploration were undertaken, any intraabdominal condition could be properly dealt with, irrespective of its location. It was interesting to note that as far back as 1884, Miculicz had operated for typhoid perforation and he then stated that, if suspicious of perforation, one should not wait for an exact diagnosis and allow peritonitis to reach a pronounced degree, but at once institute an exploratory operation, which in many cases is free from danger. He could readily understand, however, that in hospital cases, where the patient could be kept constantly under observation, when every feature of his condition had been carefully scrutinized any change in the condition of the patient, however vague, could be noted, and even a slight change might serve to arouse the suspicion of an impending perforation and lead to a physical examination which would indicate this. In private practice these circumstances were not present, and slight, though important symptoms of impending trouble might be overlooked.

Dr. Henry Roth said that some years ago the mortality statistics of intestinal perforation were collected, and these showed that no less than 25,000 persons died in the United States from typhoid perforation alone. Since then the results had not improved very much, because in most of the cases the condition was not discovered until too late for surgery to be of much service. The mortality in the operated cases was about seventy-five per cent. The only way of improving this state of affairs was by an early recognition of the condition, if possible, in the preperforative stage. This could be done only, he thought, by devoting day by day as much care and attention to the discovery of abdominal rigidity and tenderness in typhoid fever patients as was now commonly done in examining for enlarged spleen, a much less important matter. Just as soon as either of those two signs was disclosed an operation should be performed, provided that other conditions capable of causing them could be excluded. He feared, however, that surgeons would not be very successful in getting the cases at this early period, because physicians, as a rule, were not willing to consent to have an operation done unless actual perforation was shown to have taken place.

Dr. A. Ernest Gallant said that the late Doctor Van Arsdale, under whom he used to work, had always laid stress on the value of delicate manipulation in the examination of the cases. With a light touch segments of abdominal resistance could often be made out where this would be impossible under rougher handling. He could not quite agree with Doctor Hawkes that the fingers should be flexed in making the examination. Better results could be obtained with the fingers laid flat on the abdomen, or even with their ends slightly tilted up. It was also advisable that the examiner should be as much as possible on a level with the patient, instead of bending over him. With the high hospital beds commonly in use the physician might make the examination standing, but in private practice, where the beds were low, he could examine most successfully while in a sitting posture. The use of the term "rigidity" in this connection seemed to him a mistake, and he preferred, especially in teaching, to call the condition localized resistance. It would be interesting and valuable to know just what kinds of infection resulted in adhesions. The pure typhoid infection was not one of the type which caused adhesions. When he had a case of nonadhesive peritonitis, he always felt that he had a death certificate to sign.

Dr. Edward Wallace Lee said that adhesions did result from typhoid, and in some instances he had observed quite extensive ones. Adhesions following peritonitis from typhoid, however, were not as deadly as had been supposed.

Doctor Hawkes, in closing, said that if in any case there was distinct rigidity we should operate at once, just as we should in a case of appendicitis. The value of the treatment he had advised lay in the production of a distinct adhesive peritoneal tract; so that perforation was either prevented or delayed. If it occurred, the fecal matter was thereby prevented from flowing into the general abdominal cavity. The great point for successful treatment was the recognition of the rigidity. In typhoid fever we had toxic and nontoxic cases, and the toxic cases almost all proved fatal, whatever treatment might be employed. In the nontoxic there was the best chance for drainage, and if perforation did occur the intestinal contents came out into the adhesive tract of which he had spoken. As to the method of digital examination for rigidity (which might be termed localized resistance if one preferred), some examiners would no doubt find one position of the fingers of most service, and some another position. As to the advisability of the examiner being on a level with the patent, Doctor Gallant's suggestion was a good one.

Stated Meeting, November 18, 1912.

The President, Dr. Reynold Webb Wilcox, in the Chair.

How to Prevent Uric Acid Calculi by Phenol.—This paper, which was read by Dr. William H. Porter, appeared in the Journal for March 15, 1913.

Feeding in its Relation to Infant Mortality.—Dr. Joseph E. Winters first gave a number of statistics showing the enormous mortality now met with among infants under one year old, and went on to say that this would in large measure be prevented if mothers could universally be induced to nurse their offspring. That women could, as a rule, be brought to do this had been shown in some of the European schools for midwives. The fact that mothers did not more generally nurse their infants was due to a very large extent to the obstetricians and midwives, and the time had now come when there should be a change in this respect. The act of parturition was only half completed when the child was delivered, and it ought to be realized that it was as essential to the mother as to the infant that the latter should be nursed at the breast during the puerperium. At the end of gestation the uterus and its bloodvessels were enormously enlarged, and in order that the involution should be successfully accomplished it was necessary that the organ should contract powerfully and continuously. Now, this could be secured only by the stimulus afforded by the act of nursing. Every time that the infant took the breast the uterus could be felt to contract firmly, and by this nursing, post partum hemorrhage could be prevented and perfect involution effected. It could thus be seen that most of the long train of evils, such as uterine displacements, etc., which now made women chronic sufferers and brought them to the gynecologists could be avoided if nursing at the breast were more generally practised. As to the infant, the colostrum was exactly what it required at the time, and the green stools which it often caused were entirely physiological. Such was the wonderful provision of nature for both mother and child. The vomiting not infrequently observed in the latter was really of no consequence. It was a common practice to give the newborn infant water, but this was a mistake, as it was apt to make it refuse to take the breast. It should be put to the breast just as soon as the mother had received proper attention, and during the colostrum period it should be allowed to nurse as often and as long as it would. It was not necessary that breast milk should be the exclusive food of the child for a very long period, and as early as the second month it might with advantage be allowed one bottle of properly prepared cows' milk in the twenty-four hours. In this way the mother could have an undisturbed night's repose, and the weaning could be gradually and easily accomplished. As a rule, women nursed their infants for much too long a time. The only substitute for mothers' milk was properly modified cows' milk. The young infant required a strictly animal food, and all the proprietary foods were positively injurious. Physiology, as he had long maintained, was the keynote of infant feeding. The food should be of the composition of the body, and that which he had elaborated from the top half ounce of cream was based on strictly physiological principles and was identical with mothers' milk. The proteid was flocculent, and would thus pass freely through the extremely narrow orifice of the infant's pylorus. He was convinced that if the measures he had advocated were to be adopted generally, a most gratifying reduction in infant mortality would result.

Dr. Harold Capron Bailey felt that the obstetrician should be more closely associated with the pediatrist. The mortality in early infancy was appalling, and we now recognized that the accomplishment of breast feeding was the greatest factor in its reduction. In fact, breast feeding for only a few days was helpful, and every added week of such feeding would reduce the mortality. If a woman could nurse her child but two or three times a day, statistics showed that even this amount of breast milk was of value. It had been recently pointed out that the colostrum conferred immunity to the child for certain diseases the mother had had. Practically every mother could nurse her baby. Contrary to the general opinion, milk constituents were but little affected by the food taken by the mother. The sugar content was high throughout, and the protein increased in a definite ratio which was undisturbed by a large amount of protein in the diet. The quantity was variable, and many children needed extra feedings from prepared formulæ. Midwives, practitioners, and obstetricians were prone to take the baby away from the breast, which furnished a physiological food, and place it on the bottle with food prepared according to chemical formulæ. As to the feasibility of persuading women to nurse their babies, of 300 women delivered at the newly organized School for Midwives in this city, all but one nursed during her stay in the hospital. Between ten and fifteen per cent. of the babies had to have extra feedings because of their failure to gain in weight on the amount of nourishment furnished by the mother. Practically the only indications for feeding from formulæ from the start were tuberculosis of the mother and undelevoped breasts with inverted nipples. Eclampsia and breast infections caused temporary undesirability of nursing.

Dr. Franklin Welker said that from the standpoint of the general practitioner it was questionable whether we paid sufficient attention to the breasts of women during pregnancy. It was the sacred duty of the mother to nurse her child, and it devolved upon her medical attendant to see that she was in every way prepared to carry out this duty. What could be accomplished in this direction had been well shown at the school of midwives in Stuttgart, where the proportion of mothers nursing their infants had been raised from 23 to 100 per cent. It was work of this kind which told in the reduction of infant mortality. There was much to be thankful to Doctor Winters for, for what he had already accomplished; but there was still much to be done.

Dr. William Shannon said that for many years he had been familiar with Doctor Winters's work, both at the college and elsewhere, and he could testify to the marked success of his methods, especially in his own hands. Others perhaps did not meet with quite the same success, because they did not thoroughly understand his plan of artificial feeding, or did not carry out its details carefully enough, or because they did not give it a sufficiently long trial. As to the sugar to be employed in artificial feeding, he had personally found malt sugar very satisfactory. While it was true that this form of sugar was not a constituent of mothers' milk, it was a fact that it was met with normally in the intestinal canal, in the blood, and in the liver and other organs.

Dr. William D. Tyrrell said there was but one perfect food for the newborn infant, and that mothers' milk. Moreover, he believed it was practicable to have every mother (or at least ninety-nine per cent. of mothers) nurse her child. Active tuberculosis in the mother was really the only contraindication to nursing. Breast milk contained certain protective bodies which were not to be found in any artificial food, and this constituted one great element of safety. It seemed evident that a marked reduction in infant mortality might be effected if, in the first place, mothers generally could be induced to nurse their children for at least one, two, or three months, and if, second, a proper artificial food were selected in the few cases where this was impracticable. In regard to the amount of fat in such a food, four per cent. was not excessive, for this was normal. An ample fat content was, indeed, a physiological necessity. This kind of food was a source of energy. Fat entered into the composition of the protoplasm of every living cell, and it was therefore essential for the growth of the body; while, with a high percentage of fat, only a minimum of protein was required. Excess of both protein and sugar was productive only of evil. Furthermore, excess of fat protected the protein already in the cells. For these reasons, therefore, he knew of no method of artificial feeding which produced such uniformly good results, in such a large percentage of cases, as that of Doctor Winters.

Mr. Lawrence said that Doctor Winters had condemned pasteurization, and he would like to inquire his reasons for this.

Dr. J. Milton Mabbott said that he was much pleased to hear Doctor Winters speak so strongly on the marked benefit on the mother to be derived from nursing her infant. While on this part of his subject he might perhaps well have gone a little further and referred to the necessity of attention to the nipples during pregnancy, to prepare them for nursing. In regard to nursing, therefore, we ought to have in mind four things: 1, The preparation of the nipples; 2, immediate nursing—not waiting for twelve hours as recommended by some authorities; 3, the withholding of water from the newborn infant; in this particular he had to confess that he had often been guilty of giving one or two teaspoonfuls of boiled water to the baby, but he suspected that Doctor Winters was correct; 4, where a substitute for the mother's milk was required there could be no doubt that the top milk advised by Doctor Winters was by far the best in the earliest days of the infant's life. Many babies would, of course, get along on other artificial foods; but wherever there was a question of the survival of a baby, it should certainly be placed on the best without delay.

Dr. A. C. Palmateer said he would like to ask Doctor Winters four questions: 1. What form of sugar he used, and why? 2. At what time he would advise weaning babies? 3. If vomiting were physiological? Personally, he had to confess that he had experienced some trouble from vomiting, and perhaps he had made a mistake in cutting down the period of nursing. 4. When to introduce cereals into the diet?

Doctor Winters, in closing, said that if Mr. Lawrence would come to his clinic at Cornell Medical College some day, he could practically convince him of the evils of pasteurization. There he would see, almost dead, infants which had been fed upon pasteurized milk. When extreme heat was applied to milk the product was liable to give rise to the worst form of scurvy and rickets. When the heat was not so great the milk would still cause scurvy—rickets. This was the case with sterilized milk, and some years ago, when sterilization came into vogue generally, there was among infants an immense amount of scurvy, which was almost invariably diagnosticated as rheumatism. Sir Thomas Barlow Barton was among the first to describe the condition, and it became known as Barlow's disease. The same was true, in a lesser degree, of pasteurization. Already this autumn he had seen two cases of scurvy from pasteurized milk, and he could not but regard the present widespread predilection for this kind of milk as a positive calamity. No one ever saw a plump and perfectly normal baby which had been fed for a prolonged period on pasteurized milk. At a single clinic he had had no less than four infants with practically no life in them from this cause. As to withholding water from the newborn child, he did not mean to lay this down as an absolute rule; but it was true, as he had said, that the giving of water generally had the effect of making it refuse to take the breast. If it did not have the water it would be compelled to nurse. The sugar he employed was that which nature furnished, milk sugar. In his opinion there was no excuse for using malt sugar or malt soup, and, indeed, every malt preparation was absolutely wrong. It was not physiological, and physiology should be our only guide. As to the vomiting of infants, a great deal of it was due to excessive handling of the child, and as soon as this was discontinued the vomiting would cease. For the young infant he avoided all cereals absolutely, as unphysiological. As he had just said, he had but one guide in his feeding. Why should we give vegetable foodstuffs when there were no secretions which would digest them? In this matter he took his ground from the standard textbooks on physiology in this country and Europe, and therefore when certain men asserted that they had found that the young infant was capable of digesting cereal food, he did not believe them. No such statement could be found in any established work. In reply to a question from the president, Doctor Wilcox, Doctor Winters said that the top milk used varied according to the age of the baby. The method he employed had during a course of years been most carefully worked out both practically and in the laboratory. He had tested it thoroughly in his work, and then his results had been confirmed by a series of laboratory experiments by such men as Doctor Lederle, Doctor Adriance, and Professor Sherman. He could, therefore, speak with some confidence as to the pronounced success which had been obtained. On the other hand, neglect to consider the physical behavior of proteid had led to grave errors and an immense amount of trouble in infant feeding.

Letters to the Editor.

THE FEVER THERMOMETER.

OSKALOOSA, IOWA, *March 18, 1913.*

To the Editor:

Great publicity has been given in the last few years to the common drinking cup as a disease spreader through germs adhering to the cup and being passed from one person to another. In this connection my attention has lately been called to the ordinary fever thermometer such is used by physicians and nurses. It seems that this is even a greater source of danger as a disease spreader than the drinking cup when one considers the way in which it is used. Physicians have been very careful of late years thoroughly to sterilize other instruments, but seem to have overlooked in a great many cases the fever thermometer. Since this thermometer registers only a little over one hundred degrees it cannot be sterilized in boiling water but by some means such as alcohol.

So far as my observation goes there are very few physicians who give any care whatever to the thorough sterilization of this instrument. Not long ago a physician of good repute and an excellent man was called to attend a member of my family. His method of using the clinical thermometer is the same as that used by the majority of doctors. He took the thermometer from its little metal case, called for a glass of water, rinsed the thermometer around in the water, then reached for his pocket handkerchief to wipe it off. About that time our own thermometer was supplied to him for use. Barring possibly the pocket handkerchief his method is not widely different from others. One physician with whom I conversed on this subject said that, so far as he knew, he was the only one in the local profession who used alcohol to disinfect the instrument.

The drinking cup has been proved, even when washed in running cold water, to be still a disease carrier. How much more so does the fever thermometer become when it is used altogether with some one who is supposed to be ailing. It is taken from the mouth of one patient to another, is used from one patient suffering with a germ disease and carried probably from that patient to one who is only slightly ailing, who may later become infected with an incurable disease through this innocent instrument.

Physicians as well as patients should have the danger of infection well in mind and carefully guard against unnecessary exposure. If as much publicity should be given to the danger from the fever thermometer as has been given to the drinking cup, I believe that it would materially diminish the spreading of disease.

STEWART W. JAMESON.

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Book Reviews.

[*We publish full lists of books received, but we acknowladge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Materia Medica and Therapeutics. By REYNOLD WEBB WILCOX, M. A., M. D., LL. D., Professor of Medicine (retired) at the New York Postgraduate Medical School and Hospital, Eighth Edition. Philadelphia: P. Blakiston's Son & Co., 1912. Pp. xi-832. (Price, $3.)

In the new edition of this textbook the author has found it necessary to divide the work into two distinct parts, the first upon pharmacy and materia medica, in which these two subject are fully and succinctly treated, and the second upon pharmacology and therapeutics, with the customary accounts of the actions and uses of the different drugs. Different classifications are employed in these two portions of the work. In the first part the inorganic and synthetic drugs are arranged according to chemical relationships, the vegetable drugs, on the other hand, according to the nature of their physiological effects. In the second part the physiological classification is adhered to throughout, the externally acting drugs being considered first, and later the drugs acting on various systems or organs. The materia medica is very completely given, though the description of ergot, in respect of the active constituents of the drug, cannot be considered quite up to date. The sections on therapeutical uses contain many useful practical points. The official drugs are alone considered in this book; this may appear somewhat of a disadvantage when it is realized that the utility of such currently employed agents as epinephrine, pituitary extract, acetylsalicylic acid, heroine, and quinine and urea hydrochloride is not referred to. The book contains, however, a large amount of useful information, and well deserves a place in the physician's library. The index is very full and has incorporated in it an "index of symptoms and diseases." This combination of two indexes which might have been inserted separately is a useful feature, as a multiplicity of indexes in a book is sometimes a source of annoyance to its users.

A Handbook on Surgery Intended for Dental and Junior Medical Students. By ARTHUR S. UNDERWOOD, M. R. C. S. (Eng.), L. D. S. (Eng.), Late Examiner Royal College of Surgeons of England, etc., and BAYFORD UNDERWOOD, M. B., B. S. (Lond.), L. R. C. P., M. R. C. S. (Eng.). New York: William Wood & Co., 1913. Pp. viii-244. (Price, $1.50.)

As an introduction to the study of surgery this little volume can be unreservedly recommended to the medical student. The work is well arranged, and the essentials of the subject are presented clearly and concisely. But the book seems to have been prepared primarily for dental students; and, as one of the authors has served for ten years on the board of examiners in dentistry, the volume may be taken as a fair index of the scope of the examinations in surgery required of candidates for a license to practise dentistry in Great Britain. Viewed from this standpoint, the work fills us with amazement and amusement. It seems that dentists in Great Britain are required to treat (*inter alia*) glaucoma and gonorrhea, piles and dog bites, herpes zoster and corns, syphilis and dislocation of the hip, warts and fractured skull. Just why alopecia areata, fibroids of the uterus, and ingrown toenail are omitted we do not know; possibly it is an oversight which will be corrected in subsequent editions. Verily, the surgical knowledge demanded of the British dentist is (like Sam Weller's knowledge of London) "extensive and peculiar."

Who's Who in Science. International. 1913. Edited by H. H. STEPHENSON. London: J. & A. Churchill, 1913. Pp. xiii-572.

About a year ago, to be exact on May 11, 1912, we had occasion to review the issue of *Who's Who in Science* that year. Since then the publication has changed hands. The present issue is a decided improvement over the previous one, although there are many points which could be improved upon. For example, gynecology and obstetrics, and psychiatry are still omitted from the chairs of the universities. The list of biographies is also far from being complete, although we called attention to this in our former review. There is a department of geography but not of history, which is certainly a science also, and how about education? Even Woodrow Wilson has been omitted. We are well aware of the difficulty of preparing such a book as this, but justifiable criticism should be accepted and improvement be made.

Internal Secretion and the Ductless Glands. By SWALE VINCENT, M. D., D. Sc., M. R. C. S., L. R. C. P., F. R.SS., Professor of Physiology in the University of Manitoba, Winnipeg, Canada, etc. With a Preface by Professor E. A. SCHÄFER, F. R. S. Illustrated. New York: Longmans, Green, & Co.; London: Edward Arnold, 1912. Pp. xx-464. (Price, $3.50.)

The far reaching influence of the internal secretions in medicine is well illustrated by this work, which summarizes briefly the conclusions of some three thousand papers and books. The work being largely of the nature of a compilation, is of particular value to those who are attempting to solve the many problems the subject offers. The author, though working under difficulties and with limited library facilities, those of Winnipeg, Canada, is entitled to considerable praise for his perseverance. While the work does not seem to throw much light upon the functions of the organs, his conclusions are interesting. Some organs, the adrenals, for example, seem to be hardly better known as to their rôle in the body than they were fifteen years ago, but to the thyroid and parathyroids, which the author tends, rightly in our opinion, to consider as constituting one apparatus, he attributes an influence upon metabolism and antitoxic functions both as to toxic wastes and bacterial toxines. While treating with due regard the prevailing secretory theory of the pituitary body, he finds it, referring to the posterior or neural lobe (along with some American writers), "extremely difficult to imagine how such a structure can be regarded as a secreting gland." The other organs discussed are the liver, pancreas, kidney, testicle, ovary, the carotid and coccygeal bodies, the thymus and pineal.

Technik der Diagnose, Operation und Harnleiterbehandlung bei Nierentuberkulose. Von Hofrat Dr. FELIX SCHLAGINTWEIT. Mit 5 Figuren im Text. München: J. F. Lehmann, 1912. Pp. v-143.

This book is a modern review of the problems considered in the diagnosis and operative treatment of kidney tuberculosis. The duration of life in cases not operated in; spontaneous healing in kidney tuberculosis; and the treatment of the ureter at the time of and after operation are all considered at some length. The author believes that all cases of so called spontaneous healing of kidney tuberculosis should be operated in, because they never really heal, and during the process of apparent healing or encapsulation the bladder may become involved. The bibliography is complete and well selected.

Miscellany.

Nurses Who Seek Unearned Privilege.—Both the friends and the antagonists of the Seeley bill to regulate the nurses of the State are writing to us, says the *New York Times* for March 13, 1913, the one asking support for the measure and the others pleading for help to kill it. Careful consideration of the arguments of both have led to something between a firm conviction and a strong suspicion that the bill is a bad one—that its passage and enforcement, while possibly and temporarily, but not certainly or permanently, advantageous to a relatively small number of persons, would injuriously affect public interests.

The essential feature of the bill, and the only one that anybody really cares about, is a section that would restrict the right to seek employment as "nurses" to the registered graduates of hospital training schools approved by the board of regents. Now, there is no doubt that such nurses, as a class, are superior to those without their experience and teaching, and there would be no imaginable objection to forbidding others to claim or profess to be what they are. That is, the registered nurse has the best of rights to monopolize the title he or she has earned by several years of the hardest kind of work, just as anybody needing the services of such a nurse—and able to pay for them—is entitled to protection from those who would falsely pretend to have the registered nurse's qualifications.

If the Seeley bill went no further than this it would receive general commendation, and ours. But it does go further, and too far, in that it would interfere with getting the kind of nursing, not the best, but still of value, which is all that a great number of people can afford to have—that of nurses who have given less time to preparation and yet have acquired in one way or another a certain degree of competency. These are the nurses who are willing to work for less than the $25 a week which is the least that the registered nurses, by agreement among themselves, will accept from any patient. Their assistance is better than none, it does not involve as much of the financial strain which makes illness a tragedy for those of small resources, and in many cases no more aid than they can give is needed.

Moreover, the fully trained nurses have not, like doctors, as basis for claims to exclusive recognition ,the argument that they are ready to answer every call for service, regardless of the prospect or possibility of compensation. This makes their work a trade or occupation, not a profession, and, though they have the ordinary right to set what value they choose upon their time, they must endure the consequences in exposure to competition.

Meetings of Local Medical Societies.

MONDAY, *March 24th.*—Medical Society of the County of New York.

TUESDAY, *March 25th.*—New York Dermatological Society; New York Psychoanalytic Society; Metropolitan Medical Society of New York City; New York Medical Union; New York Otological Society; Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York; Alumni Association of Seney Hospital, Brooklyn; Rome, N. Y., Medical Society.

WEDNESDAY, *March 26th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; Medical Union, Buffalo; New York Society of Internal Medicine.

THURSDAY, *March 27th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association; Hospital Graduates' Club, New York.

FRIDAY, *March 28th.*—New York Academy of Medicine (Section in Public Health); Academy of Pathological Science, New York; Society of German Physicians, New York; New York Clinical Society; Manhattan Medical Society; Hospital Graduates' Club, Brooklyn; Audubon Medical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the fourteen days ending March 12, 1913:

Anderson, J. F., Surgeon. Directed to proceed to New York, N. Y., for special temporary duty with reference to Doctor Friedmann's tuberculosis treatment. **Bullard**, J. F., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from February 22d. **Burkhalter**, J. T., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Key West, Fla., and directed to proceed to Baltimore, Md., and report to the medical officer in command at the Marine Hospital for duty and assignment to quarters. **Currie**, Donald H., Passed Assistant Surgeon. Granted one day's leave of absence, February 11th, under paragraph 13, Service Regulations. **Drew**, A. D., Acting Assistant Surgeon. Granted thirty days' leave of absence, from March 1st. **Foster**, S. B., Acting Assistant Surgeon. Granted fifteen days' leave of absence from February 12, 1913. **Grubbs**, S. P., Surgeon. Granted three days' leave of absence *en route* to station. **Lumsden**, L. L., Surgeon. Directed to proceed from Chicago to Valparaiso, Ind., for conference with health officers. **McMullen**, John, Surgeon. Granted seven days' leave of absence from February 28th. **Ridlon**, J. R., Passed Assistant Surgeon. Relieved from temporary duty at Ellis Island, N. Y., and directed to proceed to Philadelphia and report to Surgeon W. G. Stimpson for duty in the quarantine inspection of vessels on the Delaware River. **Robertson**, H. McG., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Baltimore, and directed to proceed to Philadelphia, Pa., and report to Surgeon W. G. Stimpson for duty in the quarantine inspection of vessels on the Delaware River. **Smith**, J. H., Jr., Assistant Surgeon. Directed to report to the medical officer in command of the Marine Hospital, Baltimore, for temporary duty and assignment to quarters. **White**, H. F., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty. **White**, J. H., Surgeon. Granted seven days' leave of absence *en route* to station. **Williams**, C. L., Assistant Surgeon. Granted seven days' leave of absence from February 27th and upon its expiration directed to proceed to Wilmington,

N. C., and assume temporary command of the Marine Hospital at that port.

Appointments.

Drs. Mather H. Neill, Alvin R. Sweeney, William E. Glanville, Harry F. White, and John H. Smith, Jr., have been commissioned assistant surgeons in the Public Health Service.

Board Convened.

Board of commissioned medical officers convened to meet in New York, to make an investigation, under the act of July 1, 1902, of a preparation for the cure of tuberculosis. Detail for the board: Surgeon John F. Anderson, Director of the Hygienic Laboratory, chairman; Passed Assistant Surgeon A. M. Stimson, Hygienic Laboratory, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending March 15, 1913:

Blodgett, H. R., Lieutenant. Relieved from duty with the Nineteenth Infantry and assigned to duty as assistant to the surgeon at camp of Seventh Infantry. **Craft**, E. D., Lieutenant. Granted leave of absence for one month prior to May 5, 1913. **Hanson**, L. H., Captain. Granted leave of absence for sixteen days from March 11, 1913. **Loving**, R. C., Captain. Relieved from duty as surgeon of the *Thomas*. **Perly**, H. O., Colonel. Granted sick leave of absence for one month. **Pyles**, W. L., Captain. Ordered to temporary duty at Fort Greble, R. I., not later than March 14th. **Quade**, Omar H., Lieutenant. Ordered from Fort Snelling to Fort Leavenworth for temporary duty. **Smith**, L. L., Captain. Left Walter Reed Hospital on March 8th on leave of absence for twenty days.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending March 15, 1913:

Bachmann, R. A., Surgeon. Ordered to the *Delaware*. **Bogert**, E. S., Medical Inspector. Commissioned a medical inspector from December 28, 1912. **Buckley**, John, Assistant Surgeon. Commissioned an assistant surgeon from February 4, 1913. **Dykes**, J. R., Surgeon. Commissioned a surgeon from September 2, 1912. **Ely**, C. F., Surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to duty at Tutuila, Samoa. **Gates**, M. F., Medical Inspector. Ordered to take command of the Naval Hospital, Mare Island, Cal. **Hartung**, F. A., Acting Assistant Surgeon. Appointment as acting assistant surgeon revoked on March 31, 1913. **Hough**, F. W. P., Passed Assistant Surgeon. Detached from the *Intrepid* and ordered to the Asiatic Station. **Kennedy**, R. M., Medical Inspector. Commissioned a medical inspector from January 22, 1913. **Lynch**, C. P., Assistant Surgeon. Commissioned an assistant surgeon from February 19, 1913. **Lyon**, W. C., Assistant Surgeon, Medical Reserve Corps. Ordered to duty at the Naval Medical School, Washington, D. C. **Reed**, E. U., Passed Assistant Surgeon. Detached from the Naval Station, Tutuila, Samoa, and ordered home to await orders. **Rodman**, S. S., Surgeon. Detached from the Atlantic Reserve Fleet and ordered to the Navy Yard, Charleston, S. C. **Rossiter**, P. S., surgeon. Commissioned a surgeon from December 28, 1912. **Spratling**, L. W., Medical Inspector. Commissioned a medical inspector from January 12, 1913. **Sullivan**, N. R., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station. **Von Wedekind**, L. L., Medical Inspector. Commissioned a medical inspector from October 28, 1912. **Wentworth**, A. R., Medical Director. Commissioned a medical director from December 28, 1912. **Wieber**, F. W. F., Medical Director. Commissioned a medical director from October 28, 1912. **Zalesky**, W. J., Passed Assistant Surgeon. Detached from the Navy Yard, Charleston, S. C., and ordered to the Asiatic Station.

The following have been commissioned assistant surgeons in the Medical Reserve Corps: J. C. DaCosta, M. B. Miller, J. F. Burnham, C. A. Simpson, W. S. Bainbridge, J. J. Richardson, G. T. Vaughan, J. A. Tompkins, S. S. Adams, D. A. Heffernan, H. A. Hare, W. C. Lyon, A. B. Bennett, H. G. Fuller, L. C. Lehr, W. G. Morgan, L. P. Shippen, A. E. Gallant, W. S. Thomas, H. D. Meeker, W. G. Townsend, C. A. Frink, B. R. Shurly, W. W. Wilkinson, and E. M. Foote.

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Births, Marriages, and Deaths.

Married.

Clippinger—Van Vorst.—In Crooksville, Ohio, on Sunday, March 9th, Dr. Wilbur H. Clippinger, of Columbus, and Miss Bertha Van Vorst. **Dabney—Cole.**—In Baltimore, on Wednesday, March 5th, Dr. Cecil Dabney, of Sherwood, Md., and Miss Frances Cole. **Hoffman—Peabody.**—In Westerly, R. I., on Tuesday, March 4th, Dr. Harry Hoffman, of Rittersville, Pa., and Miss Ruth Virginia Peabody. **Hubbard—Johnson.**—In St. Paul, Minn., on Friday, March 7th, Dr. F. G. Hubbard, of Cayuga, N. Y., and Miss Olga L. Johnson. **Lewisohn—Strauss.**—In New York, on Wednesday, March 19th, Dr. Richard Lewisohn and Miss Constance R. Strauss.

Died.

Armstrong.—In Des Moines, Iowa, on Friday, March 7th, Dr. Joseph Walter Armstrong. **Arnold.**—In Atlanta, Ga., on Thursday, March 6th, Dr. Wood Arnold, of Godfrey. **Atkins.**—In Marion, Va., on Sunday, March 2d, Dr. Price W. Atkins, aged sixty-two years. **Billings.**—In New York, on Tuesday, March 11th, Dr. John Shaw Billings, aged seventy-three years. **Carolan.**—In Brooklyn, N. Y., on Saturday, March 15th, Dr. Eugene J. Carolan, aged fifty years. **Clemens.**—In New Orleans, on Thursday, February 27th, Dr. James Edwin Clemens. **Curtin.**—In Philadelphia, on Friday, March 14th, Dr. Roland G. Curtin, aged seventy-three years. **Droge.**—In Brooklyn, N. Y., on Sunday, March 16th, Dr. John H. Droge, aged fifty-three years. **Dougan.**—In Niles, Mich., on Monday, March 10th, Dr. William T. Dougan. **Eggert.**—In Chicago, on Thursday, March 6th, Dr. Frederick Charles Eggert, aged thirty-eight years. **Finnegan.**—In Buffalo, N. Y., on Sunday, March 9th, Dr. Christopher R. Finnegan, aged twenty-eight years. **Gillette.**—In Medina, N. Y., on Monday, March 10th, Dr. Myra Amanda Gillette, aged fifty-nine years. **Grier.**—In Camden, N. J., on Wednesday, March 12th, Dr. Clarence Russell Grier, aged forty-two years. **Isaacs.**—In New York, on Friday, March 14th, Dr. Archibald Ezekiel Isaacs, aged forty-six years. **Johnson.** In Wilkes-Barre, Pa., on Wednesday, March 5th, Dr. Charles Frederick Johnson, aged fifty-nine years. **Jones.**—In Rochester, N. Y., on Sunday, March 9th, Dr. Frank Adelbert Jones, aged sixty-three years. **King.**—In Muskegon, Mich., on Thursday, March 6th, Dr. Benjamin D. King, aged sixty-three years. **Lake.**—In Fulton, N. Y., on Saturday, March 1st, Dr. Daniel E. Lake, aged seventy-five years. **Lindsay.**—In Little Rock, Ark., on Saturday, March 8th, Dr. Rezin W. Lindsay, aged sixty-six years. **Long.**—In Lowell, Mass., on Tuesday, March 4th, Dr. Merritt Allen Long, aged thirty-five years. **McMahon.**—In Fresno, Cal., on Monday, March 3d, Dr. Frank Abraham McMahon, aged forty-three years. **Morrow.**—In New York, on Monday, March 17th, Dr. Prince A. Morrow, aged sixty-six years. **Roberts.**—In Marshall, Mich., on Monday, March 3d, Dr. Warren Franklin Roberts, aged fifty-one years. **Shartle.**—In Hagerstown, Md., on Monday, March 10th, Dr. John Shartle, aged fifty-four years. **Shimer.**—In Cuero, Texas, on Thursday, March 6th, Dr. William H. Shimer. **Sproat.**—In Worcester, Mass., on Tuesday, March 4th, Dr. William Delano Sproat, aged thirty-eight years. **Stegman.**—In Hillsboro, Mo., on Friday, March 7th, Dr. Joseph E. Stegman, aged thirty-eight years. **Thomas.**—In Boston, Mass., on Saturday, March 8th, Dr. Carlton Revere Thomas, aged thirty-five years. **Thompson.**—In Indianapolis, Ind., on Wednesday, March 5th, Dr. James Livingstone Thompson, aged eighty years. **Tiernon.**—In St. Louis, Mo., on Tuesday, March 4th, Dr. George H. Tiernon, aged twenty-four years.

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Original Communications.

MASSIVE DOSE X RAY TREATMENT OF CUTANEOUS EPITHELIOMA.*

By George M. MacKee, M. D.,
New York,
Instructor of Dermatology, New York University and Bellevue Hospital Medical College; Consulting Dermatologist, New York Nose, Throat, and Lung Hospital;

and John Remer, M. D.,
New York,
Assistant Attending Dermatologist, New York University and Bellevue Hospital Medical College Dispensary.

There are two general methods of applying the x ray in the treatment of epithelioma, namely, the fractional dose and the massive or intensive dose methods. In this country the fractional dose technic has been employed to the almost complete exclusion of the massive dose method. In Europe, on the other hand, especially in France, most if not all of the more experienced radiologists are endeavoring to apply, in as few treatments as possible, enough ray to cure the various *cutaneous* affections that are *amenable* to radiotherapy. And this is essentially true in the case of malignant tumors, particularly when the neoplasms are superficially situated, as in the case of epithelioma of the skin.

Not only have American radiologists adhered to the fractional dose technic, but they have demonstrated a decided antipathy toward all direct measurements of the ray, both of its *quality* and its *quantity*, but especially the latter.

For the information of the reader who has had no personal experience with radiotherapy, it may be stated that there are the direct and the indirect methods of qualitative and quantitative measurements. The indirect method consists of judging the quality of the ray by certain fixed standards, the technic being closely associated with the personal equation, because hardly any two radiologists employ exactly the same type of apparatus. Briefly, this technic is as follows: A milliampèremeter is employed to ascertain the amount of current passing through the tube, the milliampèrage employed being the same in every treatment. The anode of the x ray tube is always placed at a given number of inches from the skin. The parallel spark gap (or other instrument) which registers the resistance in the circuit, is adjusted at a certain distance. By working with these constants, having had a great deal of experience, being thoroughly acquainted with all parts of the various apparatus employed at the moment and, above all, possessing a knowledge of all possible sources of error, one is enabled to estimate the penetration (quality) and the amount of ray administered. The accuracy of this technic, while being sufficient for repeated, small doses, does not possess the exacting requirements of the massive dose method. This view may have to be modified in the future, but with the exciting apparatus and tubes available at present, we do not consider that our opinion is too skeptical.[1]

The direct method of measurement consists of utilizing many of the factors of the indirect technic, with the addition of employing instruments designed for the purpose of directly estimating the quality and quantity of the ray. There have been many types of apparatus and many schemes advanced with this object in view. There are, for instance, the Holzknecht chromoradiometer and radiometer, the Sabouraud-Noiré radiometer, the Bordier chromoradiometer, the Bordier-Galimard units, the Guilleminot fluorometric quantitometer, the Kienböck photographic quantitometer, the Schwarz precipitation radiometer, the Hampson radiometer, and many devices and schemes originated by Freund, Schmidt, Haenisch, and others for the estimation of the quantity of ray administered. Without going into detail, we believe that the Holzknecht radiometer (not the chromoradiometer),[2] employed with a modified technic, which will be given in a subsequent communication, is the best procedure to follow for this purpose. In our hands this technic has proved eminently satisfactory, and although not theoretically accurate or "fool proof," the possibility of error, in the hands of the experienced operator, is reduced to the minimum.[3]

This idea of estimating the quantity of ray is based upon the change in the color of a tablet of platinocyanide of barium which has been exposed to the x ray. A standard color scale is utilized for comparison. The color changes are estimated in Holzknecht (H) units. The unit 1 H is one third of that quantity of ray which can induce a mild erythema of the face of an *adult*. The dose varies with the age of the individual and the part of the body exposed. Skin that has been subjected to irritating chemicals will respond more quickly than

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*From Doctor Fordyce's clinic, New York University and Bellevue Hospital Medical College.

[1] Many, in fact most of the German radiologists depend largely upon indirect measurements, employing the direct methods as an occasional control. We think it preferable, however, to depend constantly upon the direct measurements.

[2] J. B. Stein: A Description of a Method for Measuring Easily and Exactly the Dose of the X Rays in Röntgen Therapy (with literature), *Medical Record*, May 20, 1911.

[3] G. M. MacKee and John Remer: The Single Dose X Ray Method, *Journal of Cutaneous Diseases*, xxx, 10, p. 528, September, 1912.

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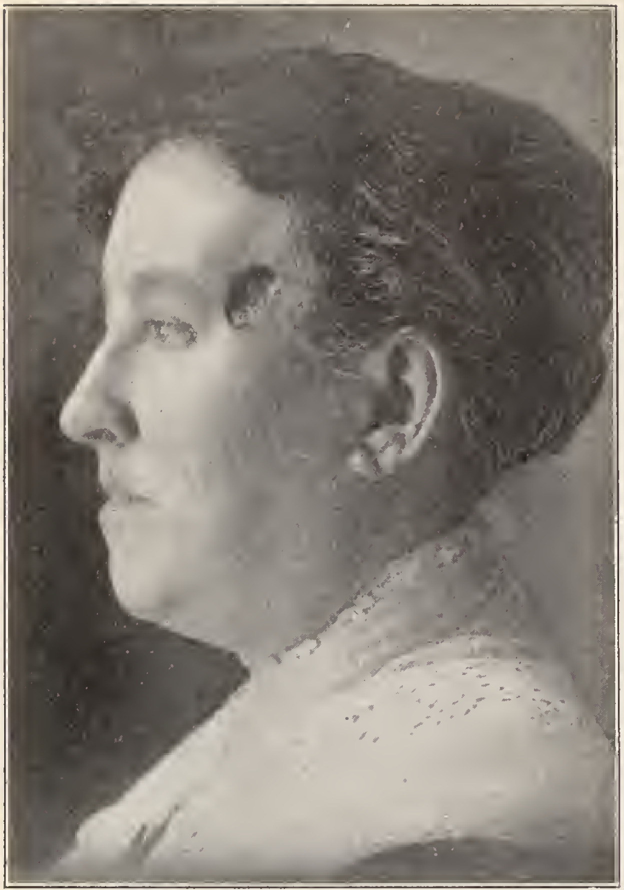

FIG. 1.—Case 1. Rodent ulcer of six years' duration; 150 x ray exposures by fractional dose method improved but did not cure the epithelioma.

normal skin. Lesions of certain diseases are more sensitive than normal skin. Fair skin is slightly more susceptible than dark skin. Beyond these variations it is a very rare thing to see an example of hypersusceptibility.

Many instruments have also been designed for the purpose of judging the penetration or quality of the ray. Most notable are the Benoist radiochromometer,[4] the Benoist-Walter, the Wehnelt, and the Walter scales. We have found the Benoist radiochronometer sufficiently satisfactory for this purpose. There are numerous other instruments that will aid one in estimating the quantity and quality of the ray, but space will not permit even mentioning them.

Now, what are the advantages of the massive dose method over the fractional dose method?

1. In the first place the accurate measurement of the dose is hardly ever attempted excepting in intensive treatment, so that the method can be said to be accurate and scientific.

2. The patient is spared the necessity of almost unlimited visits to the physician's office.

3. The last and by far the most important advantage (or advantages) will require some elucidation. Several years ago it was customary to apply the x ray to epitheliomata in very small doses three times a week. It was not uncommon to hear of from thirty to 150 or more treatments being given to one patient. Those who are familiar with past results will recollect that a certain percentage of the cases were permanently cured, while in an unfortunately large proportion, recurrences were common. It will also be recalled that the recurrences were not only resistant to further x ray treatment, but that in many instances the lesions failed to respond at all and even became so malignant that they could not be controlled. There were instances, too, where the primary epithelioma underwent involution to a certain point, and after remaining quiescent for a time, began to assume malignant tendencies while under the influence of the ray.

As apparatus and technic improved so that the number of exposures in a given case was reduced, the unfavorable results and the récidives were correspondingly diminished numerically. In other words, the nearer the treatment has approached the massive dose method the better have been the results. The application of small amounts of the x ray to the skin over a long period of time will produce atrophy, telangiectasia, pigmentation with or without erythema, and, finally, epithelioma, i. e., a condition similar in many respects to xeroderma pigmentosum.[5] It might be mentioned here that these features are far less likely to occur if a well filtered ray is employed. They will develop, however, even with the filtered ray, if the applications are repeated often enough and are continued over a sufficiently long period of time. Is it not possible,

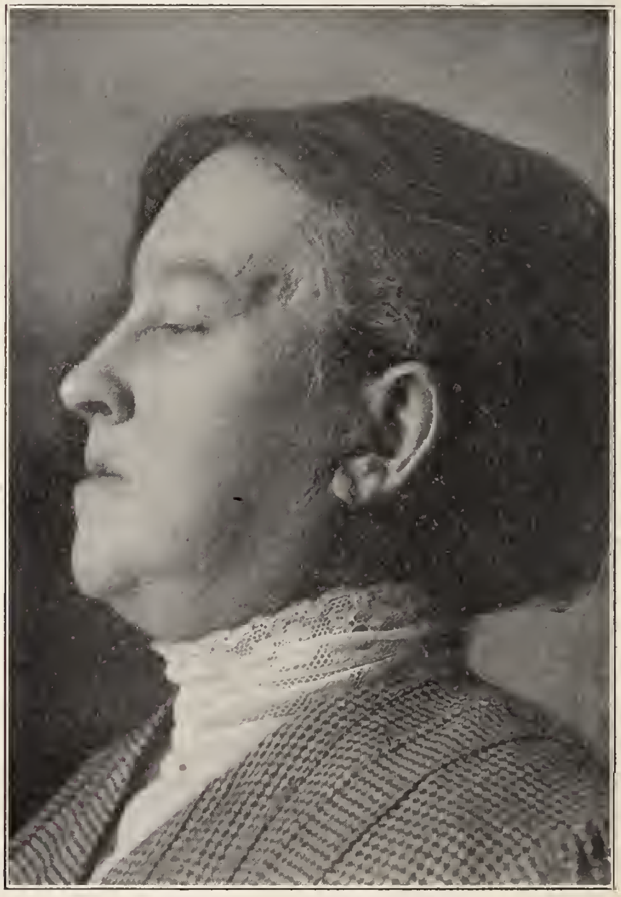

FIG. 2.—Case 1. Same patient shown in Fig. 1, after receiving one massive dose x ray treatment.

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[4] J. Belot: Radiotherapy in Skin Diseases, p. 47, New York, 1905.

[5] Xeroderma pigmentosum is a rare disease of the exposed parts of the body. The lesions consist of lentigines, telangiectasies, atrophy, papillomata, and, finally, epitheliomata. Its etiology is thought to be a hypersusceptibility to actinic rays.

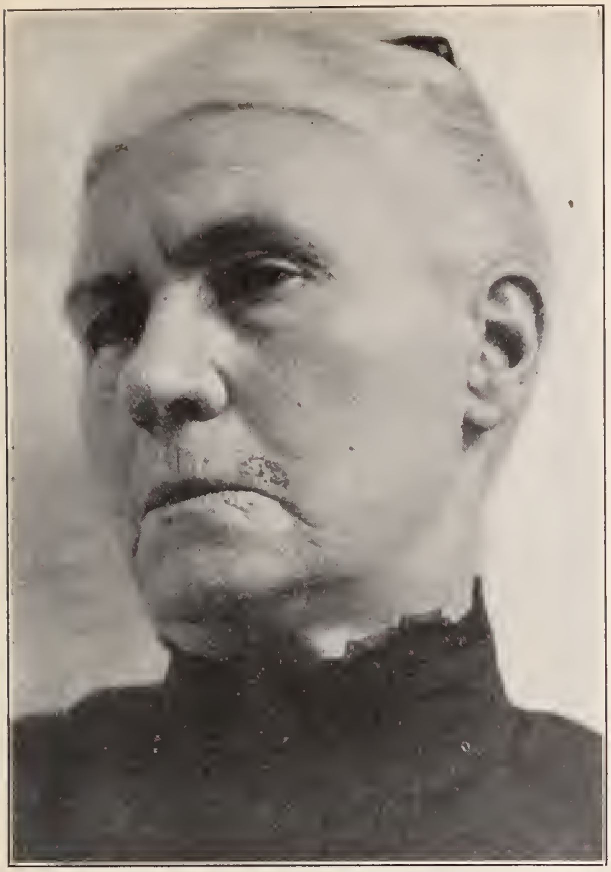

FIG. 3.—Case II. Nodular, basal cell epithelioma of two years' duration.

therefore, that so much ray applied to an epithelioma might add to its malignancy?

Cases have been recorded where epithelioma has developed upon a lupus erythematosus, where the latter disease has been subjected to repeated x ray exposures. Janeway[6] reported an interesting example of this kind at the dermatological section of the New York Academy of Medicine, April 7, 1908. The lupus had been treated with the x rays for four years, after which the solid carbon dioxide had been applied. This was followed by the evolution of a squamous celled epithelioma. Janeway thought that traumatism resulting from the use of the solid carbon dioxide was the direct cause of the epithelioma, but in the discussion Gottheil was of the opinion that the prolonged x ray treatment was the etiological factor, and we are in accord with this view. Rosenbach[7] reports a similar observation, but, unfortunately, he does not state whether the epithelioma developed secondary to lupus erythematosus or lupus vulgaris. The lupus was cured by the x ray (on this account the case was probably one of lupus vulgaris); three years later an epithelioma developed in the scar. Some of the interest is removed from these observations because a few instances have been recorded where epithelioma has developed upon lupus erythematosus which has not been subjected to x ray radiation. However, malignant degeneration on the site of lupus erythematosus is very rare, while epithelioma in connection with lupus vulgaris is relatively common. Dubreuilh and Petges,[8] in reviewing the literature, were able to find only seven recorded cases of epithelioma following lupus erythematosus, to which they added two new instances.

It has been proved absolutely that prolonged and excessive exposure to the x ray can produce cancer. It would seem advisable, therefore, in the treatment of epithelioma with the x ray, to give as nearly as possible the *exact* or *minimal* amount necessary to cure the individual case. This dose may be divided into *several strong* treatments, but not into *unlimited* and oft repeated *mild* exposures. There are several men in this country who have employed the fractional dose method with indirect measurement, but their technic has been *good,* their treatments were *strong* and relatively *few* in number, and their results splendid. We refer particularly to the work of Pusey, Pfahler, and Johnston. Pusey,[9] for instance, who was one of the pioneers in this work in America, reports 72.5 per cent. of successful results in 111 unselected cases. These cases comprised both the squamous and basal cell types of the disease, some of which were of long standing and malignant in character. The report was made on cases that had been observed for at

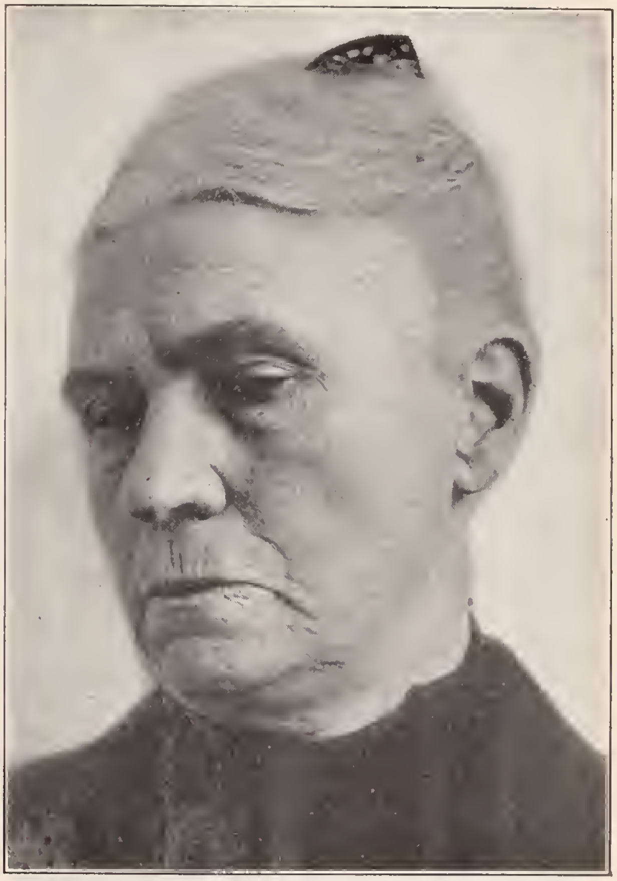

FIG. 4.—Case II. Same patient shown in Fig. 3, after one massive dose x ray treatment.

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[6] Janeway: Epithelioma Developing in a Case of Lupus Erythematosus Treated with the X Ray and CO_2, *Journal of Cutaneous Diseases,* March, 1910, xxviii, 3, p. 140.

[7] Rosenbach: Das Röntgen Carcinom, *Archiv für klinische Chirurgie,* April, 1910, xcii, 4, p. 264.

[8] Dubreuilh and Petges: De l'épithéliome consécutif au lupus érythémateux, *Annales de dermatologie et de syphiligraphie,* February, 1909, x, 2, p. 106.

[9] W. A. Pusey: Epitheliomata Treated with Röntgen Rays, *Journal of the American Medical Association,* October 5, 1907.

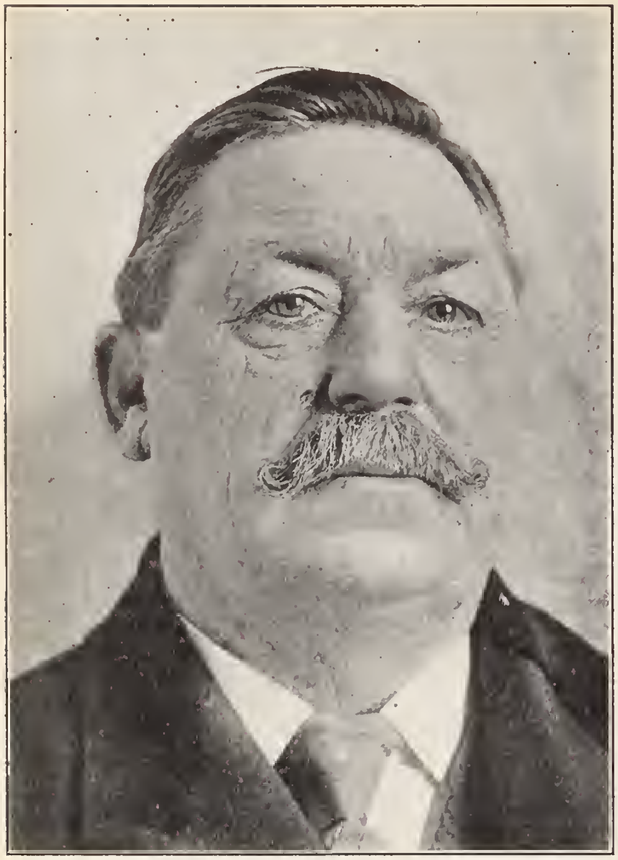

Fig. 5.—Case III. Nodular and ulcerative basal cell epithelioma of five years' duration.

least three years after recovery. Since this communication, Pusey has recorded even better results, but we mention these early observations to show that even with the technic employed previous to 1907, the results were exceedingly gratifying when the treatment was administered by an expert. At the St. Louis meeting of the American Dermatological Association in May, 1912, Pusey[10] admitted only two failures in thirty-five *selected* cases of epithelioma of the lower lip (5.7 per cent.). The mean average interval that elapsed since the treatment was six years.

These statistics are admirable, and it is possible that they will not be improved upon. However, comparing our own results of the last two or three years with those obtained previously, we admit a bias in favor of certain theoretical considerations and deductions. Time alone can determine if they have any practical value.

We have been able to prove, at least to our own satisfaction, that the only way to cure a cutaneous epithelioma with the minimum amount of ray is to obtain the desired result in one treatment. If, for instance, six H units of a No. 6 or 7 Benoist[11] ray, administered at one sitting, will cure a given case, the same effect will not be noted if this dose is divided into more than one treatment. Let us assume that only four or five H units were given at the first séance. It is a definite rule to allow a lapse of three weeks between treatments. Now, at the end of this time, the additional one or two H units will not suffice for a cure: *It will be necessary again to administer practically the full original dose of six H units.* If the six H units were to be divided into two H units every day or every second day, the difference would be less, but even here the total dose would have to be slightly increased: *the addition to the curative dose would increase in proportion to the length of time elapsing between treatments.* This is true up to four or five weeks, when it becomes necessary again to administer the full curative dose. It is obvious, therefore, that in the fractional dose method considerably more ray will be administered than is necessary for the cure of the lesion. This fact was first suggested by observing the effect of the x ray in the treatment of tinea tonsurans. In the fractional dose method it was common to see a permanent alopecia without the advent of an erythema. In other words, by the time the hair had fallen out a degree of atrophy of the hair follicles had occurred which was sufficient to produce permanent baldness, and yet there had been no sign of an excessive dose. Obviously, therefore, more ray had been administered than was necessary to obtain a temporary alopecia.

Although the histopathology of acute and chronic radiodermatitis has been studied, the biological effect of the x ray is not well understood. The Röntgen ray modifies some cutaneous affections apparently by its ability to cause atrophy of the secreting cells. Other diseases are influenced by the effect of the ray on the vessels. There is evidence, also, in some affectations, that an opsonin or

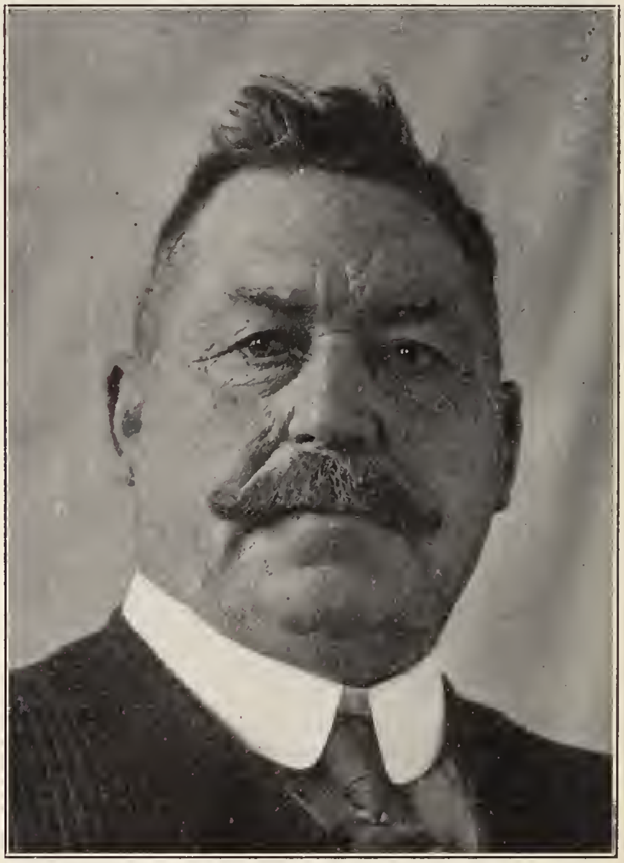

Fig. 6.—Case III. Same patient shown in Fig. 5, after two massive dose x ray treatments.

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[10] W. A. Pusey: Concerning Epithelioma of the Lip, *Journal of Cutaneous Diseases*, February, 1913, xxxi, 2, p. 71.
[11] Indicated by the letter B.

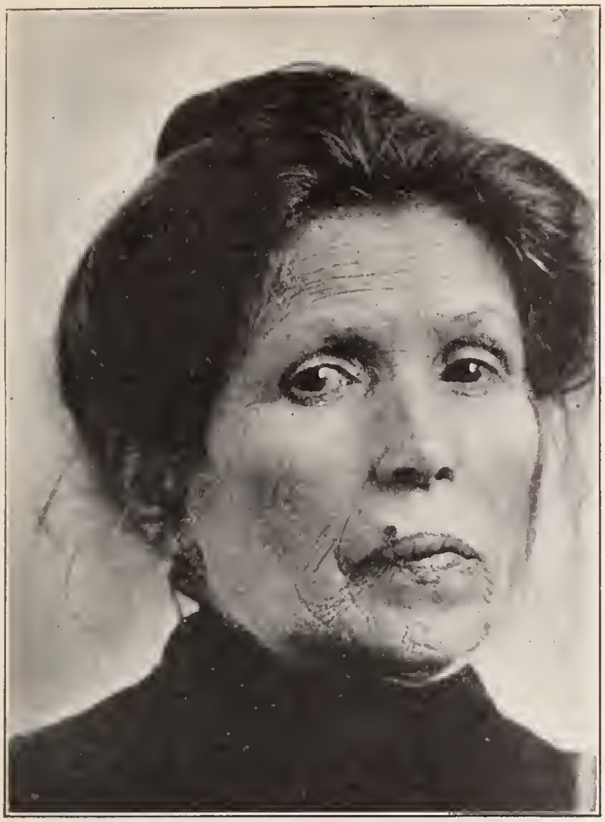

FIG. 7.—Case IV. Nodular and ulcerative basal cell epithelioma.

chemical antibody is produced. Is it not possible, that by frequent, mild applications, the tissues are overstimulated, or are taught to resist the beneficial influence of the ray? Can the malignant cell acquire in this way an immunity against the x ray? These, obviously, are questions that must be carefully investigated before it can be definitely ascertained why the massive dose method is superior to the fractional dose method.

Sequeira[12] reported a very interesting case before the dermatological section of the Royal Academy of Medicine on March 9, 1908. Although this observation lacks confirmation it has an important bearing upon the facts mentioned in this communication. The case was one of chronic radiodermatitis of the hands, which exhibited atrophy, telangiectasia, pigmentation, and numerous epitheliomatous excrescences. The condition was produced by frequent exposure to the x ray over a number of years. It was an example of the typical x ray hand seen in so many of the early workers, in which the eruption increased long after exposure to x radiation had ceased. The back of one hand was exposed to a single epilation dose of the ray. Four or five weeks later, when the patient was presented to the society, the keratoses of the treated hand had disappeared, while those on the untreated hand were unchanged.

Ehrmann and Laffont[13] mention Lomon's patient reported at the Société de radiologie médicale de Paris, April 9, 1911. It was a case of epithelioma which had not been relieved by the fractional dose x ray method, nor by surgical ablation. One dose of thirty-five H units of a *filtered* ray produced a cure.

This naturally brings up the question of the advisability of filtration. The object of filtering the ray is to remove the qualities below a No. 3 or 4 B. These rays have very little penetrative power and are absorbed by the superficial tissues, so that the maximum effect is in the epidermis. Obviously, therefore, if it is desirable to obtain the maximum effect at a lower depth, it is necessary to employ a ray of sufficient penetration. The penetration of a No. 6 or 7 B ray appears to be sufficient for most if not all cutaneous epitheliomata. It should be remembered, however, that a tube emitting a maximum of No. 6 or 7 B ray also delivers rays of both higher and lower penetration. The very soft rays can be eliminated by placing in their path two or three layers of chamois, a thin piece of aluminum, leather, etc. For the present it may be said that filtration of the ray is only necessary when the growth is dense and when it extends into the subdermal tissues. A very thin filter (a single layer of chamois) possibly may be employed with advantage in every case. When a filter is used, *the dose of the ray must be increased in accordance with the thickness and density of the filtering material.* Before leaving the subject of filtration we should like to add that it is largely through this addition to the technic[14] that good results are occasionally obtained

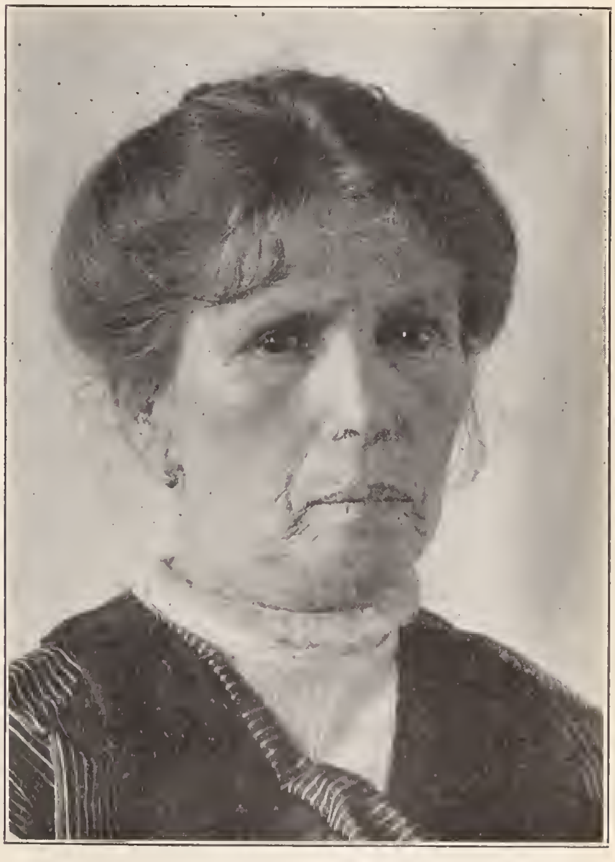

FIG. 8.—Case IV. Same patient shown in Fig. 7, after one massive dose x ray treatment.

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[12] J. H. Sequeira: *British Journal of Dermatology*, April, 1908, xx 4, p. 140.

[13] Ehrmann et Laffont, *Archives d'électricité médicale*, 1911, xix, p. 422.

[14] We believe that filtration of the ray was first suggested by Pfahler, of Philadelphia.

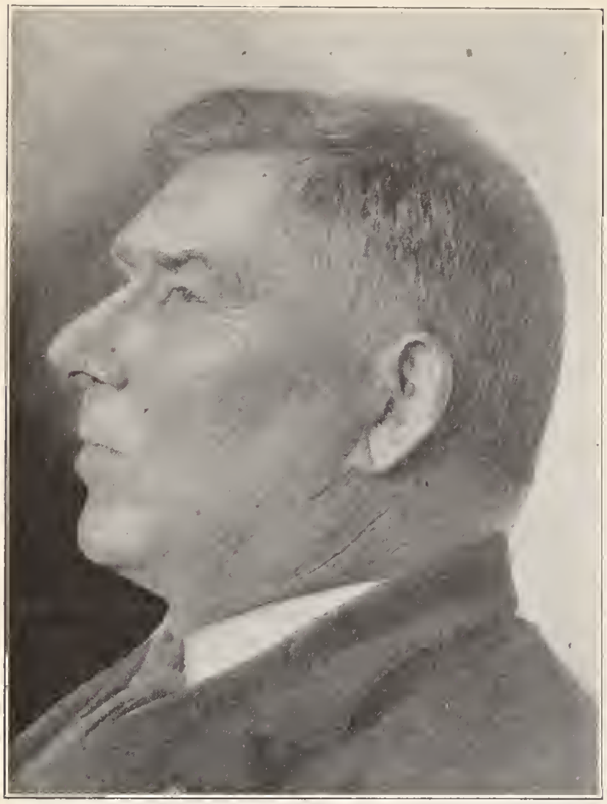
Fig. 9.—Case v. Small rodent ulcer. This was removed by curetting and cauterization

in the treatment of inoperable carcinoma of the breast, of the mucous membranes, etc., and in the prophylactic, postoperative treatment of similar conditions. The value of the massive dose technic applies here just as it does in cutaneous epithelioma, only it is not so practical because of the difficulty of administration.

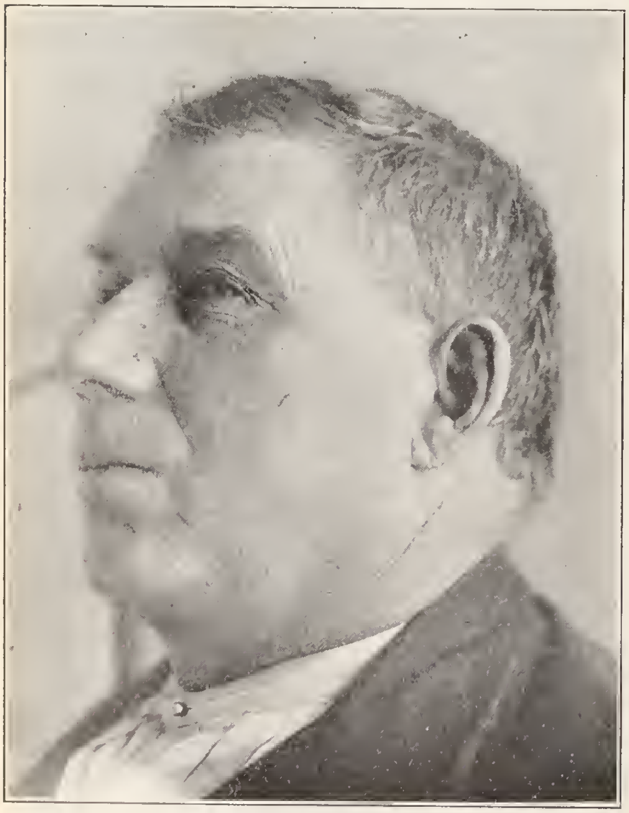
Fig. 10.—Case v. Same patient shown in Fig. 9. Recurrence few months after curetting. The lesion was removed by the use of carbon dioxide snow.

In order to demonstrate how the experiences and opinions of various radiologists differ, we would like to mention some observations made by Schultz.[15] Working in accordance with the known law that the ability of a tissue to absorb the ray is in direct relation with its specific gravity, he has found that some superficial epitheliomata have a lighter specific weight than normal skin, and sometimes, when the lesion extends into the deeper tissues, it may have less specific weight than the musculature. In such instances he has obtained superior results by employing a ray of very low penetration. His explanation is that the radiosensibility of tissues of low specific weight are excited more by soft than by hard rays. In other words, an epithelioma of low specific weight, surrounded by tissues of a higher specific weight, will absorb more soft rays than the tissue in its immediate neighborhood and vice versa. Several examples are given in support of his interesting theory.

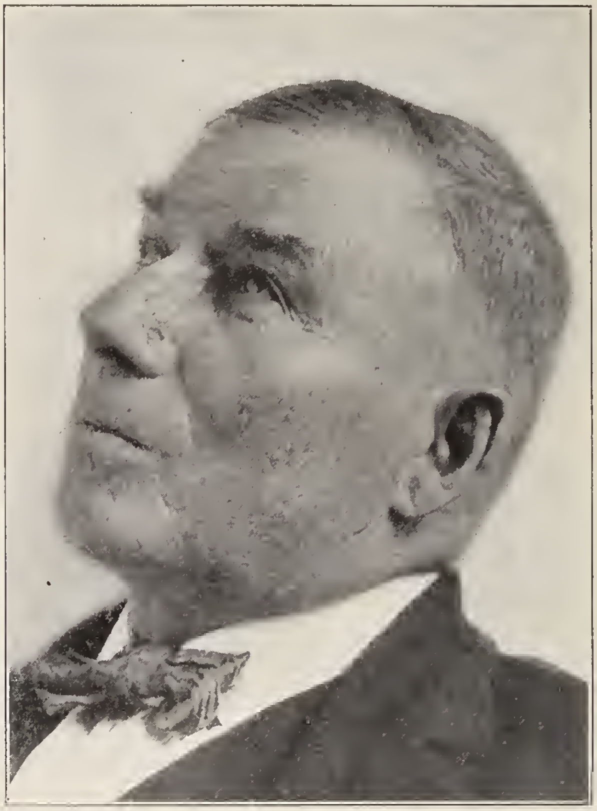
Fig. 11.—Case v. Same patient shown in Figs. 9 and 10. Recurrence after use of carbon dioxide snow.

In support of our technic and theories we should like to mention the following observations:[16]

Bordier[17] treats all cases of epithelioma by giving the estimated curative dose at one sitting. If the growth is deep seated a suitable filter is employed. In 1906[18] he re-

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[15] Frank Schultz: The X Ray Treatment of Skin Diseases; translation by James Burnet, New York, 1912, p. 152.

[16] This is not a complete synopsis of the literature.

[17] H. Bordier: Traitement moderne des épithéliomes et autres tumeurs malignes de la peau, *Consultation médicale française*, 31, 1910.

[18] Idem: *Archives d'électricité médicale*, June 10, 1906.

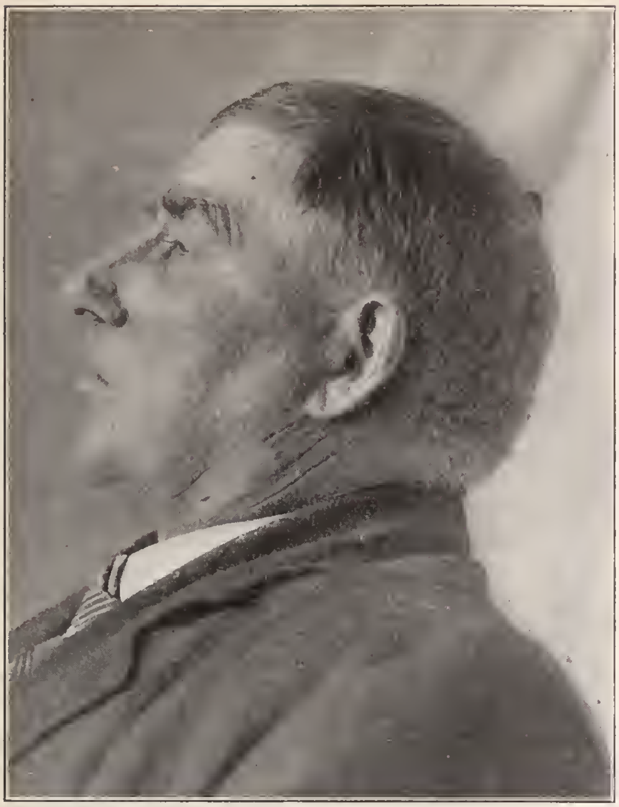

Fig. 12.—Case v. Same patient shown in Figs. 9, 10, and 11, after one massive dose x ray treatment.

ported a number of cases which had been cured in one treatment. In 1910[19], beside reporting a number of new instances, he gives the subsequent histories of the 1,906 cases. There were no recurrences.

Marie and Clunet[20] favor the massive dose technic and believe the fractional dose method produces the same effect that is seen on the hands of many radiologists.

Pirie[21] cured four cases of epithelioma with single doses of the x ray.

Broca[22] adds his favorable opinion regarding the intensive treatment of many cutaneous manifestations.

Chuiton[23] insists upon the massive dose method and has elaborated the following scheme: The first treatment is to consist of ten to twelve H units of about a No. 7 B ray; three weeks later a second treatment of five H units of the same ray filtered through a very thin sheet of aluminum. This dose is repeated at the end of another three weeks if the lesion has not undergone complete involution. After a lapse of six weeks following the third treatment, this procedure is advised: 1, If the patient is well, apply five H units to the cicatrix; 2, if the patient is much improved, the three treatments should be repeated; 3, if there has been no improvement, the case should receive surgical attention and a few prophylactic treatments administered to the resulting cicatrix.

Clark[24], at the Section in Dermatology of the New York Academy of Medicine, April 7, 1908, exhibited a patient who had been cured of an epithelioma by a single treatment. He employed the indirect method of measurement.

One of us (MacKee) has had over seven years of experience with the massive dose method. With the indirect method of judging the quality and quantity of the ray employed, the results were very unreliable. Good results were obtained by the use of the Sabouraud and Noiré radiometer, but it was not until 1910, when the Holzknecht radiometer was placed on the market, that we developed absolute confidence in our technic.

Unlike Chuiton (*loco citato*), we have no definite scheme of procedure for all cases. In a case of cutaneous epithelioma we estimate the curative dose in accordance with the age of the individual, the site, and the character of the lesion. This estimation is also based upon personal experience combined with a knowledge of the literature, apparatus, instruments, etc. It is, therefore, impossible entirely to eliminate the personal equation, although this factor is of less importance than might appear at first glance. The necessary knowledge can be gained while working up the technic experimentally. In some instances the estimated dose, if applied at one sitting, would produce too great a reaction. In such cases it becomes necessary to depend upon the second or third treatment to effect the desired result. An exceedingly safe method is to give a normal dose[25] at the first sitting and follow this by

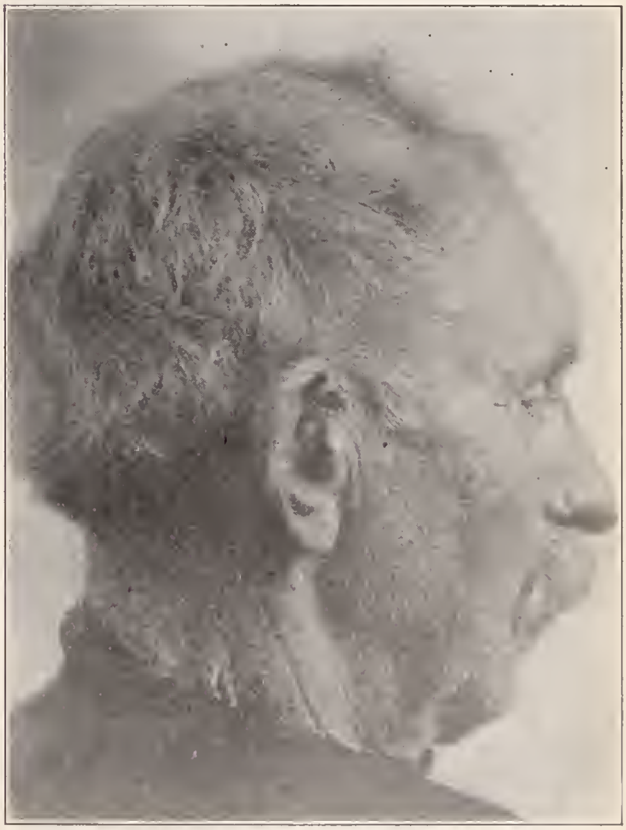

Fig. 13.—Case vi. Rodent ulcer of three years' duration.

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[19] Idem: *Ibidem, xviii*, 299, p 991, December 10, 1910.

[20] Pierre Maric et Jean Clunet: Action des rayons x sur les tumeurs malignes, *Presse médicale*, 85, p. 790, October 22, 1910.

[21] A. Howard Pirie: *Archives of the Röntgen Ray*, 129, p. 428, April, 1911.

[22] André Broca: Quelques considérations sur la radiothérapie extensive dans les maladies cutanés, *Archives d'électricité médicale*, December 10, 1909.

[23] E. Chuiton: Contribution à une technique meilleure de la radiothérapie des épithéliomes cutanées, *Archives d'électricité médicale*, xix, p. 252, 1911.

[24] A. Schuyler Clark: *Journal of Cutaneous Diseases*, xxvi, 10, p. 46- October, 1908.

[25] A "normal dose" is now known as the amount of about a No. 6 Benoist ray that will produce a temporary loss of hair from the scalp without the production of an erythema. It is also known as the erythema dose and the epilating dose. It corresponds to the Sabouraud-Noiré B tint, five H units, ten X units of Keinböck's scale, etc. As the dose will vary according to the age, site, etc., it is preferable to depend upon Holzknecht's table as follows: Middle aged adults, face two H, head and joints three H, body four H; children, one H, two H, three H, respectively; aged individuals, three H, four H, five H, respectively.

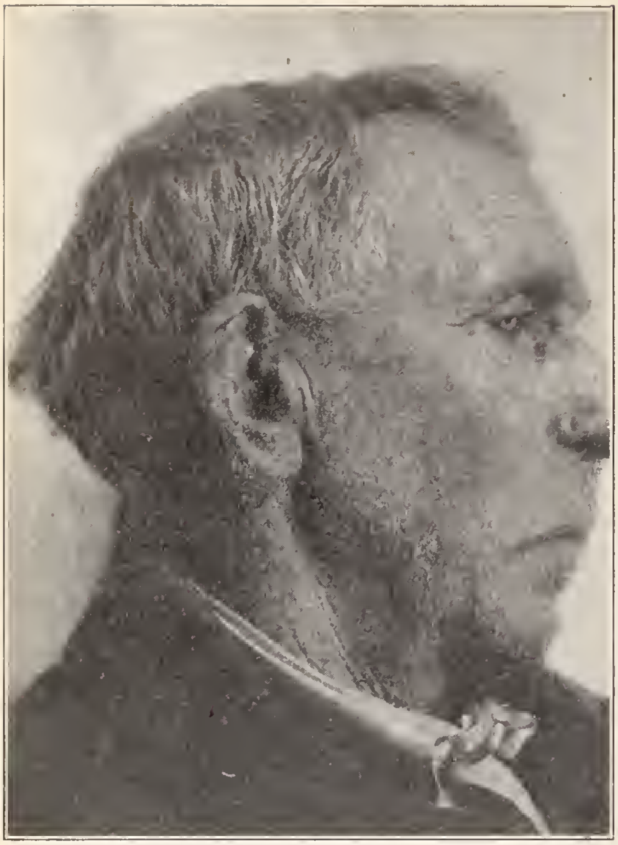

Fig. 14.—Case vi. Same patient shown in Fig. 13, after one massive dose x ray treatment. The photograph was taken before complete recovery.

subsequent treatments according to the indications.

We do not admit that it is harmful, in the treatment of cutaneous epitheliomata, to produce a first degree radiodermatitis; in fact, we consider it advisable to do so. Also, we do not wish to be understood as urging the necessity of a one treatment cure, or of confining the x ray treatment to one exposure. We simply advise the *accurate* measurement of the *dose* and the *cure* of the disease with a *minimal* amount of ray. Now, after this digression, if the first treatment has caused an erythema and yet there is no improvement in the lesion after a lapse of a month, we advise surgical intervention. On the other hand, if there has been some involution, a similar exposure is given four weeks subsequent to the first treatment. We have found that many cases of cutaneous epitheliomata can be completely cured in one treatment. It is doubtful if more than two or three treatments are necessary in any basal celled epithelioma, whether nodular or ulcerative, providing, obviously, that it is amenable to x ray treatment. This is probably true of the squamous celled tumor and possibly also of superficial epitheliomata of the lip. This, however, does not include the treatment of the neighboring lymphatic glands.

So far as concerns cancer, we employ filtration only in deep seated growths or where the tumor is covered with healthy skin. In these instances, too, we employ the massive dose technic, but inasmuch as deep seated growths are less responsive than those of a superficial nature, the fact that large areas must be treated, and because hard rays are less efficacious than soft rays, we are compelled to be more liberal in the number of treatments. As a substitute for filtration, the skin may be dehematized by adrenalin, by pressure or by ice.[26]

CASE REPORTS.[27]

Case I. Mrs. E. S. I. (Figs. 1 and 2), of American birth and forty-eight years of age. She first came under our observation August 8, 1912, having been referred through the kindness of Dr. Harry Waite. She exhibited a rodent ulcer, of six years' duration, on the left side of the forehead and cheek. It was three inches long and 1.5 inch wide. The lesion extended down to, but did not involve the periosteum. The margin was not indurated.

When the lesion first made its appearance it was removed by curettage and cauterization. Recurrence was prompt and was treated in the same manner. When the ulcer recurred the second time it was treated by the fractional dose x ray method, in the neighborhood of 150 exposures being made in the course of three years. While at first there was some improvement, the ulcer later increased in size in spite of the applications of the x ray, so this treatment was discontinued. Her last treatment was in 1899. Since then only mild antiseptics had been applied. No biopsy was made, the diagnosis being based on the clinical appearance.

On August 8, 1912, six H units of a No. 6 B ray were administered. An erythema developed around the lesion eight days after the treatment and lasted for ten days.

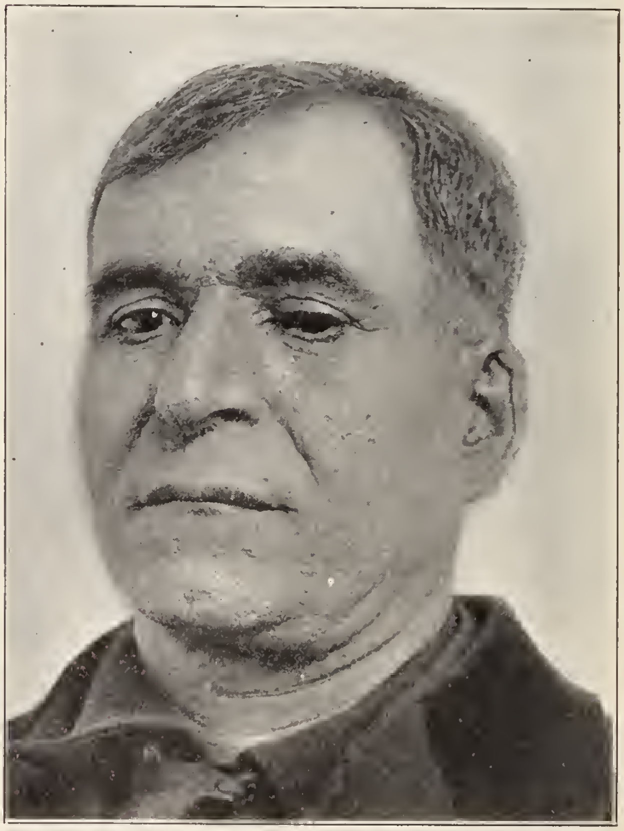

Fig. 15.—Case vii. Small rodent ulcer at inner canthus of left eye.

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[26] The discussion of filtration and the treatment of deep seated malignant tumors, inoperable cancer, postoperative cancer, etc., will be reserved for a future communication.

[27] This report comprises only a few patients of whom we happen to have photographs before and after treatment. They are selected mainly in support of our contentions. A total list of cases, including a statistical table, will be published after a sufficient length of time has elapsed to make the report of value.

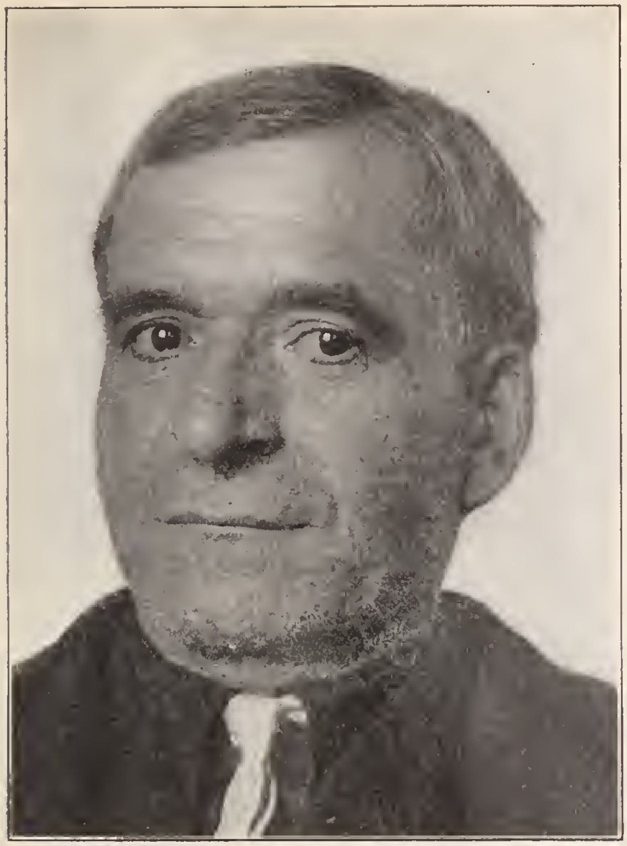


FIG. 16.—Case VII. Same patient shown in Fig. 15, after one massive dose x ray treatment.

On September 27, 1912, the lesion was entirely healed and the second photograph was taken.

This patient was exhibited at the December, 1912, meeting of the New York Dermatological Society. It was the consensus that there was no evidence of malignant tissue *in situ*, but one or two members preferred to reserve opinion on account of a slight scaliness in the centre of the scar. It has been our experience that this scaliness is not necessarily significant and usually disappears in a few weeks or months. It is important, however, to ascertain, if possible, if there is any visible evidence of incomplete cure, and in case of doubt a second treatment should be given. The history of this case is similar to that related by Ehrmann and Laffont (*loco citato*).

CASE II. Mrs. G. D. (Figs. 3 and 4), of American birth and sixty-one years of age. She first came under our observation, March 13, 1911, at Doctor Fordyce's clinic in the New York University and Bellevue Hospital Medical College. The patient exhibited an ulcerating and nodular lesion on the left side of the upper lip, close to, but not involving the mucous surface. The ulcer was 1.5 inch long and an inch wide. The duration was two years. The base of the lesion, which was slightly lower than the level of the normal skin, was composed of a hard, irregular, pearly mass. The margin was elevated and hard. No biopsy was made as there could be no doubt about its being a rodent ulcer.

On March 13, 1911, seven H units of a B 6 ray were administered. This was followed by an erythema which developed on the eighth day and which persisted for two weeks.

On April 14, 1911, the lesion was entirely healed, but there was a little scaling which disappeared in six months. The second photograph was taken October 1, 1911.

This patient was demonstrated before the New York Dermatological Society at the December, 1912, meeting. Every member agreed that the cure was complete.

CASE III. Mr. D. L. (Figs. 5 and 6), born in Ireland and fifty-one years of age. He first came under our observation at Doctor Fordyce's clinic on March 16, 1912. He exhibited a basal celled epithelioma, the size of a twenty-five cent piece, on his right cheek near the nose. The lesion presented a deep, ulcerating centre, with an elevated, hard, pearly margin. The duration was five years. No biopsy was made.

On March 16, 1912, seven H units of a B 6 ray were applied. This was followed by the usual erythema, and healing was complete in six weeks. In one part of the scar, however, there was a suggestion of a pearly nodule, and as the patient was to be away for several months, four H units were applied June 24, 1912. The man was not seen again until December, 1912, at which time the second photograph was taken.

The patient was demonstrated to the New York Dermatological Society in December, 1912; all the members agreed that it was a complete cure.

CASE IV. Mrs. D. H. (Figs. 7 and 8), born in Russia and fifty-four years of age. She first came under our observation at Doctor Fordyce's clinic on March 15, 1911. There was a lesion on the right side of the upper lip the size of a ten cent piece. It was close to but did not involve the mucous membrane. There was a hard, elevated pearly margin and an ulcerating centre which was covered with a crust. The duration was eight months. A diagnosis of rodent ulcer was based upon the clinical appearance.

On March 15, 1911, seven H units of a B 6 ray were applied. This was followed by a marked erythema. In six weeks the lesion had entirely disappeared. The second photograph was taken on July 19, 1912. The patient is

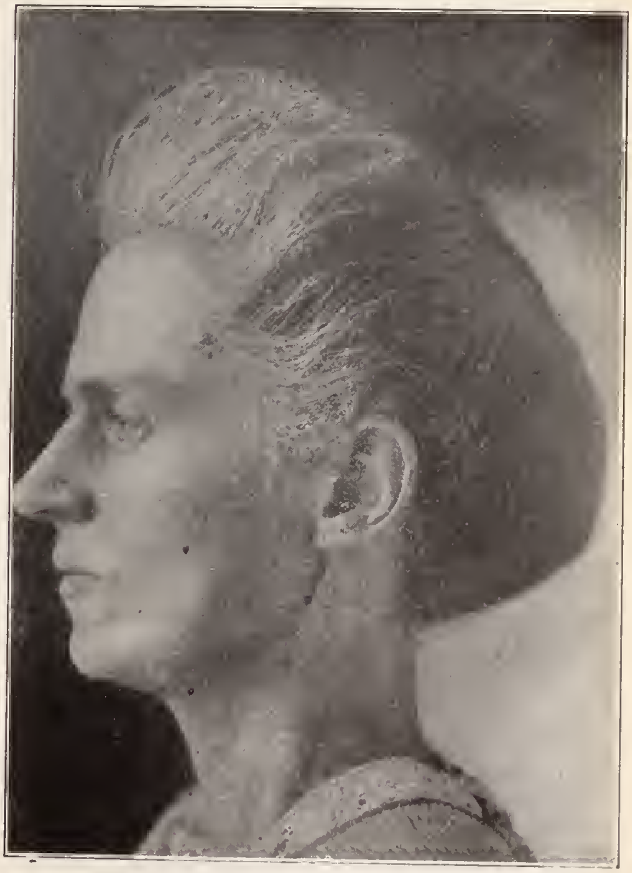


FIG. 17.—Case VIII. Nodular, basal cell epithelioma.

still under observation and there is no evidence of a recurrence.

Case V. Mr. T. M. (Figs. 9, 10, 11, and 12) is of Irish birth, fifty-eight years of age. He first came under our observation at Doctotr Fordyce's clinic in June, 1906. He presented a split pea sized lesion on the left side of the nose. No biopsy was made, but a diagnosis of basal celled epithelioma was based upon the clinical appearance. The duration was two years.

The lesion was thoroughly curetted and cauterized with acid nitrate of mercury. Recurrence was prompt and was removed with the solid carbon dioxide. The epithelioma returned the second time within a year. He was then given (November 21, 1908) a dose of eight H units of a B 7 or 8 ray. This was followed by healing, and there has been no recurrence since.

This patient was exhibited to the members of the New York Dermatological Society in December, 1912, and there was some discussion as to whether there was still evidence of malignancy present, the upper margin of the scar appeared a little pearly in character.

We predict that in recurrences following a massive dose technic, the epithelioma will still be amenable to radiotherapy in contradistinction to the after effects of the fractional dose method as already mentioned.

Case VI. Mr. H. M. (Figs. 13 and 14), is of Irish birth, sixty years of age. Was first seen at Doctor Fordyce's clinic in February, 1910. He exhibited a rodent ulcer on the cheek close to the right ear, the size of a twenty-five cent piece. It was nodular, ulcerative, and crusted. The duration was three years.

A single massive dose treatment was applied at the time of the first visit. The second photograph was taken before healing was complete, as it was necessary for the man to leave town. A recent letter from the patient informs us that he is still well.

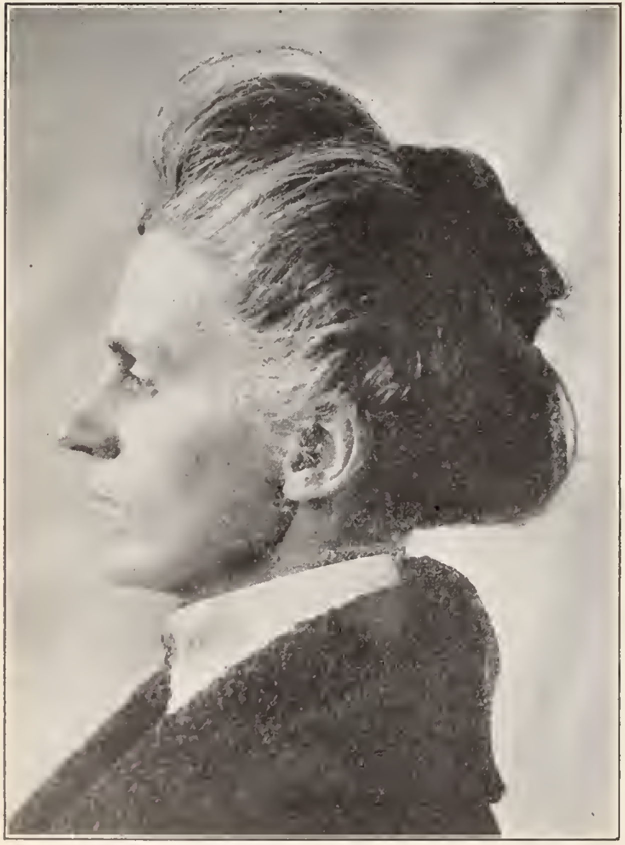


Fig. 18.—Case viii. Same patient shown in Fig. 17, after one massive dose x ray treatment which was underestimated.

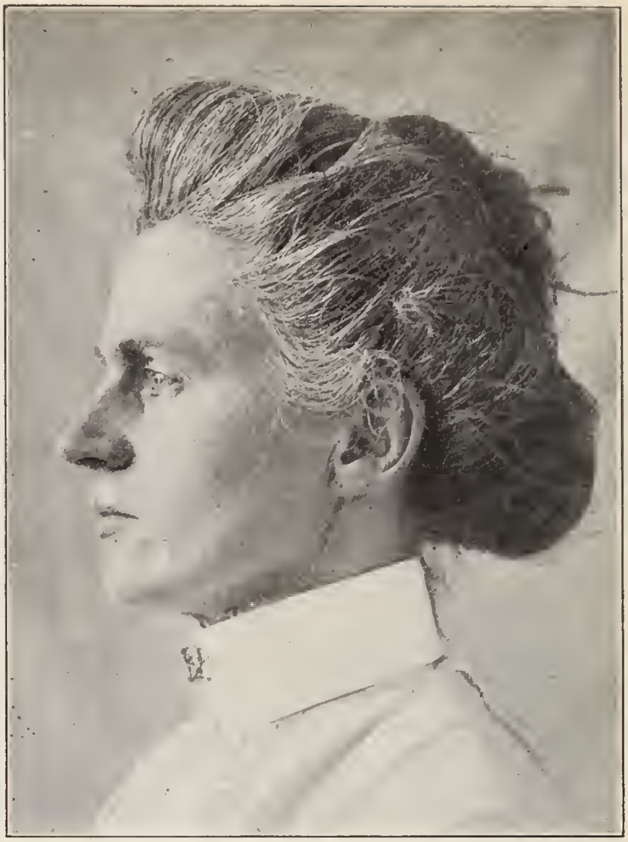


Fig. 19.—Case viii. Same patient as shown in Figs. 17 and 18, after two massive dose treatments.

Case VII. Mr. P. C. (Figs. 15 and 16), Italian, forty years of age, was referred through the kindness of Dr. L. J. Lipset. There was a split pea sized rodent ulcer at the inner canthus of the left eye. The duration was one year. The margin was hard and pearly and the centre crusted.

On January 29, 1911, seven H units were administered. This was followed by prompt healing, and there has been no recurrence.

Case VIII. Miss J. C. (Figs. 17, 18, and 19), born in Ireland, forty years of age; daughter of Mrs. G. D. (Case II.). The patient was first seen at Doctor Fordyce's clinic August 24, 1912. She presented a typical, hard, nodular type of rodent ulcer on the left side of the forehead.

Five H units of a B ray were administered August 24, 1912. That the quality of the ray was too hard and the dose underestimated was demonstrated by the absence of an erythema following the treatment. Nevertheless, there was considerable improvement, as depicted in Fig. 17. Three weeks after the first treatment the same dose was repeated, followed by further improvement. There was still, however, slight evidence of incomplete cure (not sufficiently plain to be demonstrated by photography). Five H units of the same quality of ray were administered four weeks after the second treatment, and this resulted in a cure (Fig. 19). The total amount of ray used in this case was fifteen H units; the quality was B 8. We feel confident that this lesion would have undergone involution under one application of seven H units of a B 6 ray or nine units of a B 8 ray.

This case illustrates what we have already discussed, namely, that all other factors being equal, *the quantity must increase with the quality;* that there is no advantage in employing a ray higher than a B 6 in superficial epitheliomata; and that when it is necessary to *repeat* the treatment, the *total amount* of ray is *greater* than if the *correct curative dose* had been applied at the start.

58 West Fifty-eighth Street.

HOSPITAL MORBIDITY STATISTICS.

A Practicable Method of Making Them Uniform and Preparing Them for Analytic Study.

By Charles F. Bolduan, M. D.,
New York,
Assistant to the General Medical Officer, Department of Health of the City of New York.

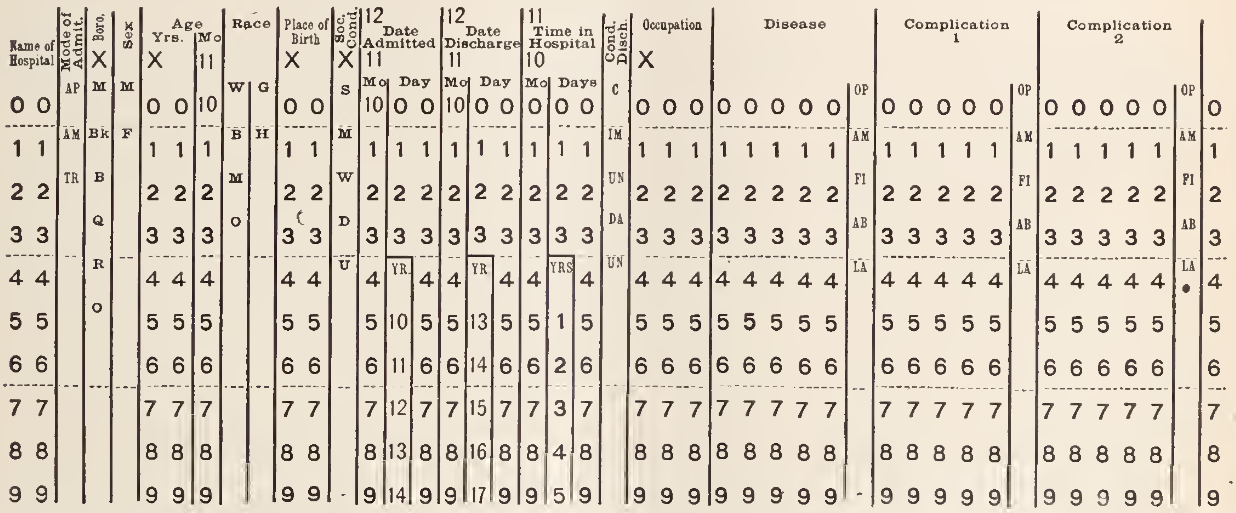
At the present time, in this country, practically the only vital statistics available for the guidance of public health administrators are those collected and published by the various boards of health, namely statistics concerning births, deaths, and marriages. Unless as a result of special investigations, practically no data whatever are available concerning the occurrence and distribution of nonfatal cases of disease, except for the comparatively small group of reportable diseases. In Germany and some other European countries morbidity statistics may also be obtained from the *Krankenkassen,* but such data are not obtainable in the United States. The need of trustworthy morbidity statistics has long been felt, and some progress looking toward the preparation of such statistics has already been made. I refer here to the workable system of morbidity nomenclature prepared by the Bellevue Hospital Committee.[1] Unfortunately, either because of indifference or for some other reason, the adoption of any standard classification by the large majority of hospitals moves but slowly, and even though, to date, some eighty hospitals throughout the United States are using the Bellevue Hospital system of nomenclature, the writer is convinced that it will be years before really serviceable morbidity hospital statistics will be available, unless some method like the one about to be described is introduced.

Some years ago the writer devised a system of bookkeeping for hospitals whereby it was thought various hospitals could be induced to record all their cases according to a uniform nomenclature. The plan was never carried out for several reasons, but chiefly because no satisfactory system of nomenclature was then available. Moreover, the difficulty of securing the enthusiastic cooperation of the medical staff of the various hospitals appeared to be an insuperable obstacle, and without such cooperation the plan seemed to be doomed to failure. Taking up the question anew, and guided by a study of methods employed in the Bureau of Records of the Department of Health, the writer has devised what he believes to be a simple, practicable method of preparing uniform morbidity statistics from different hospitals, *no matter what system of nomenclature is employed in such hospitals.* The great advantage of this last point is at once apparent. It makes possible the publication of comparable morbidity statistics from hospitals long before a uniform system of nomenclature has been adopted.

Before describing the plan, it may be well to remind the reader that mortality statistics from a large part of the United States, namely, from the Registration Area, are compiled on the basis of the International classification, and that this compilation has been successfully made even without the active cooperation of the practising physicians who sign the death certificates. The manner of securing uniformity is simplicity itself. Thus in New York city every death certificate sent to the department of health is looked over by an assistant registrar of records, a physician, who indicates by means of a blue pencil the particular heading under which the certificate is to be listed. A certificate of death stating that an infant died of hydrocephalus is marked "30", indicating that the death is to be entered under tuberculous meningitis; a death certificate for a child stated to have died of membranous croup is marked "9," indicating that this is to be entered under diphtheria, etc. By having all the certificates thus pass through the hands of one trained individual, a high degree of accuracy is secured.

The basis of the system here proposed is the "Discharge Certificate," a form of report very similar to the ordinary death certificate. These discharge certificates would be supplied to all the cooperating hospitals, and for each patient discharged from a hospital, a discharge certificate, properly filled out and signed, would be sent by the hospital to a cen-

HOLLERITH TABULATING SYSTEM.



Name of Hospital		Mode of Admit.	Boro.	Sex	Age			Race		Place of Birth		Soc. Cond.	Date Admitted			Date Discharge			Time in Hospital			Cond. Disch.	Occupation			Disease						Complication 1						Complication 2						
					Yrs.		Mo						12			12			11																									
			X		X		11			X		X	11			11			10				X																					
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1	1	AM	Bk	F	1	1	1	B	H	1	1	M	1	1	1	1	1	1	1	1	1	IM	1	1	1	1	1	1	1	1	AM	1	1	1	1	1	AM	1	1	1	1	1	AM	1
2	2	TR	B		2	2	2	M		2	2	W	2	2	2	2	2	2	2	2	2	UN	2	2	2	2	2	2	2	2	FI	2	2	2	2	2	FI	2	2	2	2	2	FI	2
3	3		Q		3	3	3	O		3	3	D	3	3	3	3	3	3	3	3	3	DA	3	3	3	3	3	3	3	3	AB	3	3	3	3	3	AB	3	3	3	3	3	AB	3
4	4		R		4	4	4			4	4	U	4	YR	4	4	YR	4	4	YRS	4	UN	4	4	4	4	4	4	4	4	LA	4	4	4	4	4	LA	4	4	4	4	4	LA ●	4
5	5		O		5	5	5			5	5		5	10	5	5	13	5	5	1	5		5	5	5	5	5	5	5	5		5	5	5	5	5		5	5	5	5	5		5
6	6				6	6	6			6	6		6	11	6	6	14	6	6	2	6		6	6	6	6	6	6	6	6		6	6	6	6	6		6	6	6	6	6		6
7	7				7	7	7			7	7		7	12	7	7	15	7	7	3	7		7	7	7	7	7	7	7	7		7	7	7	7	7		7	7	7	7	7		7
8	8				8	8	8			8	8		8	13	8	8	16	8	8	4	8		8	8	8	8	8	8	8	8		8	8	8	8	8		8	8	8	8	8		8
9	9				9	9	9			9	9		9	14	9	9	17	9	9	5	9		9	9	9	9	9	9	9	9		9	9	9	9	9		9	9	9	9	9		9

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[1] *The Bellevue Hospital Nomenclature of Diseases and Conditions, with Rules for the Recording and Filing of Histories.* Compiled by the Committee on Clinical Records, composed of Dr. Robert J. Carlisle, Dr. Warren Coleman, Dr. Thomas A. Smith, and Dr. Edmund L. Dow. Third Edition, 1911.

tral recording bureau. The data supplied on such a certificate are shown in the accompanying facsimile.

DISCHARGE CERTIFICATE.

Name of hospital..............
How admitted—Ambulance
or
own application
or
(Tabulation No.) transfer from other hospital.
Patient's address ....
.... Borough ......
Date admitted ....
Date discharged ....
Days in hospital....months.....
days........
(If over a year, omit the days and give only years and months)

Hospital admission No.........
Sex Age
White Hebrew
Colored Gentile
Mongolian
Place of birth.................
Single or married or widowed or divorced or unknown.
Discharged to—
Home
Other hospital
Convalescent retreat
Coroner

Occupation—(a) Trade, profession, or particular kind of work.
....
(b) General nature of the industry, business or establishment in which employed (or employer)
....
Diagnosis and Complications ....
If operated upon, state nature of operation..........................
Condition on discharge: Cured. Improved. Unimproved.
Died—Autopsy.
No autopsy.
Signed ....
House Physician—Surgeon.

It will be noted that the discharge certificates contain the ordinary data concerning the sex, age, race, nationality, social condition, occupation, and residence of the patient, and then certain data pertaining to the patient's admission, stay in, and discharge from the hospital, the disease and its complications, etc. So far as the discharging hospital is concerned, I think it will be admitted that the amount of clerical work involved in properly filling out these certificates will not be large; certainly not excessive, considering the very great value of the information thus obtained.

At the central recording bureau each certificate is looked over by a trained physician registrar, who indicates on each certificate the correct designation, in the standard nomenclature,[2] under which the certificate is to be classified. It then passes to a tabulating clerk, who transfers, by means of punch holes, all the information on each certificate to a correspondingly numbered tabulating card. These cards are specially prepared to fit machines which sort and count the cards into any desired groups. The illustration shows a card containing all the data of the discharge certificate.

It is obvious that tables of almost infinite variety may be prepared from the information thus recorded. In order to give an idea as to the utility of such tabulations, and the light they would shed on hospital practice and hospital administration, a number of specimen tables have been drawn up. Comment on these is unnecessary.

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[2] I have in mind particularly the Bellevue nomenclature with its numerical designations based on the international classification.

TABLE I—SHOWING MODE OF ADMISSION, BY HOSPITALS.

Admission by	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Total
Own application						
Ambulance						
Transfer from other hospital						
Total						

TABLE II—SHOWING DESTINATION OF PATIENTS ON DISCHARGE, BY HOSPITALS.

Discharged to	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Total
Home						
Convalescent institution						
Transfer to other hospital						
Died—						
Coroner's case						
Other cases						
Total						

TABLE III—RESIDENCE OF PATIENTS, BY BOROUGHS, SHOWING HOSPITAL AND MODE OF ADMISSION

Residence in borough of	Hospital A			Hospital B			Hospital C			Hospital D			Hospital E			Total		
	Appl.	Tran.	Amb.	Appl.	Tran.	Amb.	Appl.	Tran.	Amb.	Appl.	Tran.	Amb.	Appl.	Tran.	Amb.	Appl.	Tran.	Amb.
Manhattan																		
Bronx																		
Brooklyn																		
Queens																		
Richmond																		
Out of town																		
Unknown																		
Total																		

TABLE IV—PATIENTS TREATED, SHOWING MONTH OF ADMISSION, ALL DISEASES, AND CERTAIN PARTICULAR CASES.

Disease	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Certain particular diseases.													
Total, all diseases													

TABLE V—PATIENTS TREATED, SHOWING LENGTH OF STAY, ACCORDING TO HOSPITALS.

Length of stay	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Total
1 day or less						
1-3 days						
4-7 days						
8-10 days						
11-14 days						
2-3 weeks						
3-4 weeks						
4-5 weeks						
5-6 weeks						
6-7 weeks						
7-8 weeks						
2-3 months						
Etc.						

(NOTE.—This form of table would also be instructive if given for certain individual diseases.)

TABLE VI—CONDITION OF PATIENTS ON DISCHARGE, SHOWING PRINCIPAL DISEASES AND HOSPITALS.

	Hospital A				Hospital B				Hospital C				Hospital D				Hospital E				Total			
Disease	C.	Im.	Un.	D.	C.	Im.	Un.	D.	C.	Im.	Un.	D.	C.	Im.	Un.	D.	C.	Im.	Un.	D.	C.	Im.	Un.	D.
Give certain particular disease																								
and																								
Total—all diseases																								

TABLE VII—PATIENTS DISCHARGED BY TRANSFER TO ANOTHER HOSPITAL, SHOWING DISCHARGING HOSPITAL AND DISEASE.

	Case discharged by					
Disease	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Total
Give only the principal ones						
All others						
Total						

TABLE VIII—ALL PATIENTS DISCHARGED, SHOWING RACE DISTRIBUTION IN CERTAIN PARTICULAR DISEASES, AND CONDITION ON DISCHARGE.

	Total—All diseases				Disease A				Disease B				Disease C				Disease D				Disease E			
Race.	C.	Im.	Un.	D.	C.	Im	Un.	D.	C.	Im.	Un.	D.	C.	Im.	Un	D.	C.	Im.	Un.	D.	C.	Im.	Un.	D.
White—Gentile																								
White—Hebrew																								
Negro																								
Other races																								
Total																								

TABLE IX—PATIENTS TREATED, SHOWING DISTRIBUTION BY AGE AND SEX, ALL DISEASES, AND CERTAIN PARTICULAR DISEASES.

	Under 1		1-2		2-3		3-4		4-5		Total under 5		5-9		10-14		15-19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-69		70 and over	
Disease	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Certain particular diseases																																						
Total, all diseases																																						

TABLE XA—DISEASE A, SHOWING DISTRIBUTION BY AGE AND SEX AND NATIVITY.

	Under 1		1-2		2-3		3-4		4-5		Total under 5		5-9		10-14		15-19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-69		70 and over	
Place of birth	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
United States																																						
Russia																																						
Ireland																																						
Germany																																						
Etc.																																						

TABLE XB—DISEASE B, SHOWING DISTRIBUTION BY AGE AND SEX AND NATIVITY.

United States																			
Russia																			
Ireland																			
Germany																			
Etc.																			

TABLE Xc—DISEASE C, SHOWING DISTRIBUTION BY AGE AND SEX AND NATIVITY.

United States																			
Russia																			
Ireland																			
Germany																			
Etc.																			

TABLE XIa—DISEASE A, SHOWING DISTRIBUTION BY AGE AND SEX, AND OCCUPATION.

	Under 1		1-2		2-3		3-4		4-5		Total under 5		5-9		10-14		15-19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-69		70 and over	
Occupation	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Give those most numerous and																																						
Total, all occupations																																						

TABLE XIb—DISEASE B, SHOWING DISTRIBUTION BY AGE AND SEX, AND OCCUPATION.

Give those most numerous and																			
Total, all occupations																			

TABLE XIc—DISEASE C, SHOWING DISTRIBUTION BY AGE AND SEX, AND OCCUPATION.

Give those most numerous and																			
Total, all occupations																			

TABLE XII—SHOWING THE COMMONER COMPLICATIONS OF CERTAIN PARTICULAR DISEASES.

Principal disease	Total, complicated and uncomplicated	Complications			
Disease A		Disease 27^{10}	Disease 105^{9}	Disease 63^{6}	Disease 18^{2}

The small figure to the right indicating the number of times the complication was observed.

In New York city, the number of cases treated each year in the various hospitals is enormous, Bellevue and Allied Hospitals alone treating in the neighborhood of 50,000 patients annually. The magnitude of the problem of tabulating the hospital statistics according to the plan just outlined is, therefore, considerable. At the same time, it is entirely feasible to begin the work on a small scale, taking, for example, half a dozen of the larger hospitals in addition to Bellevue and Allied Hospitals. This would, perhaps, represent from 100,000 to 150,000 patients annually; about double the number of cases now handled annually as death certificates in the Department of Health of the City of New York. At the end of a year, those making the tabulation would probably have become so trained that they could easily handle fifty per cent. more work. To anyone familiar with work of this kind, it is a matter of course that the tabulations must be made by machine. The cards here shown are based on the tabulating machine used in the Department of Health of the City of New York.

So far as the expense of the undertaking is concerned, this consists of two factors, namely, the preparation of tables similar to those exhibited above, and the publication of these tables together with their analysis. There is practically no additional expense whatever on the part of the participating hospitals. After the work had been organized and running for some time, the preparation of tables concerning 200,000 cases would probably not exceed $12,000 per annum; and the printing of an annual report would probably be less than the present total cost of the individual hospital reports. Moreover, where the present individual hospital reports are almost worthless, a combined report such as here described would be of enormous value to all students of public health.

Fort Washington Avenue and 170th Street.

SUPRAPUBIC CYSTOSTOMY.

Its Indications in Carcinoma of the Prostate, with Illustrative Cases.

By Charles Greene Cumston, M. D.,
Boston.

The application of cystostomy in cancer of the prostate, quite as well as in all varieties of malignant neoplasms of the bladder and urethra, can arise under two very different circumstances. When the growth is still operable, cystostomy is done as a temporary palliative operation, and as permanently palliative when the neoplasm has attained the inoperable and therefore the incurable state.

The malignant affections of the prostate, representing the operable class (sarcoma, or more frequently carcinoma), are usually mistaken for simple prostatic hypertrophy, for the very simple reason that they offer the symptomatology of the latter process. The indications for suprapubic cystostomy are here quite the same as in instances of prostatism and is done for serious complications, such as acute retention, severe infection, intolerable pain, profuse hematuria, and a bad general condition which resists all other therapeutic measures. Under these circumstances the suprapubic drainage should be preferred to total perineal prostatectomy, as it will relieve the urgent symptoms and allow one at a later date to remove the diseased gland from above, should the condition of the patient warrant such a procedure.

Case I. M., aged seventy-six years, had suffered for several years with urinary symptoms, apparently the result of a prostatic hypertrophy. For some time past he has used the catheter. About a week previous to coming under observation the patient made a false passage with the instrument. When seen he was suffering from complete retention, the bladder reaching to the umbilicus. Per rectum the prostate was enormous, irregular in contour, probably carcinomatous. No enlarged lymphnodes could be detected. Temperature 97.9° F. The passage of a catheter was difficult, but after a while the instrument was introduced.

On the next morning the bladder was again distended but a catheter was passed and the urine withdrawn was clear. Temperature 99.3° F. In the afternoon of the next day a severe hematuria occurred and the temperature was still up. The patient's general condition seemed less good, the infection appeared to be progressing, and the old man began to complain of rather serious digestive disturbances. Suprapubic cystostomy was done without further delay.

An improvement was rapidly manifest, so that ten days later the patient was discharged wearing an apparatus to collect the urine. He died eighteen months later with all the symptoms of malignant disease, but was made very comfortable by the operation.

Case II. I. I., aged seventy-one years, had had an attack of retention a year ago, after having presented urinary disturbances previous to this, evidently of a prostatic nature. When seen, a catheter could not be introduced into the bladder, and futile essays were made with all types of instrument. Rectal examination revealed a very hard, irregular prostate of medium enlargement, not tender on pressure. A diagnosis of probable malignant disease was made. On account of the retention and the impossibility of entering the bladder with a catheter, suprapubic cystostomy was done. This was three months ago, and although the patient presents unmistakable evidence of a generalized malignant invasion he is in fairly good condition and is not troubled by any bladder symptoms.

Case III. L. B., aged sixty-nine years, presented the ordinary symptoms of prostatic hypertrophy, these having been present for the past four years. For the last few months, the patient has been obliged to pass the catheter several times in twenty-four hours. During the past three weeks there had been complete retention, micturition taking place by overflow. There was much pain on going to stool.

When seen, rectal examination revealed an enormous prostate, very irregular and hard. Both the lower poles of the kidneys could be palpated. There was a cloudy polyuria, about four litres being voided in twenty-four hours. Straw yellow coloring of the integuments, no appetite, extreme thirst. Temperature 101.2° F. The patient stated that all these symptoms had appeared within ten days and had markedly progressed.

Every attempt to pass a catheter was fruitless and very painful, and it was evident that no time should be lost. Therefore, a suprapubic cystostomy was quickly done under local anesthesia. The bladder was found greatly dilated and in an advanced condition of sclerosis. The urine was very cloudy and strong in odor. The finger introduced into the bladder could feel the median lobe as large as a walnut and completely obstructing the outlet of the bladder.

The operative result was excellent, so much so that the patient's general condition improved for a time, death taking place some four months later.

Case IV. F. T., aged seventy-four years, had complained for six months of frequent desire to void urine. About six weeks ago there was an attack of hematuria for the first time, and for ten days the patient voided pure blood almost constantly, to such an extent that anemia was pronounced and the strength greatly reduced. There was severe infection, the tongue dry, temperature 101.7° F.

The passage of the catheter was essayed for three days without any marked result, at least as far as the hematuria was concerned, although some amelioration in the symptoms of infection was thought to be noticed. Therefore, suprapubic cystostomy was done.

The bladder contained at least two litres of sanguineous urine, mixed with much mucus. No clot, no calculi, no vesical ulceration or tumor. Felt from within the bladder, the prostate formed a hard plane under the urinary reservoir, although apparently quite circumscribed in extent.

Four weeks later the patient was discharged in very good condition considering the circumstances. The vesical hemorrhage had completely stopped, the temperature was normal, but. although the urine had cleared up, the general condition was poor on account of the progress made by the malignant cachexia. He lived in comparative comfort up to his death ten weeks later.

Suprapubic cystostomy is certainly the operation of choice when it is possible to do it, because it allows one to remove the carcinomatous prostate later on if conditions are suitable. At the present time the occurrence of prostatic cancer is well recognized and it should always be looked for in every case of supposed simple prostatic hypertrophy. When in the early stage, before serious symptoms have arisen, a radical operation can be done successfully, but in advanced cases palliative measures alone are indicated. For this reason total prostatectomy should follow suprapubic cystostomy as soon as the conditions admit, the suprapubic operation having been indicated by certain urgent symptoms resulting from the prostatic process.

But there is always a notable proportion of inoperable cases, in my experience about one out of three, where the growth has extended beyond its capsule and in which prostatectomy would be useless, if not disastrous. Here we are dealing with what Guyon called the *diffused type,* and besides not being able to remove the neoplasm completely there is always danger of fatal hemorrhage or a rapid extension taking place immediately after the attempt at removal. These instances are certainly of the *noli me tangere* class, and to them palliative operations alone belong.

Perineal section is now generally considered a bad operation because the route followed is in itself a poor one. It exposes the patient to serious operative hemorrhage, because one is obliged to go directly through the neoplasm in order to reach the bladder. It favors the development of inflammation of the growth and is the source of repeated irritation by the constant passage of the urine over it, from which arise increased activity, proliferation, and generalization. Then, too, micturition is no longer voluntary, continence returns with reappearance of all the serious symptoms. The only advantages it possesses is to combat the retention at the time and to disinfect the bladder, both of which indications are fulfilled by the suprapubic operation.

Catheterization is often impossible, difficult, or very painful and usually does not control the symptoms for which it is done.

CASE V. G. H., aged sixty-nine years, was seen for the first time with a retention of urine which had lasted for two weeks, micturition taking place by overflow. Rectal examination revealed a large nodulated prostatic tumor adherent to the rectum and pelvic walls. On either side of the prostate there were hard infiltrations, immobilizing the prostate and rectum. Enlarged and hard inguinal lymphnodes could be detected.

The general condition was fairly good and the passage of the catheter, which was not difficult, withdrew a large amount of cloudy urine. The instrument caused considerable pain and irritated the urethra.

Suprapubic cystostomy was done, and when the bladder was entered an enormous prostate, surrounding the neck of the organ was found; no ulceration of the bladder. The operative results were good. The patient was seen for the last time two months after the operation, voiding the urine perfectly by the hypogastric meatus. The urine was quite clear. The patient expressed himself as perfectly satisfied with his condition. He died ten months after the operation.

CASE VI. G. G., an old sea captain, aged eighty-one years, had been troubled for a number of years with symptoms of prostatic hypertrophy. He was seen in his first attack of complete acute retention. The passage of the catheter was impossible.

Rectal examination revealed an enormous prostate with a very irregular surface, and enlarged hard lymphnodes could be distinctly felt in both iliac fossæ.

Suprapubic cystostomy was done with great relief to the patient, the progressive cachexia resulting in a death four months later, but during this time the patient was very comfortable and free from any suffering.

The impossibility of introducing the catheter or when it is difficult and painful, has been an indication for cystostomy and many are the cases recorded, for example, those of Southam, Guillemot, Legueu, Thompson, Desnos, Delore, and others too numerous to mention. What Legueu said years ago is quite true to-day, namely, that "with repeated catheterization the result is pain and hemorrhage; with the permanent catheter, also stubborn pain without any chance of an amelioration in the patient's condition."

In inoperable prostatic cancer suprapubic cystostomy is the only resource and should be done without delay if the operation is to be of any real and lasting benefit. This is also the opinion of Wenzel, Legueu, and Poncet, and in my opinion the bladder should be opened as soon as there is any disturbance in the flow of urine, because an early suprapubic cystostomy not only procures permanent relief, but in many cases the progress of the malignant disease is lessened by the favorable general effect of the operation. The same applies to the operation of colostomy in rectal carcinoma.

In some cases the life of the patient is undoubtedly prolonged. For example, Desnos reports a case where the patient survived the operation three years and a half, another two years and a half, while a third lived for over four years. Guillemot's patient lived fourteen months, Delore's patient lived in peace for eleven months, while two of my own (Cases I and V) lived quite happily for eighteen and ten months respectively.

I would also include in the subject of this paper cases of malignant disease of the rectum and other types of intrapelvic carcinoma, no matter what may be its starting point, when the neoplasm has extended to, and involved either the prostate or bladder, when it sets up functional urinary disturbances or painful micturition. Such patients are in quite a similar condition to those of the anorectal type of prostatic cancer, with severe rectal pain and tenesmus accompanied by urinary disturbances.

Independently of the operations which are to be directed against the rectal disturbances, such as colostomy, the surgeon may be led to perform a suprapubic cystostomy more completely to relieve the patient of his sufferings.

In all cases of inoperable prostatic malignant disease, a *temporary* cystostomy will rarely be sufficient. The prostatic impediment, far from diminishing, rapidly increases, unceasingly augmenting the impermeability of the urethra, which is the primary cause of all the serious complications, so that, for this reason, the artificial suprapubic meatus must be so constructed as to remain permanent during the remainder of the patient's life.

871 BEACON STREET.

AN IMPROVED X RAY GENERATOR.

Discovery of a more powerful x ray generator producing an unfluctuating voltage and a quality of x ray which is safer and more effective.

By SINCLAIR TOUSEY, A. M., M. D.,
New York.
Consulting Surgeon, St. Bartholomew's Clinic.

The author's part in this important discovery consisted really in directing the attention of the inventor, Mr. Cabot, to the need for such an unfluctuating direct current of a potential which could be regulated from 10.000 volts to 100,000 volts or more. The story is a romantic one. Mr. Sewall Cabot and his partner, Mr. Joseph T. Shaw, are electrical engineers and inventors and manufacturers of high voltage electrical appliances, especially those used in wireless telegraphy. They were already seeking a means of producing direct unfluctuating high tension currents for commercial uses, especially in electrometallurgy. About three years ago they were asked by Doctor Williams, of Boston, to look into the subject of the x ray, and in pursuance of this they purchased the author's book (*Medical Electricity and Röntgen Rays*) and took it with them on their summer hunting and fishing trip in Nova Scotia. They lugged it over carries and read it by an acetylene lamp in the evening and eventually were rewarded by discovering three or four pages which suggested the present discovery. I said in my book that the induction coil, the static machine, and the step-up transformer with a high tension rectifier were all imperfect x ray generators, no matter how large and powerful they might be made. They sent through the x ray tube a series of impulses, the voltage of each of which varied a great deal; the cathode particles therefore traveled at many different velocities and this was the principal cause of the different wave lengths produced by an x ray tube excited by any of these generators. This mixed quality of the x radiation appeared dangerous and undesirable to the author. An x ray tube used for making a radiograph was giving out some rays which were of the right quality to penetrate the tissues to an extent dependent upon the density and produce a chemical effect upon a photographic plate which furnished a chart of the relative density of the portions transversed by the x rays. But, in addition to these proper and useful rays, there were at the same time many rays of such rapid vibration that they produced little contrast upon the photographic plate, passing through denser and less dense tissues about equally. These rays still produced an effect upon the photographic plate, but it was a blurring and undesirable effect. And they produced an effect upon the tissues which was undesirable because unnecessary. Generally speaking, every precaution should be taken to reduce the effect upon the tissues to a minimum in x ray examinations.

A third class of x rays produced by the previous generators were the rays of so little penetration that they were absorbed by the superficial tissues and could take little part in the production of a picture. They could only add to the effect upon the tissues and were more or less suppressed by the interposition of a screen of sole leather or aluminum.

A fourth class of x rays was of extreme penetration and passed through the photographic plate without much chemical effect, but it did not follow that they were without effect upon the tissues.

The same disadvanages were present when it came to x ray treatment with a source of x rays of mixed wave length.

The advantages to be gained by the use of a generator of unfluctuating voltage and by x rays of approximately homogeneous wave length, lie in the production of a quality of radiation suited to the purpose in hand practically free from other wave lengths, which can take no useful part, but which may be a great detriment.

Better and safer examinations and more effective treatment of deep seated or of surface lesions are the result.

The apparatus installed for the author is capable of delivering sixteen kilowatts or any smaller amount of electrical energy at the terminals of the x ray tube, and the voltage is subject to exact regulation and is constant.[1] Radiographs may be made in a small fraction of a second or the apparatus may be adjusted by a fluoroscopic attachment in such a way that a radiation, mild but still of the necessary penetration for fluoroscopic examinations or for treatment, may be applied for a long time.

850 Seventh Avenue.

EXTRACT OF THE SUPRARENAL GLANDS

Its Therapeutical Uses.

By John Aikman, M. D.,
Rochester, N. Y.

Extracts of the suprarenal glands have such a wide use to-day, that it is surprising to note that they were put on the market but a little over ten years ago.

HISTORY.

The first investigations of value in regard to the ductless gland therapy were reported by Brown-Séquard, and, in 1856, he discovered that removal of the suprarenal capsules would cause death in either man or the lower animals. In 1895, Oliver and Schaefer found that these glands produced a peculiar substance which had a marked action on the circulation. After this, various reports were made on the use of aqueous extracts of the glands, showing that they had a valuable therapeutic action. The greatest advance occurred in 1897, when Abel, of Johns Hopkins University, announced that he had discovered "the blood raising constituent of the suprarenal gland." In 1898 and 1899, Abel published reports of further experiments and gave more light to the chemistry of the substance he had discovered, calling it epinephrine. Reports were also made by V. Furth, in 1899, and he applied the name of suprarenine.

Two years later, Takamine announced the discovery of the active principle of the gland, asserting that it was not the same as epinephrine and suprarenine.

Whether or not the substances discovered by the different workers are the same, it is not the object of this paper to decide. It is interesting to note, however, that Cushny gives the credit to Abel and speaks of epinephrine and Takamine's product as the same.

The extract is chiefly used to-day in a solution of one part crystalline extract to 1,000 parts of normal salt solution. The same drug can be made synthetically. Thus prepared it has but one half the strength of the natural product, according to Coleman.

The solution of the extract, as it is sold to-day, can be boiled without destroying its activity. It is also put up in other forms; ointments, tablets, triturates, inhalants, suppositories, etc. The dry powdered gland should be mentioned, as it is of great value in certain conditions.

The suprarenal capsules belong to the class of ductless glands, and are situated in the back part of the abdomen immediately above the upper end of each kidney. Our knowledge of these capsules is chiefly confined to certain activities of the medullary portion; of the cortex we know practically nothing.

PHYSIOLOGY.

The glands produce an internal secretion of which the function seems to be to control blood pressure and maintain the tone of the bloodvessels, because, when the glands are removed symptoms of loss of vascular tone and a great fall in the blood pressure follow, as in Addison's disease. The most active principle of the internal secretion probably is epinephrine, and it is found in the blood flowing from the gland. Still it does not represent the entire function of the organ because it fails to cure many cases of Addison's disease and many times makes the condition worse.

Since Addison's disease is due to a partial or complete destruction of the suprarenal capsules, the extract, if it represented the whole function of the gland, should give as satisfactory results as thyroid extract does in myxedema. Up to the present time no other principle has been discovered.

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[1] This is the third apparatus of this type to be made. Others are in use at the Massachusetts General Hospital and at Dr. Walter Dodd's office in Boston. Other manufacturers are constructing apparatus upon the same principle but I have not yet had an opportunity to test them.

PHYSIOLOGICAL ACTION.

Applied locally, suprarenal extract produces no action on the intact skin, but causes a constriction of the arterioles and blanching if applied to the mucous membranes. In the mouth there is local action on the membranes, and some assert there is absorption from the mouth and tongue, especially when the dried gland is masticated and held in the mouth for a short time. How much action it would have if given by the stomach is a question. There would be a local action, but probably no systemic effect, because Bates reports a case where "two pounds of the fresh suprarenal capsule in the form of an aqueous extract" were swallowed without any apparent ill effects. Hare says that there is probably some action in the stomach, but there is little physiological proof. It is also stated that twenty times the toxic dose by intramuscular injection is inactive by the mouth. This would substantiate the assertion that the extract is destroyed by the gastric juices. Musser and Kelly hold that given by the rectum, it will be absorbed.

On subcutaneous injection the arterioles are at once constricted and absorption of the drug takes place very slowly. When given into the muscle, which, by the way, seems to be the best method of administration, the systemic effect occurs much more rapidly. It is also given by intravenous infusion in the strength of one to 50,000, or one to 100,000, especially in cases of surgical shock, as advocated by Crile.

Given internally, the extract has no action on the central nervous system except in poisonous doses. In the eye, applied locally, it causes dilatation of the pupil, decreased intraocular pressure, and constriction of the bloodvessels. Its action on the general circulation is most interesting. Given by intramuscular injection or intravenous infusion, epinephrine causes a distinct rise in blood pressure and a slowing of the pulse. The action passes in a few minutes, although it can be demonstrated in the circulating blood for a much longer time. No satisfactory explanation for this latter fact has been given. The increase in blood pressure is due to a direct stimulation of the endings of the vasomotor nerves in the muscles of the arterioles, also to a direct action on the heart similar to that of digitalis, but to a lesser degree. There is a stimulation of the accelerative fibres of the heart, causing slowing in rate, increased efficiency, and more complete evacuation of the heart chambers. Then follows an increase in pulse rate. The vasoconstriction action is noticed chiefly in the splanchnic area, which receives its sympathetic nerve supply from the spinal cord at the lumbar and dorsal regions. The degree of constriction varies with the amount of control normally exercised by the constrictor nerves in any particular region. So vessels in the uterus are more constricted than those of the bladder and of striated muscle. It is most important to note that the arteries of the brain, lungs, and heart are not affected by suprarenal extract because they are not under control of the vasomotor system. It is possible that the pressure here may be effected indirectly by the action on other vessels of the body. The vasodilator fibres of the arteries are stimulated, but to a lesser degree.

TOXIC EFFECTS.

Although epinephrine is a very valuable preparation and has a wide use, it is not without toxic effects. These we shall outline briefly. Some individuals show a marked idiosyncrasy to even small doses. Wiggens advises against placing reliance on definite doses because of the varying susceptibility. Thirty minims have caused shock; when we speak of minims we refer to the one to 1,000 solution. Shock has followed the injection of ten minims into the urethra. The writer has seen one such case and had his attention drawn to a case where urethral injection for hemorrhage was followed by sudden death. The amount used in this last case is not known. Thirty minims by intramuscular administration have been followed by failure of respiration and cyanosis, making artificial respiration necessary. Atheroma of the aorta has occurred in rabbits after repeated injections over a long period of time, but this has not been shown to occur in man.

Locally, the extract may promote infection, especially in the nose. The solution is an excellent culture medium for bacteria, and quite severe infections have followed the use of contaminated preparations. It may retard healing or cause sloughing and gangrene, especially in elderly or poorly nourished individuals. This is more apt to occur when the extract is used with cocaine. The unpleasant after effects, especially in nose operations, is secondary hemorrhage. Persistent turgescence of the mucous membranes follows often when epinephrine is used in hay fever. Pigmentation of the skin may occur from continued medication.

THERAPEUTIC ACTION.

The most important local use is for control of hemorrhage in minor injuries and operations. This action is due, obviously, to its constricting action on the arterioles. It may be applied on a pledget of gauze or cotton, or, if the hemorrhage is from the nose, the nasal cavity may be packed with gauze soaked in the extract. It must be remembered that a dilatation of the arterioles may occur later, after the effect has passed off. Many times, the extract in solution will seem to have no effect and then the dry powdered suprarenal gland applied locally is of value. This local action may be obtained in gastric hemorrhage, especially if due to gastric ulcer. Forchheimer advises a gastric lavage with 1.5 c. c. in 250 to 500 c. c. of water. It is of doubtful value in intestinal hemorrhage, but in the lower bowel and rectum good results may be obtained by rectal infusions. Suppositories are of value in hemorrhoidal hemorrhage. The extract has been used with success in uterine hemorrhage, and post partum hemorrhages have yielded to this treatment. In hemorrhages from the urinary bladder and urethra, local applications of the drug give good results. For uterine hemorrhage the uterus may be packed with gauze soaked in from one to 2,000 to one to 5,000 solution.

It is well to emphasize here the fact "that in order to have the hemostatic action, the extract must be applied locally." Hypodermic injections will, by increasing the blood pressure, increase the hemorrhage. By local applications one secures the constriction without an increase in general blood pressure. While we are considering hemorrhage it might be well to speak of two other types of cases in which suprarenal extract is contraindicated, but for which conditions it is frequently used, namely, pulmonary hemorrhage and cerebral hemorrhage. We have learned that it does not cause a constriction of the pulmonary and cerebral vessels, owing to the fact that these vessels have no vasomotor control. The extract will not act as a hemostatic unless applied locally, and in these two cases its use would be attended with danger because of an increase in the general blood pressure, which would augment rather than retard the escape of blood in these regions. It has been advised by many writers, especially if used in frequently repeated doses; but in view of the physiological activities of the drug, it is difficult to defend such therapy.

The use of epinephrine combined with cocaine for local anesthesia is well known and is based on the facts that it blanches the operative field and prolongs the action of the anesthetic. The dangers of secondary hemorrhage, gangrene, and sloughing should be remembered. Another local use is for the reduction of congestion in mucous membranes of the nose and throat, both to reduce inflammation and to aid in examinations. It is also used to reduce swellings and edema of mucous membranes. It is of value in many conditions of the eye, ear, nose, and throat; but those will not be discussed, as they are out of our field.

Internally, probably the greatest use of suprarenal extract is in bronchial asthma. In order to get the beneficial action we must be sure that the asthma is not of the renal or the cardiac types, because in these conditions it is of doubtful value. As one writer has said, the effects "are truly marvelous in relaxing the spasm of the asthma instantly." The good results are obtained only by hypodermic injections, preferably into the muscle, the dose being from fifteen to twenty minims. We frequently hear complaints that it has failed to act. In such cases, inquiry as to the method of administration and type of asthma will almost invariably explain the failure. An interesting explanation for this action in spasmodic asthma is given by Melland in the *Lancet* for May 21, 1910. Briefly outlined, it is this. The vessels of the mucous membranes are supplied by the bronchial arteries of the ordinary systematic type and under vasomotor control. The circular muscles of the bronchi have the vagus as their motor nerve. The writer holds that all vagus supplied muscles are relaxed by suprarenal extract. Since bronchial asthma is generally acknowledged to be caused by a spasm of the bronchial muscles, also by swelling and congestion of the bronchial mucous membranes, the action of the drug is easily explained, provided Melland's statements are correct. Whatever the explanation, it is a fact that the extract gives instant and complete relief in most cases of true bronchial asthma, such as is seen under no other medication. It is not a cure, and the attacks may recur, but for temporary relief it is most valuable. In some cases it seems to remove the cause, and, in one case recalled by the writer, no attacks have occurred for two years, while previous to that time severe attacks occurred every few weeks. It gives relief for one half to three quarters of an hour and sometimes for three to four hours.

While considering asthmatic conditions, it is well to mention hay fever or autumnal catarrh, which is so frequently associated with the former condition. For this, Hare advises the use of suprarenal extract in the form of a spray, locally applied, with normal salt solution, stating that it is better when used together with cocaine. Others prefer to omit cocaine entirely and use the extract alone, because of the likelihood of producing a cocaine habit in long continued cases. The extract is stated to relieve asthma also when sprayed into the nose and throat in the strength of one to 20,000 or one to 10,000 solution.

The use of suprarenal extract in cardiac conditions is a much mooted question and requires the best judgment. One should be guided by the blood pressure, and even then it is difficult to select cases in which it will be of value.

In pulmonary edema due to loss of vascular tone it shows, sometimes, wonderful results; but if the chief cause of the edema is cardiac failure, other stimulants are of greater value. If cases can be selected, very good results are frequently obtained. In certain types of Graves's disease, epinephrine may be used as a cardiac tonic.

In cases of shock it is recognized as being the only drug of real value, and according to Crile the best results are obtained by giving it in an intravenous infusion; the strength of the solutions being from one to 50,000 to one to 100,000. This infusion may be continued until good results are obtained, but during the operation careful observations should be made of the pulse and blood pressure. The administration is justified if the symptoms point to the heart not having enough blood to work against.

When suprarenal extract was first discovered it was hoped that it would give as good results in Addison's disease as thyroid extract does in myxedema, but such has not been the case. A small percentage of cures has been reported. Kennicutt collected forty-six cases; of these, six were cured and twenty-two improved. As good an observer as Forchheimer found it of no value in this condition. It should be tried, however, and must be given in small doses by hypodermic injection, frequently repeated. Some of the good results reported were obtained when the drug was administered by the mouth in the form of the dry extract.

The above mentioned uses are the most important; but in looking over the literature one finds that the agent has been used in nearly every diseased condition. Many of these observations have been proved erroneous; but there are still several conditions to be mentioned in which it gives favorable results.

In children it gives relief in the paroxysms of whooping cough, and it has been used with satisfactory results in spasmodic croup.

In several instances the extract has been used in snake bites, and it can be seen how it would be of value, both by delaying the absorption of the venom and by acting as a cardiac and vascular tonic. Some have found it of value in Graves's disease, hemophilia, and purpura.

Briefly to summarize a few important points:

1. Constitutional effects are obtained only by hypodermic injections or intravenous infusions.
2. The hemostatic effect is obtained only by local applications of the drug.
3. Given by the mouth, suprarenal extract has little or no action aside from the local effects.
4. It should not be used in the treatment of pulmonary or cerebral hemorrhages.
5. Failures in the treatment of bronchial asthma are generally due to faulty diagnosis or improper administration of the drug.

880 Monroe Avenue.

CHRONIC SEMINAL VESICULITIS.

A Clinical Résumé, with Special Reference to the Urethroscopic Findings in the Posterior Urethra.

(From the Genitourinary Clinics of the Mount Sinai and Post-Graduate Hospitals.)

By A. Hyman, M. D.,
New York,
and A. S. Sanders, M. D.,
New York.

A review of the literature of the past decade shows an extreme paucity of information concerning the urethroscopic findings in the posterior urethra in chronic seminal vesiculitis. In part this has been due to unsatisfactory instruments for examining the posterior urethra; since Goldschmidt (1) first introduced irrigation urethroscopy, in 1907, our knowledge of the pathology of this region has greatly increased.

Although seminal vesiculitis was first described by Morgagni, in 1745, the frequency of this condition is even at the present day greatly underestimated, and statistics as to its occurrence vary considerably. Chute (2), in 1901, reviewing a series of 540 cases of gonorrhea, found the vesicles involved in sixty cases; Mayer-Worms (3), in a later publication, demonstrated vesiculitis in sixty per cent. of the cases of posterior urethritis. Petersen (4), in a series of 200 cases of gonorrhea, found vesiculitis present in four per cent.; while Feleki (5), in the compilation of a year's statistics, encountered this complication in 2.3 per cent. The statistics of Lewin and Baum (6) are very interesting and highly instructive. The authors examined 1,000 cases of gonorrhea, and found the posterior urethra involved 629 times—sixty-three per cent. The frequency of spermatocystitis in this series can be seen from the following table:

Uncomplicated prostatitis.	Uncomplicated certain.	Spermatocystitis probable.	Prostatitis and spermatocystitis.	Prostate and vesicles negative.	Prostate and vesicles normal.
385	31	7	180	10	16
61%	5%	1%	29%	2%	2%
		35%			

Of these 218 cases of vesiculitis, sixty-four per cent. were bilateral, and thirty-six per cent. unilateral. A summary of the literature shows that the seminal vesicles are involved in from forty per cent. to sixty per cent. of the cases of chronic posterior gonorrhea; when complicated by epididymitis the figures are even higher. The frequency of nongonorrheal vesiculitis is hard to determine, as the reports on this subject are very meagre.

ETIOLOGY.

Two types of spermatocystitis are generally described; the bacterial and the catarrhal. The bacterial is by far the more frequent and is most often gonococcal in origin. Among other organisms found in vesiculitis may be mentioned the pneumococcus, streptococcus, staphylococcus, *Bacillus coli communis*, and tubercle bacillus.

Lloyd (7) and Fuller (8) were among the first to call attention to the catarrhal type of vesiculitis. According to Wiltse, catarrhal vesiculitis is seen without any ascertainable etiological factor. The author found this condition in healthy men who had led a regular, continent life, and who were free from venereal infection. These patients, however, were under a rather high nervous tension. Sexual excess, masturbation, and coitus interruptus are mentioned as etiological factors. The effects of alcohol and tobacco are as yet undetermined. In this connection it may be interesting to note that bicycle riding is also mentioned by some authors as a causative agent of the catarrhal type of vesiculitis.

SYMPTOMATOLOGY.

The symptomatology of seminal vesiculitis is very complex; many of the symptoms simulate those of other conditions, especially posterior urethritis, cystitis, colliculitis, and prostatitis; and unless a careful rectal examination is made this condition will often be overlooked. The symptoms as described by Wiltse (9) are grouped under three heads: First, those referable to inflammation in general; second, those referable to the sexual sphere; and, third, those affecting the urinary function.

Under the first head we find that pain is a rather constant symptom, and varies considerably in severity. There may be but a sense of discomfort or uneasiness or a pressure sensation in the perineum. Often the pain radiates from the suprapubic region, down the spermatic cords, into the testes and glans penis. Pain in the back is a frequent manifestation. A real vesicular colic, beginning in the deep urethra and radiating down toward the anus and glans penis, has also been described. The attacks of colic generally take place at the end of coitus, and are said to be due to mechanical obstruction of the ejaculatory ducts by fibrinous sagolike masses. The close association between general rheumatic pains and seminal vesiculitis has been fully described by Fuller (10). Under sexual symptoms may be noted erections and erotism in the earlier stages, with frequent pollutions, which are apt to be blood stained. As the condition progresses the sexual powers decline, ejaculation becomes premature, and erections become weak and finally fail. Even where the sexual power remains strong, impotence generandi may be present as a result of obliteration of the ejaculatory ducts (Barnett) (11). Noble (12) and Picker (13) were the first to call attention to the fact that recurrent attacks of epididymitis are generally due to disease of the ampulla of the vas deferens. Closely associated with these sexual disorders are numerous mental and nervous symptoms which vary considerably in degree. Among the urinary symptoms may be mentioned a burning sensation at the vesical neck, increased frequency, and attacks of vesical tenesmus. Chronic urethral discharge is a rather frequent symptom. Voelcker (14) gives as characteristic of vesiculitis the following symptom complex: Chronic or recurrent urethral discharge, bladder irritability, and rheumatic manifestations.

DIAGNOSIS.

The diagnosis of spermatocystitis is in great measure dependent upon rectal palpation supplemented by microscopical examination of the contents of the vesicles obtained by massage. In this respect it is important to note that the normal vesicles are palpable in about seventy per cent. of all cases. In palpating the vesicles, one should determine chiefly their size and consistence. As regard size and consistence the cases can generally be classified under one of two types, spermatocystitis catarrhalis and spermatocystitis fibrosa. In the former the vesicles are moderately or greatly distended; on this fact alone, however, the diagnosis of vesiculitis cannot be made, for distention, even though of considerable degree, is by no means of pathological significance, for the capacity of the vesicles varies considerably within normal limits. According to Picker this variation is from 1.5 to two c. c. In the fibrous type the vesicles have a hard feeling, and are often irregular in outline; again, they may be so atrophied that they fuse into the circumvesical tissues and cannot be palpated. At times they can be made out as two hard cord-like masses. Tenderness, while a valuable symptom in the acute cases, cannot be relied upon in the chronic cases as an indication of the changes the vesicles have undergone, for the reason that the normal sensitiveness of this region varies considerably in different individuals. It is of interest to note that the urethroscopic appearance of the colliculus often coincides with the results of rectal palpation, i. e., in the fibrous vesicles the colliculus is frequently found atrophic, hard, and grayish white in color, whereas in the catarrhal type a hypertrophied or congested caput is generally seen. A positive diagnosis of spermatocystitis really depends upon the results of microscopical examinations of the secretion from the vesicles. In order to obtain the contents of the vesicles uncontaminated by the urethral and prostatic secretion, we have found the method of Cabot (15) practical, and at the same time accurate. The technic is as follows: The urethra and bladder are first flushed with a mild antiseptic solution, so as to remove any contamination from these sources. The bladder is then distended with the solution and the prostate is massaged; the solution voided contains the prostatic secretion. The bladder is again filled, this time preferably with saline solution, and the vesicles are massaged. The discharge which appears at the meatus and that which flows back into the bladder should be collected for examination. Lewin and Bohem, from their investigations, give the following results of the microscopical examinations of the vesical contents in spermatocystitis: Leucocytes were found in all cases, gonococci in fourteen per cent., live spermatozoa in twenty per cent., and dead spermatozoa in eleven per cent.

In our series of 100 cases of chronic seminal vesiculitis, we found gonorrhea to be the most frequent etiological factor; a few cases, however, in which gonorrheal infection could be excluded were encountered. Gonococci were demonstrated in but a small percentage of the cases. Urethroscopically the nonspecific cases cannot be differentiated from the specific.

PATHOLOGICAL FINDINGS VIEWED BY THE URETHROSCOPE.[1]

Before beginning a study of the pathological urethra it is important to bear in mind the various landmarks of the normal urethra, for an excellent description of which we refer to the papers of Goldschmidt (16), Wossidlo (17), Lohenstein (18), and Buerger (19). In making a routine examination of the posterior urethra it is expedient to follow some systematic scheme of examination; by so doing the possibility of overlooking important lesions is considerably minimized. Our method of procedure is as follows: The sphincter, with its superior, inferior, and lateral margins, is first examined; the instrument is then slightly withdrawn and the supramontane portion (Buerger) inspected, note being made of the condition of the posterior frenula; the colliculus, the most important landmark in the posterior urethra, is then brought into view, and the sinus prostaticus, ejaculatory ducts, lateral sulci, prostatic ducts, and membranous urethra are carefully inspected.

Vesical sphincter. Whereas in prostatitis the sphincter generally showed definite changes in form and color, it was especially noted that in vesiculitis the large majority of the cases showed nothing pathological in the sphincteric region. In a few of the cases characterized by marked distention of the vesicles, the normal configuration of the sphincteric margin was destroyed, and in place of a smooth, slight concavity an irregular border presented itself. In three cases following the operation of seminal vesiculotomy by Doctor Fuller this irregularity of the sphincter was found to be rather marked; involving both the lateral and upper margins. In two cases small papillomata were found at the lateral sphincteric margin, while in one patient two small cysts were seen.

Posterior frenula. We observed a rather marked hypertrophy of the posterior frenula in a number of instances. The mucous membrane covering these frenula, and that of the rest of the posterior urethra in most of the cases showed rather marked changes. These were in no wise, however, characteristic of seminal vesiculitis, because similar lesions were often seen in chronic posterior urethritis not complicated by vesiculitis.

The colliculus. This structure seems to bear the brunt of most of the changes in the posterior urethra in seminal vesiculitis, and shows pathological variations in the large majority of cases. It is necessary to bear in mind the fact that the size and shape of the normal colliculus varies considerably, and one must be guarded in pronouncing a colliculus to be pathological from these data alone. In general, two types can be differentiated, although any number of variations are found between the two. In the old sclerotic vesicles the colliculus at times was found to be normal in form and color; more often, however, the surface was very irregular and covered with knoblike excrescences, giving it a bosselated appearance. At times the colliculus seemed much smaller than the normal and of very firm consistence. The color of this type of colliculus is very characteristic, for instead of a pale yellow red the surface assumes a pearly white appearance. Even under the irritation of the instrument itself and the irrigation fluid this color varies but slightly, and bleeding is but rarely seen. This type of caput often showed an enlarged utricle with irregular borders. The small atrophic colliculus, irregular and gray in color, was generally found associated with a characteristic symptom complex; pain at the end of urination, cold sensations in the glans, pain in the back, diminished potency, and in general the symptoms of sexual neurasthenia. Dreyer (20), in a recent publication on urethroscopy, called particular attention to this fact. In the other type the colliculus was found to be considerably enlarged, often to twice and three times the normal size, with a smooth surface, very much congested, and covered with small red and white spots, giving it the appearance of a raspberry. Such a colliculus stands out prominently from the surrounding paler mucosa and bleeds readily under the slightest manipulation. In one case there was seen dipping down into the sinus pocularis a large cyst. On incision this cyst disappeared with its accompanying symptoms.

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[1] In our examinations we have employed the irrigating urethroscopes of Goldschmidt, Wossidlo, and Buerger.

Ejaculatory ducts. The appearance of the openings of these ducts varied considerably. Where the caput was very much enlarged and congested, the ducts were at times not visible; more often, however, a small area immediately surrounding the openings of the ducts was considerably congested, thus affording a good guide to their location. In the small sclerotic type of caput the ducts were practically always visible, at times with large and gaping orifices, owing no doubt to infiltration of the walls which rendered them rigid. Where but one vesicle was affected the duct on the corresponding side almost always showed pathological changes, whereas the other duct was either normal or but slightly changed. Very infrequently pus could be seen exuding from the diseased duct; on massaging the vesicle this could be more readily demonstrated. Regarding the appearance of the posterior urethra after appropriate treatment had been instituted for some time, it was noticed that in the picture generally found associated with the fibrous vesicles but little change urethroscopically took place; the atrophic grayish white caput remained practically unchanged. Marked changes following the local applications of silver nitrate and iodine could be demonstrated in the other type; the colliculus became smaller, the congestion less marked, so that the color of the mucous membrane approached almost the normal. It is of interest to note that there is but slight apparent relationship between the symptomatology and the pathological findings; where marked lesions were present the complaints were often but mild in character and vice versa.

CONCLUSIONS.

As a result of a large number of urethroscopic examinations we were led to the conclusion that from the urethroscopic examinations alone it is not possible in the majority of cases to diagnosticate accurately the condition of the seminal vesicles. The appearance of the openings of the prostatic and ejaculatory ducts gives us some idea, however, as to the organ involved. In prostatitis the prostatic ducts generally show evidences of disease, while in vesiculitis the lesions are found in the region of the ejaculatory ducts. As pathognomonic of vesiculitis may be mentioned the oozing of pus from one or both ejaculatory ducts; this latter condition is rarely seen. With the possible exception of this characteristic picture the lesions presented by the colliculus cannot be taken as a criterion of the condition of the annexa, for similar lesions are often seen in uncomplicated posterior chronic gonorrhea, and even in cases of irritative urethritis due to masturbation or excessive coitus.

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40 East Forty-first Street.
212 East Fifteenth Street.

NEWER TEACHINGS OF DISEASES OF GASTROINTESTINAL CANAL.

By Mark I. Knapp, M. D., LL.M.,
New York,

VIII.

Examination of Chyme.

For the quantitative analysis,[1] the chyme should first be filtered. In the execution of the analysis we need a decinormal solution of sodium hydrate, a buret, usually of 100 c. c. capacity, divided into one tenth of a c. c., filtered chyme, a pipette of five or ten c. c. capacity, and the indicator. What we determine is the number of c. c. of the decinormal sodium hydrate solution, which is required to neutralize 100 c. c. of chyme. And, accordingly, we speak of a chyme of an acidity of forty, if 100 c. c. of that chyme require for its complete neutralization forty c. c. of the decinormal solution sodium hydrate. So we speak of an acidity of sixty, if 100 c. c. of such chyme requires the addition for complete neutralization sixty c. c. of the caustic soda. And an acidity of ten means that 100 c. c. of the chyme require ten c. c. of the soda solution for the complete neutralization of the chyme. The pipettes, which I use for the aspiration of the filtered chyme, have a bulb blown out near the mouth end. The object of this is to prevent the chyme getting into the mouth of the examiner, should the aspiration be a little too forceful. The normal acidity of the chyme lies between forty and sixty, that is 100 c. c. of a normal chyme requires of from forty to sixty c. c. of the decinormal sodium hydrate to become neutral. The normal quantity of free hydrochloric acid has been set at between twenty and forty. This is rather questionable in the light of my discovery of the synchronous presence of free hydrochloric acid with free organic acids. My researches on organic acids were made after the normal acidities had been established, at a time when the presence of organic acids in the chyme together with free hydrochloric acid had been either denied or only the copresence of an inconsequential quantity thereof had been conceded. We do not use 100 c. c. of the filtered chyme for analysis, for the reason that we cannot always get such a quantity (which would be pathological) and second, it would require too much of the caustic soda for neutralization. We use only five or ten c. c. of the filtered chyme. Therefore, as we use only a tenth part, if ten c. c. are used, and only a twentieth part of 100 c. c. of the chyme, if five c. c. are used, we multiply respectively by ten or twenty the number of c. c. of the sodium hydrate, which we have consumed in the neutralization of the ten or the five c. c. of the chyme. Assuming we have used ten c. c. of chyme and it required 6.7 c. c. of the decinormal sodium hydrate for the complete neutralization of this chyme, we calculate the acidity of this chyme by multiplying 6.7 by ten, which would give the result as sixty-seven, and we say then that the acidity of the chyme in question is sixty-seven. Assuming, however, we have used only five c. c. of the chyme for the quantitative determination of the acids, and that we have used 2.9 of the caustic soda, we then multiply 2.9 by twenty and the result in this instance will be that the chyme has an acidity of fifty-eight.

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[1] See Journal, March 1, 1913, p. 437.

Having measured off with the pipette of ten c. c. capacity ten c. c. of the chyme we first determine the presence and the quantity of free hydrochloric acid. For this purpose two drops of the tropeolin oo solution is added to the chyme, when, in the presence of free hydrochloric acid the characteristic color reaction takes place. The beaker, which contains the chyme, is held with the left hand under the buret, and with the right hand the flow of the decinormal sodium hydrate solution from the buret is regulated. This procedure is called titration. The titration is continued until the end reaction of the tropeolin is reached, that is until the chyme has turned a clear, transparent amber color. This is the first titration. We now add into the beaker two drops of Töpfer's solution. In the presence of organic acids the amber colored chyme turns a carmin red, its intensity varying with the quantity of the organic acids present in the chyme. The titration with the sodium hydrate is now resumed and continued until the end reaction of the dimethyl (Töpfer's solution) is reached, which is, that the chyme turns a lemon yellow color. This is the second titration. We now add two drops of phenolphthalein into the same chyme and again resume the titration, until the chyme turns the characteristic color, a beautiful carmin red. During all the titrations, the beaker must be constantly shaken. The first titration gives the quantity of free hydrochloric acid, the second titration the quantity of the organic acids, and the third titration the quantity of all the acids. Let us assume that we use five c. c. of the filtered chyme, and that at the beginning of the titration the buret reads 10.9, and that at the end of the first titration the buret reads 11.8, at the end of the second titration the reading of the buret is 13.3, and at the end of the third titration the buret reads 14.4. We now remember that we employed only five c. c. or a twentieth part of 100 c. c., and therefore our buret readings will have to be multiplied by twenty. In the first titration we used up 0.9 c. c. of the sodium hydrate, which multiplied by twenty gives eighteen, and therefore we say that there are eighteen free hydrochloric acid. In the second titration we figure the buret reading from where we stopped last, that is from 11.8 until we reached the end of the second titration, the buret indicating 13.3. We have therefore consumed 1.5 of the soda for this titration, which multiplied by twenty gives thirty. We now say we have thirty organic acids. For the third titration we calculate from the reading of the buret before the first titration was begun, that is from 10.9 until the end of the third titration when the buret reading was 14.4. As the difference between 10.9 and 14.4 is 3.5, we multiply 3.5 by twenty, which gives seventy as the result; the general acidity of this chyme specimen is therefore seventy. Comprehensively we speak that this chyme has free hydrochloric acid eighteen, organic acids thirty and general acidity seventy. I believe, that in the discussion hereinbefore stated at quite some length, I have sufficiently proved that the dimethyl can safely be used as an indicator for the organic acids. If in this titration we used dimethyl alone instead of tropeolin and dimethyl, the buret would indicate at the end of the dimethyl titration, which would have begun at 10.9 and ended at 13.3, that 2.4 of the caustic soda have been consumed, which would mean that the free acids amounted to forty-eight and which, very fallaciously, would be interpreted as meaning free hydrochloric acid by those who still cling to the dimethyl as the indicator for free hydrochloric acid. Instead, we see that there were only eighteen free hydrochloric acid and the rest, thirty, were organic acids. What a difference that makes in our conception of the clinical picture! According to my method, which is the true method, the patient suffers from organacidia gastrica, really a *hypochlorhydria* and, according to the others the patient suffers from *hyperchlorhydria.* Under my treatment the patient requires mineral acids and under the other method the patient would be given alkalies. And, as under the alkalies the patient would get worse, the physician at once stamps the patient as "nervous or hysterical." What a fallacy!

The presence of the organic acids is to be proved also by a different method, the floating method which I devised in 1902. This method is based upon the fact that the organic acids, usually found in the stomach, are extracted by ether. The ether extract is then floated upon a weak solution of ferric chloride. At the plane of contact of the ether extract with the iron solution a colored ring appears. The color of the rings varies with the different acids. In my experiments I have used one drop of a ten per cent. solution of ferric chloride to two c. c. of distilled water in a narrow test tube (one c. c. diameter), upon which was floated the ether extract of the acid solution. The ether extract was made by putting one c. c. of the acid solution into a Strauss's separatory funnel, adding to it four c. c. of ether, shaking it well, letting it rest for a little while until the ether separated from the watery solution beneath, then allowing the lower, watery part to escape, by opening the stopcock, and then float the clear ether extract upon the iron solution. The following acids were used in the experiments: Acetic, butyric, citric, formic, lactic, malic, propionic, succinic, oxalic, and tartaric. Of these the malic, lactic, oxalic, and tartaric gave a sulphur yellow ring. Propionic and succinic acids gave a dark jasper red ring. To distinguish the several acids, which give a sulphur yellow ring, from the lactic acid, all we have to do is to dilute the solution to be tested. Diluted to an acidity of forty the sulphur yellow ring of malic, oxalic, and tartaric acid became faint and, at an acidity of twenty-six the malic acid extract failed to give the sulphur yellow ring. But the lactic acid gives the characteristic reaction with as low an acidity as ten and even with an acidity of five, if the test tube is corked up so as to prevent the evaporation of the ether and allowed to stand for a while undisturbed. The acid phosphates of calcium (acidity eighty), magnesium (acidity 100), sodium (acidity forty), and potassium (acidity fifty-five) gave no sulphur yellow rings. Neither did the mineral acids respond to this test.

Some differentiation can be made between tartaric and lactic acids. If we look at the test tube with the light in front of us, the ring of tartaric acid appears opaque and seems to shade into Nile green and, when looking with the back turned to the light and a white sheet of paper is held behind the test tube the color of the ring appears a sulphur yellow. In lactic acid the sulphur yellow ring is perfectly transparent in both of these positions. Furthermore, if 0.3 c. c. alcohol, ninety-five per cent., is added to each test tube containing the tartaric and lactic acids, and the test tube is shaken, the ether column in each test tube remains clear, but the iron column of the tartaric acid becomes cloudy, while the iron column of the lactic acid remains clear. The sulphur yellow rings of the malic and oxalic acids soon fade; the lactic acid ring persists. Beside the floating test the presence of succinic acid may be confirmed by the following test: If a solution of succinic acid is boiled with a few drops of concentrated sulphuric acid, in a test tube, the odor of celery is given off.

The general deduction from these experiments is that if the ether extract of the chyme shows a colored ring on the floating test, the chyme contains organic acids. Thus we have another and a positive means of demonstrating the presence of organic acids, beside the method advocated by me before, which consists of the use of the Töpfer's solution. When testing for lactic acid, no alcohol should be added to the chyme, as alcohol itself gives a sulphur yellow ring, although not of the same intensity as the lactic acid.

The test for combined hydrochloric acid is a negative one. We do not test directly for such acid. The indicator we use reacts with all other acids, save the hydrochloric acid in combination. This test is used then, when the question arises whether the stomach secretes any hydrochloric acid at all. The indicator for such purpose is a watery one per cent. solution of alizarin. We proceed in the following way: First we determine the free hydrochloric acid, organic acids, and the general acidity. We then take another specimen of the chyme and use two drops of the alizarin solution as indicator and titrate until the chyme turns purple. Supposing we proceed with the illustration given before, to determine the combined hydrochloric acid of the same chyme. We shall have to take another five c. c. of the filtered chyme and put into it two drops of the alizarin reagent and begin to titrate with the decinormal sodium hydrate solution. After having determined the free hydrochloric acid, the organic acids, and the general acidity, the buret read 14.4. We now resume the titration and find that, when the chyme turns purple, which is the end reaction of the alizarin, the buret reads 17.1, indicating that in this titration 2.7 of the caustic soda has been used up. If we now multiply 2.7 by twenty we get as the result fifty-four. The general acidity, which we have previously ascertained was seventy from which we now deduct fifty-four, which leaves sixteen. The complete answer will be, that the chyme specimen spoken of before contained free hydrochloric acid eighteen, organic acids thirty, combined hydrochloric acid sixteen, and that the general acidity was seventy, leaving an acidity of six unaccounted for. It is assumed that the acidity of the chyme, not otherwise accounted for, is due to acid phosphates. I confess, that as yet, I have not been able to demonstrate the acid phosphates in the chyme of the test breakfast, consequently, I cannot vouch for the correctness of such an assumption. Quite the contrary. According to the simple test which I have devised for such purpose, I failed to get the reaction for acid phosphates. My test is based upon the fact that the red ferrirhodanide is decolorized by phosphoric acid and the phosphates. This red ferrirhodanide solution consists of:

Distilled water,	5 c. c.;
Ten per cent. solution ferric chloride,	2 drops;
Five per cent. solution ammonium sulphocyanide,	5 drops.

Instead of the ammonium sulphocyanide, another cyanide, as sodium or potassium can be used. The reaction is performed in this manner: One c. c. of this reagent is put into each of two test tubes. To one test tube is added the chyme, and to the other as much water as chyme was added to the first test tube. In the presence of phosphates the red ferrirhodanide is either entirely discolored by the added chyme, or nearly so. The test tube to which water is added serves for comparison, to see whether the change of color, if any, in the test tube to which the chyme was added, is due to the possible presence of phosphates or simply to dilution.

This test is a very delicate one. The chemical constitution of the chyme does not hinder this reaction. This I have proved to my full satisfaction. The chyme was tested first for acid phosphates according to the method just described. When this test gave a negative result, the merest trace of an acid phosphate was added to the same chyme and the test again applied. The test now gave a positive reaction to the presence of the acid phosphates. This proves conclusively that the chemical constitution of the chyme will not interfere with the test. If any acid phosphates are present in the chyme this test will prove positive and, if this test is negative, it shows that there are no acid phosphates present. And, as already stated, I have failed to find the presence of acid phosphates in the chyme.

Where hydrochloric acid is absent, it is occasionally desirable to determine the amount of the deficiency. The necessary operation is performed by titrating the chyme with a decinormal hydrochloric acid solution from the buret, and using as indicator any reagent that reacts with an acid, either the tropeolin or Töpfers solution or blue litmus paper or the congo paper. We proceed again in the same way as we determined the acidity. Five c. c. of the chyme are put into a beaker, the indicator is added as before, and so much of the decinormal solution of the hydrochloric acid is slowly added, drop by drop, into the beaker until the respective color reaction takes place. Or if litmus paper or congo paper is used, we test the reaction by removing with the loop of a platinum wire just a trace of the chyme, test this upon the paper, and continue to do so until the chyme reacts to the acid. We now note the number of cubic centimeters of the decinormal hydrochloric acid that were used and multiply this by twenty, as before. Assuming we had a chyme which showed hydrochloric acid deficiency and we wanted to determine the presence and quantity of pepsin according to Mette, we proceed in this way: We first determine the amount of the hydrochloric acid deficiency. Supposing this was twenty, that is, it required twenty c. c. of the decinormal hydrochloric acid solution from the buret to give the acid reaction to 100 c. c. of the chyme, we then take another specimen of the chyme, say five c. c., and add first from the buret sufficient to make up the deficiency, and in this instance we add one c. c. of the decinormal hydrochloric acid. In addition we must bring this chyme up to the normal, that is the chyme must contain about thirty of free hydrochloric acid, and we therefore add additional 1.5 c. c. of the decinormal hydrochloric acid. Altogether we have to add 2.5 c. c. of the decinormal hydrochloric acid to the five c. c. of the chyme before we apply the Mette test.

616 Madison Avenue.

DREAMING AND DREAMS.

By George Drenford, M. D.,
Baltimore,
and L. K. Hirshberg, M. D.,
Baltimore.

Modern psychology rests on experiment, and experiments in psychic matters are of enough moment when dealing with so difficult and delicate a subject as the waking state. But modern psychology has, by way of extension, applied its methods, the methods of inductive science, to the phenomena of sleep, and still more particularly to dreams and the vital fantasies of dreams.

When Weygandt had pronounced his conviction as an established idea that probably all dreams are due to some stimulus (*Reiz*), and that the laws of reaction on the part of the "dreaming consciousness" most likely are no others but those observed in normal life, the problem of dreams became one of general interest. How to observe and establish the connections of the elements entering into, taking possession of, and penetrating the dreamer's consciousness, was then a subject of dignified attack.

But the scientist charging himself with this line of experiment cannot help living more or less his ordinary daily life, and is, in addition, usually subject to, and hampered by other influences bearing upon his own dream life. What then, must be the energy and fitness of an experimenter treating such brittle material "as dreams are made of" and managing to extract valuable gold nuggets out of the dross of slag and to make a clear path through a labyrinth of bewildering circumstances!

John Mourly Vold, born August 24, 1850, a native of Trondjem, Scandinavia, devoted twenty-five years of his celibate life to experiments based on the thought that it might be possible to make out something of their nature by employing an artificial stimulus or rather a series of such stimuli in order to bring about and induce specific types of dreams. He did not live to see the two volumes translated into German and published after his death by Klemm in Leipsic, which contain an analysis of the rich collection of material, which he with the assistance of some hundreds of teachers and students of both sexes, gathered in his successive peregrinations, while holding the chairs of docens and professor of philosophy; for he died too soon for science in general on the first of July, 1907.

The unusually thorough analysis, qualitative as well as quantitative, of his materials brought together at home and abroad in the clinics of Germany, Holland, Scandinavia, and France is apparent in these two volumes. His science of what may be called "dream phenomena" constitutes the principal value of these volumes. He had, through a number of other philosophical publications, already become known as one of those modern thinkers who in a critical theory of cognition find the basis, and recognize the elements which lead to a superstructure of idealistic results (*Weltanschauung*). But his *opus magnum*, viz., the experiments in psychology that refer to dreams and hallucinations, furnish the bulk of his psychological lifework. For them, he employed systematically the method of comparing reports on dreams that had occurred in one or several nonexperimental or control nights; that is to say, during normal dreams. By this method, he sometimes reached surprisingly sharp pictures of effects from stimuli upon dream formations, a method invented and perfected by him. In fact, in opposition to the Sigmund Freud method of claiming everything, it may be asserted in his behalf that he, one of the first, and as a master, introduced and made possible exact psychological analysis in the delicate realm of dreams. Of this vast dream realm only a frontier or province has been surveyed, and of the many possible types of stimuli only a section has been employed for his experiments, with the happy consequence that the latter have been correspondingly more thorough. In contradistinction to the Freudians, he chants no formula, adopts no arbitrary norm, maintains no thesis sexual, repressive, or otherwise. Facts alone are for him.

Mourly Vold studied and strove to gain access and insight into the causal connection between stimulus and the dream that accompanied or resulted from the irritation. If his reports are not mysterious or detailed enough to please the Jung-Freud-Bleuler school, it is because his work has been honest and conscientious, and the reader at all events has the advantage of following experiments presented fairly and without bias. You see the whole as well as the details of the research done together with all the alert controls and criticisms which a careful experimenter continuously makes before he rests satisfied with the results of his investigation.

The character of the Vold experiments was for the most part cutaneous muscular stimulation. The skin is always influenced together with the muscles, and without an exception in his vast material, contrary to positive statements of Freud, always brings about a definite dream traceable to the stimulus. The method, instruments, and details of the experiments, how he irritated the back of the body, his use of gloves, and other appliances, his creation of waking dreams, delusions in the darkroom, and other items of importance to be carried out by the practical experimenter are necessarily passed over here. But it is interesting to note in particular that the articulation of the foot was chosen for its delicate sensitiveness and was more easily influenced to produce fantasies than the knee. Stockings and bandages, single, double, and crossed, resulted in a number of dreams that Freud, Bleuler, Jung, Jones, and others have tried to explain upon the sexual repression and sublimation theory. These were controlled by the "normal" dreams, and the reader finds himself observing cases of "strong parallel double," foot leg irritation, normal cases of "very strong or strong double, but not parallel double" foot leg irritation; normal cases with "only weak" leg irritation, and cases of little dream substance.

The author, Mourly Vold, records that he had for years worn stockings during sleep. His own impression is that the cutaneous irritation is much weaker than the muscular stimulus, and that the reaction amounts only to cutaneous dreaming, without localized warmth. A bandage bound around the left foot articulation of nineteen students furnished a number of stimuli that proved to be nearly twice and one half as strong for dream life as normal dream life sleep without it—a result conforming to the author's personal experience. Nothing could account for the difference but the irritation of the foot articulations.

"Double" irritations cause, it would seem naturally enough, different results. To bring about these it was necessary to tie the feet together in addition to bandaging them, in order to achieve a more perfect parallelism when compared with the controls of unstimulated dreamers. The results of such measures were what the author calls parallel motives, the motive of passive total movement, and rhythmical movements.

1937 MADISON AVENUE.

HYPERIDROSIS; ETIOLOGY AND TREATMENT.*

By H. G. WERTHEIMER, M. D.,
Pittsburgh,
Instructor in Dermatology and Syphilology, University of Pittsburgh.

DEFINITION AND OCCURRENCE.

"Hyperidrosis is a functional disorder of the sweat glands characterized by an excessive secretion of sweat" (Schamberg), and is classified according to Weidenfeld, of Vienna, as hyperidrosis localis, hyperidrosis generalis, hyperidrosis universalis (rare). Again, under the head of hyperidrosis, he speaks of eczema hyperidrosum, recognizing two subdivisions (a) dysidrosis, and (b) eczema in hyperidrosis.

Examples of localized sweating are familiar to us all, occurring on the palms, soles, forehead, eyelids, nose, cheeks, axilla, genitalia, etc. Hyperidrosis nudorium, as the term implies, is present in the axillæ when a patient, for example, undresses before a physician (excitement).

The term "universal" in dermatology, according to the Vienna school, is used only when every part of the body is affected; whereas the word "general" is applied to designate that although most of the body may be involved, healthy skin is observed between the diseased areas.

Generalized hyperidrosis, as well as the universal, is symptomatic in character. Weidenfeld considers the latter rare, yet both are seen in such diseases as acute rheumatism, malarial fever, tuberculosis, night sweats, typhoid, etc.

Hyperidrosis paradoxica may occur with fever or with a subnormal temperature, and is observed in nervous affections and spinal cord lesions.

Eczema hyperidrosum occurs on the palms of the hands and soles of the feet. From excessive sweating, small or larger vesicles may be produced, when it is known as dysidrosis or pompholyx, the characteristics of which are grouping, all lesions are of the same size, no redness, and hyperidrosis (Weidenfeld).

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*Read before the Allegheny County Medical Society, June 18, 1912.

In contrast to this, we have "eczema in hyperidrosis" (a hyperidrosis complicated with eczema), having the following distinguishing features: Dissemination of the vesicles, which vary in size, redness, hyperidrosis, and reflex eczema (Weidenfeld).

Like the general and universal varieties, unilateral hyperidrosis scarcely belongs to the domain of dermatology; but when present should excite suspicion of a disease of the sympathetic system (Sahli).

It is most frequently found in pneumonia and may be found in various conditions dependent upon reflex origin from the pneumogastric nerve; aneurysm, hemiplegia of cerebral origin (Sahli); and peripheral facial paralysis (Köster).

ETIOLOGY.

The disease is of nervous origin, central or peripheral. The vasomotors, the ganglia, or the nerves governing the sweat glands may be involved. Again we have internal and external factors.

Internal factors. 1. The glands themselves may be involved. 2. Diseases of the heart. 3. Anemia. (Both these factors cause hyperidrosis by insufficient oxidation.) 4. Nervous. It may be of purely nervous origin and may be seen in such diseases as syringomyelia, neurasthenia, or reflex, as from pain. 5. Diseases of the internal organs. This is best exemplified in colic from renal calculus, gallstones, etc. 6. Psychic, as from fear of pain. 7. A local condition which frequently is the cause of hyperidrosis is flatfoot.

External factors. 1. Pilocarpine may cause hyperidrosis by action on the glands or spinal ganglia. 2. All arsenic preparations, as the trioxide, salvarsan, etc.

TREATMENT.

General. As in all other conditions causal treatment is the primary object. It is not within the domain of the dermatologist to prescribe general treatment, excepting at times for the neurasthenic and anemic patients, such remedies as tonics, hematinics, hydrotherapy, etc.

Internally, hyperidrotics may be used, such as atropine or agaricin (five to ten milligrammes in pill form, twice daily), never in larger doses, since the drugs must be used for some time.

Local. The sweat glands, as well as the blood-vessels, must be influenced, and this is accomplished by astringents and antihyperidrotics.

1. Astringents. These include the organic acids, acetic, salicylic, tannic; and the inorganic acids, nitric, sulphuric, boric.

2. Antihyperidrotics. Of these formaldehyde solution, unguentum diachylon of Hebra, alum, and bismuth subgallate are frequently employed.

Chromic acid. A concentrated solution is applied by painting on lightly for three or four days. This causes a superficial slough, followed in three or four days by small scales, and complete exfoliation in five to eight days. It may be necessary to repeat this procedure. It should also be remembered that this drug stains yellow or brown.

Salicylic acid or tannic acid is used in the strength of five per cent. in starch, forty parts, and talc, sixty parts. These are very good, but not as rapid as the chromic acid treatment, taking eight to fourteen days for a cure. After thorough washing and drying of the feet, the powder is applied inside the shoes and stockings. It is essential to have frequent change of both shoes and stockings. The latter should be either silk or woolen, but never cotton. Here we may also mention the correction of flatfoot, when necessary.

Alum acts hygroscopically and also by its acid properties, alum being the double salt of potassium and aluminum sulphate. It is applied in the same way as the salicylic powder.

The diachylon ointment of Hebra is of especial value in the presence of eczema, being spread thickly on linen, applied, and then bandaged. These applications are changed daily and in eight to fourteen days a cure may be expected.

Oppenheim, of Vienna, is trying a new treatment. In order to prevent the acid formation, and thereby dermatitis or eczema, he uses alkaline powders:

℞	Sodium bicarbonate,	1.0;
	Magnesium oxide,	2.0;
	Amylum,	10.0.

M. ft. pulv.

This is dusted into the stockings in the usual manner. It does not prevent hyperidrosis.

When eczema is not present, the following formula may be used:

℞	Formaldehyde solution,	5.0 to 10.0;
	Alcohol,	100.0;
	Glycerin,	2.0.

M. S.: To be applied twice daily.

For the treatment of cheiropompholyx, Brandweiner, of Vienna, recommends, after washing with warm water, the application of

℞	Salicylic acid,	6.0;
	Alcohol,	200.0.

M.

This is permitted to dry on the parts which are then powdered with

℞	Salicylic acid,	5.0;
	Talc, Zinc oxide,	āā 25.0.

M.

Bismuth subgallate is a very good and efficient powder. It is simple in its use, being employed in all the dermatological clinics in Vienna, in full strength or with talc or starch.

Where the vasomotors are at fault, hot foot baths, as hot as the patient can tolerate, act as an antihyperidrotic by contracting the vessels. Following the bath the parts should be thoroughly dried and either the formaldehyde solution or the salicylic or tannic powders are applied.

Freund, röntgenologist to the Finger clinic, recommends the x ray for hyperidrosis; but only after continued repetition of the treatments are the glands destroyed and the hyperidrosis cured.

1217 Westinghouse Building.

A PLEA FOR MORE EXPERT ANESTHETISTS.

By Miguel Lavandera, M. D.,
New York.

When an operation requiring a general anesthesia is necessary among the well to do, the attending physician or surgeon informs the patient that a "special" anesthetist is to be engaged. Indeed, in many instances among this class of patients the expert anesthetist is called upon to render his special services just as the surgeon is asked to perform the operation. Even if this is to be done in a hospital, where internes more or less skillful in the administration of anesthetics are available, their skill is usually dispensed with. Thus in institutions where a resident anesthetist is always on hand, the "special" already mentioned often takes the resident's place.

Obviously it is the wealthy patient who learns to value the services of a specialist in anesthesia, as in all other branches of medicine, not that this class of patients more than others really appreciate the true importance of a well administered anesthetic,—they demand the services of the expert in question because they are told by the doctor in charge the advantages of such services, which, however, are seldom enjoyed by the majority of patients in less fortunate circumstances. It is this majority who ignore that the professional anesthetist is as much a necessity for the prevention and cure of disease as is the expert in other specialties, now fully recognized by every one.

The time will perhaps come when the laity as a whole will demand that anesthetics be given by the expert and by him only. Certainly that desirable time will be retarded so long as the profession in general fails to engage the trained anesthetist whenever occasion requires. Further, there are many who disregard the well known fact that a general anesthesia means more than "to put the patient under." Obviously to apply any fluid or vapor, by means of any device, to the patient's face, requires little or no skill. But any one whose fortune it has been to cause hundreds of ether, chloroform, and nitrous oxide anesthesias, will at once agree that "to put the patient under and keep him under" properly—not to mention the responsibility in so doing toward both the patient and the surgeon concerned —is not so easy a task.

Those in position to know have frequently reminded us of the pathological effects immediate and remote upon the organism due to general anesthesias—particularly from ether or chloroform—under proper surroundings and equally good conditions. How often it depends on the anesthetist's ability whether or not a patient undergoing an operation is to be spared an "ether eye," pleurisy, pneumonia, shock, or even death!

Certainly, were any of us to be anesthetized, a "special" anesthetist would at once be secured, not because we wish to cast any reflection upon the interne or any other member of the profession at hand, but because the "special" is known to do that entirely and well,—he has a name for his ability and skill, he therefore inspires confidence.

Why this attitude in most cases toward the specialty under discussion? Why this indifference to so important a branch of medicine? This is a hindrance, not only to a more rapid advance in anesthesia, but also very discouraging to those who, by reason of their peculiar fitness, would otherwise become excellent anesthetists, among whom experts are now few, for the simple reason that the importance of their services generally, as already pointed out, does not receive sufficient recognition, often none at all. Why so? Perhaps the answer is twofold: The apparent easy means of anesthetizing and the relatively few fatal accidents therefrom, particularly with ether and nitrous oxide. Most surgeons or physicians excuse themselves by the assertion that "in the majority of cases which require a general anesthetic, there isn't enough in it even for for the doctor himself." This, however, is the exception rather than the rule, at least with a private clientèle: the patient who engages a physician, often both a physician and a surgeon, can well afford, for the good of his or her health, to pay extra to the skilled anesthetist. As to free patients, all hospitals should provide well paid anesthetists, as has already been suggested by others.

How are we, then, to secure an adequate number of competent specialists in anesthesias? Let every surgeon or physician in charge of a given case for operation, demand the services of the expert anesthetist. Competition would naturally follow, and an adjustment of fees to suit the individual case would be the result, just as the physician's or surgeon's fees to-day depend on the patient's means. The risks of anesthetic complications would then be diminished, if not entirely removed, the public and the profession could count at all times upon the services of the expert already mentioned, while anesthesia as a specialty would then be made worth while to the would be specialist in anesthesia, which is not the case to-day

420 West 121st Street.

THE PREVENTION OF MIDDLE EAR DISEASES.*

By Max Lubman, M. D.,
New York,
Chief Assistant in Ear, Nose, and Throat, Har Moriah Hospital.

The diseases of the middle ear are easily prevented if the laws governing the ear are understood and upheld. This statement will still hold good even should these laws be interfered with, provided prompt attention is given at the proper time. The laws are not many—two in number; one is based upon physiology, and we call it a physiological law, while the other is based upon physics, and is a physical law. The physiological law governs the ear through the mechanism of deglutition, whereby air is permitted to enter the middle ear. Through such ventilation the physical law is upheld by the equalization of the external atmospheric pressure upon the outer side of the drum membrane.

To see how deglutition affects the ventilation of the middle ear, we must glance over the anatomy of these parts. The middle ear, as we all know, communicates with the oropharynx and nasopharynx through the Eustachian tubes, which open in the mouth into the upper part and side of the pharynx, on a level with the inferior meatus. The walls of the tubes are always in contact, except for a small space near the bony portion of the tube. The tensor palati muscles have their origin at the pharyngeal extremity of the Eustachian tubes, and, by the action of these muscles during the act of deglutition, they open the tubes. Thus, a free admission of air in the middle ear takes place, and its ventilation is accomplished. Through this ventilation of the middle ear, the external atmospheric pressure upon the external side of the drum membrane is equalized. It is evident, therefore, that no obstructions or occlusions should be found in the path of communication between the oropharynx and nasopharynx with the middle ear.

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*Read at the Clinical Society of the Har Moriah Hospital on November 11, 1912.

It will also not be amiss to look over the physiology of the parts most concerned, i. e., the drum, tympanic cavity, and the Eustachian tubes.

The office of the drum membrane is to receive and convey sound waves to the ossicles, thence to the labyrinth. It also protects the tympanic mucous membrane from the deleterious effects of the air, as well as from entrance of morbific gems and foreign bodies.

The Eustachian tubes are to ventilate and drain the tympanic and mastoid cavities.

The tympanic cavity with its contents transmits the sound waves to the labyrinth. It also forms a channel of communication between the Eustachian tubes and epipharynx on one hand, and antrum with mastoid on the other.

It is also in place to add here the physiological law which states: "Anything that interferes with the normal tension existing between the membrana tympani, ossicles, and the contents of the oval window, will cause tinnitus and deafness."

Now, when the physiology is well understood, let us see what are the etiological factors that produce middle ear diseases. The causes are two, namely, pathogenic microorganisms which are the exciting cause of inflammation, and obstructive conditions interfering with the drainage and ventilation of the cavity, as the predisposing cause. By lowering the resistance of the tissue, the pathogenic microorganism then flourish, and with their toxines excite the reaction of inflammation. Of these two causes, much more stress should be laid upon the obstructive cause, leaving out of consideration congenital malformations or tumors producing obstructions, adenoids are the only cause which act as an obstructive agent to produce middle ear diseases.

Adenoids are hypertrophied lymph glands which normally exist in the epipharyngeal space. They are chiefly situated on the superior and posterior wall of the epipharynx, though they may extend into the fossa of Rosenmüller, and into the mouth of the Eustachian tubes. They consist of a fibrous connective tissue framework supporting masses of lymphoid cells. Owing to its peripheral position, it has an epithelial covering upon its free surface, differing from the more deeply placed lymphoid glands.

There is a pathological law governing adenoids, which is, "that the lymphatic structure of children becomes enlarged and hypertrophied in response to bacterial stimulation, which, in adults, does not cause lymphoid hypertrophy to a correspnding degree." Therefore, as the exanthematous fevers occur chiefly in early childhood, when the special susceptibility exists, it is but natural to find adenoids most frequently during that period of life. Statistics of McBride and Turner show that adenoids are most frequently found between the sixth and fifteenth years of life, though they may occur at any period. Killian states that in forty per cent. of patients up to the fifteenth year adenoid vegetations are present.

The diseases of the middle ear can grossly be classified in two divisions, the dry form, and the moist. By the dry, I mean otitis media sicca, while the moist is with a discharge which can be subdivided into acute and chronic. Of these two forms, the dry is of more interest to us, for though the purulent form is a very serious condition *per se,* and more so when neglected, having serious complications such as mastoiditis, brain abscess, sinus thrombosis, etc., still we have attained the knowledge and skill to meet the emergencies as they arise; but, for the ordinary dry form, with its distressing symptoms,—tinnitus, deafness, etc., our knowledge of relief is very limited. What a pitiful sight to see young adults in the vigor of health, going from clinic to clinic, seeking in vain for relief from their miserable symptoms, not knowing how little we can do for them at this particular stage.

From the normal mechanism of the middle ear ventilation and pressure equalization above indicated, we can readily see that any obstruction which is large enough to fill or obstruct the nasopharynx must necessarily interfere greatly with the perfect action of the palatal muscles, with the result of imperfect ventilation and pressure equalization. Still more, each act of deglutition under such a condition will exhaust air from the tympanic cavity rather than replace it, as we can readily demonstrate. By catching the alæ nasi between the thumb and forefinger, compressing them tightly, and swallowing, a sensation of stiffness is immediately experienced in both ears, due to the exhaustion of air from the middle ear, producing a lowered endotympanic air pressure, which causes the following pathological condition: The blood within the vessels supplying the mucosa of the middle ear feels the partial vacuum thus created, and congestion and engorgement follow. This congestion necessarily leads to a changed nutrition of the parts, and forms a disturbed relationship in the cellular structures.

All these phenomena predispose to inflammatory processes, and, by the entrance of bacteria, we get otitis media purulenta. In case bacteria do not invade the inflammatory field, a catarrhal exudate is formed, which may gradually subside, followed by other attacks to induce a productive inflammation, causing a thickened retracted drum with ankylosis of the ossicles, which, according to the physiological law above stated, produces tinnitus and deafness.

Having outlived the result of retronasal obstruction, the question arises: Why should medical men not encourage parents to have adenoids removed as soon as symptoms of obstruction show themselves?

Rhinitis is a very common occurrence in every walk of life, especially in children, in whom the activity of the lymphoid system is great. On account of its frequency, and the slight disturbance it produces constitutionally, treatment is neglected by medical men. They should know that the mere running nose is only a dial to indicate that either the nose or the retronasal space is not in a normal condition. Instead of looking for the cause, however, and removing it, they treat the effect, by advising the application of a little vaseline at night, which advice is quickly confirmed by the neighbor.

I may quote Metchnikoff (not word for word) in his latest work, *Prolongation of Life*. He states: "Any organ in the human body which functions in harmony with its physiological construction cannot be diseased." Hence, a steadily running nose in a child should attract the attention of the medical man.

Some physicians are under the impression that adenoids atrophy or shrink at puberty, and, therefore, operation is either not advised or delayed. Allow me to tell you that it is a dangerous thing to do, for, while waiting, the attendant inflammation is always progressing, and may, and actually *does* in sixty-six per cent. of all cases, invade the Eustachian tubes and middle ear. Atrophy does not occur after puberty any more than at a less advanced age. Indeed, the atrophy is independent of the age of the patient. Why wait, therefore, for a process of shrinkage which has no definite period of occurrence? The observations of McBride and Turner confirm this statement.

Here it will also not be out of place to indicate the minor sequelæ of adenoids. The development of the face is often materially modified. The open mouth, absence of the nasolabial folds, the short upper lip, broad flat upper half of the nose, and the narrow, slitlike nasal opening all combine to form the so called "adenoid face," the general expression of which is stupid. The degree of facial disturbance is usually in proportion to the degree of nasal respiration, rather than the actual size of the adenoid growth. As J. E. Schadle points out, the average capacity of the epipharynx is about seventeen c. c. and its lateral diameter is longer than the anteroposterior. Hence, if the capacity of the epipharyngeal space is diminished, or its anteroposterior diameter contracted, a small adenoid mass may produce a greater degree of nasal obstruction than a large growth in a more roomy epipharynx.

The interior of the nose is also modified in its development. As J. S. Thompson pointed out, the loss of the physiological stimulation incident to nasal respiration results in undeveloped turbinates. The hard palate is usually Gothic or arched, especially in its anterior portion. The contraction of the lateral diameter of the arch sometimes causes the central incisors to protrude and to be in distal torsoocclusion twisted upon their axes, making their posterior surfaces face each other.

The respiratory system is also affected. The lateral walls of the chest are contracted, and form the characteristic deformity known as "pigeon breast." The lungs are undersized, and respiration is shallow; the transfusion of gases through the walls of the air vessels is impaired—too little oxygen passes into the blood, and too little carbon dioxide is thrown off.

Frederick Coolidge calls attention to the relationship between adenoids and the various forms of club feet (due to a deficient deposit of lime salts).

CONCLUSION.

I would say that middle ear diseases can be prevented by removing obstructions in the postnasal space. Adenoids, when not removed, produce middle ear diseases in sixty-six per cent. of cases (Ballinger). The physician who sees the disease in its incipiency, for instance, such as a mere running nose, sleeping of child with open mouth, or notes the complaint that the child does not hear well, should, under no circumstances, ignore these symptoms, but should examine the child for adenoids, and, if found, explain to the parents the necessity of removing them. Adenoids do not atrophy at puberty, and it is very dangerous to wait. They have a deleterious effect on nutrition and are very closely allied with the different deformities of the lower extremities, and, finally, the ear is a very important organ in our economy and is, in just proportion, a dangerous organ when neglected. Therefore, it deserves more attention from the family physician, and, if this paper should act as a stimulus to the general practitioner, my work will be rewarded.

78 EAST FOURTH STREET.

TEN CASES OF GOITRE.

A Bacteriological Study of Cultures and of Stained Sections from the Thyroid Gland.

(From the Laboratory of Clinical Pathology, Philadelphia Polyclinic and College for Graduates in Medicine.)

By JOHN J. GILBRIDE, A. M., M. D.,
Philadelphia,
Lecturer in Surgery, Medico-Chirurgical College; Assistant Surgeon, Medico-Chirurgical Hospital; Instructor in Diseases of the Stomach and Intestines, Philadelphia Polyclinic.

These cultures were made from pieces of the thyroid glands obtained from Dr. John B. Deaver's patients at the time of operation at the German Hospital. A piece of gland the size of the distal phalanx of one's finger was cut from the excised part of the thyroid gland under aseptic precautions and placed in a sterile test tube. The cultures were then made by placing small bits, three or four mm. square, of the thyroid in the culture media. Along with using ordinary culture media, i. e., bouillon, agar, glucose agar, etc., culture media containing calcium carbonate and normal salt solution were also used. A saturated solution of calcium was used with the thought of providing one of the salts which is the most common ingredient in the water in goitre districts of Europe.

I made a search through some of the literature to find the composition of the water in some of the districts of Europe in which goitre is common, but without success.

A special effort was made to grow anaerobic organisms, and sections were stained with Gram's stain, methylene blue, and fuchsin, according to the method of staining for microorganisms in the tissues.

OPERATIONS BY DR. JOHN B. DEAVER.

CASE I. Exophthalmic goitre. Operation March 11, 1912. Culture negative. Stained sections negative.

Case II. Exophthalmic goitre. Operation March 13, 1912. Culture negative. Stained sections negative.

Case III. Exophthalmic goitre. Operation March 28, 1912. Cultures negative. Stained sections negative.

Case IV. Exophthalmic goitre. Operation March 30, 1912. Cultures negative. Stained sections negative.

Case V. Colloid goitre. Operation April 10, 1912. Cultures negative. Stained sections negative.

Case VI. Exophthalmic goitre. Operation April 25, 1912. Culture negative. Stained section negative.

Case VII. Colloid goitre. Operation May 15, 1912. Culture negative. Stained section negative.

Case VIII. Cystic goitre. Operation May 27, 1912. Culture negative. Stained section negative

Case IX. Cystic goitre. Operation June 10, 1912. Culture negative. Stained section negative.

Case X. Exophthalmic goitre. Operation June 19, 1912. Culture gave a growth of *Micrococcus tetragenus.* Stained section negative.

These ten cases represent six cases of exophthalmic goitre and four cases of simple goitre. The cultures and stained sections of all of these cases were negative, with the exception of the culture made from Case x, one of exophthalmic goitre which gave a growth of *Micrococcus tetragenus.* In a series of fourteen cases reported by me (*Journal of the American Medical Association,* December 16, 1911, p. 1988) there were six cases of exophthalmic goitre and eight cases of cystic goitre. A growth was obtained by culture in two cases. One case of exophthalmic goitre gave a growth of *Micrococcus tetragenus,* and a growth of *Streptococcus vermiformis* of Sternberg was obtained from one case of cystic goitre.

This work was done in the laboratory at the Philadelphia Polyclinic, and I wish to thank Dr. John A. Kolmer, director of the laboratory, for suggestions and aiding me in the examination of the stained sections.

1934 Chestnut Street.

SALVARSAN IN ASTHMA.

By L. Ellis Glasgow, M. D.,
Pittsburgh, Pa.

Case. G. S. N., aged forty-two years; married; occupation, chief clerk. Patient presented himself to me July 11, 1912, with small indurated spot on left side of corona, which he had noticed two days previous. Patient's history was that he had not had sexual intercourse for over three weeks, and spot appeared as small papule, the surface being rubbed off leaving a small ulceration with very little discharge.

His previous history was negative. His mother had always been a sufferer from asthma, and patient had same since childhood, so much so that in the last ten years many times he was unable to attend to his duties, and would have to remain propped up in bed, being unable to rest in recumbent position. For several years he had taken no treatment for this condition, except asthmatic powders, the smoke being inhaled during severe attacks, but previous to this time he had consulted many physicians with little or no relief.

The dark field illumination was made of discharge from the ulceration, and spirochetes were found. The following day, October 12, 1912, patient received 0.4 gramme salvarsan intravenously, in left median basilic vein, with the result that in a few days the chancre was completely cured and patient said from the evening of the injection he suffered no symptoms of asthma, although he had a very violent reaction, his temperature reaching 103.2° F., with a chill and looseness of bowels, increased amount of urine, and general malaise.

This reaction passed off within forty-eight hours, and the patient had no further treatment until December 11, 1912, when a Wassermann seroreaction was taken, which showed a mild inhibition. December 18, 1912, intravenous injection 0.3 gramme salvarsan was given patient, with result that Wassermann examination gave negative reaction, January 24, 1913.

My reason for reporting this case is to know if any similar cases have been found, in which salvarsan has seemed to relieve symptoms of asthma.

Abstracts and Reviews.

MODERN PROBLEMS OF NUTRITION.*

By Professor Franz Knoop,
University of Freiburg.

Until very recently, in fact almost until the present century, physiology has been dominated by morphological concepts, and the microscope has held sway as the instrument by which the unknown facts of life were to be discovered. This dominance of morphological methods is still noticeable at the present day, both in the courses given by the medical schools and in the practice and teachings of the clinician. Within the present century, however, the fundamental value of chemical studies has become recognized, and biochemistry is rapidly coming into its own as the most valuable means of discovering the processes by which life and nutrition, health and disease, are maintained, brought about, or overcome. The old analogy between the human body and an engine is no longer adequate, for it is recognized now that the fuel—nutrition—of the body must supply, not only the energy for the working of the parts, but also the materials for the continual restoration of the losses caused by wear upon the parts. Chemical and not morphological studies will provide the details of these processes of utilization of the nutritive materials.

The conception of the existence and action of hormones was an enormous stride toward the elucidation of some of the chemical processes. At present no thinking person can regard the secretions of the pituitary, thyroid, adrenals, etc., without seeing the necessary corollary that the chemical processes in the human body must be very sharply specific and must be concerned with elaborate destructions and syntheses.

Many attempts have been made to isolate from the bodies of man and of animals some of the intermediate products of the chemical changes which one or another type of food underwent, in the hope of being able to trace the whole course by means of these indications. Such attempts have been only very slightly successful, and this because of two main facts: First, that the chemical processes in man take place under the most remarkably uniform conditions of moisture, motion, heat, etc., conditions which it is well nigh impossible to maintain *in vitro;* second, that the processes of oxidation or reduction, of synthesis or destruction, take place very slowly, only a few molecules of a product being formed at a time. On this account the concentration of intermediary metabolic products in the body is extremely small at any one time, although during the course of a day a comparatively large amount of material may be utilized.

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*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, March 22, 1913.

By means of perfusion of single organs, and other similar methods, by which a single step can be watched and the intermediary products obtained in sufficient concentration for isolation and identification, some advance has been made. But we are still far from the goal.

The practitioner looks upon the chemical methods as something perhaps of scientific interest, but certainly of no value to either his patient or to himself. This attitude is utterly fallacious, and it may be stated that the study of reactions *in vitro* has led to the understanding of many of the problems of more elaborate metabolic processes.

By such studies, coupled with simultaneous or subsequent observations of the processes *in vivo*, it has been our good fortune to gain an understanding of the metabolism of the fatty acids. These acids have been found to undergo oxidations in which they always lose two carbon atoms. By this process they are gradually reduced to relatively simple chemical compounds. On the other hand, the aminoacids are oxidized in such a way that they lose but a single carbon atom. Subsequent to this type of chemical change, and after reduction to a certain point, they undergo a further simplification with the loss of their nitrogen and the conversion of the acid from one of the aminoseries to a fatty acid. From this point the process continues as in the case of the acids which started as fatty.

These observations on the catabolic changes of these two groups of substances led to a study of the possibility of the synthesis of proteid from carbohydrate, it being already known that the reverse process could take place.

By treating grape sugar *in vitro* with ammonia it was found that aminoacids could be formed. *In vivo* the same process is possible, for ammonia is always present and the synthesis consists in an interaction between this substance and one of the alpha ketonic acids which are derived from carbohydrates in abundance. The resulting aminoacids, formed either *in vivo* or *in vitro*, are *Bausteine* (building stones) for the synthesis of proteids. Thus, by the discovery that alpha ketonic acids arise from the metabolism of sugar, and that these acids may be converted into aminoacids by the action of ammonia, we have the explanation of the proteid sparing action of the carbohydrates and of ammonia, both of which facts have been recognized by the clinician, but which have been held to be impossible by the older school of metabolic physiologists, for they did not recognize the possible conversion of carbohydrates into proteids.

From these observations we are led to believe that the products of intermediary metabolism may, and probably often do interact one with the other for the formation of new products.

We are led, further, to the suggestion that obesity may be the result, in some cases at least, of an interaction between the several fatty acids or, rather, of a reversible fatty acid metabolism.

In addition to the elucidation of the facts of nutrition by biochemical methods, it is to be recalled that many, if not most disease processes are probably chemical in basis. It is to be borne in mind that never so slight a disturbance in the chemical processes may lead to the most far reaching and disastrous disturbances to health.

At the present time all branches of medical science are calling to the biological chemist for the explanation of the intricate processes which he alone is in a position to analyze.

Therapeutical Notes.

Clinical Uses of Liquid Air.—T. C. Beebe, in the *American Journal of Dermatology* for October, 1912, asserts that a five years' trial has convinced him of the superiority of liquid air to carbon dioxide snow, radium, the x ray, and caustics in a wide range of conditions. The securing of good results depends merely upon experience in applying the agent with the proper degree of pressure and for the required length of time. The author uses for the applications pine throat sticks, one end of which has been cut down to fit the area under treatment and firmly wound with absorbent cotton. If a large area is to be treated it is best to make several applications, and where the area is on a mucous or ulcerated surface a thin layer of gauze should be placed over it in order to prevent the swab from freezing to the surface. The degree of pressure varies from a mere touch to well marked pressure, and the duration of the application from fifteen to forty-five seconds.

In cases of epithelioma treatment is begun with firm or severe pressure around the periphery, repeated at intervals of one or two weeks; subsidence of the effect of a former application is not waited for in repeating the procedure. From one to six applications will cause the lesions to heal; in but two of the author's cases of epithelioma did healing fail to take place. Two cases of lupus apparently healed after four to six applications; both patients had previously been treated with carbon dioxide snow, and had complained much of the pain and slowness of the latter method.

Nævi of all kinds, as well as chloasma and xanthelasma, the author finds it possible almost always to remove by means of liquid air, with practically no pain or residual scarring. It is very important that these lesions be treated early in life, while the tissues are soft, if the best results are to be obtained. In many cases of warts—particularly of the face and scalp—fibromata and corns, excellent results were obtained with a very few applications of liquid air. A case of vernal catarrh had shown gradual improvement under mild, short applications, and while still under treatment was almost entirely healed.

Intraperitoneal Oxygen Injections during Abdominal Operations.—H. J. Godwin, in the *Lancet* for September 21, 1912, reports gratifying results from this measure in the following varieties of operative cases: 1. After removal of large tumors, to overcome negative abdominal pressure; 2, in tuberculous peritonitis; 3, in certain instances to prevent the formation of adhesions, and, 4, in general septic peritonitis. Just before closing the abdominal wound he inserts a specially made trocar and cannula into the abdominal cavity on the side opposite the incision. Withdrawing the trocar, but leaving the cannula, he next sews up the abdominal wound, connects a rubber tube with the cannula, and finally passes in oxygen from a cylinder through a Woulfe flask containing hot saline solution. The amount of oxygen introduced does not seem to be of any significance, but the author always passes in enough to obliterate completely the liver dullness. In his experience this measure has both prevented shock and arrested nausea and vomiting. If the abdominal cavity is completely filled with the gas, about two weeks elapse before it is wholly absorbed. Since the author has been employing the procedure in the ascitic form of tuberculous peritonitis he has never seen the condition recur.

Treatment of Whooping Cough.—J. Herz, in *Semaine médicale* for October 9, 1912, is credited with recommending the internal use of metallic copper and of inhalations of cypress oil and of formaldehyde in this affection. In children over two years of age, the dose of copper given is 0.0005 gramme (1/128 grain), administered morning and evening in water or milk. In those below the age mentioned considerably smaller doses are used. The cypress oil is used in a ten per cent. alcoholic solution. A piece of flannel is pinned to the little patient's clothing and allowed to remain both day and night; a few drops of the cypress oil solution are placed on it about every three hours—or when the odor disappears—and the child is thus kept constantly in an atmosphere of the oil. The formaldehyde is administered once daily by fumigation, i. e., much in the same manner as with the ordinary room disinfection at the close of infective illnesses. Herz has obtained with the foregoing measures results much superior to those of ordinary treatment. They are especially efficacious if begun early in the disease, though even later considerable relief is afforded.

Nascent Iodine as Antiseptic in Otorrhinolaryngology.—P. Laurens, in *Quinzaine thérapeutique* for July 25, 1912, is credited with the suggestion of using nascent iodine, liberated by the interaction of sodium iodide and hydrogen dioxide in aural, nasal, and laryngeal practice. In chronic suppurative otitis, in cases where regular treatment is not practicable, the effects of nascent iodine are superior to those of silver solutions or chromic acid After a cleansing irrigation of the parts with boiled water, five drops of an aseptic three per cent. aqueous solution of sodium iodide are instilled, followed immediately by a like amount of hydrogen dioxide solution, which is then allowed to act for ten minutes. These instillations are to be repeated daily or on alternate days. They cause a certain degree of burning, which is, however, always bearable. In the terminal stage of acute suppurative otitis media, when a mucopurulent discharge persists after twenty days, notwithstanding the customary measures, each ordinary treatment should be preceded by the nascent iodine ear bath already mentioned.

In obstinate purulent rhinitis, as well as in ozena, after the parts have been cleansed with a tepid isotonic solution, a spray of a thirty per cent. solution of sodium iodide should be used, at once followed by one of hydrogen dioxide, from a different spray apparatus. About six bulbfuls of each spray should be used, and the nozzle of the apparatus at first directed horizontally to moisten the lower turbinate, then elevated at an angle in order to reach, as in ozena, the middle and superior turbinates. In maxillary sinusitis the successive use of the two solutions may also give much benefit.

In pharyngeal affections, such as lacunar tonsillitis and chronic pharyngitis, the solutions may be employed either as sprays, direct applications, or gargles. In the latter case, the patient places in a halfglassful of water one teaspoonful of the iodide solution flavored with mint, and in another halfglassful one tablespoonful of the hydrogen dioxide. Alternate gargling with the two solutions is then carried out. In any instance, the amount of iodine set free can be regulated at will by changing the concentration of the iodide solution.

Treatment of Hemoptysis.—O. Grunbaum, discussing hemoptysis in the *Clinical Journal* for November 6, 1912, states that after the patient has been reassured in order to secure mental rest, he may receive a small injection of morphine, provided the hemorrhage or secretion from the lungs is not so profuse as to lead to asphyxia were he not to cough for some hours. The patient should be placed in bed, lying on the affected side, if this is known, and perhaps preferably without a pillow if the hemorrhage has been profuse, except in patients who are thereby rendered uncomfortable. Where it is difficult to make the patient stay still, an icebag may be applied to the chest, and instructions given to avoid its displacement. If the hemorrhage continues, strapping of the affected side should be considered. Oxygen, if given, should be used without exciting the patient, and may be supplied most simply through a rubber teat with a hole of fair size cut in it, the gas first being passed through a metal tube immersed in hot water.

To diminish the pulmonary blood pressure the first measure to be employed is a mild purge. The routine use of ergot is not justifiable, although there is a possibility that it may do good. Aconite, two minims of the tincture every hour, continued until the pulse becomes abnormally slow, i. e., below 65 to the minute, or irregular, or until the blood pressure falls below 90 mm. Hg., is the most useful drug. An attempt may be made to increase the coagulability of the blood by administering calcium lactate, thirty grains in solution, three times a day. The diet may be restricted with advantage, and often no harm will result from giving the patient only fluid for several days.

In obstinate cases the patient, if at an elevation, had probably best be moved to as near the sea level as possible. The side should be strapped, and if the hemorrhage still continues, and one is sure as to which side is bleeding, the production of pneumothorax seriously considered.

Placing bandages around the limbs to deplete the pulmonary circulation may do good for a short time. The introduction of epinephrine to the bleeding area by means of an atomizer may be tried.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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THE TREATMENT OF HEMOLYTIC JAUNDICE.

Although considerable labor, mainly by French clinicians, has demonstrated that a relatively large proportion of cases of jaundice, formerly obscure as to their pathogenesis, were due to the destruction of the red corpuscles, thus causing them to be grouped under the term "hemolytic," or "hemohepatogenous" jaundice, textbooks seem totally to have overlooked the therapeutics of this condition. This is mainly due to the fact that the results obtained have been conflicting, similar measures having produced dissimilar effects in symptomatically identical cases. Gradually, as the pathogenesis became elucidated, however, thanks to the labors of Widal, Klemperer, Chauffard, Teissier, and others, it became evident that the disorder was due to many different causes, and that successful treatment could be expected only when the cause in each case could be clearly determined and the remedy adjusted to that cause.

Proceeding from the best known to the more obscure groups of hemolytic jaundice, we have in quinine a valuable remedy in the cases which are traceable to malaria. Here the malarial parasite is the direct factor in the destruction of the red cells; the hemoglobin of the latter is converted into melanin, which in turn is deposited in the skin and gives it its icteric hue. Quinine, by killing the organism, arrests the hemolysis and thereby the jaundice. Secondary syphilis may also give rise to hemolytic jaundice, the destructive factor here being also the specific organism. Not only does specific treatment cause the jaundice to disappear, but, as recently shown by Sablé and Danel (*Journal des sciences médicales de Lille,* January 6, 1912), so do intramuscular injections of dioxydiamidoarsenobenzol, the blood count being rapidly restored to normal. The hookworm or ankylostoma, the bothriocephalus, and other intestinal parasites likewise produce substances which are destructive to red corpuscles and thus evoke typical hemolytic jaundice; thymol also cures this form by causing elimination of the parasites. The three general groups enumerated, malarial, syphilitic, and entozoal, clearly exemplify the vast field covered by the disease.

In another group of cases ascribed to autointoxication, the pathogenesis is not so clearly defined. The poisons may either be absorbed from the intestine, or retained through some organic renal lesion. Thus Widal, Abrami, and Brulé refer to a case due to postulcerative contraction of the rectum in which an artificial anus relieved the jaundice, which would soon recur if the artificial exit failed to give free passage to the excreta from which the causative toxics were derived. Closely allied to this form is the jaundice of pernicious anemia when it is due to autointoxication of intestinal origin. Here purgation and arsenic are quasi specifics. Arsenic, however, acts in a manner totally different from that ascribed to the agents considered in the preceding paragraph: It prevents, or at least is thought to prevent the destruction of the red corpuscles by increasing their resistance to the action of the hemolytic agent. Another drug to which this action is attributed is calcium chloride. This agent has shown its value in cases of nephritis attended by marked hemolysis when given in fifteen grain (one gramme) doses, four times a day. Parisot and Heully, in a recent article (*Semaine médicale,* February 19, 1913), reviewing the whole question, point out the value of this agent for the prevention of hemolysis caused by chloroform, ether, and other anesthetics. Finally, we have in cholesterin, as shown by many observers, a powerful antihemolytic agent. It has given excellent results in the hemolytic jaundice of pernicious anemia and chlorosis, severe cyclic albuminuria, and paroxysmal hemoglobinuria, with intense destruction of the erythrocytes, the best results being obtained by means of intramuscular injections of a ten per cent. solution of cholesterin in decinormal saline solution.

On the whole, it is evident that there is no longer justification for the absence in our textbooks of all reference to treatment of hemolytic jaundice.

TYPHOID ERADICATION.

It is no longer necessary to adduce evidence to prove that typhoid fever is a thoroughly preventable disease. For a long time it has been conceded that milk and water borne typhoid epidemics depend upon factors which are entirely within our control. More recently it is becoming apparent that it is both theoretically and practically possible to reduce the flyborne cases to almost the vanishing point. The health authorities in Jacksonville, by the enforcement of a sanitary privy ordinance and a concerted action against the fly and his breeding places, reduced the morbidity from typhoid fever in 1911 to a little less than one half of the figures for the previous year. Freeman, in commenting upon the present status of our knowledge regarding the transmission of this disease, declares that the subject is now so completely understood that preventive measures will yield desired results in every case where they are properly applied. The army manœuvres on the Mexican border last year offered a practical demonstration of the ground for such a sanguine belief. Given a certain area and sufficient men and money and typhoid fever can be entirely kept out; once in a given area it can be surely vanquished. Yet, notwithstanding these known facts, the disease still prevails throughout the civilized world. In this country the decrease in the typhoid death rate has not kept pace with the decrease in other preventable diseases. In the seven year period, from 1900 to 1907, the decrease in the death rate from tuberculosis of the lungs was 21.6 per 100,000 of population. From diphtheria it was nineteen, but for the same period typhoid fever showed a decrease of only 5.6. Considering the fact that the United States stands at the very forefront of those nations which have demonstrated their ability successfully to cope with large sanitary problems, the comparison of our own typhoid death rate with that of other countries is not at all flattering. During the five years ending in 1905, the annual average death rate from this cause in Germany was 7.6 per 100,000 of population. In the United Kingdom it was 11.5, whereas in the United States (registration area) the rate was 32.2. Sweden, Switzerland, and a number of other European countries also showed a comparison greatly in their own favor.

A little reflection must serve to show that at least one of the reasons for our comparatively bad showing lies in the fact that we consist of an aggregation of States, each one of which exercises for the most part its sovereign right in the control of health matters. The responsibility for what is really a matter of national importance is divided up too much among local and State health boards. As a result there has not been concerted action enough on a large scale. The preventive work has been almost entirely local, having so far been chiefly confined to the personnel of the army and navy and locally to cities and towns. The all important problem of getting rid of rural typhoid has not yet been seriously attacked. Until all the plague spots are attacked simultaneously and systematically, there can be no real typhoid eradication. As we recently pointed out, it is an error to suppose that typhoid fever is either an urban or a rural disease; consequently the problem is not one simply of eradicating it from town or country, but rather of eliminating those factors which transmit the infection from one community to another. According to Freeman these factors are all included under the following heads: From country to town, carriers temporary or permanent, persons in the incubating period, and persons actually sick, foods and drinks including water, dairy products, garden truck, fruits, shellfish, and possibly other foods; from town to country and between rural communities, persons infected in the cities or towns and incoming carriers, foods of various kinds, night soil and manure carried out of cities for fertilizing purposes, stream pollution, railway trains.

It will be seen that while several of these factors are capable of control by local health boards, others must be inevitably neglected unless provision is made for some sort of concerted action on the part of all health boards and the proper sanitary supervision of streams, interstate commerce, and travel. Unless all the factors are controlled the ultimate complete banishment of the disease is well nigh impossible. Not until concerted action, national in scope, has been undertaken can we truthfully say that we have done all we can to eliminate the trouble. This will require, not only considerable new legislation, but also a great deal of money. To convince the people that protection from typhoid fever is something worth spending money for is now the chief unsolved problem in its eradication.

It is within the limits of reason to consider that fully eighty-five per cent. of the typhoid deaths can be prevented, and such prevention would lengthen the average life at least 0.65 a year. As typhoid has its greatest fatality among men and women in the age period of their greatest economic value, we should thus very materially increase the sum total of all human productivity. It is not only in the saving of the life of the individual that economic benefit would accrue, because for every death from typhoid fever there are many cases of illness which incapacitate the sufferers for a long period before their ultimate recovery. Fisher has estimated that beside the economic loss from every death from typhoid, there is the added loss of eight other cases of the disease with a total incapacity of seventy-five days for each case. The very conditions, moreover, which produce typhoid fever are also conducive to other kinds of sickness. This is shown by the fact that the purification of a typhoid infected water supply results in a diminution of the death rate from other causes than typhoid.

Although facts might be cited almost indefinitely and arguments multiplied to show that the prevention of this disease is of the greatest economic importance, yet would the case still be inadequately stated without at least a passing reference to the misery and sorrow which would be avoided if the public demanded the legislation to make such prevention an accomplished fact.

THE COST OF SUCCESS.

The timeworn aphorism of the candle lighted at both ends lasting only half its natural span, has never applied more accurately or more intensely to the average American city man than it does today. The higher cost of living, the desire for social recognition, and the luring attractions of the city are all contributing causes of an inexorable desire for success, that, hydraheaded though it may be in the multiplicity of its forms, still means, when reduced to its ultimate factor, only a firmer grip on the elusive god Mammon.

The indomitable driving force of American enterprise has, it is true, made itself felt in all parts of the civilized world. That fact in itself has, consciously or unconsciously to us, plastered an immense amount of comfort on our collective vanity. For American success does stand out unique and gigantic when viewed *in toto,* and without further analysis. But sooner or later we shall see that we are paying the price with a vengeance and that the law of compensation is asserting itself, surreptitiously but none the less surely. Thoughtful men are daily becoming more and more aware of the fact that the hundreds of thousands of Americans, we might say the millions, who make possible the abstract fact of our success, are individually travelling at a terrific pace to give us this so called supremacy. The intensity of their efforts may wear them out, but new recruits are ever ready to fill up the gap and keep the mighty ball rolling.

When we are constantly geared up to a high speed, physiological laws raise a warning that read aright means, "Thus far shalt thou go and no farther." The very pleasures and recreations of the city man are unphysiological and exaggerated. Late hours with loss of sleep, dining at a time when repose is indicated, and violations of hygienic and dietetic laws in the matter of proper exercise and regular nourishment are all diminishing a vitality that can only be fleeting under such abnormal stress and strain.

Of what value is success if we spend ourselves untimely in its attainment? It is not hard to see that the unnatural demands of business and pleasure in our life are causing an ever increasing drain on the physical resources of the city individual. The mad scramble for success with its accompanying ability to indulge in dubious pleasures, would be ludicrous were it not tragic.

It is a terrible fact that cardiac diseases, cancer, and arteriosclerosis are eating more and more into the vitals of a nation that should be robust and virile. Insanity has increased enormously in the last half century. Sudden deaths are so commonplace that they pass unnoticed. And if we were to dwell upon the subject in detail, it could be shown that the intensity and single purposeness of the average American in the gratification of his lust for success, as well as for the enjoyment of exaggerated pleasures, play no small part in the increase and perpetuation of disease, insanity, and shortened lives.

Preventive medicine has, it is true, diminished the mortality of infectious diseases; it has mostly done away with the dangers of scourges and plagues; it is making such rapid progress that miraculous discoveries soon appear commonplace in the light of new discoveries. But preventive medicine has a still greater sociological mission to perform. It must teach the lesson that a normal life, in which sufficient leisure and repose alternate with bustle and hard work, is far more to be desired than riches and exaggerated pleasures which are abnormal. Such a knowledge of how to live normally, once attained and wisely followed, would go the longest possible way in diminishing the labors of medicine.

MONTHLY BULLETIN OF THE AMERICAN IRON AND STEEL INSTITUTE.

We have received the first two numbers of the *Monthly Bulletin of the American Iron and Steel Institute,* which will appear, as the title specifies, every month, and which is given over to "articles on iron and steel statistics, and the improvements of methods of producing iron and steel, on the promotion of health and safety among the employees in mines and mills, and generally to serve as the magazine of the institute." It is not long since our great American industries have seen the necessity for protecting the health and lives of their employees. Foremost along these industries are the great iron and steel companies, and they have founded the American Iron and Steel Institute. We find that the large plants of the corporation are beautified so as to make the working place of the laborer as healthful as possible, and at the same time protect him against the dangers of his trade by appropriate warnings, using, when advisable, the native tongue of each man. Here also it has been found that prophylaxis properly applied is the best protection. An article by Dr. Thomas Darlington describes the work laid out for the trained nurse among the men and their families; we see her attending the injured laborer, his wife in confinement, his child in sickness, giving instruction in cooking and nursing, etc. The example set by the institute seems to be a very praiseworthy one.

LABOR UNIONS AND MEDICINE.

In the *British Medical Journal* for March 15, 1913, a letter from a practitioner, A. George Bateman, states that rumors have been heard of the possible establishment of a "trades union" or labor union among members of the medical profession. The writer points out the absurdity of such allegations. As he observes, the advantages of a labor union over its members are its authority to issue orders for a strike and the prevention by "picketing" of the entrance of blacklegs or "scabs" into the strike; and he asks how it could possibly be contended for a moment that either of these powers could be used by educated professional men exercising the healing art and carrying on medical practice. Could the wildest imagination conceive an order emanating from the central office of a medical labor union ordering all members to cease at a given time the care of and attendance upon patients suffering from all forms of disease? Any unity founded on labor union lines, concludes Mr. Bateman, would be degrading and derogatory to professional men in the extreme, and he hopes that the suggestion will be scouted and dismissed as utterly untenable.

RESPIRATORY GYMNASTICS IN CONSTIPATION.

At a meeting of the Société de l'internat des hôpitaux de Paris on February 27th, Froussard drew attention to the fact that for some years kinetotherapy had assumed a prominent rôle in the treatment of habitual constipation; this was logical, since debility of the muscles of the abdominal cavity always accompanied this condition. Among these muscles, continued Froussard, according to *Presse médicale* for March 8, 1913, the diaphragm was one of the most important, although we were accustomed to consider it to be solely a respiratory muscle. Its movements, together with those of the abdominal parietes, acted not only on the movements of the intestinal folds, but on the gases within, and this gaseous circulation was the cause of peristalsis. A moment's reflection would show the importance of the diaphragm in the act of defecation. The speaker recommended, therefore, to the constipated subject, a series of deep respiratory movements just before going to the closet, alternated with movements of effort to defecate, and he observed that Chalaiditi, Aubourg, and Rosenthal had also approved of this procedure.

THE PHENOMENA FOLLOWING HYPODERMIC INJECTIONS.

The hypodermic injection of distilled water alone produces very remarkable results. Our readers are familiar with Schleich's method of inducing anesthesia in this manner, and now an English practitioner, G. Arbour Stephens, asks, in a letter to the *Lancet* for March 15, 1913, that physicians test, and if possible corroborate some very good curative results he has had in the treatment of syphilis, by the injection, every third day, of six to eight c. c. of distilled water into the subcutaneous tissue of the back. After three doses all the patients looked and felt much better and their ulcers appeared very much cleaner. After each dose the temperature showed a rise supposed to be characteristic of vaccine treatment. In three weeks, Mr. Stephens had very gratifying results in ulcers of the cheek and leg and in rupia with abscesses threatening to break. No other treatment was used.

Taking into consideration the curious results obtained in tuberculosis by the hypodermic injection of various agents, along with the experiments of Mr. Stephens, both the physical and the psychic effects of such injections seem to deserve further study.

Obituary.

ALGERNON T. BRISTOW, M. D.,

of New York.

Doctor Bristow died at his home, 234 Clinton Street, Brooklyn, on March 26th, of septichemia following a scratch on the finger, received while operating two weeks before. The most energetic treatment, including the early use of vaccines, failed to avert the fatal outcome. Doctor Bristow was born in Richmond, England, November 29, 1851, and came to the United States in his fourth year, when he began his education in the public schools. Subsequently he attended the Polytechnic Institute, graduated from Yale in 1873, and from the College of Physicians and Surgeons, New York, in 1876. He had been vice-president of the Academy of Medicine, president of the Kings County Medical Society, professor and visiting surgeon at the Long Island College Hospital, visiting surgeon to the Kings County Hospital and St. John's Hospital, and consulting surgeon to the Long Island State Hospital, the Swedish Hospital, and the Bushwick Hospital. Doctor Bristow was editor of the

New York State Journal of Medicine and a prolific contributor to other medical publications, including the New York Medical Journal, his latest article on National Medical Insurance as Affecting the Doctor appearing in our issue for January 4th last. He is survived by a widow and two daughters.

News Items.

Changes of Address.—Dr. Wm. H. Veenboer to 110-116 Fulton Street, East, opposite Fulton Street Park, Grand Rapids, Mich.

Dr. Isadore C. Goldstein from the Fango Institute, New York, to the Sanatorium, Sharon Springs, N. Y.

Gross Lecture at Jefferson Medical College.—The Samuel D. Gross Lecture for the session 1912-1913 was delivered at Jefferson Medical College, Philadelphia, by Dr. William L. Rodman, on Friday evening, March 28th.

South Scranton Physicians' Association.—At the annual meeting of this association, held on the evening of February 27th, the following officers were elected: President, Dr. M. H. Quinn; vice-president, Dr. J. L. Sallade; secretary-treasurer, Dr. Grace McMahon.

Harvey Society Lectures.—The last lecture in the series will be delivered on the evening of March 29th, at the New York Academy of Medicine, by Professor John Howland, of Johns Hopkins University, on the Scientific Basis for the Artificial Feeding of Infants.

Medical Inspection of Druggists and Grocers.—In a bill which has been introduced by Mr. Deering into the Oklahoma legislature, health officials are empowered to require medical inspection of all handlers of foods and drugs where the presence of contagious, infectious, or loathsome disease is suspected.

Jefferson Hospital Clinical Society.—At the annual meeting of this society, held at Jefferson Hospital on the evening of March 21st, the following officers were elected to serve for the ensuing year: President, Dr. Francis T. Stewart; vice-president, Dr. E. Q. Thornton; treasurer, Dr. C. D. Smith; secretary, Dr. E. H. Funk.

Medical Association of the State of Alabama.—The annual meeting of this association will be held in Mobile on April 15th, 16th, and 17th, under the presidency of Dr. Harry T. Inge. Dr. J. N. Baker, of Montgomery, is secretary of the association, and Dr. P. J. M. Acker, of Mobile, is chairman of the local committee of arrangements.

Rush Lecture at the University of Pennsylvania.—The fourth Rush Lecture will be given in the new medical laboratories of the University of Pennsylvania on Wednesday afternoon, April 2d, at four o'clock, by Professor W. B. Cannon, of Harvard University. His subject will be Some Studies on the Bodily Effects of Fear and Rage.

Weir Mitchell Lecture.—Professor H. P. Armsby, of the Institute of Animal Nutrition of the College of Physicians of Philadelphia, will deliver the next Weir Mitchell Lecture in Mitchell Hall, College of Physicians, on the evening of April 4th. The subject of his lecture is Animal Calorimeters and the Study of Nutrition. All physicians and others interested are invited to attend.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Tuesday, Board of Directors of the Aid Association of the County Medical Society, Physicians' Motor Club Smoker, and Medical Examiners' Association; Wednesday, Board of Directors of the Physicians' Motor Club and the College of Physicians; Thursday, Obstetrical Society; Friday, Kensington and Southeast Branches of the County Medical Society.

Dental Clinics for New York School Children.—Six new dental clinics for school children were opened on March 25th by the department of health. The 1913 budget authorized the employment of one supervising dentist and nine staff dentists. Of the six clinics two are in Manhattan, three are in Brooklyn, and one is in The Bronx. Up to the opening of these clinics there was only one for all the boroughs. Of the present registration of 700,000 children it is estimated that 420,000 are in urgent need of dental treatment.

Association of American Medical Colleges.—At the recent annual meeting of this association, held in Chicago, the following officers were elected: President, Dr. E. P. Lyon, St. Louis University; vice-president, Dr. F. F. Wesbrook, University of Minnesota; secretary-treasurer, Dr. F. C. Zapple, University of Illinois.

New Building for Sydenham Hospital.—Plans are being prepared for a new building for Sydenham Hospital, to be erected on the present site of the institution in East 116th Street. The proposed building, which will contain 200 beds, will cost $350,000. Mr. Isaac Guggenheim has given $100,000 toward the building fund, with the stipulation that the hospital remain nonsectarian, and the directors have promised to raise the additional $250,000.

Walker Cocaine Bill Condemned.—The bill drafted in the district attorney's office to regulate the traffic in cocaine, and introduced into the New York legislature by Assemblyman Walker, was severely condemned by several speakers at a meeting of the Medical Society of the County of New York on Monday evening, March 24th. Resolutions condemning the measure were proposed, but did not come to vote, the president appointing a committee to confer with the assistant district attorney regarding proposed modifications of the measure. This committee will report to a special meeting of the society to be held on March 27th. The assistant district attorney has agreed to await action by the society before pressing the passage of the measure.

American Society of Medical Sociology.—A meeting of the American Society of Medical Sociology will be held on Saturday, March 29th, 8:45 p. m., at the residence of Dr. William J. Robinson, 12 Mt. Morris Park West. The Problem of the Prevention of Conception and the Best Means to Bring about the Repeal of the State and Federal Laws against It will be the topic of the evening and ten ten minute papers will be read by physicians and sociologists, dealing with this important question, including Dr. William J. Robinson, Dr. James P. Warbasse, Dr. H. Edwin Lewis, Dr. I. L. Nascher, Mrs. Anita C. Block, Mrs. Clara G. Stillman, Mr. Edwin C. Walker, Mr. James F. Morton, Jr., and Mr. I. Balch Lewis.

The Glasgow Lister Ward and Museum.—As a memorial to the late Lord Lister, and as a means of perpetuating his memory in a way that it is hoped will prove both interesting and instructive to every member of the medical profession for all time to come, one of the wards in the Royal Infirmary, Glasgow, in which he worked out and first put into practice the principles of antiseptic surgery, is to be reserved and utilized in the following way: One part of the ward is to be refurnished as it was in his time with such objects as it may be possible to acquire; while the other part is to be made into a museum for the exhibition of anything associated with his life and work. It is, therefore, asked that any who may have letters, pamphlets, books, or other objects of direct personal association with Lister and his work will either present or loan them to the museum. Professor John H. Teacher, M. D., curator of the Museum, will be pleased to receive any objects addressed to him at the Royal Infirmary, Glasgow, Scotland. The names of all donors or senders of objects are to be affixed to the exhibits.

Protest against Recent Ruling of Health Department Regarding Venereal Diseases.—The Committee on Medical Economics of the Medical Society of the Borough of the Bronx has sent to Mayor Gaynor a vigorous protest against the recent direction and order of the Health Department of the City of New York to certain hospitals in the city, requiring such institutions to record in the department the names and addresses of all patients suffering from venereal diseases, and, if possible, the names and addresses of all persons supposed to be sources of infection. Several reasons are given for their objection to the ruling, the principal one being that all knowledge of such cases obtained through professional media is confidential and privileged and should not be recorded, even in private practice, except as records of disease, and it is believed that the protection of such records in the health department would be impossible. Dr. Isaac M. Heller is president of the society, Dr. John J. Decker is secretary, and the Committee on Medical Economics is composed of the following members: Dr. William S. Gottheil, Dr. John A. Cutter, Dr. William H. Kahrs, Dr. Harry Aranow, and Dr. J. A. McNevins.

Official Investigation of Doctor Friedmann's Treatment for Tuberculosis.—The following statement has been made by the United States Public Service regarding its investigation of the Friedmann treatment for tuberculosis: On March 8th the Secretary of the Treasury, on the recommendation of the surgeon general of the Public Health Service, caused a board of medical officers to be detailed to make a thorough investigation of Doctor Friedmann's alleged cure for tuberculosis. These officers proceeded immediately to New York and arranged with Doctor Friedmann for demonstrations of his remedy upon persons suffering from tuberculosis. These demonstrations are being carried on in certain New York hospitals through the courtesy of their respective authorities, and will be continued until sufficient information has been obtained for the forming of an opinion as to the merits of the treatment. Doctor Friedmann has submitted to the board a culture of the bacteria which, he states, are used in his method of treatment. In addition to the observation of persons under treatment by Doctor Friedmann, the board of officers will make experiments to ascertain whether this culture is, as Doctor Friedmann asserts, harmless to warm blooded animals. Considerable time will necessarily be required to carry out these investigations. The work will be carried on as rapidly as possible. In the meantime the public is informed of the inadvisability of tuberculous patients traveling long distances in the hope of receiving the treatment. Those to whom it is administered for demonstration purposes are selected by the hospital authorities from among their patients; the number selected constituting only a small proportion of available volunteers. Certain statements purporting to be expressions of the opinion of the board of officers of the Public Health Service carrying on the investigation have appeared in the newspapers. These officers have expressed no opinion and will not be in position to do so until the work has advanced sufficiently far to warrant some conclusion in regard to Doctor Friedmann's treatment.

Fund for Social Welfare Work.—Announcement is made that Mrs. Elizabeth Milbank Anderson has given $650,000 to the New York Association for Improving the Condition of the Poor, for the establishment of a department of social welfare to conduct experimental laboratories for the purpose of demonstrating the practicability of preventive and constructive measures, in order that they may be adopted by the municipality and other civic and social agencies. This fund will be known as the Milbank Memorial Gift. The new department will be under the direction of a board of managers, and will be entirely free from all A. I. C. P. activities, no part of the fund to be used for relief or fresh air work of any kind. The work of the proposed Department of Social Welfare will be carried on by three committees, as follows: Committee of Public Health and Hygiene, Committee on the Welfare of School Children, and Committee on Food Supply. The Committee on Public Health will continue the public bath work which the association started in 1891, cooperating with the city in endeavoring to increase the popularity of the public bathing facilities throughout the city. An allied activity will be an educational campaign for the extermination of common disease carriers. The Committee on the Welfare of School Children will investigate the ventilation of school buildings and other public buildings, a committee of experts to be appointed for research and experimental work; it will also aid the School Lunch Committee in the work of serving hot lunches to school children. The problem of extending and improving the present system of medical inspection of school children, and of increasing the clinical facilities for the treatment of physical defects of school children, especially of the teeth, will be taken up by the committee in cooperation with existing agencies. More sanitary methods of cleaning school rooms and of providing sanitary drinking fountains also will be considered by the committee. The programme of the Committee on Food Supply so far as it has been outlined includes an investigation concerning the scientific production of various articles of food, its purchase in larger quantities, its scientific storage, its efficient and honest handling, and the latest facts as to relative food values. The object of this inquiry will be to ascertain how the cost of food can be reduced to the consumer and its nourishing qualities increased.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

January 5, 1913.

Nystagmus retractorius, a Localized Cerebral Symptom.—Elsching arrives at the conclusion that this symptom, consisting of a slight retraction of the bulbi with increased convergence, but without contraction of the pupils, is caused by a cumulative neurosis of all the external muscles of the eye and depends upon diffuse pressure on the nuclei of the nerves controlling the muscles and their connecting fibres, i. e., a foreign body at the entrance of the aqueduct of Sylvius. The author is not certain whether hemorrhage into the aqueduct of the third ventricle can produce this symptom.

Rapid Opening into the Larynx in Cases of Urgent Asphyxia.—Denker says that from his post mortem examinations and experiences on the living, intercricothyrotomy is an easily executed and safe procedure which may be employed as a preliminary to other operations and a life saving device in many instances. A set of instruments sterilized for performing an intercricothyrotomy should be held in readiness and is of much more importance than a tracheotomy set.

January 12, 1913.

Migraine, Symptoms, Causes, Nature; Migraine and the Sexual Life.—Caeser's interesting article details the symptom triad of migraine, specific headache, gastric and psychic disturbance. Sympathetic symptoms are: 1. Hemicrania spastica, a sympathetic cramp, and, 2, hemicrania angioparalytica, due to a sympathetic paresis. The first is characterized by pallor and coldness of the face, dilatation of the pupils, thickening of the temporal arteries, and salivation; the second by redness of the face, injection of the conjunctiva, epiphora, narrowing of the palpebral aperture and pupils, and unilateral sweating. The latest statistics show that disturbances of vision, found in twelve per cent. of the cases, are of two types, paretic and visual. As to irritations of the cranial nerves the trigeminus holds first place. The most important factors in the causation of the attack are the sexual incidents, namely, menstruation and ovulation in the female. The author discusses the various theories of the irritations of the cortex, plexus chorioideus or hypertrophied hypophysis, increased cerebrospinal fluid, etc.; also, the sympathetic theory, i. e., paresis or spasm of the bloodvessel, reflex irritation from the stomach, eyes, etc. Poor function of the endocrine glands is the main cause of the migraine, and, more specifically, the affliction is conditioned by disturbance of the ovary. The weakened activity or complete cessation of this organ influences the headache tendency favorably, while a hyperfunction or painful function is the most important factor clinically. The practical therapeutic significance of this is that in a positive case of migraine which has resisted all treatment, sterilization of the patient should be tried, particularly in elderly unmarried women or married women who have borne a number of children. This may be accomplished by the Röntgen ray and does not require operation.

January 19, 1913.

Treatment of Peritonitis.—Schepelman's experiments on animals proved the following: By preparatory treatment of the peritoneum with lime water, its bactericidal action influences the course of the peritonitis in a favorable way, not sufficiently, however, to employ it for practical purposes. By the intraperitoneal injection of homogenous animal blood the formation of abdominal pus is neither encouraged, improved, nor prevented. The injection of heterogenous animal blood is decidedly damaging. The great disadvantage in these blood injections is the formation of adhesions.

Arsentriferrol.—C. A. Ewald gave arsentriferrol, first prepared by von Salkowski, a thorough clinical test, especially as to its acceptability by the organism in cases of gastric and duodenal tumors. In contradistinction to other iron preparations, arsentriferrol gave good results in all twenty-eight cases. In only two cases its administration was discontinued because of the production of pain. In all the others it was well borne and produced an improvement in the blood picture. In some cases of achylia gastrica and in carcinoma ventriculi an increase in the hemoglobin content was obtained. In the case of a man with acute anemia from hemorrhoidal hemorrhage, the increase in hemoglobin was considerable. This preparation, which has been considered of doubtful value, may, according to these experiments of the author, be highly recommended.

Right Ventricle of Heart and Sport.—Grober had occasion to examine the participants in a competitive manœuvre before and after the exercises. In only five out of the twenty-five were no changes observed. Two of these were trained soldiers and two were vegetarians. Slight changes, broadening of the heart to the right, decreases in the motility, and expansibility of the lower borders of the lung were observed in four. Actual and important changes were seen in the majority (sixteen), namely, marked dilatation of the right heart, irregularity of the heart action, heart murmurs, collapse, etc. These serious changes, though only temporary, show that in such tests only trained and bodily sound individuals should take part.

January 26, 1913.

Adamon, a Substitute for Valerian in Solid Form.—H. Gudden summarizes his article thus: Adamon furnishes a harmless, effective sedative, the first practical substitute for valerian in solid form which makes possible a course of treatment of long duration, because of its tastelessness and because it does not affect the gastrointestinal tract. The choice of the name is also a happy one, since it does not arouse suspicion of bromides or valerian, a fact which should not be undervalued for patients who have been saturated with either, and demand a new sedative.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

February 1, 1913.

Value of Pituitary Extract in Hebosteotomy (Pubiotomy).—Linzenmeier reports two cases of contracted pelves in which pituitary extract was given and pubiotomy subsequently performed. In both instances the child lived and no serious injury was done to the mother. The author believes that this procedure may be employed in place of Cæsarean section.

Pituitary Extract in Prolonged Gestation.—Stolper reports two cases in which the date for delivery had been passed. Pituitary extract was given, but in both instances the first injection had no effect. In one instance, after waiting seven hours, a second injection was given, this being followed by the delivery of the child a little more than an hour later. In the second case four injections were given before spontaneous delivery occurred. The author did not notice any abnormal conditions as a result of giving so much pituitary substance, but recommends that both mother and child be carefully watched, particular attention to be paid to the heart action of the infant.

Has Pituitary Extract a Harmful Effect on the Child?—Spaeth briefly mentions some cases by other observers in which harmful effects appear to have been exerted. He then gives an instance of his own, where the child died a half hour after birth. In this individual the heart beat was visible, but very slow. The autopsy showed nothing positive. The death was evidently due to action upon the heart muscle.

February 8, 1913.

Can Eclampsia be Cured by Injections into the Spinal Canal?—Rissmann does not believe in the placental theory of the origin of the poisons elaborated during pregnancy. He holds that in eclampsia there are injuries done to the brain and cord. In the case reported he injected five c. c. of a sterile fifteen per cent. solution of magnesium sulphate, intradurally. The patient was unconscious and had had some twelve convulsions. Following the injection no further attacks occurred, and in the course of three days the patient completely recovered.

Treatment of Eclampsia.—Putz gives a brief presentation of forty-five cases of eclampsia coming to his notice. He states that immediate delivery is brought on only in those which are considered severe cases, such as present a very rapid and small pulse, slight amount of urine, and stupor.

February 15, 1913.

Biological Diagnosis of Pregnancy.—Petri makes a five per cent. solution of a peptone, obtained from the placenta, in distilled water, and adds one c. c. of this to one c. c. of the serum of a pregnant woman. The control consists of using a mixture made with the serum of a nonpregnant woman. These are placed in the chamber of a polaroscope, put in an oven at 37° C., and examined hourly. No change is observed in the nonpregnant, but in the other there is a marked effect, due to the action of a ferment in the serum of the pregnant woman upon the placental peptone. Basing his conclusions upon work of Abderhalden, the author believes that it may be possible to make a diagnosis of pregnancy within the first day after the fertilization of the ovum.

February 22, 1913.

Hematometra at the Age of Eighty Years.—Ottow briefly reviews the matter and then reports a case under his observation. The patient gave a history of the sudden escape of very large quantity of blood. Examination showed the presence of a carcinoma of the uterus with atresia of the cervix. When the carcinoma had infiltrated the uterine wall sufficiently to cause a point of weakness, it ruptured and allowed the retained blood to escape.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

February 15, 1913.

Coagulation of Blood during the Death Agony.—Franz Rost, on account of its importance from a medicolegal point of view, undertook to determine whether the clots found at autopsy were formed before or after death. As a result of his experiments he concludes that many of these coagula must have formed during the agonal period.

February 28, 1913.

Colloid Retention in Circumscribed Goitre.—Monogenow, from studying specimens that had been injected with Berlin blue, believes that in struma nodosa there is a retention of colloid material. This condition is due to a lack of normal lymph vessels or to an incomplete union of the lymph spaces with the lymphatic system of the adjacent tissues.

ZEITSCHRIFT FÜR AUGENHEILKUNDE

February, 1913.

Vision and Shooting.—Fernand Cuny has studied the vision and shooting ability among the German soldiers, and finds that those who wear glasses prove on the average to be better marksmen than those who do not. Very slight impairments of vision have marked influence on the result.

Treatment of Choked Disc, Especially when Due to Tumor of the Brain, by Palliative Trephining, with Temporary Exocranial Drainage of One of the Lateral Ventricles.—Kaelin-Benziger maintains that the positive diagnosis of a bilateral choked disc furnishes an unconditional indication for the surgical relief of the pressure on the brain. The farther the injury to the optic nerves has advanced the worse is the prognosis for the preservation or the improvement of their functional power by the operation. Spontaneous recovery is rare and should not be taken into account, because there is no diagnostic criterion that justifies a hope for its occurrence; hence expectant treatment is to be condemned. As the cause of the choked disc cannot be removed in most cases of tumor cerebri, and as it is impossible to enlarge the physiological avenues of escape for the liquor cerebri, the only therapeutic means at our disposal are either a new permanent avenue of escape for the fluid, or a permanent enlargement of the cavity occupied by the brain. As a solid tumor is often complicated by a hydrops of the ventricle, it is well to combine exocranial and endocranial drainage with trephining. Exocranial drainage for from eight to twelve days serves two purposes: It lessens the danger of prolapse of the brain, and enables us to ascertain the properties of the contents of the ventricle. Endocranial drainage of the arachnoid space, on the contrary, needs to be permanent. A permanent and sufficient enlargement of the cavity occupied by the brain and a permanent endocranial drainage cannot be made without removal of bone from the skull together with the periosteum, and division of the dura. Simple trephining suffices only in very rare cases. The aperture should be made in the parietal region. Lumbar puncture should be reserved for suitable cases of papillitis of syphilitic origin, of serous meningitis, and of chronic interstitial nephritis in which decompression is contraindicated, and should be performed either by itself or in combination with medicamental treatment. Therapeutic decisions should be guided in every case by the ophthalmoscopic condition of the choked disc, the reduction of which is to be attained under all circumstances.

PRESSE MÉDICALE.

February 22, 1913.

Subcutaneous Injections of Hexamethylenamine in the Treatment of Typhoid Fever.—H. Triboulet and F. Lévy studied in particular the urinary changes produced by this drug. In children over six years of age they gave initial doses of 0.4 gramme morning and evening, then increased the amount until four, five, or six grammes were being given daily, in two doses. A forty per cent. solution was used, either sterilized by exposure to 60° C. for twenty minutes or prepared simply by dissolving the compound in sterile water. They give detailed records of three cases; all were bathed in addition to the hexamethylenamine treatment. In the first case no abnormality in the urine could be detected; in the other two the drug caused the appearance of vesical epithelium and of pseudoalbumin in the urine, with a mere trace of serum albumin. Later erythrocytes and globulin were eliminated, but serum albumin was barely perceptible. No bladder pain or tenesmus were noted. The transitory urinary changes are attributed by the authors to vesical irritation alone, the kidneys remaining unaffected. The injections were productive of greater benefit than hexamethylenamine taken by mouth, the tongue becoming moist, adynamia disappearing, diarrhea being reduced, and the urine rendered more dilute. Fever was not of more than three weeks' duration in either case. Large doses of the drug could probably also be used with benefit and without danger in septic states, especially those with elimination of bacilli in the bile and with infectious enteritis.

SEMAINE MÉDICALE.

February 26, 1913.

Supracondylar Fracture in the Atrophied Femur.—F. Lejars states that while cases of supracondylar fracture from relatively slight traumatism in the presence of bone atrophy have so far been reported only in children subjected to prolonged immobilization because of coxalgia or congenital hip dislocation, the same sort of accident may occur in adults. In one case he reports, that of a young man who had "white swelling" of the knee, terminating in ankylosis, the fracture was caused by a misstep in walking; in another case, that of a man forty-two years of age, previously treated for pseudoarthritis of the right tibia, the fracture occurred while the patient was getting into a carriage. The supracondylar portion of the femur is the seat of election of "fractures by inactivity." Brandes has shown experimentally in guineapigs the extreme rapidity with which the os calcis atrophies—two to five weeks—after section of the tendo Achillis. The lesson to be drawn from these facts is that during immobilization the bones in certain areas rapidly lose their strength, and a corresponding degree of care should be exercised in the performance of active and passive movements in these cases. It seems surprising, at first sight, that the fractures occurring in atrophied bones generally heal without any difficulty.

REVUE DE CHIRURGIE

February, 1913.

Relations of Motor Branch of Radial Nerve to the Radiohumeral Joint and Their Bearing upon the Surgery of the Elbow.—O. Jacob asserts that in operations on the posteroexternal aspect of the elbow the motor division of the radius is not rarely injured, with resulting paralysis of the extensors and abductors of the hand. He has seen three such cases, in which the operations performed were, respectively, resection of the elbow through Kocher's incision, removal of the upper extremity of the radius, and arthrotomy of the elbow joint for suppurative arthritis. Studying the anatomical relations of the nerve in twenty cadavers, in order to ascertain the limit of safety as regards incisions in this region, the author found that these relations vary according to whether the forearm is in complete pronation or supination. In the former case no incision should extend below an oblique line drawn from a point on the external aspect of the radius four cm. below the radiohumeral joint to a point on the posterior aspect of the same bone, six cm. below the joint. With the forearm in supination, on the other hand, two and four cm. are to be substituted, respectively, for the distances just named.

Separation of the Tibia and Fibula in Fractures above the Ankle.—Clermont discusses this question at great length, and presents x ray reproductions illustrating the relations of the bones as he has found them in these cases. He points out that separation of the tibia and fibula may occur without tearing of the ligaments, by reason of fracture of the lower extremities of the bones, and conversely, has observed clinically that the ligaments may be torn off without separation of the bones resulting. No indirect fracture of the fibula can occur without a certain degree of mobilization of the lower end of the fibula, and to this loosening of the parts the general term "tibiofibular disjunction" may be applied. The necessary mobilization may be brought about either through combined rupture of the anterior, interosseous, and posterior ligaments, or of the first and last of these singly, or may occur through the splitting off of anterior or posterior fragments from the fibula or anterior, external, or posterior fragments from the tibia. Clermont would classify fractures in this region into those unaccompanied by disjunction, those in which the fracture gives rise to disjunction, and those in which disjunction is the cause of the fracture. Stereoscopic x ray views should be taken in examining these cases.

Changes Observed in the Thyroid Gland as the Result of Various Experimental and Clinical Conditions.—E. Martini reports the results of histological study of the thyroid in dogs, from which various other internal secretory glands had been removed and in human subjects who had succumbed to various infections. In operating on the dogs, a small section of thyroid was always taken in order to supply a firm basis for comparison of the condition of this organ before and after the intervention. Partial removal of the pancreas, or removal of one suprarenal body, kidney, or testicle was found to have no effect on the thyroid. Total pancreatectomy or bilateral adrenectomy or nephrectomy, however, led to histological changes indicating increased function of the thyroid; removal of both testicles or of the spleen resulted in similar but less marked changes, the toxemia to be counteracted by the thyroid after these procedures apparently being less. In the thyroids taken from ten human subjects who died of pneumonia, indications of increased functional activity were found; in ten typhoid fever cases increased function was also evident, but there were already distinct retrogressive changes in addition, doubtless owing to the greater duration of the disease. In ten cadavers of chronic pulmonary tuberculosis cases the thyroids showed both sclerotic and atrophic changes and proliferation of the residual functioning cells. Finally, in ten cases of cancer the changes were similar to those in the tuberculous cases, but less marked, both as to sclerosis and epithelial proliferation. All the cadavers examined were of patients between the ages of twenty-five and forty-five years. The conclusion reached was that whereas at the start of infectious processes the thyroid reacts as an antitoxic organ, the prolonged presence of toxic substances induces retrograde pathological changes.

REVUE DE MÉDECINE

February, 1913.

Acute Dehydration of Toxic Origin.—Marcel Labbé reports a case in which continued vomiting and diarrhea, apparently due to some toxic factor the nature of which could not be discovered, resulted in a loss of twenty-four kilogrammes in weight in a period of two weeks. Purpura, edema of the extremities, and albuminuria were simultaneously present, but there was no fever. It was estimated that thirty-five per cent. of the water previously present in the system had been lost—a degree of dehydration not attained even in cholera or by deprivation of fluids. Extreme muscular tenderness was a prominent symptom. Stress is laid on the fact that there was no tendency to coma or acidosis. This shows that, as already asserted by Chauffard, acute dehydration in diabetic coma is a secondary phenomenon, and does not in itself bring on the coma; likewise, that inanition, clearly manifest in the author's case, is not sufficient in itself to bring on acidosis.

Resorption of Ascitic Fluid in a Case Subjected to Autoserotherapy.—G. Vitry and A. Sézary present the history of an undoubted case of cirrhosis, with diminished size of the liver, splenic enlargement, prominent collateral circulation, and positive methylene blue test, in which autoserotherapy and other measures led to rapid absorption of an ascitic accumulation of six months' standing. The patient was put to bed and given three pints of milk a day. Upon administering one gramme of theobromine the elimination of urine rose slightly. A week later, subcutaneous injections of ten c. c. of ascitic fluid were started, and thereafter continued on alternate days. On the third day a free flow of urine set in, with the result that eleven days later the ascites had disappeared and autoserotherapy was necessarily discontinued. The urine during this period showed both an absolute and a relative increase in sodium chloride—a fact apparently of considerable significance in relation to the favorable results obtained. The urinary acidity was simultaneously lessened, owing to the elimination of the alkaline ascitic fluid. The patient was subsequently given saltfree food, then placed on a careful chloride-containing diet, with the result that ascites and the symptoms due to portal congestion have not returned.

Elimination of Chlorides in Simple Polyuria.—J. Goldberg and R. Hertz point out that the rôle played by the kidneys in simple polyuria is not as yet clear. Some, including Meyer, believe the essential cause of the condition to be an inability on the part of these organs to maintain a normal degree of concentration in the urine, while others assert that this is by no means true of all cases. The authors, in studying the question, made hourly estimations of the sodium chloride concentration in three cases, two of independent, simple polyuria, and one in which the condition appeared in some way related to syphilis. Administration of sodium chloride to these patients caused an increase both in the quantity of the urine and its saline concentration, thus showing that the concentrating power of the kidneys was at least partly retained. Ten gramme doses of sodium bicarbonate were found always to lower the urinary saline concentration, both in these patients and in normal subjects; these findings agree with those of Widal, who observed a decrease in the elimination of salt, with tendency to edema, in diabetics to whom large doses of the bicarbonate were given.

New Views Concerning Diabetes.—A Rodriguez finds that the concentration of chlorides in the urine of diabetes is nearly always increased, and bears a close relationship to the degree of glycosuria. He believes excessive ingestion of chlorides to be a factor in many cases of glycosuria, and has obtained good results in a number of patients with a diet, free of or poor in salt, but rich in carbohydrates.

BRITISH MEDICAL JOURNAL.

March 1, 1913.

Intramural Spread of Rectal Carcinoma.—Percival P. Cole analyzes the material from twenty cases and concludes that the spread of the lesion is by way of the lymphatic channels. There is a plexus of lymphatic vessels between the two muscular coats, the vessels of which run in a circular direction. It is suggested that this plexus is largely responsible for the circular distribution of the lesion in the rectum. This plexus empties into larger vessels which form toward the mesenteric side of the gut, and it is usually observed that carcinoma fails to involve a narrow zone corresponding to the area between the vessels of either side as they pass from the intestine to the mesenteric glands. The size of the ulcer in rectum carcinoma is no indication of the extent of involvement, and in every case in the series the growth had spread to the tissues outside of the bowel wall.

Afterhistory of Gastroenterostomy for Peptic Ulcer.—Aleck W. Bourne traced sixty-eight patients who had suffered from peptic ulcer and who had had gastroenterostomy performed for its relief. He summarizes his findings thus: 1. The results of the operation are generally either excellent cures, or complete failures. 2. The immediate mortality of ninety-two cases was 7.6 per cent., but of the last fifty-three cases it was nil. 3. The general results are, forty-three per cent. excellent, and thirty-eight per cent. bad. 4. Prognosis is much better when the patient is over forty. 5. Of males sixty-nine per cent. are cured, twenty-eight per cent. of females are not improved. 6. The duration of symptoms is of no assistance in predicting the result of operation. 7. The length of time elapsing between a meal and the onset of pain is of great importance; the longer it is the better the outlook. 8. Duodenal ulcers yield very much better results than gastric ulcers; the latter give thirty-eight per cent. of cures, the former seventy per cent. 9. Cases of pyloric stenosis give the best results. 10. The degree of hyperchlorhydria is important, cases having an acidity of over 0.2 per cent. (total acidity) do well, those with normal acidity do badly. 11. The improvement effected by the operation is probably due to the relief of dilatation, pyloric spasm, and hyperacidity by drainage. 12. Failures may follow the closure of the anastomosis. 13. The position of the anastomotic opening on the posterior wall of the stomach may be of great importance. 14. Failures may be due to, a, recurrence, or failure of the ulcer to heal; b, formation of jejunal ulcer. Apparent relapses, a, adhesions, causing pain, vomiting, etc.; b, carcinomatous degeneration. 15. Patients in whom no ulcer is found at operation do badly.

March 8, 1913.

Certain Physical Signs of Myocardial Involvement.—Thomas Lewis records the observation of acute and subacute heart block in a number of rheumatic cases. This phenomenon occurred not infrequently in the absence of all other signs of cardiac involvement. In many of the cases it was present only during the acute stage of the disease, and in most it disappeared, for a time at least. Similar findings have been recorded in cases of influenza, infection of the bladder by a coliform organism, and in diphtheria. In some of the cases death resulted from other causes while the condition was recent and in others only after it had become old. In all there have been demonstrable signs of myocardial invasion which was so located as to include in its damage the bundle of His. In another case only one of the branches of the bundle was involved. This cannot be diagnosticated by any means except the electrocardiograph, but it serves to carry the argument farther, to the effect that acute or subacute heart block is an early, and often the only, indication of myocardial disease. In many instances this myocardial involvement progresses by recurrent exacerbations eventually to become chronic and often to lead to the death of the patient. While this form of heart block may not be an infallible sign of general myocardial disease, it is certain that it is often an indication of invasion when other signs are absent.

Manifestations of a Healthy Heart.—W. Bezly Thorne does not accept the views of James Mackenzie regarding certain types of irregularities of pulse rate and the presence of functional murmurs. On the contrary, he believes that they point to two defects; an inactive tunica media of the arteries and a consequent deficiency of recoil and vascular conductivity; and an actual defect of myocardial energy, the importance of which is relatively aggravated by the fact of the central organ being called on to perform a considerable part of the work which should be carried out by the arterial heart. The signs and symptoms are a dicrotic, empty pulse, an undue degree of postural tachycardia, functional murmurs which tend to subside in the erect position, irregularity of the pulse, and dilatation of the pupil. The result is a general impairment of power and efficiency and an inability to bear strain, either mental or physical.

The Auricle in Mitral Stenosis.—D. W. Samways believes that the complex series of murmurs heard during the course of a case of mitral stenosis can be easily and naturally explained if it is granted that the contraction of the auricle may not cease when that of the ventricle begins, but may continue for a longer or shorter period to overlap it. In this lesion it would take longer for the auricle to expel its blood through the small orifice than normally, and if the auricle can prolong its contraction into ventriculosystolic time the following results would appear: 1. The presystolic murmur would go up to and into the first sound, and would not even necessarily stop with the advent of the first sound, for it has been shown that the power of the contracting auricle varies roughly inversely with the cube of its diameter. This would make possible a condition in which the power of the auricle was greater than that of the distended ventricle. 2. A systolic murmur might be absent for years, though the mitral valve was incompetent, owing to the greater power of the small auricle contracting against the filled ventricle and preventing regurgitation. 3. Through dilatation of the auricle it might fail to overcome the force of the ventricle, and the result would be the advent of a systolic regurgitant murmur.

LANCET

March 8, 1913.

Peritoneal Adhesions.—Joseph E. Adams conducted an experimental study of this subject and presents some interesting findings. Noninfective adhesions form readily after the introduction of sterile cotton or gauze, or the injection of emulsions of sterile sand into the peritoneal cavity without injury to the peritoneum. Such adhesions progress to the formation of fibrous bands just as do the infective adhesions, but they are far less extensive. Injection of scarlet red, which is reputed to have powers of causing cell proliferation, caused absolutely no peritoneal adhesions. The introduction of sterile drainage tubes into an uninjured and sterile peritoneal cavity, or the fixation of sterile gauze pads to the peritoneal surface of the intestine, led, in many cases, to a lowering of the resistance of the peritoneal coat so that the bacteria from the lumen passed out into the adhesions. Such a finding suggests a serious danger in the introduction of drainage tubes in man, unless there is a definite and well delimited abscess cavity. Further, the introduction of sterile drainage tubes was followed in twenty-four hours by the complete coating of the tubes with a layer of fibrin and leucocytes. This further confirms the futility of draining the peritoneum in the absence of a definite abscess cavity. Even the use of lubricants, such as sterile olive oil, does not prevent the formation of adhesions around these tubes, but, in fact, seems to make the adhesions more dense than without the lubricant. Adams studied the movements of the omentum and found that this organ owes its motion solely to intestinal peristalsis. Its movement is slow and when it comes into contact with an abraded peritoneal area it adheres and finally unites therewith. The omentum may even be completely detached from its blood supply and, if left free in the abdominal cavity, it will continue to live. It does not have a tendency to form adhesions itself and its use as grafts is the most satisfactory means at present known of preventing the formation of adhesions.

Treatment of Pulmonary Tuberculosis.—Noel D. Bardswell analyzes the records of 1,082 patients sent to a single sanitarium. Of these, fifty-two, or 4.8 per cent., were found not to have tuberculosis and are not considered in the subsequent discussion. A total of 1,030 cases diagnosticated as having pulmonary tuberculosis showed tubercle bacilli in 82.4 per cent., and there were 17.5 in which there were no bacilli found. Of the total 1,030 there have been 920 traced. It is this group which forms the basis for the following figures. The statistics are of the condition of these 920 cases at periods varying from one year and four months up to five years and four months after their discharge from the sanitarium. In 156 of these patients no tubercle bacilli were ever found, and of these, 89.1 per cent. are well or alive, and 10.9 per cent. are dead. Of 764 who did have bacilli, there were 183 in stage I and 83.6 per cent. of these are alive or well: out of 357 in the second stage, 61.6 per cent. are well or alive; and only 28.5 per cent. of the 224 patients in the third stage are well or alive. It is striking how well the records of the early cases having tubercle bacilli compare with those of the cases in which no bacilli could ever be found. The average patient with tubercle bacilli and still in the early stage of the disease does well under sanitarium treatment. The statistics of the cases in the third stage shows that little permanent benefit is to be expected from sanitarium treatment of this class. In the second stage, if only the onward march of the lung disease can be arrested, complete restoration to health and capacity for work is still to be looked for with confidence. Failing an efficient arrest, the lapse into a hopeless condition is inevitable. The series teaches that the disappearance of tubercle bacilli from the sputum is a factor of the highest importance from the point of view of individual prognosis, and the advantage of having the sputum free from bacilli is of no less import in relation to the public health. In this entire series of patients none has received tuberculin.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

February, 1913.

Diffuse Osteomyelitis from Nasal Sinus Suppuration.—Dan McKenzie describes two varieties of cranial osteomyelitis, the fulminating, which is fatal in a few days, and the slower type sometimes following nasal sinus suppuration. The duration of this latter is from three weeks to six months or even two years. The onset is very insidious. Following operation, the skin wound may be united and the temperature normal, when slight redness and swelling appear at the external wound. The tumefaction slowly progresses despite intervention, the wound gapes; pus becomes abundant. Pain may be severe, or may be but slight. If the sinus is opened again the bone will be found to be dead white or discolored, with pus emerging from the cut edges. Toxic symptoms now develop; edema of the soft parts at a distance from the sinus of origin shows itself; the disease extends from one bone to another, reaching down to the nasal bridge at times, pus collecting here and at the eyelids. The temperature shows a slow rise to a moderate continued fever. Rigors are unusual. Treatment consists in opening external abscesses as they form; resection of necrosed tables of the skull; evacuation of extradural pus collections. After an interval of weeks or months of apparent recovery, recurrence usually takes place. Death is caused by toxemia, asthenia, pyemia, or endocranial complication, i. e., extradural abscess, which is to be regarded as a regular feature of the disease, thrombophlebitis, cerebral abscess, or leptomeningitis.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 13, 1913.

Ureteral Obstruction.—Benjamin Tenney reports ten cases of this nature. Two symptoms appear in almost every condition which obstructs a ureter. One is pain between the point of obstruction and the tenth rib on the obstructed side. The pain varies from a dull ache to agony and may produce anything from nervous irritability to vomiting and unconsciousness. It is sometimes increased by motion, as in stone cases, sometimes brought on by a change from the horizontal to the upright position, as in cases with ureteral kink, and sometimes appears without regard to either, as in purulent or bleeding kidneys when the pain comes and goes quickly with the passage of some fibrin mass through the ureter. Tenderness may or may not correspond in location. When a patient is in pain from ureteral obstruction he is also tender over the affected kidney; when he is not in pain the tenderness may disappear. The other constant symptom is an alteration from the normal habits of urination. We may find increased frequency, urgency, incontinence, or the necessity of repeated attempts before the desire passes away. The presence of any one of these symptoms is a plain warning that something is wrong in the urinary tract—not necessarily in the kidney—and calls for further study of the case.

Typhoid Vaccination.—J. Herbert Young thus summarizes the present status of typhoid vaccination: 1. Typhoid vaccine as a prophylactic provides almost certain protection from typhoid fever; 2, typhoid vaccine as a therapeutic agent in active typhoid is still in the experimental stage; 3, as a therapeutic agent in chronic typhoid carriers it is the method that has given the best results, though it does not offer certain cure.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 15, 1913.

Operations on the Mammary Gland.—Deaver's statistics, although meagre, indicate in a general way the status of mammary carcinoma in regard to the prognosis of operative treatment. About one patient in five is permanently cured by the radical operation. If the inoperable cases which do not appear on hospital records were included in the statistics the percentage would probably be materially lessened. These results are highly disappointing unless compared with the results of past decades. A lack of faith in the surgery of this disease will be replaced by a healthy optimism where immediate operation is made on the discovery of a lump in the breast; when physicians learn to think of breast tumors in terms of operability and when injudicious operations are no longer excused on the ground of humanitarianism.

Prevention of Arteriosclerosis and Heart Disease in Otherwise Healthy Individuals Past Middle Life.—Louis F. Bishop concludes that the causes and prevention of heart disease have been considered as matters of great obscurity and to be in the hands of Providence. He emphasizes the analogy between the universally recognized idiosyncrasy of some persons to particular articles of protein food that give rise in them to symptoms of pain, and the unconscious idiosyncrasy of many others to aminoacids which produce damage without conscious symptoms. Periodic chemical examinations of supposedly healthy individuals past middle life would detect and correct conditions leading to heart disease. The writer inveighs against the abuse of saline laxatives, as they disturb the chemistry of the body and osmosis and tend to produce heart disease, and commends castor oil as the safest and best remedy for those threatened with aminoacid poisoning. Those who have a tendency to heart disease should receive courses of treatment at intervals, such as are given in some of the health resorts of Europe. With proper environment such treatment could be carried out at home.

New Preparalytic Symptom of Poliomyelitis.—John A. Colliver has made a few hundred observations of a symptom in sixteen cases which seemed absolutely characteristic of the preparalytic stage of infantile paralysis. It consists of a peculiar twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to less than a minute. The amplitude of vibration exceeds that of a tremor, is not so constant and long as a convulsion, and more regular than mere twitching, yet it has some elements of all of these. Usually affecting a part or whole of one or more limbs, the face or jaw, it may sometimes involve the whole body. The symptom usually lasts less than a second, and unless the patient is disturbed does not recur oftener than every hour or so, and may, therefore, be easily overlooked in the beginning. The spells later lengthen to a few seconds and recur at shorter intervals. There is often with this condition a peculiar cry, somewhat like the hydrocephalic. There is a slight convulsive movement, like a chill, at times, during which time there is apparent unconsciousness, and the eyes are set for a few seconds, and then becoming apparently normal again. This brief unconsciousness, with set eyes, may come on without noticeable convulsive movement, thus simulating petit mal. The writer has observed it as a twitching of the lips with tongue running in and out and a working jaw, preceding bulbar cases. The writer has not worked out to his own satisfaction the relation of the local symptom to the paralysis.

MEDICAL RECORD

March 15, 1913.

Malignant Disease of the Tongue and Mouth.—Robert Abbe says that sarcoma, of the round or spindle cell type, is apparently congenital in origin, though long latent, and may best be cut out. Carcinoma, on the other hand, is always the result of irritation, either by a tooth, a dental plate, tartar, a pipe stem, or tobacco. Tobacco seems to be the most frequent offender, for advanced cancer of the mouth is extremely rare except in one that has been a severe smoker, or has chewed tobacco. It is usually after twenty or thirty years that the beginning of an epithelioma shows and insidiously advances. It usually starts either at the contact points of the pipe, or streams of hot smoke on the tongue, or in the gutters where the nicotine lies in the mouth or where the quid rests between cheek and gum. The practical lesson is that when the first spot of leucoplakia appears it is wiser to cease the use of tobacco "at once and forever." When the inside of the cheek is extensively invaded by carcinoma, it may still be cured by excising a part of the cheek, but half of the lower jaw must be excised to permit free play in eating and to obtain sufficient sound tissue to close the defect. The writer concludes that thorough surgery is the supreme reliance in malignant disease of the mouth, and early operation the patient's chief hope of cure. Radium has its uses, but in advanced cases of cancer its good effect is transient; in giant cell sarcoma and in leucoplakia, however, it is a specific.

Occupation Neuroses.—Tom A. Williams asserts that the essential preliminary to treatment is the elimination of the genetic idea. The patient must be convinced that it is this idea that produces the disability and that his previous belief that the disability is of physical origin (of muscle, nerve, or brain) is positively erroneous. The psychodynamic genesis of his condition must be clearly comprehended by the patient. The next step is for him to reacquire control of the psychomotor mechanism requisite in his occupational acts. Practice can alone bring this about, and in proportion to the length of time the perverted kinesis has existed, these efforts at rectification are difficult and prolonged. The writer insists that there is only one direct therapeutic means—psychotherapy, which requires for its best effect a well nourished nervous system. Defective hygiene must be rectified, but when this is done it is an aid only and not a cure. The same remarks apply to prophylaxis. Workers should be well nourished and fatigue minimized, but this alone will not prevent occupational neurosis if the ideational seeds germinate in the minds of the workers.

Municipal Clinic of San Francisco.—Julius Rosenstern discusses the subject of prostitution and venereal infection, and formulates certain requirements for the success of modern institutes for the sanitary regulation of prostitution. The regulation of prostitution should be administered by the municipalities or counties, and prostitution, while regularly and officially supervised, should not be punished criminally, but should be met with a spirit of helpful dignified sympathy. The clients of the institution should be educated as to the perils of their trade, the methods of their avoidance, and to appreciate the institute's beneficial services for their protection. The spirit of self dependence will be inculcated by charging a small examination fee, sufficient to meet the expenses of the institution, and will insure free and private medical, ambulatory, and nonlock hospital treatment. The landladies might assume part or all of the fee. A police detail attached to the institution is desirable for the surveillance and rounding up of delinquents. The control of examinations will be helped by affixing cards in the private rooms of houses of prostitution calling for the inspection of examination certificates by the visitors, but disabusing their minds as to a feeling of positive safety.

Tuberculosis in Early Life.—Edgar P. Copeland refers to the frightful mortality of tuberculosis in early life, and has little to suggest in the way of treatment. So far as is known at present tuberculin as a therapeutic agent has disappointed the profession. Fifteen cases of cervical tuberculous adenitis, treated with tuberculin, showed no alteration in the course or character of the disease. Indeed most authorities are agreed that its use in childhood is not devoid of danger. The writer emphasizes that upon prophylaxis we are to place our hopes for results, as after infection is received, very little may be expected. The writer insists on one point, for laity and the profession alike, and that is a deep regard for the seriousness of whooping cough, measles, and influenza in their relation to tuberculosis, and the importance of providing a suitable environment for the young, who otherwise are doomed to the malady. Efficient prophylaxis is the watchword if we would hope for any considerable decrease in the terrible mortality of tuberculosis, for this mortality is highest in early life.

AMERICAN JOURNAL OF OPHTHALMOLOGY.

February, 1913.

Thiocyanates in the Body Fluids.—Bernard R. LeRoy makes some extraordinary claims on behalf of the thiocyanates which deserve investigation, for if his ideas are right and such results as those he reports can be obtained even to a much less satisfactory degree, we have at our command a remedy of wonderfully rejuvenating power to act on the cells of the human body. He says: The first action of the thiocyanates in the body fluids is that of a chemical solvent. The gelatinous and mineral substances of the food are rendered more soluble and assimilable. Without their presence in proper physiological amounts certain essential constituents are caused to be continually precipitated somewhere within the body, while others are excreted in abnormal amounts, for instance, the precipitation of calcium, magnesium, and silicon in union with the fatty acids and gelatinous substances in cataracts, opacities, and scar tissue in the eye, and such systemic diseases as arteriosclerosis, chronic syphilis, chronic insanities, and other chronic conditions where the cells have been filled with a deposit of these substances from a slight clouding to a deep solid infiltration. A large amount of calcium and magnesium is to be found in the urine of persons suffering from chronic forms of pulmonary tuberculosis and other chronic conditions, while in all of these conditions the thiocyanates are found in greatly reduced amounts, or more often are absent. The more chronic the condition the more certain is the body to be absolutely free from the thiocyanates. If one wishes to enjoy life and to be free from many serious chronic forms of disease the thiocyanates must be present in the body fluids in amounts equal to that found in the body fluids of a young, healthy, rapidly growing girl of sixteen years. The presence or absence of the thiocyanates may be determined by an examination of the saliva, for if they are absent from the saliva they are not to be found in any of the body fluids, but if present there they are to be found in all. LeRoy asserts that the continuous retrograde movement from healthful life, through changing physiology, to complete stagnation in the cell or organ may be reversed in action by the proper administration of the thiocyanates; the precipitation is checked, the deposit is resolved and removed from the cell, and as this process takes place the primitive action of the cell is resumed, and the physiology of that cell returns toward normal as the cell clears. Furthermore, after the clouded opaque and "dead" cells have received this form of treatment, and after the grosser deposits have been dissolved and removed from the once disabled cells or organs, there remains no scar or other defect that may give the examiner the faintest clue concerning the character of the original diseased condition. All this requires time, what he terms physiological time. He reports five cases. The first was one of cicatrix resulting from a wound of the eye, of such an extent as to render the eye blind. Not even a shadow could be perceived when an object was passed between the eye and the sun, but electric tests showed that some power of vision was present. After six weeks of treatment the patient was able to see a ray of light which increased steadily. In six months the scar tissue over the cornea was nearly all gone. After twelve months the patient was able to read large print and to distinguish friends at a distance of fifty feet. The cataract present was also clearing up. At the end of nearly two and a half years the lens was nearly clear, the adhesions of the iris were less so that certain portions of the iris reacted naturally, the eye had vision and acted with the other. No definite statement of the vision is given. The second case was one of opacity following ophthalmia neonatorum. The report of the mother is that there is no trace of scar tissue and that the child has the use of his eye. The third was a case of incipient cataract that cleared up under treatment. The fourth was one of senile cataract, of which there are slight traces after two years of treatment. The fifth was one of entropion cured in the same manner. The report of the last certainly leaves much to be desired. Nothing seems to have been done to remove the mechanical basis of her trouble, the continual rubbing of the eyelashes upon the cornea, except to pull the lashes out diligently, and every physician who does much work on the eye knows how utterly inefficient such a measure is. If there is anything in the suggested form of treatment it needs to be developed scientifically; the physiological basis demands confirmation, the dose needs to be carefully determined, and the results should be given in definite form with due regard to complicating conditions.

AMERICAN JOURNAL OF UROLOGY

January, 1913.

Diagnosis of Hemorrhage in Hydronephrosis.—Marchais discusses the rare complication of hemorrhage into the hydronephrotic sac. The diagnosis is difficult and often is made only when the sac is incised. The prognosis is serious, and immediate operation is indicated. Nephrectomy should be performed if the opposite kidney is functioning normally.

Double Congenital Stricture of the Left Ureter with a Movable Calculus between the Points of Constriction.—Lower reports the case of a man of eighteen years, who gave a history of attacks of renal colic since infancy. A radiograph showed a calculus in the lower part of the left ureter. At operation a much dilated left ureter was found with a constriction of the ureter a few inches above the bladder; no stone could be found. Immediate radiography showed the stone to be near the kidney. A lumbar incision was made and a constriction of the ureter noted on a level with the lower pole of the kidney. The stone was found at this point, pushed down, and removed from the original incision in the ureter. Between the two points of constriction the ureter was as large as a loop of small intestine.

ARCHIVES OF DIAGNOSIS.

January, 1913.

The Surgeon's Diagnosis in Neurasthenic Conditions.—R. T. Morris asserts that in diagnosticating neurasthenia, or the relative values of various phases of the condition, the bacteriologist's report of colonic findings should be taken as the starting point. The toxines produced by many colonic microbes, bacterial or protozoan, are definitely known to be injurious to the cells of organs, and those influencing the ductless glands abnormally are largely derived from bacteria of the colon. The surgeon can help in many cases by fixing the loose kidney, suspending the sagging colon, and separating adhesions that interfere with gastric or intestinal motility, but his work does not preclude a subsequent diagnosis of neurasthenia in the same cases.

Therapeutic Differential Diagnosis of Constitutional Dysmenorrhea.—S. W. Bandler has observed that in many cases of deficiency of ovarian function in young women there are digestive and nervous symptoms indicative of an actual and relative hyperthyroidism, and considers it important in the many instances where trouble occurs in association with menstruation—usually in the premenstrual phase, to distinguish between cases due to excess of the ovarian secretion itself and those in which there is hyperthyroidism due to deficiency of the antagonistic ovarian function. This distinction can often be readily made by the use of thyroid substance, the latter variety of cases being made distinctly worse by the drug in doses of one to five grains three times a day, while the former class is benefited by the thyroid substance. Where the ovarian function is deficient, ovarian substance is of value.

Atony of the Cecum (Typhlatonia).—H. Stern considers this condition very common. The most frequent etiological factors are malposition and structural alteration, the latter consisting generally of the so called "membranous pericolitis," the pericolic veils preventing the normal expansion of the cecum and causing it to become atonic. Typhlatonia is a disease entity, though it may occur with other affections of the cecum, as well as with those of the appendix, ascending colon, ileum, right kidney, gallbladder, with partial or general enteroptosis, etc. It should not be confounded with cæcum mobile, which is not a disease entity, though it may occasion typhlatonia. The latter occurs often in young individuals, but may also exist later. It is characterized by obstinate constipation and irregularly occurring paroxysms of severe griping pain, usually lasting some hours. In some cases there is merely discomfort. There may be fulness at the site of the cecum and a dragging on the ascending colon. Palpation evinces a localized resistance or even a soft, elastic tumefaction. Percussion reveals circumscribed tympany. Ileocecal gurgling is most characteristic; where typhlectasia is also present radiography and mesial displacement of the cecal tympany and gurgling when the patient is on the left side are also of diagnostic value. The treatment consists of dietetic and physical measures.

Aneurysm of Thoracic Aorta.—C. G. Cumston asserts that in every case of aortic aneurysm, whether or not a history of syphilis is obtained, an intensive antisyphilitic treatment, especially by potassium iodide, should be resorted to at once.

Diagnostic Features of Phrenocardia.—J. Gutman states that while the phrenocardias or psychogenic sexual neuroses of Hertz are less recognized at present than other neurotic disturbances, they are common, possess a rather distinct etiology—abnormal sexual relationship—and are easily distinguishable. The chief characteristics are pain in the cardiac region, respiratory disturbances, and palpitation of the heart. Of diagnostic significance are general instability and transientness of all the patient's complaints, disproportion between objective and subjective phenomena, increase in the pulse rate upon the slightest mental effort, and restless sleep.

Family and Personal History Registers.—J. M. Taylor refers to the fact that physicians are frequently handicapped owing to the impossibility of obtaining definite and detailed information concerning family and personal antecedent events. He suggests that the head of every family keep a record of essential occurrences and data of all kinds in a specially prepared family history register. Blanks for personal histories are included.

LONG ISLAND MEDICAL JOURNAL.

February, 1913.

Blood Cultures, Simplified by New Apparatus.—William Lintz has devised a bottle fitted with a ground glass air tight stopper the top of which is ground to fit an ordinary blood culture needle. Through the centre of this projection there leads a small canal which opens into a groove in the side of the stopper near the inner face. This groove can be brought into apposition with a similar one in the neck of the bottle, thus opening a continuous canal from the outside to the interior of the bottle. By lubrication of the stopper with graphite it may be made to turn readily yet remain air tight. Into the bottle is placed a measured amount of finely powdered salt, or a small amount of some one of the liquid culture media and the stopper is inserted with the canal open. The bottle and culture medium are then sterilized by immersion in a boiling waterbath. The heat thus generated also serves to drive out much of the air contained within the bottle so that, if it is closed while in the bath, there will be a considerable vacuum on cooling. One then places the desired needle on the projecting tip and covers this with an inverted test tube. The whole is again sterilized and is ready for use at any time. The vacuum keeps. To use, one merely inserts the needle into a vein, after sterilization of the skin, and turns the stopper of the bottle so as to open the canal; the vacuum aspirates enough blood into the bottle; the stopper is again turned to close the canal; the whole withdrawn from the arm and shaken. It can then either be sent, warm, to the laboratory, or if a culture medium is used in the bottle, can be placed in the incubator or a thermos bottle and subsequently sent to a laboratory for examination. The method is simplicity itself, avoids all air contamination, and reduces the cost of blood cultures materially.

NEW YORK STATE JOURNAL OF MEDICINE.

February, 1913.

Dementia præcox without Delusions or Hallucinations.—George H. Kirby describes a group of cases in which there is a slowly developing and progressive shrinkage in the patient's energy and capacity for work, loss of interest in the ordinary affairs of life, and pronounced dulling in the emotional sphere, so that a condition of more or less pronounced apathy is established, without, however, the patient ever giving expression to any particular trend of ideas, suspicions, or delusions, and without the appearance of hallucinations. Individuals who deteriorate in such manner are undoubtedly to be found in large numbers among the dependent classes of the community. In most of these cases there was the appearance in childhood of a shut in type of personality, which is probably a very deeply rooted tendency and one which has much to do with later developments. In close relation with this disposition is a difficulty in sexual adaptation, autoerotic traits developing early and masturbation becoming a fixed habit. The deterioration begins in most cases at about the age of puberty. In all of these cases, after many years' duration even, the personality remains well preserved, and in no case has there been found incoherence in thought, peculiarities of language, neologisms, etc. The chief factors in bringing about this deterioration are fundamental defects in makeup and faulty mental habits .

Bouillon Culture of Staphylococcus pyogenes aureus in Diphtheria Convalescents and Bacillus Carriers.—R. G. Wiener reports success with the spraying of the throat and nose of the diphtheria convalescent with fresh cultures of the staphylococcus. Such treatment should be applied every three hours, and the cultures must be fresh and living if success is to be secured. The result of such spraying is the rapid disappearance of the Klebs-Loeffler bacilli from the throat and nasal passages and the hastening of convalescence. In the carrier cases similar results are obtained in the removal of the organisms from the cavities of the mouth and nose.

PENNSYLVANIA MEDICAL JOURNAL.

February, 1913.

Desiccation Process of Tissue Destruction as Applied to Certain Pathological Conditions.—William L. Clark reviews the methods of applying the high tension current to tissues so as to cause rapid dehydration of the part with rupture of the delicate cell capsule and transformation of the tissue into a dry mass which subsequently separates and leaves soft scar tissue beneath. (See this JOURNAL for June 10, 1911, p. 1131.) He advocates the use of this method of tissue destruction in the following conditions as the result of his wide experience of the value of the method. Warts, elevated moles, x ray and senile keratoses can usually be removed by a single application of the electrode. Congenital nævi and acquired pigmentation such as tattoo marks may require more than one application. Chronic varicose and other granulating ulcerations heal more rapidly if treated once or twice, and acne vulgaris is peculiarly responsive to the treatment if the desiccation is applied to each individual papule until it and its surrounding area have become markedly anemic. Keloid may be removed by desiccation aided by the subsequent use of x rays. Chancroids and neoplasms in the bladder, and papillomata, caruncles, and granulations in the urethra are better treated by desiccation than by the direct application of the cautery. In suitable cases local lesions, such as neoplasms, in the larynx, throat, and pharynx, as well as sessile tumors in the nose all respond well to this method of destruction. In cancer desiccation should be employed only in cases in which it is superficial and has not invaded deeper structures. The treatment of superficial epitheliomata is very satisfactory. Cancers of the mucous membranes should not be treated by the method unless seen very early, on account of the possibility of there having already developed an invasion of the draining lymphatic structures.

Proceedings of Societies.

SOUTHERN MEDICAL ASSOCIATION.

Sixth Annual Meeting, Held at Jacksonville, Fla., November 12, 13, and 14, 1912.

The President, Dr. J. M. JACKSON, of Miami, Florida, in the Chair.

The Diagnosis of Malaria.—Dr. GRAHAM E. E. HENSON, of Jacksonville, stated that examination of the blood in cases of suspected malaria should be rigidly conducted for the detection of the parasites. Care should be taken so to time the taking of the smear as to insure the most likely time to find the parasites in the peripheral circulation. It should be the aim of the physician to make honest efforts to secure laboratory confirmation of the clinical findings before placing the patient on specific treatment, provided there were no symptoms suggesting the more pernicious type of the disease. In the event that quinine had been administered before the patient came under observation, a tentative diagnosis of malaria, even in the absence of the detection of the parasites, was justifiable under the following circumstances: 1. That the clinical history of malaria was obtainable; 2, that the patient had enlarged spleen; 3, that a leucopenia was present; 4, that the red cell count was below normal; 5, that the hemoglobin was reduced, and that the differential count showed an increased percentage of large mononuclears.

If these rules were adhered to, which might within certain limits be elastic, the many incorrect diagnoses of malaria that to-day covered a multitude of sins, and constituted the greatest blot in tropical and subtropical medicine, would be removed, and many of the unfortunates who to-day considered themselves the victims of chronic malaria, might be told what their condition really was, and possibly be relieved from further suffering.

Dr. E. C. THRASH, of Atlanta, spoke of a case that had come under his observation three or four weeks before in which a diagnosis of tuberculosis had been made by a local physician. For six or eight weeks the diagnosis lay between malaria and typhoid fever. He found the spleen of the patient very much enlarged, ruled out tuberculosis, and told the patient he thought he had either typhoid fever or malaria, and that he would soon decide between the two. He had been taking quinine systematically and regularly in all sorts of ways. He gave him treatment for ten days, watched him, found he had a rise of temperature continuously, and would occasionally have a chill. At the end of the eighth or ninth day he began to make examinations of the blood every six hours, and in the fourth examination he found estivoautumnal parasites. This man could have been saved a great deal of annoyance and a long attack of illness if the instructions outlined in Doctor Henson's paper had been carried out. He put the patient on four grains of cacodylate of sodium hypodermically daily and on large doses of quinine hypodermically, to which he responded promptly, and had had no trouble since.

Dr. CHARLES F. CRAIG, of the United States Army, mentioned two cases showing the importance of blood examinations in malaria. One man became unconscious on the street one day, was picked up, and taken to the emergency hospital. He died in a short time. The speaker had the opportunity of examining the brain and spleen in the case and found them both loaded with estivoautumnal parasites. Another case was at the Washington Hospital for a week before a blood examination was made. This patient died, and post mortem examination revealed the spleen filled with these parasites. It was the general impression that pernicious malaria did not occur in the city of Washington, yet within a month two cases occurred which were not recognized.

Dr. JOHN T. HALSEY, of New Orleans, said that in the month of October he had two cases of pernicious cerebral malaria at the Charity Hospital, New Orleans, in neither one of which did physical examination give a hint of malaria. These cases would end in recovery if the disease was recognized promptly and quinine given hypodermically in a very energetic manner.

Dr. JAMES H. RANDOLPH, of Jacksonville, reported three cases of the cerebral form of malaria which recently came under his observation, and which illustrated in a very striking manner the importance of blood examinations. These cases were characterized by delirium.

Dr. William Ross, of Jacksonville, related the case of a child who had six convulsions in five hours, was unconscious, had absolutely all the symptoms of acute epidemic cerebrospinal meningitis, with a temperature of 102° F. His diagnosis was cerebrospinal meningitis. He was about to make a lumbar puncture. He took a blood smear, and found malarial parasites of both the estivoautumnal and tertian type. The child was unconscious for six days before it responded to quinine treatment.

Dr. Charles T. Drennan, of Hot Springs, Arkansas, said it was just as imperative to make blood examinations in suspected cases of rheumatism as it was to make uranalyses in conditions which would lead us to suspect interstitial nephritis.

Dr. L. A. Green, of Jacksonville, stated that the records of the State hospital showed that a number of patients admitted as insane were instances of pernicious malaria. These patients reacted promptly to quinine medication and recovered, but left the institution with the stigma that they had been insane, when, as a matter of fact, they had been suffering from malaria.

Doctor Green, of New Orleans, said that, in the fall of 1898, a patient was brought into the Charity Hospital with a diagnosis of chronic interstitial nephritis with uremia. An examination of the blood and urine was insisted upon, and disclosed the case to be one of pernicious malaria. The patient was treated promptly with quinine and recovered.

Dr. Joseph Goldberger, of Washington, said there could be no doubt that in hospitals in these days a routine examination of the blood was absolutely essential,, but the general practitioner did not as a general rule, avail himself of this means of diagnosis in a great many cases, believing that it was unnecessary.

Dr. C. C. Bass, of New Orleans, referred to the time of taking blood from the patient, and said that if we were dealing with the estivoautumnal type, the parasite might not be present in the blood for six or eight hours. It was worth while to direct attention to the fact that the estivoautumnal case in which the clinical course was more or less tertian, with chills and intermittent fever, with perhaps normal temperature, was due to the fact that the parasites segmented almost all together in groups as they did in the tertian and quartan type. In such cases the number of parasites present in the blood after six or eight hours would be smaller than at any other time. There never occurred a time when there were not enough parasites in the blood of the patient who was having chills and fever from malaria, but that the parasites could be found. The proper time to take a blood examination for malaria was whenever one saw the patient.

Preliminary Study of Malaria in Alabama.—Dr. R. H. von Esdorf, of the United States Public Health Service, Mobile, Alabama, drew the following conclusions: 1. All forms of malarial fevers prevailed in the State of Alabama. 2. The types of infection in the order of prevalence were tertian, estivoautumnal, subtertian, quotidian, and quartan. 3. The colored race was a large factor in the spread of infection in whom the chronic type of malarial infection was proportionately greater than in the white. 4. To obtain an index of infection in the community, a blood examination should be made of adults as well as children of those who were permanent residents in such locality. 5. Latent or nonchronic cases should be treated vigorously for at least a month, and then with prophylactic doses of quinine for a period of from April to November. 6. Prophylactic doses of quinine should be taken by all persons in Alabama living in the localities known to be infected, between the period of April 1st to November 1st. The prophylactic dose advised and used by him was ten grains of quinine sulphate, given in five grain doses, morning and evening. 7. The microscope should be more generally used for making or confirming the diagnosis of malaria, or, if practicable, advantage should be taken of the State laboratory where examinations of blood would be made.

The Incidence of Malaria in the Puerperium.—Dr. J. V. Freeman, of Jacksonville, took the position that when a woman had elevation of temperature in the puerperium, whom the physician confined previously, and during that time she gave a great deal of anxiety and trouble, and he discovered malarial infection, if he delivered her a second time he was justified in giving prophylactic doses of quinine, but he was not justified in giving it in every case he saw.

Dr. Graham E. E. Henson, of Jacksonville, said that owing to the fact that any rise of temperature in the puerperium caused great alarm not only to the attending physician, but also to the members of the family, it had been his custom for the last five years, as soon as a patient was delivered, to put her on ten grains of quinine a day. He did not think there was anyone who practised medicine who would more strongly oppose measures to mask infection than himself; at the same time, owing not only to the anxiety caused by fever in the puerperium, but also to the fact that malarial infection did develop, the mother was put on large doses of quinine to control the infection after it had once manifested itself. By following this line of procedure, and delivering 100 or more women, he had never seen malarial fever develop in the puerperium, and on that account he would strongly urge that these patients receive ten grain doses of quinine. He generally gave five grains in the morning and five grains at night.

Dr. Stevens T. Harris, of Highlands, North Carolina, said with regard to fever returning periodically being classed as malaria, it was not true. It was absolutely erroneous to make a diagnosis of malaria from this standpoint. He had seen fever, chills, sweats, typically malarial in character recur without the presence of malaria. One might also have chills occurring periodically and with regularity in tuberculosis and possibly in other septic conditions. He would strongly urge that the use of the microscope was the only way to diagnosticate malaria.

Dr. B. B. Simms, of Talladega, Alabama, said he could have chills and fever, and even if we found the plasmodia we could not always call the case malaria, because there were frequently plasmodia in the blood. In Alabama it had been found that eleven per cent. of the people had malarial parasites in the blood without manifesting symptoms of malaria .

Dr. W. A. Boyd, of Columbia, South Carolina, believed that a woman who went through the trials and troubles of childbirth had suffered enough, and the physician should not as a routine impose upon her the necessity of caring for ten or fifteen grains of quinine because of a possible malaria. If they had a puerperal woman who showed a febrile condition, and were not sure of the actual condition present, he did not believe as obstetricians they were justified in putting that woman upon the routine treatment of quinine until they had proved to themselves and for their patient's benefit, as the result of bacteriological examination, that she was infected with malaria.

Production of Beriberiform Polyneuritis in Fowls with Substances other than Rice.—Dr. Creighton Wellman, of New Orleans, stated that before he took up the problem experimentally, Professor Bass, in a series of experiments during 1911, showed that the characteristic polyneuritis of fowls could be produced by feeding them an exclusive diet of milled Louisiana white rice. During Professor Bass's subsequent absence in Central America. he carried on another series of experiments and observed that not only milled Louisiana rice would produce this condition, but also that a single diet of other carbohydrates would accomplish precisely the same result. For instance, he was able to produce this characteristic condition in fowls more rapidly and completely with cane sugar than with milled rice. Pure corn starch would produce the condition rather more slowly, but fully as completely as milled rice. He also found that a mixed diet plus small doses of oxalic acid would produce a condition indistinguishable from that caused by milled rice. Finally, like other observers, he produced the condition by semistarvation. These experiments were in each instance checked by controls. The production of a beriberiform neuritis in fowls by other substances than milled rice was a new observation and suggested a revision of the accepted views regarding rice as a sole cause of beriberi in man.

President's Address; Medical Education in the South.—Dr. J. M. Jackson, of Miami, said the Association of Medical Colleges of the South could do much to solve the problem of medical education, as the intimate acquaintance of each with the other would make it possible to deal personally and individually with each school. Great would be the day when the weaker and unequipped schools gave way and we should have centralized upon a few schools whose equipment and advantages in both didactic and clinical instruction would be equal to any school anywhere. He was astonished to see some years ago in the *Journal of the American Medical Association* how few professors entered medical schools with fitness as teachers of obstetrics, and he supposed it was quite so in other branches. When schools were run for the good of the profession and humanity, then should we have this improved condition. The medical profession was a quasi public profession and it should have in connection with it capable teachers and proper equipment of hospitals in localities of sufficient size to furnish ample clinical material, which was to-day considered so important a part of medical education, and these should be run for the benefit of the well as well as for the sick occupying their beds.

Public health was a nation's greatest asset and the conservation of it the greatest need of the day. This conservation could only be done by an educated people and a highly educated medical profession as directors.

Empiricism in Medicine.—Dr. H. H. Martin, of Savannah, said if they must use drugs in practice, they had the *United States Pharmacopœia*, and the *National Formulary* for reference, and in addition the Council on Pharmacy and Chemistry of the American Medical Association published a list of new and unofficial remedies which they had examined and approved. They should withdraw our support from the so called remedies and cures which were manufactured or compounded for the sole purpose of making money and not for the purpose of healing the sick. Let them, as medical men, intrusted with the health and lives of their fellowmen, come to a fuller realization of their duties and responsibilities. Let them shake off the superstitions and absurdities of empiricism; let them draw a sharper line between scientific and empiric medicine with "no compromise" as their slogan. Let them endeavor to secure the enactment of a law in each of the several States that would make the newspaper proprietor just as responsible civilly and criminally for the advertisements that went into his paper as he was for any article in the news columns.

Address in Surgery; the Thyroid and Hyperthyroidism.—Dr. Stuart McGuire, of Richmond, said that when a patient with exophthalmic goitre came to a surgeon, the case ought to be kept under observation and carefully studied for some days before deciding on the character of the operation best suited to the individual and the safest time to perform it. In the hands of experts, the mortality of operations for hyperthroidism was now from two to five per cent., and eighty-five per cent. of those who recovered might be said to be symptomatic cures. It was neither honest nor expedient to make light of the operation nor to belittle its difficulties and dangers. The figures quoted were from the statistics of master surgeons and by no means represented the results of the average operator. After a successful operation for hyperthyroidism the improvement in the patient was immediate and marked. No operation in surgery produced such quick and brilliant results. Tremor disappeared, the pulse fell to normal, the eyes became less and less wild, and restlessness and irritability were replaced by quiet and composure. The wound, as a rule, healed rapidly, and the patient was able to leave the hospital in from ten to fourteen days. Because the patient was well from the operation, and because the acute symptoms were relieved, was no ground for immediate return to the ordinary activities of life. Crile very properly stated that it required approximately the same time to recover from exophthalmic goitre as from a nervous breakdown from other causes. A successful operation should be followed by an adequate period of rest.

Vaccine Therapy.—Dr. Irwin E. Colgin, of Waco, Texas, said the most uniform results obtained from the use of vaccines were in cases of pyogenic infection, especially those caused by staphylococci, such as furunculosis and carbuncles. This was due to two factors, the chronicity of the infection and the uniformity of the causative organism. Success had also been the rule in treating cases of acne vulgaris. A combined vaccine of staphylococci and bacillus acne of Gilchrist was used based on the theory that the original nodule was due to bacillus acne, and the pustule to secondary infection of staphylococci. He advised giving fifty million staphylococci and ten million bacilli acne as the initial dose. One should give increasing doses at intervals of from a week to ten days. In vaccine therapy success depended upon: 1. Choosing cases applicable to the use of bacterial vaccines; 2, determining the causative factor. One should not depend upon mixed vaccines, as usually if one got rid of the main factor Nature could take care of the balance of infection; 3, select the dose according to individual patients and do not follow set rules; 4, make the interval long enough between injections to let the body respond to the stimulation.

Dr. J. B. Elliott, Jr., of New Orleans, said that last year he reported several cases of typhoid fever treated by vaccines. Since that time he had had four cases of typhoid fever treated in the same way by the use of typhoid vaccines. The results had been uniformly successful. The cases had all terminated about the twentieth or twenty-second day, and after three doses of vaccine there was generally a fall of the temperature to normal. He had failed to see any harm done in any case by the use of typhoid vaccines.

Dr. E. C. Thrash, of Atlanta, had been observing the use of these vaccines during the last few years and had been much chagrined at the profession treating them so indifferently. Any pharmaceutical drug that was put upon the market, without any value scarcely, or without endorsement of the profession, would be bought and prescribed empirically generally because the advertiser was behind it. If they could cure five per cent. or ten per cent. of the cases of specific disease, they had made a long stride in their therapy, because when they ruled out syphilis and malaria, they were about all the diseases they could cure with drugs. There was nothing more valuable in their therapeutic work than careful studies of the action of these vaccines and administering them intelligently.

Hydrothorax in Its Relation to Cardiorenal Lesions.—Dr. Frank A. Jones, of Memphis, drew the following conclusions: 1. Hydrothorax was often an acute condition instead of a part of a general dropsy. That acute nephritis was often ushered in by an attack of acute edema of the lungs, followed rapidly by acute fulminating hydrothorax. 2. In all probability, the attack of edema of the lung followed rapidly by hydrothorax was due to the same toxic agencies which, at the same time, produced the renal changes. 3. That in these cases passive congestion, venous stasis, etc., had nothing to do with the production of the edema; that the large black lung was analogous to the large red kidney. 4. When dyspnea was marked, either in cardiac or renal lesions, examine the patient just as critically for hydrothorax. 5. Hydrothorax, massive in nature, was often latent. 6. Saline cathartics and digitalis, when hydrothorax was present to any appreciable degree, were dangerous; they invited edema of the lungs and paralysis of the heart.

Relation of Gas Embolism to the Production of Artificial Pneumothorax.—Dr. Stevens T. Harris, of Highlands, North Carolina, said from all sides came reports of the employment and success of artificial pneumothorax as a treatment of tuberculosis of the lung. It was safe to say that the results of no other method ever employed could compare with the wonderful results obtained by this procedure. It was the only real curative treatment for phthisis which had ever been devised. Surgical procedure had again scored a victory. Artificial pneumothorax, like other surgical methods, had its dangers, and chief among them was gas embolism. Nearly all of the deaths due to the treatment had been caused by this condition. The chances for gas embolism were remote after one had definitely proved a free pleura and more or less of an activity had been formed. He had never seen it occur when this was the case, except where there were thickened pleura and some adhesions, and where too high a pressure was suddenly produced.

Present Status of our Knowledge Regarding the Parasitic Amœbæ.—Dr. Charles F. Craig, of Washington, said we were still ignorant regarding the exact method of the transmission of these parasites from host to host, and we knew nothing whatever about the relation the species found in the lower animals bore to those found in man, so that researches along these lines might result in valuable knowledge regarding the epidemiology of amebic dysentery. The point of greatest practical importance to the physician was the demonstration of a harmless entameba in so large a proportion of healthy persons, and those suffering from diseases other than dysentery, and the vital necessity of differentiating between this species and those causing disease, before making the diagnosis of amebic dysentery in patients who did not present typical clinical symptoms of the disease. He would, therefore, urge the greater use of the microscope on the diagnosis of the diseases of the intestinal tract, especially in regions where amebic dysentery and other parasitic infections of the intestine were endemic, believing that this one measure would be of more service in arriving at a correct diagnosis than any other command.

Some Economic Questions Related to Syphilis.—Dr. Isadore Dyer, of New Orleans, said he had employed salvarsan in a number of cases, and he had had no serious accidents, but he was still regretting that he was led to the indiscretion of employing a remedy which in his humble opinion had no advantage over tried medications, properly administered, for syphilis. The States were deliberating the establishment of laws requiring health certificates before marriage licenses were issued. It was more important to protect marriage contracts by requiring treatment for such diseases as syphilis than it was to aim at a restriction on natural inclinations. Hospitals for syphilis should be established in every State, not, as was averred, as an incentive to vice, but as a deterrent. If syphilitics were required to be hospitalized for the treatment of their disease, it would reduce the occurrence of syphilis and encourage proper treatment. The South had its peculiar problem in this regard with the negro population, which it was hard to educate in sanitary or moral prophylaxis. The whole question of syphilis was alive in their present society, and needed the careful study of those interested in the future generations of our people. While treatment might be of great importance, of more importance was the study of the ways and means to educate the profession and the public in the care and in the prevention of syphilis and its consequences.

Importance of the Recognition of Syphilis in Circulatory Disease.—Dr. John T. Halsey, of New Orleans, said the conclusions to be drawn from facts indicated were: 1. Syphilis very frequently produced lesions of any portion of the circulatory system, and did so during the early stages. A routine Wassermann test should be, and could be made in all such cases, nor was there any doubt that if this be done, much unnecessary suffering and disease would be prevented. 2. Those who treated syphilis in any stage, but particularly in the early phases, should be on the lookout for evidence of disturbed circulatory function, and, when such were found, they should not be satisfied to treat the syphilis alone, but should treat the heart as well. The coexistence of circulatory disease and positive or presumptive evidence of syphilis called for energetic antisyphilitic treatment, and it could not be too strongly emphasized that potassium iodide alone was not sufficient. Such patients must have mercury or salvarsan, the choice between which should be governed by various considerations.

Hygiene of Syphilis.—Dr. Oscar Dowling, of New Orleans, pointed out that as a preventive measure, segregation of the prostitute class, while unsatisfactory and undoubtedly a legalization of vice, afforded opportunity for medical supervision and treatment. Stringent, practical regulations, humane, adapted to local conditions, and rigidly enforced, would give results worth the effort involved. But to be effective, there should be no favor, no laxity, no escape. Certainty and justice should be the keynotes. The best means of getting rid of syphilis or any similar disease was to educate the people by energetic, practical work daily. Vigilance in the control of bad practices, activity in the practical things pertaining to home life, enforcement of every health ordinance and regulation were means which spread the gospel of cleanliness and health. The hygiene of syphilis was the same as the hygiene of other contagious diseases. From its nature, specific work should be done to enlighten everyone as to its origin and to correct the false notion that it was contracted only in one way.

Syphilis of the Ear.—Dr. N. M. Heggie, of Jacksonville, had seen only eight cases of primary labyrinthine deafness within the year, two of which were probably due to mumps and one to traumatism, leaving but five to be classified as syphilitic. In view of the fact that labyrinthine syphilis was not amenable to local treatment, he would advise patients to avail themselves of the treatment recommended by a syphilographer, just as readily as were the lesion of another organ.

(*To be concluded.*)

Letters to the Editor.

EXAMINERS IN INSANITY.

New York, *March 24, 1913.*

To the Editor:

The Committee on Expert Medical Testimony of the New York State Medical Society has caused to be introduced into both houses of the State Legislature the following proposed bill:

An Act to amend the judiciary law, in relation to examining physicians.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1.—Article two of chapter thirty-five of the laws of nineteen hundred and nine, entitled "An act in relation to the administration of justice, constituting chapter thirty of the consolidated laws," is hereby amended by adding at the end thereof a new section, to be section thirty-one, to read as follows:

Section 31.—Examining Physicians. In a criminal action or proceeding or in a special proceeding instituted by the State writ of habeas corpus or certiorari to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.

Section 2.—This act shall take effect immediately.

This bill has been most carefully drawn by an expert on constitutional law at the instance of the committee. The expert who drafted the bill has taken into account the laws of all the other States and the decisions regarding them where declared unconstitutional.

It is his opinion that this bill will stand the constitutional test. He further believes that it is wiser to use it as an amendment to the judiciary law than to have it enacted as an entirely new legislation.

It is sincerely hoped by the Committee of the State Society that the profession of the State of New York will endorse this bill and stand back of it with a solid front. The abuses of medical expert testimony have been and are shameful. The committee deem it the better part of wisdom to confine its efforts to having the bill enacted covering only criminal cases.

The bill was introduced in the Senate on March 17th by Senator Walters, of Onondaga, and in the Assembly on the same date by Assemblyman Daly.

Dwight H. Murray, Chairman.

MINERALIZATION IN PHTHISIS.

Brooklyn, New York, *March 18, 1913.*

To the Editor:

In an article entitled Tuberculosis published in your March 15, 1913, number, page 553, Dr. M. W. McDuffie gives a formula of mine in which even my name is not used, this formula having been published in the *Medical Record* for December 16, 1911. No wonder his patients had disturbance of the stomach as he gave double the dose of salts in 250 c. c. of water. The formula is made so that eight c. c., when in 250 c. c. of water, represents the salts as found in 250 c. c. of blood serum. It is a hypotonic mixture when complete. Doctor McDuffie was giving a hypertonic one which would not pass the membrane and enter the blood. He also says calcium is of no value, but my formula is not given for calcium alone, but to supply the deficient minerals of the organism that should be there to act on the defunctioning adrenals to raise blood pressure. Doctor McDuffie does not understand how to use them. I have had between thirty and forty patients with high temperature get well; length of time of treatment between thirty and sixty days. The correct formula is:

Sodium chloride,	34.4 grammes;
Sodium carbonate,	10.13 grammes;
Sodium phosphate,	1.1 grammes;
Calcium phosphate,	1.23 grammes;
Magnesium phosphate,	0.9 gramme;
Potassium carbonate,	2.6 grammes;
Boiled water,	120 c.c.

Sodium carbonate, sodium chloride, and potassium carbonate are dissolved in boiling water, the solution is filtered, and the other ingredients are added. The dose is eight c. c. or a dessertspoonful in a tumblerful or 250 c. c. of water every three hours.

Please compare formula as sent by me and the one as published by Doctor McDuffie; he has it wrong in his article. CHARLES F. D'ARTOIS-FRANCIS, M. D.

AN ORGANISM IN INDIA INK?

ST. LOUIS, *March 24, 1913.*

To the Editor:

In the use of India ink for the detection of spirochætæ I have found the India ink *itself* to contain a motile organism about ten μ long and one thick. It is actively motile in all directions and retains its motility about twenty-four hours. The motility is not due to any Brownian movement, or current in the fluid between cover slip and slide.

I have found this organism in two different lots of the Gunther-Wagner Ink and in one lot of Higgins's American Drawing Ink. I am certain the ink has not been contaminated.

Some of the organisms are longer and thinner, very much resembling a spirochete, which might lead to a very serious mistake in diagnosis. Messrs. Bausch and Lomb cannot account for it.

Can you tell me the cause and a way to remedy it?

LAWRENCE SCHLENKER, M. D.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Development of the Human Body. By J. PLAYFAIR MCMURRICH, A. M., Ph. D., LL. D., Professor of Anatomy in the University of Toronto, etc. Fourth Edition. With 285 Illustrations, Several in Colors. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. x-495. (Price, $2.50.)

Professor McMurrich's manual of human embryology has justly earned the confidence of those whose duty it is to inculcate in the minds of medical students those principles which enable them to acquire a proper foundation for a successful career. A knowledge of the development of the human body is required, not only for a proper understanding of anatomical facts, but also of the many clinical phenomena due to teratological deviations. A clearer, more concise work than McMurrich's is hardly available. The present edition has been carefully brought up to date without, however, materially increasing the bulk of the volume.

Medical Men and the Law. By HUGH EMMETT CULBERTSON, of the Ohio and New York Bars, etc. Philadelphia and New York: Lea & Febiger, 1913. Pp. xv-325. (Price, $3.)

Those of our readers who followed up the admirable series of articles on medical law recently concluded in the NEW YORK MEDICAL JOURNAL, will find this volume to contain much information of the same nature, quite distinct in character from what is known as medical jurisprudence. The volume treats of the legal rights, duties, and liabilities of physicians and surgeons, beginning with a series of useful definitions indicating who may legally practise medicine, showing the relation between physician and patient, and proceeding to the discussion of compensation, malpractice, criminal liability, the exemption of practitioners from jury duty and execution, the physician as a witness, the right to protect professional reputation, the validity of contracts, and closing with much useful information on wills. Although intended mainly for the doctor, probably many a lawyer will wish to add this work to his library.

Safeguarding the Special Senses. By HENRY O. REIK, M. D., Formerly Associate in Ophthalmology and Otology in the Johns Hopkins University. Illustrated. Philadelphia: F. A. Davis Company, 1912. Pp. 123. (Price, 75 cents.)

This little book is written very simply, its contents are excellent, and we can only hope that it will secure as wide a circulation as it deserves, that it may fulfill its purpose of informing reasonably intelligent people how to keep healthy the eye, ear, nose, and throat, and how to recognize the signs of the presence of any abnormality. It seems to be better fitted for this purpose than most of the books that have the same design. A paragraph from the preface seems to be worthy of reproduction: "It is probably safe to say that fifty per cent. of the practice of specialists is made up of efforts to correct conditions that should never have been permitted to exist. They are constantly crying to the family physician and the public that prevention is not only cheaper, but easier and better than cure; that proper care of the eyes in early life prevents the onset of cataracts and other intraocular diseases in old age; that the removal of bad tonsils and adenoid growths permits the child to develop normally and insures against certain affections of the ear and of the respiratory tract; that proper attention to colds in the head and early treatment of running ears would wipe out eighty per cent. of the cases of brain abscess and purulent meningitis."

Die Digitalistherapie. Ihre Indikationen und Kontraindikationen. Von Dr. ARTHUR W. MEYER, Assistant der chirurgischen Klinik zu Heidelberg. Mit 23 Abbildungen im Text. Jena: Gustav Fischer, 1912. Pp. ix-138.

This valuable monograph, emanating from the Heidelberg medical clinic, consists of a general review of known facts concerning the applications of digitalis in practice. In the first part is to be found a sketch of the history of digitalis since its introduction by Withering, with a discussion of the indications and contraindications to its use, according to the opinions of various observers past and present. Next is given a summary account of the action of digitalis as revealed in experimental pharmacology. The remaining three fifths of the work are devoted to a detailed discussion of the indications for digitalis from the standpoint of the information derived from sphygmography, including especially the study of the venous pulse; also from the standpoint of the different valvular lesions, the presence or absence of functional or organic vascular disorders, the acute infections, etc. Much useful material is also contained on the questions of habituation to digitalis, abnormal individual response to the drug, its prophylactic administration, as well as on a number of other subject. The work is particularly timely, and cannot fail to be of interest and value to the practitioner familiar with German.

A System of Surgery. Edited by C. C. CHOYCE, B. Sc., M. D., F. R. C. S., Dean and Teacher of Operative Surgery in the London School of Clinical Medicine, etc. Pathological Editor, J. MARTIN BEATTIE, M. A., M. D., C. M., Professor of Pathology and Bacteriology and Dean of the Faculty of Medicine in the University of Sheffield. In Three Volumes. Volume I: With 16 Colored Plates, 64 Black and White Plates, and 250 Illustrations in the Text. Pp. xxii-957. Volume II: With 18 Colored Plates, 8 Black and White Plates, and 375 Illustrations in the Text. Pp. xii-1105. New York: Funk & Wagnalls Company, 1912. (Price, $21 for the set of three volumes.)

The first two volumes of this new system of surgery by English authors follows very closely on other surgical works of English origin. They compel the conclusion that there is a great revival of interest in surgery and surgical technic among English physicians. With its long list of collaborators the book is representative of the theoretical and practical surgery of Great Britain. The arrangement of the subject matter into two parts, 1, general surgery with surgical pathology, and, 2, regional surgery, corresponds with the best usage of to-day among German, American, and English authors and is certainly the most convenient for the reader. The second and third volumes are devoted to the regional part and are divided among authors, fifty in number, whose special knowledge and experience give the work the stamp of authority. The articles are well written and plenty of space is given to the underlying pathological principles of each subject. The work testifies to the high character of the work now being done by the English surgeons, both in the field of surgical pathology and practice. The illustrations are excellent throughout, and this is particularly true of the plates showing tumors and other pathological specimens. The articles dealing with intestinal surgery are full and up to date. The book will be found of great value to the student, particularly the first volume dealing with surgical principles, and to the surgeon who wishes to keep abreast of the progress in general surgery and to know the best of English surgical practice.

Autointoxication and Disintoxication. By Dr. G. Guelpa (Paris). Translated by F. S. Arnold, B. A., M. B., B. Ch. With a Chapter on the Use of the Method in the Treament of Morphine Addiction by Oscar Jennings, M. D. (Paris). New York: Rebman Company, 1912. Pp. 152. (Price, $1.25.)

In this little book the author advocates a treatment which he terms "rapid disintoxication" for various chronic disorders usually ascribed to autointoxication, but including, from his viewpoint, diabetes, even in cases in which gangrene has already appeared. He holds that the quantity of proteid food required to maintain nitrogenous equilibrium sufficiently to sustain health, strength, fitness, and weight, is much less, one third in fact, of the quantity laid down as a necessary minimum by the older writers on nutrition. The excess of proteid food ingested being rich in purins, it is prone to undergo decomposition in the intestine and form the toxic substances which underlie various chronic disorders. Complete abstinence for a few days and a copious daily purge with some saline is the foundation of Guelpa's treatment, the beneficial results of which are vouchsafed for by his translator after repeated trials. Though the treatment seems rather severe and will hardly be acceded to by many patients—at least in America—the premises of the author are in keeping with modern investigation and very suggestive from the therapeutic viewpoint.

Wheeler's Handbook of Medicine. By William R. Jack, B. Sc., M. D., F. R. F. P. S. G., Assistant Physician to the Western Infirmary of Glasgow. Fourth Edition. New York: William Wood & Co., 1912. Pp. xi-532. (Price, $3.)

This little book stands between the compend and the average textbook of practice. Such works can hardly be said to fill a need; yet they seem to meet a ready market since in the present case a fourth edition has been reached. The symptomatology is as a rule satisfying, but the therapeutic methods advocated are too few in most instances to afford aid to the physician who fails to give relief through what remedial agents are mentioned. Although it is asserted that the book has been brought up to date, some disorders seem to have been overlooked. The discovery that polished rice is the cause of beriberi, for instance, is not mentioned, though it has already saved victims by the thousands. We find no reference to the use of adrenal extractives to carry the patient through the asthenic stage of infections. The book is well written and neatly printed and may serve as a memory jogger for students.

Textbook of General and Special Pathology. By Henry T. Brooks, M. D., Formerly Professor of Pathology at the New York Postgraduate Medical School and Hospital. Illustrated with 525 Half Tone and Other Text Engravings, Also 15 Full Page Plates in Colors. Philadelphia: F. A. Davis Company, 1912. Pp. xviii-1127. (Price, $6.)

To the already long list of textbooks on pathology there has been added one of some eleven hundred pages. It can hardly be considered, however, a valuable addition. There are several rather serious drawbacks to the likelihood of its becoming popular. The definitions in many instances are neither concise nor clear. Throughout the book there is a diffuseness that intereferes with a clear comprehension of the subject matter. One could carefully read the descriptions of the two chief forms of cirrhosis of the liver and after having done so be unable to give a résumé that would enable a second person to recognize the conditions. Concerning hemorrhagic pancreatitis, the statement is made that nothing certain is known of the etiology of this affection. On page 255 the author states that Hodgkin's granuloma (disease) has no connection with so called pseudoleuchemia. On page 674 the terms pseudoleuchemia, lymphomatosis, and Hodgkin's disease are used synonymously. In diabetes mellitus, atrophy of the pancreas is said to occur. No mention is made as to what portion, and from the context one gathers that it is the parenchyma. Of the 525 illustrations, 161 are taken from Langerhans's textbook published in 1904. With very few exceptions they are extremely poor and do not well represent the conditions they are supposed to display. Added to the foregoing drawbacks is a cost of six dollars.

L'Ipofisi Cerebrale, Faringea e la Glandola Pineale in Patologia. Dott. Alfonso Poppi, Rhinologo e Chirurgo Comprimario Dell'Ospedale Maggiore di Bologna. Con 68 Figure, nel Testo e in 10 Tavole. Bologna: Paolo Neri, 1911. Pp. xi-214.

In this monograph of 200 pages the author aims to show that there exists a pathological connection between various ductless glands, notably the pituitary, thyroid, thymus, and adrenals, on the one hand, and nasopharyngeal diseases on the other. In support of his views he mentions cases of exophthalmic goitre cured or benefited by intranasal operation, cases of simple exophthalmos, of Addisonian bronzing in connection with adenoid vegetations, of tumor of the hypophysis with hypertrophy of the pharyngeal tonsil, etc. The original cause of this morbid relationship is ascribed by the author to fetal anomalies of the pituitary, which in turn would disturb the relations between this organ and the other ductless glands. Poppi's work is a valuable contribution to a new field of considerable promise for the rhinologist.

Physiologische Uebungen und Demonstrationen für Studierende. Von Dr. Robert Tigerstedt, Professor der Physiologie an der Universität Helsingsfors, Finnland. Mit 327 Abbildungen im Text. Leipzig: S. Hirzel, 1913. Pp. xvi-402.

The author planned this book as an addendum to the textbooks on physiology. He gives a number of physiological experiments which will illustrate, when properly performed, the important facts brought forward in a lecture on physiology. But these experiments should be made not only by the lecturer but also, and this is very important, by the student. For the latter the book is especially written. As these experiments necessitate a good deal of experience which the student does usually not possess the book will assist him and make him proficient in his experimental work. The advice given here can only seldom be found in textbooks as it would make them too voluminous and these books suffer already from too much detail. For the researcher in physiology Professor Tigerstedt's book is a great help, and to him it can be well recommended.

The Interpretation of Radium. By Frederick Soddy, M. A., F. R. S., Independent Lecturer in Physical Chemistry and Radioactivity in the University of Glasgow. With Illustrations. Third Edition. New York: G. P. Putnam's Sons, 1912. Pp. xvi-284.

This handy volume is a useful compendium of our present knowledge in a field of growing importance for the physicist as well as the physician, dealing as it does not only with radium and the other members of the uranium series, but also with thorium, the new radioactive substances, mesothorium and radiothorium, and actinium. It is not, strictly speaking, a medical work, since it does not refer to any of the possible therapeutical applications of the newly discovered forces; but it is of value as a basis of study for those interested in the subject, and as a point of departure into the more limited fiield of their practical use. It can be recommended to the student who needs the latest facts of this attractive subject presented in concise and accessible form. A number of pictures and diagrams elucidate the text.

BOOK AND MAGAZINE NOTES.

Readers of Sir Conan Doyle's amusing story, The Poison Belt, which begins in the April issue of the *Strand Magazine,* cannot fail to be reminded of the central idea of H. G. Wells's *The Comet,* although in that tale the etheric belt of peculiar properties through which the earth was supposed to pass had a beneficent influence on humanity. Jules Verne's *Experiment of Doctor Ox* also used the same idea, that of a gas surrounding mankind. Professor Challenger, the hero of the new story, is a joyful creation. Our solar system has been usually regarded with respect and admiration from the time of Hebrew poets to that of the most crass materialists of the nineteenth century, but in the mind of the combative Challenger, it is "a little and obscure planetary system to which we belong. A third rate sun, with its ragtag and bobtail of insignificant satellites, . . . we float toward . . . some squalid catastrophe."

Arthur B. Reeve, who has disclosed considerable knowledge of the criminal classes in his stories about his scientific detective, Craig Kennedy, which have appeared in various magazines, states in a recent issue of the *Popular* that a combination of chloral hydrate, hyoscine, and cannabis indica is the latest narcotic used by drug habitués. We have dwelt upon the drug factor in recent crime in our editorial columns, and we insist that such work as smashing plate glass windows on Broadway in the midst of theatre crowds belongs only to the insane or bemused mind. The treatment of drug habituation by substitution so popular with quack empirics would find a pretty problem in a victim of the mixture mentioned by Mr. Reeve. We might ask why recent proposed legislation concerning narcotics makes no mention of chloral, henbane, and hashish; would laws about these drugs not permit of sufficient impertinent lay meddling with medical men?

W. C. Rivers, author of *Walt Whitman's Anomaly* (London: George Allen & Company, Ltd.; price 2s. 6d.), is careful to state that the sale of the book is restricted to members of the legal and medical professions. The anomaly in question was the sexual inversion of the poet, and the impartial reader will agree that Mr. Rivers has proved his thesis. Some readers may ask *Cui bono?* These matters are of paramount importance, however, and it is time that American and British psychologists gave them the attention they deserve. It has been the custom among Anglo-Saxon writers either to ignore or to give a horrified denial in cases of this kind, as they have been supposed to be due merely to a voluntary depravity. Now that they are known to be organic and, moreover, frequently associated with genius and even great talent, as in Whitman's case, they will receive due attention from the profession at large and not merely from the few disciples of Freud. A psyche to which belonged Wilde, Sir Francis Bacon, probably even Shakespeare, to say nothing of numerous Greek and Roman writers and a hero or two of the Middle Ages, demands rigid and microscopic scrutiny. When its subjects lose their self control it is a special asylum not a jail that claims them.

Of *Music and Health,* which makes its bow as a magazine with the spring number dated March, we may say that it seems to have been issued somewhat hastily before sufficient convincing copy had been secured. We are flattered to have cited at length a communication from the New York Medical Journal by our friend, John Knott, of Dublin, Music as a Therapeutic Agent. The editor of *Music and Health* is Eva Augusta Vescelius, the teacher of the principles of harmony; we hope she will associate with her a medical therapeutist and so escape the otherwise inevitable vagaries of a nonprofessional therapy. What matter has been collected for this issue is interesting and the editor's plan to increase the supply of free municipal music is most praiseworthy. The magazine is published at Croton-on-Hudson, N. Y., at 25 cents the copy.

That sterling work, *The Family,* by Charles Franklin Thwing and Carrie F. Butler Thwing (Boston: Lothrop, Lee & Shepard Co.), which has been in the bookshops for twenty-eight years, has just made its reappearance in a new and revised edition. Beside its value as a textbook of unusual interest for colleges, its careful historical accuracy and impartial tone make it an excellent document for the medical reader who cares for general culture. Its fairness may be judged from the fact that while it pays due attention to the teaching of Christ and the various churches concerning the family, it observes of H. G. Wells that much he has said is "as true in fact as it is brilliant in phrase." Of venereal disease as a cause of divorce the book is silent; an inexcusable omission we think, even in a book designed partly for colleges. As reproduction is at the root of family life, such destructive factors as syphilis and gonorrhea demand the fullest investigation and discussion, especially as there is no longer any doubt that they are at the root of an enormous proportion of marital unhappiness. As far as it goes, however, *The Family* is a fine work; used as a basis of his lectures by a thoroughly informed and fearless teacher, it will help to spread abroad much needed information.

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Miscellany.

Doctor Trudeau and the Seeley Bill.—An inquiry was recently addressed to Dr. E. C. Trudeau, of Saranac Lake, remarks the *New York Times* for March 21st, asking what he thought of the Seeley bill making it illegal for any except the registered graduates of hospital training schools to describe themselves as "nurses" when seeking or taking employment as attendants of the sick. The reply elicited, coming as it did from a man of Doctor Trudeau's experience and eminence, ought to have, and doubtless will have, much weight with the intelligent and thoughtful members of the Legislature. If they give it the attention it deserves, there can be no question as to what action they will take on this effort, at once indefensible and reprehensible, to create a monopoly injurious to public interests.

The regular registered nurse, Doctor Trudeau says, will not take care of tuberculous patients if she can help it, and even when she will it is but rarely that the victims of this long malady can afford to pay the $25 a week which is the least she will accept. At Saranac Lake, therefore, it has been found necessary to use unregistered nurses, and these have proved to be efficient, especially after they have received some training, partly through service and partly from instruction, in caring for consumptives. After a year or two of this work these women are not eligible for registration, indeed, but they are certainly "nurses" and have a right to add to that ancient and honorable title any qualification which without deception expresses their superiority to the untaught attendant.

Nobody can deny either the utility or the competency of the regularly trained hospital graduate, and none would object to protecting her from rivals who falsely pretended to be her equals in her own field. It would be quite another thing, however, to give her the exclusive use of a common word like "nurse," for that would simply mean putting into her not too considerate hands another implement for compelling the payment of fees in many cases cruelly burdensome. The fully trained nurses aspire to recognition as occupying a position analogous to that of the doctor, but they do not justify the aspiration by confessing and acting upon the duty of giving their services to all who need them, regardless of whether payment is to follow or not. When the registered nurses do that it will be quite time enough for them to insist that there are no nurses except themselves.

Consumption Cure Frauds.—In the vocabulary of the consumptive, says the *Journal of the Outdoor Life* for March, 1913, there is probably no other single word which is so full of meaning and which appeals to him so strongly as the short word "cure." It means both the completed task and the restoration to health, and also the means by which the recovery is brought about. Its outlook is to the future and its inspiration is hope.

This inherent factor in tuberculosis, combined with the worldwide campaign against the disease, has encouraged the production of hundreds of efforts to cure consumption. Some of these attempts such as the use of certain home made remedies are results of delusion on the part of individuals who think that they have found a real specific for tuberculosis, while others, too numerous to mention, are exploited by those who know that their alleged cures have no virtue and who are simply playing upon the consumptive's easy susceptibility to any suggestion as to a cure for his disease in order to gain a financial advantage.

For some time the *Journal of Outdoor Life* has been considering a plan whereby it might inform its readers frankly concerning the real character of certain of these widely advertised consumptive "cures" and the methods employed by their promoters. It is with more than usual pleasure that the editor is able to announce that, beginning with the April number, a series of articles exposing a number of alleged cures for consumption will be published.

A rough estimate as to the amount of money being spent by tuberculosis patients on fraudulent cures for consumption every year indicates that at least $15,000,000 is poured annually into the coffers of the exploiters of these alleged remedies. How much money the readers of the *Journal of the Outdoor Life* are spending in vain on "cures" of this character will probably never be known, but the editor hopes that the articles which will be published will result in a renewed determination on the part of many to fight tuberculosis by the only methods recognized by competent medical opinion.

Meetings of Local Medical Societies.

TUESDAY, *April 1st.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity; Long Island Medical Society; Amsterdam City Medical Society; Lockport Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

WEDNESDAY, *April 2d.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Bronx Medical Association; Elmira Academy of Medicine; Schenectady Academy of Medicine.

THURSDAY, *April 3d.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Dansville Medical Association; Practitioners' Club, Buffalo; Geneva Medical Society.

FRIDAY, *April 4th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society, New York; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending March 22, 1913:

Billings, Frank, First Lieutenant, Medical Reserve Corps, Associate Professor, Medical School, U. S. Army. Left Chicago on March 17th for Washington, D. C., to lecture at the Army Medical School. **Cole**, C. L., Captain, Medical Corps. Ordered to Fort Sam Houston, Texas, Department of Laboratories. **Edger**, B. J., Major, Medical Corps. Relieved from duty at Fort William Henry Harrison, Montana, and ordered to Fort George Wright, Washington, relieving Major E. A. **Deen**, who, upon being thus relieved, will proceed to the Presidio of Monterey, California, for duty, relieving Major William F. **Lewis**, who will proceed to the Presidio of San Francisco, Cal., for duty. **Loving**, R. C., Captain, Medical Corps. Ordered to the Army General Hospital, Fort Bayard, New Mexico, for duty. **Lyster**, W. J. L., Major, Medical Corps. Returned from leave of absence to Fort Oglethorpe on March 13th. **Page**, Henry, Major, Medical Corps. Granted leave of absence for three months and eleven days, with permission to go beyond the seas. **Schmitter**, F., Captain, Medical Corps. Relieved from duty at Fort Greble on March 15th, and left post on leave of absence for one month and fifteen days. **Thode**, R. Frederick, First Lieutenant, Medical Reserve Corps. Ordered to active duty on April 1, 1913, and will proceed to Fort Hamilton, N. Y. **Van Kirk**, H. H., and **Worthington**, J. A., First Lieutenants, Medical Corps. Relieved from duty in the Southern Department and will report to the Commanding General of the Western Department for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending March 22, 1913:

Davis, R. G., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Proving Ground, Indian Head, Md. **Huff**, E. P., Passed Assistant Surgeon. Detached from the marine detachment on the U. S. S. *Prairie* and ordered to the U. S. S. *Florida*. **Lovering**, P. A., Medical Director. Detached from the Naval Hospital, Mare Island, Cal., and ordered to Washington, D. C., and to await orders. **Tompkins**, J. A., Assistant Surgeon, Medical Reserve Corps. Ordered to the Navy Yard, New York, N. Y.

Births, Marriages, and Deaths.

Married.

Dees—Groome.—In Greensboro, N. C., on Saturday, March 15th, Dr. Rigdon Osmond Dees and Miss Helen Hazel Groome. **Holcombe—Bagenstose.**—In Philadelphia, on Saturday, March 8th, Dr. Guy T. Holcombe and Miss Emily Bagenstose. **Johnson—Varney.**—In Lynn, Mass., on Saturday, March 15th, Dr. Harold Abbott Johnson and Dr. Edith C. Varney. **Talbot—Mitcheson.**—In Marinette, Wis., on Wednesday, March 12th, Dr. Paul Tilman Talbot, of New Orleans, and Miss Jenny Swart Mitcheson.

Died.

Adams.—In Stamford, Conn., on Monday, March 17th, Dr. George S. Adams, of Westboro, Mass., aged fifty-five years. **Bellamy.**—In Irondequoit, N. Y., on Friday, March 14th, Dr. Archibald Waite Bellamy, aged forty-four years. **Brady.**—In Girardville, Pa., on Sunday, March 16th, Dr. Sobieski H. Brady, aged sixty years. **Bronson.**—In Lowville, N. Y., on Sunday, March 16th, Dr. Miles Hall Bronson, aged seventy-eight years. **Cutler.**—In Boston, on Saturday, March 15th, Dr. James Tucker Cutler, aged forty-eight years. **Gue.**—In Oklahoma City, Okla., on Wednesday, March 12th, Dr. Arthur E. Gue. **Hoagland.**—In Rural Grove, N. Y., on Monday, February 24th, Dr. George Bradford Hoagland, aged forty-eight years. **Knight.**—In Chaplin, Conn., on Monday, March 10th, Dr. Charles Milo Knight, aged fifty-six years. **Knowles.**—In Grand Rapids, Mich., on Tuesday, March 11th, Dr. Weston O. Knowles. **Peltier.**—In Hartford, Conn., on Friday, March 21st, Dr. Frank Hamilton Peltier, aged forty years. **Simons.**—In Warroad, Minn., on Wednesday, March 12th, Dr. H. R. Simons. **Six.**—In Lawrence, Mich., on Tuesday, March 11th, Dr. Arthur G. Six. **Skeel.**—In St. Louis, Mo., on Saturday, March 15th, Dr. Samuel Coleridge Skeel, aged seventy-four years. **Stanley.**—In Brooklyn, N. Y., on Sunday, March 23d, Dr. Grant Stanley, of Sea Cliff, aged thirty-eight years. **Stevens.**—In Peru, Kansas, on Wednesday, March 12th, Dr. Joseph D. Stevens, aged seventy-six years. **Strauss.**—In St. Louis, Mo., on Saturday, March 15th, Dr. Leon Strauss, aged fifty-six years. **Strong.**—In Saratoga Springs, N. Y., on Monday, March 17th, Dr. Sylvester Emery Strong, aged seventy-six years. **Stubblefield.**—In Nashville, Tenn., on Wednesday, March 12th, Dr. David R. Stubblefield, aged fifty-six years. **Van Valkenberg.**—In Sharon, N. Y., on Thursday, March 6th, Dr. Jacob J. Van Valkenberg, aged seventy-five years. **Waite.**—In Pittsfield, Mass., on Tuesday, March 18th, Dr. Lorenzo Waite, aged eighty-four years. **Welliver.**—In Dayton, Ohio, on Friday, March 14th, Dr. James E. Welliver, aged sixty-two years. **Winton.**—In Cincinnati, Ohio, on Thursday, March 13th, Dr. Charles F. Winton, aged fifty years.

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Original Communications.

AN ADVENTURE IN PRACTICE.*

BY JAMES G. MUMFORD, M. D.,
Clifton Springs, N. Y.

The custom prevails among us of prefacing frequently a scientific paper by a perfunctory and more or less accurate account of historical events leading up to the subject of discussion. And so when I come to the reflections which I shall lay before you this evening, I find that I can best make them lucid and definite by introductory words which lead up to a discussion of the present state of medical practice.

No one will deny that the conditions of practice to-day are unsatisfactory; that the great subject of medicine—study, research, and practice—is sadly in need of an efficiency expert. And yet there was a time, I believe, when those who professed to cultivate medicine were more nearly efficient, or were more nearly on the track of efficiency than are we to-day.

The pundits are continually referring us to the ancient Greeks. Now, the ancient Greeks, we need not remind ourselves, were an alert and subtle folk, keenly alive to their own interests, but wise in this, that they perceived their own interests to be bound up closely with the interests of all their people. While individualistic, they were endowed with breadth of vision and an apprehension of the value of collective action. They failed eventually and effectively to become one great nation, but that is another story. So the development of medical research and practice among those ancient people followed lines so interesting that it is worth our trouble for a moment to think of them. We recollect the fact that the followers of medicine in the preHippocratic days and after were called Asclepiadæ. As with the members of medieval guilds, they followed their profession from family habit. Moreover, the Greek physicians did not scatter themselves loosely and solitary over the country, each man struggling how least he might express his incapacity; but they gathered into communities for cooperative practice. One reads, for example, of the schools of Athens, of Cos, of Cnidos, and the rest. The fashion was for families of physicians to live together for generations in those communities, which indeed have no parallel in modern life. The central architectural feature of the establishment may have been a fine temple or a hospital. About this great building were grouped schools, libraries, and academic groves. In the neighborhood were all the paraphernalia of organized community life—sometimes even large towns and cities arose. But the leading thought was medicine—study, research, healing—and the worship of the gods. There generation after generation, men were born and lived and died in an atmosphere of science. They grew up to their job. From the beginning they were trained in science and cognate studies. They had experience of the gymnasium and the university. They had access to the great literary collections of their predecessors. They were led gently and tactfully into the paths of philosophy and knowledge. Such men became accomplished practitioners, luminous and careful writers, enthusiasts for research. In the course of something like three hundred years, they seem to have developed an extraordinary educational system. Among them, too, one would find the same restless curiosity, the same eagerness, the same search after news and after truth that marks us to-day. They realized present limitations; they looked to a wider knowledge beyond their own borders; in youth they became travellers; wherever learning had raised its head, there their representatives sought it. The *Wanderlust* was quite as common among them as among us. From Athens to the islands of the sea, to Syria and Persia, to Arabia, to Egypt, their young men travelled, learning and giving forth; and in the end they returned to the home university. This meant a wide culture and a generous progress.

The Greek people realized the value of these things, just as they realized the value of other branches and types of knowledge. Those great centres of healing, that is, university hospitals, as we might call them, were sought out by the thronging sick; patients gathered in such institutions, because they knew that in them they would find intelligent cooperation in the study of disease, and intelligent, long tried, and efficient means for combating it.

One might discourse through many chapters on the advantages of the old Greek method. Dozens of thoughts arise; the satisfaction of friendly competition, unembittered by greed; the ambition for scientific research and study, in itself lovely; the daily and constant friendly discussion among experts variously trained; the constant circulation of new knowledge; the recurring opportunity for clinical tests; the peaceful advantage of dealing with patients, friendly, grouped, docile, confident.

Such was the era and such were the conditions which produced Hippocrates and his great pupils.

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*Address read before the Rochester Academy of Medicine, February 5, 1913.

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Toward the end of the classic period, such were the conditions that prevailed in Alexandria. The best of the great Roman writers with their minute culture had these benefits—independent individualism associated with progressive collectivism.

It is needless to rehearse the shipwreck of science, the destruction of effectiveness, the death of collectivism, the slow rise of a futile and jealous individualism which marked the medicine of the succeeding centuries. We are wont to think of those years between the sixth century and the thirteenth century as contemptible in science, and indeed they were so among the western peoples. Conception of collectivism, however, had not disappeared entirely among the scholars of the thirteenth century, who gathered up and perpetuated in manly fashion ancient thought and new ambition, through the foundations which are known to us as the medieval Italian schools. It is not fair to group those people as mere monks and barbers; the monks and barbers represented the crude and scattered practitioners of the time. But beginning with the thirteenth century, and persisting through the *Renaissance,* through the so called revival of learning, and through the generations of modern men, gradually there developed new methods and democratic ideas and again the meaning of science. A study of the course of science with its sporadic advances and its humiliating retreats during the past five hundred years is of profound interest to the philosophic observer. I think that the two predominating features in it all are the gradual and increasing and insistent hungering after truth, and the growth of the democratic conception of the value of individual effort as dominant. Perhaps the days of John Hunter and of Bichat illustrate best for us the culminating point of that era. For those great men actually conceived the possibility themselves of recasting and rewriting the whole of biological truth. Through the generations which preceded them, and in their day even, medicine was continually afflicted with disheartening human rows. There were rival schools, so called; countless hypotheses; unfulfilled theories; ignorant assumptions in practice; and empiricism rampant. Through such mental attitudes and miseries there came about a separation of interests; the wide and unnatural division between medicine and surgery was accomplished. Then came the still more monstrous division between students of theory and practitioners, so that doubtless it was necessary that such men as Hunter and Bichat and Virchow and the others were needed to demonstrate how even in the greatest minds there can be no encyclopedia of knowledge.

We have now come down almost to modern times; and with the growth of the new spirit of research and the new accuracy of practice, we see a division of effort among many specialists. With the development of research and of the scientific method there arose legitimate claims to exact knowledge, but there arose also the deplorable terms "practical man" and "scientific man," terms foolishly invented and inanely perverted.

Within the memory of most of us now practising, and in middle life, the *present* situation has developed. Let me briefly recall to you its salient features: A restless and omnivorous searching after facts; a wide dissemination of the scientific spirit; increasing facility with and distribution of the tools of research; the reorganizing and perfecting of great hospital clinics; the founding and developing of laboratories; the applying of theoretical knowledge to practical endeavor; the astonishing development of preventive medicine; the incessant activity of men working along lines continually more and more specialized; the eager study of comparative medicine, and the adaptation of such general biological knowledge to special cases and conditions; the gradual realization that much of this work is incoordinated, and that these great power houses are not being turned to their highest possible efficiency. Along with such efforts and conceptions we see a growing interest and appreciation of our problems on the part of State and civil governments; a gradual interference on the part of the State; increased activity in works of public sanitation and hygiene; effective work upon these lines; the struggle against and the elimination of great epidemic diseases—smallpox, yellow fever, tuberculosis, poliomyelitis, and other scourges of the past; earnest and worldwide efforts of late years towards coordination and cooperation; the increasing recognition of the value of public meetings, of the gatherings of medical men, of congresses, national and international; the enormous development of the scientific press and the amazing distribution of general knowledge. These thoughts are commonplace enough; they are matters of everyday observation, and through evolution they must be leading toward constant and eventual betterment.

One asks one's self then, at times, what does it all mean? Toward what are medical progress and practice moving? Is mankind the better for them; is mankind getting the best out of them? Are we bringing the benefits of modern knowledge to the people? Are we fairly and honestly playing the game? Are we the saviors that should come, or do we look for another? It seems as though in some fashion the people are dissatisfied. Collectivism and socialism are terms which ring pleasantly in many ears. Jealous persons are invoking the aid of the State. There are strong and insistent claims for public medicine, such as recently arose in Great Britain through the surprising new Insurance Act, incorporated in the so called Lloyd George Bill, while in opposition was arrayed almost unanimously the force of the medical profession acting through the British Medical Association.

The significance of these recent tendencies and accomplishments is far deeper than superficial criticism admits. Scientific men seem to be in a state almost of panic through their resentment of State interference with these intellectual problems, and for two reasons: because they fear that such interference will cripple individual and personal ambition and endeavor; and, secondly, because to the average man it seems to threaten his own personal position and his own pecuniary rewards. Neither those who advocate governmental guardianship of scientific pursuits with its resulting collective efficiency, nor those who insist upon unrestricted individualism—neither group has all the logic and all the reason on its side. There is no question that at present, even with State aid and with State supported laboratories, State investigations, and State distributions of therapeutic material, there is no question that at present the masses of our people, estimated at eighty per cent., still fail to secure their rights and to receive the full benefit of modern scientific medicine.

These are matters which have long and deeply concerned me, as they must concern every thoughtful scientific man; and so it was with peculiar interest that I, as representing the Massachusetts General Hospital, received an invitation some three years ago to visit a western city in order to discuss with the trustees and staff of a large projected hospital there, their plans for equipping, launching, and conducting their institution. Some half dozen other hospital men from various places met with us, and for a long afternoon we discussed in elaborate detail and in a conventional manner the new enterprise. At last our friend, Doctor Finney, of Baltimore, arose with the exclamation that in his judgment, we were missing the main point of the discussion: that we were permitting the trustees to overlook a unique and important opportunity. He continued in a strain not altogether unfamiliar to us, and somewhat in the following fashion:

> For what is your hospital primarily intended? Obviously for the care of the sick. But what sick? The country is full of hospitals, but those hospitals don't seem to meet all of our needs, and you plan to add one more to the old collection. Two groups of patients—the well-to-do and the poor—now get the benefits of our hospitals with their scientific equipments and care. These patients represent about twenty per cent. of our people. In large measure, and especially for surgery, they are helped by our present hospitals, but the vast majority, the great middle class, fail to receive the full benefits of modern, scientific medicine.
>
> What is the usual course, when sick, with members of our three groups—the rich, the middle class, the poor? A rich man consults his family physician; he is told perhaps that he has an obscure and serious disease. He is sent to a comfortable private hospital. He sees sundry consultants—an internist, a neurologist, a surgeon, an ophthalmologist. Special studies are made of his blood and his secretions; he has x ray examinations. Special and unusual treatments are given. He is investigated through all the aids at our command, and he pays large and proportionate fees. Perhaps before a definite diagnosis is reached, the rich patient expends hundreds of dollars. At the other end of the scale is the poor man. When ill, he goes to a hospital dispensary. If his ailment is not simple and readily understood, he too is sent into a hospital ward; but it is in one of our great, highly organized and equipped municipal hospitals—free or nearly free to the poor. There our patient finds for nothing the same elaborate care and treatment as that for which his rich brother paid out his hundreds.
>
> But the man of the middle class—how does he fare? He must live and support his family, perhaps, on $800 or $1,000 a year. He has little laid by; he must not abandon his wage earning; much less can he pay out dollars to a private hospital, and yet his self respect will not allow him to become a charity patient. We have all watched sadly the struggles of such unhappy people; we have done what we could to help them, and that is little enough. The usual course with such a sick man is that he must throw himself on the care of his overburdened family physician, and that physician alone and mostly unaided must do what he can for his charge. No one man can specialize in everything. no one man can bring to the problem all the known aids of science. The fault is not that of the individual physician; it is that of the profession and the community. We have not yet learned the secret of practical and efficient cooperation.
>
> So then my advice is that you still further increase your handsome endowment; that you build and equip a hospital to be run, not on the ordinary cooperative plan, but somewhat as a great university is run—dependent in part on the small fees of beneficiaries, and in part on invested funds and on the gifts of friends; for mark you, the patients must all pay fees—such fees as suit their incomes. And observe further—in my belief it will not be very long before such a hospital will support itself; for the fees paid in will not be uniform, but as in the case of a physician in private practice, the hospital will, in time, obtain payments more and more in proportion to the circumstances and the means of the individual patient.

So much for Doctor Finney. I believe that these statements deeply impressed those trustees. At least they seemed to take them much to heart; but of the present condition of their enterprise I regret to say I know no more.

I myself went home from that meeting with a conviction that much remained to be done; and during the next two years that conviction would not permit me to be idle. Indeed there arose among a little group of us in Boston the ambition to establish some such cooperative hospital as that advocated by Doctor Finney, but on modest lines. Dr. R. C. Cabot, Doctor Goldthwait, Dr. F. T. Murphy, and I held several meetings and discussed plans. We went so far even as to inspect a suitable building in the heart of the city and to interest certain financiers. But for the time fate was against us. We are all busy and overburdened men. Other imperative obligations pressed upon us. Then Doctor Murphy was called to a chair of surgery in St. Louis, while I myself became for a time the victim of ill health, and was obliged largely to limit my work. Having nothing better to do I occupied myself in the writing of a couple of books, in which among other casual topics I discussed some such plan of cooperative hospital practice as that which I have here suggested. While so employed, and stirred by the lassitude of an unaccustomed leisure, an opportunity came my way which I shall briefly rehearse to you under the title *An Adventure in Practice:*

I was asked to take charge of a large general sanatorium. Now the word sanatorium has not always been entirely attractive to medical ears. Betimes we think of such institutions as centres of "faddism," of hydropathy, of electromountebankery, of hysterical dietaries, and other therapeutic eccentricities; of disregard for sound diagnosis and scientific medicine, and of a somewhat pernicious commercial activity. I learned, however, that the institution in question is not of that order. My immediate predecessor there was a well known internist, formerly of the Johns Hopkins staff, who now holds an important chair in a university of the middle west. The sanatorium is not conducted for profit. There is no stock company, nor are there dividends to be paid. The institution was founded, and for more than fifty years until his death, was conducted by a physician of liberal views and remarkable vision. In considerable part his purpose was to care for, at minimum charge, or without charge, the great class of professional people who have broken down in the struggle of life—physicians, clergymen, missionaries, teachers, and their families. Incidentally, and in conjunction with this work, he built up a very strong and remunerative clientèle. He developed a dignified and imposing physical plant—with extensive grounds, substantial buildings, and a large and profitable farm. Under him and his successors the staff was strengthened, laboratories were added, an elaborate equipment for physical therapeutics was installed, and a small but excellent surgical hospital was organized. But best of all, I think, the ancient and erroneous idea of a sanatorium as a mere rest house for psychoneurotic invalids gradually was corrected; the frequent physical basis for what was once regarded as purely functional disease became recognized; and steps were taken toward building up a genuine hospital as well as a sanatorium. Moreover, I learned that the institution is now in the hands of a responsible and progressive board of trustees, whose earnest wish is to conduct it on approved modern lines—for the benefit of the patients and for the advancement of medicine. There is another and interesting feature of this place—a feature which has an important bearing on the psychical reeducation of the sick, whatever their ailment. I refer to a certain religious atmosphere and practice, as adjuncts in the care of invalids, gathered in large numbers in an isolated country community. I believe that the value of well directed religious influences has long been recognized—influences leading to a tempered endurance of illness, a sane philosophy, and a reasonable outlook on the chances of life and death. The activities of a well balanced, restrained, and earnest clergyman are not only of high value for their immediate effect on the sick, but for the general, permeating atmosphere of service and uplift which they lend to a hospital as a whole. Of these things I am convinced by their practice, and I believe all experienced physicians will agree in this conviction.

I have said that one of my leading objects of professional interest for years has been the bringing of good scientific medicine through cooperation to that large group who do not now receive our best. The people to whom I refer may well be persons of education and social distinction—that may be their misfortune; especially are they found among the professional classes. Here seemed an opportunity for strengthening a good work and developing a new enterprise. Reduced to its lowest and fundamental terms, I found at my hand a great and varied clinic, and the means withal to carry it on; not an endowed institution—that would have destroyed my leading principle—but an institution supported by a legitimate business or professional income.

I agreed to undertake the enterprise, or "the adventure," as I have called it; but I insisted with the trustees upon the inevitable importance of two elements for success: The strengthening of the staff by constant additions of high grade men of the first class; and the sharing by such men in the increasing pecuniary rewards, should we succeed; in other words, brains and rising incomes.

Let me say a few words regarding these two elements, and the possibility and reasonableness of securing them. In a well conducted, well equipped sanatorium hospital such as this, the ambitious man shall find much that a distinguished university hospital might offer him, and certain things in addition. The success of St. Mary's, at Rochester, Minnesota, has proved that competent and reliable men can build up a clinic in unpromising places. The location counts little. In such a clinic the first class man finds work to his hand, his patients are assembled under one roof, there is the advantage of a constant, personal, well arranged, and continuous observation and study of cases, easily accessible and inexpensive laboratories, x ray departments, physical therapeutic appliances, and similar accessories; time, opportunity, and advantages for research and publication without undue friction; congenial and sympathetic companionship in his pursuits; accessible and interested consultants on the staff—for the success of one implies the success of all—competition unembittered by rivalry; and an atmosphere of work, progress, and enthusiasm in a rare degree both for the clinic and the laboratory. One misses the stimulus of a great city community, the distinction of association with famous institutions, and perhaps with many eminent men; but one asks, wherein lies a real distinction which is not personal and self acquired? I myself have intimate knowledge of these things. If a man be truly worthy, he himself brings distinction to the institution, not the institution to him. I admit, however, there is at first the isolation and the severance from great university ideals and the larger group of distinguished men. Well, then, it remains for you, my friends, who take up the remoter life, so to illuminate it that the larger world shall seek you out.

Then there is the other important question of financial success in this adventure of cooperative hospital practice; for financial success is important to most men. We must educate our children and we must provide against sickness and old age. Just here there enters into the problem an interesting feature or advantage in cooperative practice; you work on a rising salary or profit sharing basis, and so your case differs from that of the private practitioner; your income goes on even in the case of absence or of illness. I assure you that is often a great consolation. In the case of such an institution as I am describing—an institution which is founded, financed, and conducted much as is a college, dependent for its support on fees, and to some small extent on the rare gifts of friends and supporters—in such an institution there should be a minimum salary with which the individual physician starts. Subsequent increase in salary in each case must depend on the physician's efficiency and value to the institution. The medical director and trustees must be the judges of his increased value, and must assign to him his increase of income in proportion to the rising net income of the institution. The sanatorium hospital I am describing receives between three thousand and four thousand patients a year; its income from patients is large, and the mere business of conducting it is a serious task. The business administration is, as it should be, in the hands of a highly qualified manager or treasurer, who relieves entirely the medical staff of all business responsibility.

Such in general outline was the character of the institution to which I was called, and such were some of the propositions and conditions under which I accepted it. Let me close the story with a few words on the nature of the enterprise as I have now seen it for four months, and the lines on which I hope to watch it develop. The one leading feature which has most interested me, and will interest you is the nature of the clinic and the work we are doing.

The clinic is large, as I have said, running up into the thousands, even in bad years. Certain features familiar to private practice are found there. The number of patients varies with the seasons, and the types of cases vary also. I think I may safely assert that most of the patients are sent to us because they cannot well or successfully be cared for at home. Now home conditions vary, the financial and climatic circumstances of patients vary, and available medical care varies. In this institution patients get a great deal at small outlay: board and lodging, ordinary treatment and nursing, and a physician's care, but not free surgery. Many persons come to us and from all parts of the world to escape bad climatic conditions; overworked country doctors send us patients that would not be sent by a city physician with his special aids to practice. City doctors send us patients to get them away from town, or from overwhelming home or business surroundings. To me and my associates, especially to us newcomers, one of the most gratifying and surprising features of the work is the richness and variety of the clinic. You think of a sanatorium hospital as a rest cure, as a refuge for neurotic invalids. I write these words in mid-January when our numbers are at their lowest. Our cards show one hundred and fifty-eight patients to be now under treatment. The diagnoses are: Psychasthenia, 17; neurasthenia, 9; enteroptosis, 18; gastroptosis, 4; cancer of the lip and face, 2; Graves's disease, 5; flat foot, 3; cancer of breast, 2; hemorrhoids, 2; gallduct disease, 7; myoma uteri, 4; uterine version, 2; nephritis, 5; genitourinary tuberculosis, 2; hydronephrosis, 2; duodenal ulcer, 3; bronchitis, 11; acute appendicitis, 2; sacroiliac disease, 11; and arteriosclerosis, epilepsy, pernicious anemia, cancer of the stomach, fistula in ano, tenosynovitis, opium habit, subcoracoid bursitis, paralysis agitans, double tuberculosis of hip, ruptured perineum, hallux valgus, pneumonia, luxation of cervical vertebræ, cancer of uterus, osteomyelitis of femur, fractured patella, intestinal adhesions (Lane kink), inguinal hernia, and brain tumor, 1 each; 158 in all.

This group of cases shows a variety. Their study keeps our internists working almost feverishly, our laboratory humming, our x ray plant in constant use, and our operating room fully occupied. Frankly I ask you, is not this a quite different picture of a sanatorium from that we have commonly held? Yet there is no going backward even if we would. A sanatorium is but a special type of hospital. When it has attained its growth it must take in all varieties of cases and it must equip itself for their care. It truly becomes a medical clearing house in a sense. If it aids the seemingly hopeless, then more and more will the hopeful also seek it. Always it must expand and perfect its equipment for the study and treatment of chronic disease especially; but definitions and clinical conceptions of disease change with the advance of science. It is coming about that the modern sanatorium more and more is to be regarded as a hospital for the treatment of all difficult cases, while one of its departments at least must always be devoted to the ancient and familiar function of rest cure.

An efficient sanatorium draws patients from great distances. That circumstance adds to the interest of the sanatorium life. Since taking up this work I have seen patients—and in great numbers—from the world over, America and Europe, Asia, Africa, and the Indies. In one day there consulted me a colonial archbishop, missionaries from Natal, Burmah, and Turkey, a bishop from Japan, and an official from Manila. These are small matters. My story of the enterprise is already too long; but I trust I have made clear to you all—practical and experienced men—certain facts which daily become more clear to myself.

Here is a new field for highly trained physicians; a good living with increasing returns; cooperation in practice no longer a dream, but a stimulating fact; service to all classes of the community above the very poor; while the untilled soil shows abundance of work for the workers. More and more I believe may proper and satisfying study and practice thus become accessible, profitable, and efficient.

"VIENNA CAUSTIC."

By Augustus Maverick, M. D.,
San Antonio, Texas.

Between seventy and eighty years ago a little band of American physicians journeyed over to Paris to study the methods of the great master, Louis. They were all hard workers, ambitious, and anxious to learn. Back to America they brought with them the spirit of the great master, a knowledge of how to study disease, and also, as Osler tells us, "a Gallic refinement and culture which stamped them, one and all, as unusual men." During the years that followed, American medicine was to hear of many of these men; of Jackson, Oliver Wendell Holmes, Bowditch, Shattuck, Warren, and Fisher, of Boston; Norris, Gerhard, Pennock, Stewardson, Alfred Stillé, Mütter, Stewart, William Pepper, Gibson, Biddle, Tucker, Clymer, Johnson, Ruschenburger, and Peace, of Philadelphia; and many others from elsewhere.[1]

The magic of the East beckons to the young physician of to-day as it always did. He learns that many of the shining lights in modern American medicine once studied under some big European physician. He thrills with yearning as he reads of the triumphant invasion of the students of Louis. With more or less sacrifice he may scrape together the means to go himself to the land of the chosen few. As a rule he wants postgraduate work in general medicine. Where will he go? To London? "No, it is not foreign enough." To Paris? "No, there are not enough big men in Paris to-day." Munich, Leipzig, Breslau, Jena, and Halle have certain advantages, but there are places larger. Berlin and Vienna—ah, the magic of these words! It is hard to decide between the two. They both have their good men and plenty of material—there is little choice here. In Berlin, however, the hospitals are scattered about the city, causing a loss of time in going from one to the other throughout the day. In Vienna practically everything is crowded together within a few squares. Here one can attend a medical lecture from 8 to 9 o'clock, a laboratory course from 9 to 11, a skin clinic from 11 to 12, a surgical operation from 1 to 3, and so on until the day is ended. To do the most work in general medicine in a given time Vienna is the ideal place. Yes, to Vienna he will go. The dream has come true. Already he sees himself working intimately among a little group of earnest countrymen, the coming masters of American medicine, discussing disease, playing with the diagnostic signs, dragging the causal agents into the limelight. He prepares himself for the light of superior knowledge which will soon flood the obscure corners of his cortex cerebri. He sees himself returning home, the bearer of clinical Europe's message to America, one of the champions of future medicine. The culture he has received from living abroad will always cling about him like a halo, making people stop and listen when he talks. On the boat he refreshes his memory with a book on diagnosis, so that his present ignorance will not startle those with whom he will soon mingle.

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[1] William Osler, Alfred Stillé, *University of Pennsylvania Medical Bulletin*, 1912.

At last, Vienna! He stops temporarily at a hotel on the Ringstrasse, which Baedeker tells him is near the hospital—the Allgemeines Krankenhaus. The day is well advanced, but he cannot wait to visit the field of action. He strolls up Alserstrasse past the old Votive church, several cafés, and a soldiers' barracks. The loungers at the tables before the cafés, the bright uniforms of the many army officers, the broad, grotesque trolley poles on the street cars—all these lend a foreign air which fills him with delight. Finally, the old hospital itself with its rows of low, dirty, stone buildings and its court yards filled with convalescent patients, just as he had pictured it. He stops a man looking very much like an American and asks the way to the seat of the American Medical Association of Vienna. The association is in its new headquarters up the next street, he is told, but if he will stop at the Café Klinik on the way he will find many of the fellows. He does not like the word "fellows," nor the fancy vest this American wears—these do not smack of learning.

Alas, how many fond hopes have been shattered by that step into the Café Klinik! Can this be the little band of American physicians who are to carve their names in medical history? This fellow with the big cigar and loud voice, talking of last night's experience at some gay music hall; this one in shirt sleeves, with cue in hand, who claims the title of brilliard champion? There is the odor of spirits and tobacco, the rattle of glasses and bottles, the clink of billiard balls, and the humming of ragtime. It is good to step from the streets of sleepy Vienna into a corner of America, where there are real Americans, wearing real American clothes and using real American slang. It dispenses with a blueness of spirit, but it does not add to a grayness of cerebrum. Is this medical Vienna, where so many famous men first saw the light? No, this is just the majority of American postgraduate students who waste their time and money and sometimes fool their friends at home by "studying abroad." "That doctor studied in Vienna, he must be pretty bright." Yes, but what did he study? Here is one disciple of Æsculapius who studied diseases of the eyeball three hours a week and the peculiarities of the billiard ball six hours a day—he will soon return as an eye specialist. Here is another who is taking up genitourinary diseases, but who hunts for gonococci, not in the hospital, but in cafés and music halls. Here is a third who will soon open an office in a large American city as an expert on stomach troubles, but whose study has consisted chiefly in the effects of Hungarian goulash and Munich beer upon his own stomach. Here are some more who do not maintain that they are studying anything—they are "just looking around, getting used to the language and customs before beginning." Many of these do not know exactly what they want. Then there is the busy practitioner who rushes through Vienna with exactly six weeks to spare. He expects to gulp down a dose of foreign medicine as he would a cup of coffee and a fried egg. Mental indigestion is the result. He would do better at home, keeping up with his medical journals.

The majority have very little knowledge of the German language. In eye, ear, nose, and throat work there are a few good lecturers who use English, but in other lines a knowledge of German is absolutely necessary to obtain the best. Many Americans fool themselves into attending second rate men who talk second rate English. Some think that the smattering of German they learned at school will help them through, but it does not go far. Others sit through lectures, ignorant of what the lecturer is talking about, but waiting patiently for the time when the German language will suddenly dawn upon them. "How are you getting along with your skin work?" queried a friend of a man who was making a specialty of dermatology. "Pretty fair," came the reply; "Zumbusch showed us several cases of *Haut* to-day, but I have'nt had a chance to look up the English name for *Haut*." "Why you idiot, *Haut* means skin."

One of the most pathetic sequelæ of postgraduate work in Vienna is the *Zeugniss*. The *Zeugniss* is a certificate showing that the holder has taken so many medical courses in the Royal and Imperial University of Vienna. A *Zeugniss* may be printed on plain paper or real imitation sheepskin, depending upon what the lucky one wishes to pay. He takes it around to the instructors whose work he has attended and has them sign their names. It makes no difference how many times he attended the instructor's lectures; in fact (and this is confidential), he can haul it around to instructors he has never seen before. All Americans look alike to the German teachers; they all sign the *Zeugniss* without a quiver. Possibly the Germans have a deeper sense of humor than we suspect. Finally the dean himself attaches his name and with his little rubber stamp impresses in red the two faced royal bird of Austria. There it hangs on the office wall at home, throwing off its radiumlike rays to warm the enthusiasm of faithful patients. "The doctor must be a smart man, look, he has a diploma from a foreign college. Maybe it was given to him last year because of that address he made before the Mothers' Club, which the morning paper wrote so much about." As a bit of real elegance there is only one flaw in the *Zeugniss*. This is the heading, University of Vienna, which reads *Universität zu Wien*, and unfortunately few patients know that *Wien* is the German name for Vienna. Possibly the American Medical Association of Vienna can induce the dean to have the *Zeugniss* printed in English, translating the word *Zeugniss* into "diploma," of course, and not "certificate"; there is no dignity in the word certificate; patients might think their doctor had framed his insurance policy or his certificate of vaccination.

Practically all Americans join the American Medical Association of Vienna, which has now moved its headquarters from the smoky atmosphere of the Café Klinik to its own club rooms. The association has worked hard to systematize the postgraduate courses in the hospitals. This systematizing does not make the courses themselves any better, but it proves a great convenience to the newcomer. The association meets one night a week. The meeting begins with an address by some representative of local talent, like Marburg, Lauber, Kapsammer, Falta, Holzknecht, or occasionally more important men, as Lorenz, von Noorden, or the retired Politzer. After this, scientific transactions and business items of interest to the association are discussed by its members. Medical societies, like true love, never hit on all six cylinders at one time. In the ordinary county society, however, the members remaining very much the same, the heretics, from death, exhaustion, or "sore heads," gradually drop out, leaving a survival of the fittest (or unfittest, depending on the point of view) in an interval bordering on peace and calm. In Vienna, on the other hand, as soon as the dissenters fall away they are reenforced by new ones from the States. The man from Minnesota has altogether different views of how to run the association from the man from Missouri; the man from Chicago thinks the one from Philadelphia ought to be locked up. A few years ago there was a fierce feud between two factors of Chicago talent which caused much excitement and a few fisticuff encounters among those concerned, but which brought the men from other States into more friendly relations. "Chicago men might be all right in Chicago," some one said, "but they certainly don't belong over here." Anyone who has attended a Turkish-Bulgarian Peace Conference or served a term as president of Mexico will little realize how sweet and peaceful the world really is until he has visited a "scientific" meeting of the American Medical Association of Vienna.

The newcomer in Vienna is apt to be disappointed in the lack of sincerity shown by his American confrères. But what about the medical work itself? The immense Allgemeines Krankenhaus, always crowded, and the new Jubilee Hospital across the street, whose completed buildings have already been filled; and also the Polyklinik, the Institut Obersteiner, the Lupus Home, the Rothschildspital, and the St. Anna Kinderspital, all near at hand—certainly the material is abundant. There are plenty of good men also; one has only to mention the names of Zuckerkandl and Hochstetter in anatomy; Weichselbaum in pathology; von Noorden, Ortner, and Neusser in medicine; Obersteiner and Chvostek in nervous diseases; Eiselberg, Hochenegess, and Lorenz in surgery; Schauta in obstetrics; Fuchs in eye work; Chiari in nose and throat diseases; Escherich in pediatrics; and Finger and Riehl in diseases of the skin.[2] Here is the cream of Vienna medicine. How many of these lecture to American students? None. Sad but true. Any one can mingle with the Vienna undergraduates and attend the clinics of these professors, but what he hears is purely elementary, intended only for the ears of beginners. From the upper tiers of seats one can see numerous medical cases and surgical operations, but the view is not the best even though one follows the example of many Austrian students and uses a pair of field glasses.

The postgraduate work for Americans, therefore, falls into the hands of minor professors, docents, and assistants. The courses to be given are previously posted on the bulletin board of the association. As a rule, each course lasts one month, one hour a day, costs ten dollars, and is open to ten men. Those who want the course sign their names to the list, which is taken down from the bulletin board by the American promoter when filled. Lists for the best courses are almost filled a week or a month beforehand. The newcomer must therefore wait a month or two before he can take certain subjects, although he may have but a short time to stay. In very popular courses, like Kovacs's in internal medicine or Ghon's in morbid anatomy (taking twenty men), it may be months before he sees an opening. Other courses are not so popular and a promoter must hustle around and get the list filled or almost filled so that the course will be given. Such a course may be just what the promoter himself wishes and which he may attend free because of his promoting. Newcomers are thus often induced to take courses which they find useless. Most of the courses given by the minor professors and docents (in German) are excellent—there is much to see and no end of information for those who want to learn. No one is disappointed with Ghon, Marburg, Stoerk, Schlesinger, Kovacs, Pötzl, Clarmont, Wertheim, Wintersteiner, Neumann, Knöpfelmacher, Zumbusch, and others.[3] What they have to say and show is as good as one meets in the best postgraduate courses in America, and the foreign atmosphere which goes with them probably gives them an advantage like that which mineral water has over water from the hydrant. Many of the courses given by the assistants and some of the docents, however, are very elementary and disappointing; these men have the material, but they do not know how to show it. One who goes to Vienna expecting to perform operations or do much actual handling of patients will be disappointed. It is always possible to examine patients during a lecture, or just before, or just after a lecture, and sometimes to tap a chest or pass a sound. To do more one must obtain the position of externe in one of the clinics; this demands a good knowledge of German and is open only to extremely few Americans. Externes, however, do not have the opportunities of the ordinary interne in one of our own hospitals. One going to Vienna expecting to learn surgery or therapeutic technic of any kind will be disappointed. For pathology and diagnosis go to Austria or Germany, but for treatment, surgical or medical, continue your journey east until you strike America.

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[2] There have been some changes in this line up since the writer left Vienna; for example, von Pirquet now heads the pediatric clinic, and Neusser has recently died.

[3] Minor changes have probably been made in this list since the writer left Vienna.

The American going to medical Vienna who finds most of his companions out for a good time, and who discovers that the work is really no better than he can obtain at home, will usually console himself with having developed the culture and refinement which are averred to go with a foreign education. What is the mysterious source of this foreign polish which he takes home with him? First of all, Vienna is a stupid old place, about as lively as Philadelphia on Easter Sunday. There are two or three music halls and cafés which are wicked enough to stay open all night. There is even an "American bar," where one sits on a stool and drinks tea served by a barmaid. At the very worst, the spirochete and gonococcus are not more cultured in Vienna than they are in Kansas City. Vienna is a fair example of how the Germans have always tried to imitate the French, but never succeeded. There is the Ringstrasse (a copy of the boulevards), within which the old part of the city is situated. There are spots of beauty on the Ringstrasse, but they are limited. There are museums and picture galleries to visit, and the royal palace which is a faded yellow affair, apparently an imitation of a Parisian railway station. There are the operas where one can hear good singing, but see most unattractive actresses. Viennese actresses, like many birds, sacrifice in plumage what they gain in song. There is always a new Viennese musical comedy on the boards, but it has to be taken to America to be acted properly.

Café life in Vienna (another effort to copy Paris) consists in sitting on the sidewalk at a little iron table and sipping lukewarm coffee from a glass or, if you are out for a lark, a mixture of wine and seltzer water. If it is in the morning you are given the paper to read, an evil smelling little sheet with blurred print and astigmatic, Turnerlike illustrations, that is, provided you do not look like an American, otherwise the head waiter will invariably hand you the *Illustrated London News*. In the evening the idea is to stare at everybody that sits near you. The Viennese are great starers; you can stare back, wink your eye, make faces, or even throw pieces of bread rolled into pills at them, but they stare right on without a quiver. The ambition of all Viennese men is to look thin and anemic and wear American shoes. The women evidently try to grow as large as possible. Vienna is noted for its beautiful horses and women, but the horses have the advantage. The café waiters have the honesty of Spanish pirates. They are poor mathematicians, but always make mistakes in their own favor when adding up their checks. They charge for each roll you take from the bread plate and often for your serviette if you use such a luxury. Butter and drinking water must be especially asked for, causing nearby Austrians to chuckle at such strange American tastes. At the end of the meal there are three waiters, sometimes four, to tip, the head waiter who collects the money, the regular waiter who pulls away your chair, and the wine boy who holds your hat. Tipping is prolific, but not very expensive in the Austrian capital. One must even tip the janitor four cents to open the pension door at night and the street car conductor one half cent each ride.

Vienna has the reputation of being one of the most expensive cities of Europe in which to live. Food is cheaper than in America if one keeps house and does not demand American articles, like Heinz's baked beans which are thirty cents a can, and Uneeda biscuits which sell at twenty cents a box. Hotel and pension life costs about the same as in America considering what you get. Only one pension out of thirty has a bathroom. The Viennese has the same fondness for water and open windows as spermatazoa have for acid. Clothes are not cheap if one wants what one is accustomed to wear at home. A glance through the attractive shop windows of the Graben and Kärntnerstrasse (where foreigners go), or the less attractive ones of Mariahilferstrasse (where the Viennese themselves shop), will convince one of this. Collars and shirts and other articles are all measured in the metric system, making it necessary for one to be measured all over again. One can buy a tailor made imitation of an American suit of a first class tailor for twenty dollars. The material is good, but the finished suit looks as if it came from the Bowery. You can go back to have it fitted fifteen times, and even let the tailor rip an old suit to pieces for making patterns, but the result is always a sad failure; you will give it to your chauffeur on returning home and dislike him for wearing it. Austrian cigars and cigarettes (sold by the government) are cheap, but you will be glad to pay double for a Henry Clay (the favorite American brand in Europe), although you may never smoke Henry Clays in America. Some long, emaciated Austrian cigars have a straw through the centre; you are meant to pull out the straw before smoking one, but the flavor is better with the straw left in. Women carrying hods of brick up a ladder, pulling dog carts, and shoveling snow from the streets are common sights in Vienna. The Viennese men are careful to take their hats off to one another, but except in the mockery of "higher society" their rudeness to women touches the American to the quick.

As it is apparently the intention of the writer of this article to be as disagreeable as possible, let him not fail to mention the most caustic product of Vienna culture, namely, the landlady. Beware of the Austrian landlady, most fiendish of evil spirits; distrust her as you would the bacillus of plague! This applies chiefly to the American who takes his family to keep house in Vienna. The following is the sad story of one American's exit from the Austrian capital; the story is a true one, as the writer has good reason to know. The American had lived two years in medical Europe, over a year of which time was spent in Vienna. He kept house in Viennese apartments neighboring the hospital. All through the stay his wife was bothered by petty thefts of food and clothing which were finally traced to the landlady. They put up with this state of affairs as best they could, as they had heard of no other landlady of better reputation. On the eve of their departure from Vienna the landlady suddenly swamped the American with bills for numerous "extras" of most mysterious origin. So anxious was he to get away from her depressing influence that he paid everything without a struggle. One hour before the train left, with a cab waiting at the door, the landlady entered with one more bill, probably an inspiration from a fruitful night of dreams. This bill included a chair whose surface had been worn by the friction of the American's trousers and a window broken by a cake of soap, "accidentally" hurled by the landlady at the American a week previous—even the cake of soap was listed at three cents. The bill was a small one, but the American having certain antibodies of Irish extraction in his blood had an anaphylactic revolt against this final charge of the landlady's toxines. Three well nourished Austrian gentlemen friends of the landlady, waiting for their cue, then entered upon the scene and began making faces at the American. This was followed by a noise resembling overturned furniture, broken glass, and dull thumps. In the most lively part of the celebration the American's wife, in true American spirit, came to the rescue by pulling the most ambitious of the vivisectors by the hair until he cried like a pig. When the smoke finally cleared, the American's baggage had mysteriously vanished. An Austrian policeman, who stood hesitatingly across the street looking up at the house, was called over by the American, given a cigar with a straw in it, and told to get back the baggage. He took the cigar, but said the chief had given him no rules about baggage. A trip was then made to the nearest police station, where the American was informed that he had a perfect right to his own baggage, but he would have to obtain a search warrant from the mayor. As the train was to leave in twenty minutes peace negotiations were made with the enemy and a compromise restored the missing articles. The American and his family fell into the compartment of a railway carriage just as the train was leaving for Munich. Two American women were seated in the compartment and one said: "Look at that poor Austrian, he has cut himself on the neck." "Austrian, be damned!" said the American. He looked up and then smiled—it was good to be among real Americans again, even if they were only two kind hearted old ladies from St. Louis.

DEVELOPMENTAL ALEXIA.*

Two Cases of Congenital Word Blindness.

By Burton Chance, M. D.,
Philadelphia.

The rarity of congenital word blindness is my apology for wishing to give a short account of two cases that are now under my observation.

Case I. A young man of eighteen years, who has attended school since his fifth or sixth year is still unable to read, although he has advanced far in arithmetic and algebra and in geographical and historical knowledge. He has maintained in fact a degree of general intellectual progress out of all proportion to what one might expect for one who had learned only by oral teaching. He is a healthy, good natured fellow, quite ready in repartee, but very soon tires when he attempts to read. He is in only the *Second Reader*.

The letters on Snellen's and other distance cards were named with the greatest difficulty and only after many vocal attempts. The individual characters indicated nothing to him: he supposed they were the alphabet. Nevertheless, a card arranged with numerals was read properly; he divided the lines into their intervals of notation, calling them off as expressions of total sums without the slightest hesitation, even into the tens of billions. The American Ophthalmological Society's card containing fractions was deciphered with startling rapidity. Playing cards were accurately named (he is said to be quite an adept in euchre and poker) whereas the Jaeger card could be spelled out only with extreme hesitation and difficulty. In a sentence containing the words "concave," "convex," "lens," he read somewhat as follows: C-O-N. *con,* C-A-V-E, he could not say what it was: C-O-N. V-E-X, *con-leth* L-E-N-S, *leth.* M-O-R-N, *morn,* but only after repeated listenings to the sounds of his spellings. When he spells aloud all attempts are easier than when he tries to read offhand. The paragraph composed of two and three syllable words beginning with "children should be allowed to read such books, etc." had to be read, or rather spelled, three times before he could give the sense of what he had read.

The visual acuity equalled 5/5; the accommodation ranged, for type 0.50 D., from 10 to 50 cm. Ophthalmoscopically, the media were clear, the discs 7 x 8, vertically. The right disc showed a "Beard's sector," a surface formation which I have frequently noticed in the psychodeficient. An expansive venous wave appeared on the right superior vessels. The funduses were granular; connective tissue reflexes showed on the discs, and striations were well marked, though there was an early absorption conus at each temporal border. The eyes were quite emmetropic. Phorometric tests showed an exophoria of 3°. No other developmental changes were seen in either eye; nor was the head misshapen.

Colored wools were picked out and named accurately. He had a slight stammer, yet otherwise he spoke clearly, with accent and emphasis as well as understanding. He said he would like to take up a learned profession, perhaps be a doctor, yet his secret yearning was to be a plumber! (it is needless to say that I discouraged him from being false to his true self). He dislikes to sit still; he never makes an attempt to read, or quietly to pass his time. He must be doing something. He likes to work with tools and fit pipes. He can make things with pocket knives and tools. He is right handed. Sports engage him and he enters into them with the greatest enthusiasm. He could find the scores in the newspapers and could decipher their meaning so that he could independently know what was going on in the baseball and basket ball worlds. He is a "good sport" and boxes well. It was interesting to note his rendering of a time table of a railway division running through his own region. He rattled off the stations from New York to Trenton, but beyond Trenton it was a blank, and his attempts to tell the other stations were painful to him as well as to myself.

The young man had been carried along in the primary schools depending upon the good will of the teachers until he was too old to be kept with little boys; first in the public schools then in parochial schools, receiving from first one and then another extra teaching. At fourteen years of age he entered a monastic school and has since then been under the care of the Benedictines. One of the brethren has shown rare sympathy and understanding of the case; he took him to Professor Witmer's psychological clinic at the University of Pennsylvania, and it is through the courtesy of Doctor Witmer's assistants that he was brought to me for an ophthalmological study.

The family history is negative; no other member has been known to be unable to read. The mother is dead, the father and the only brother are healthy and normal. They are Irish Americans.

I recommended that the young man should be continued in the general classes where the instruction is carried on by lectures and demonstrations, and to be given special periods of twenty minute practice in the study of letters and words by the so called "look and say" methods. He was encouraged to commit words to memory, by writing or printing them, and to pronounce them without first orally spelling them. But he was discouraged from setting his heart on accomplishing a learned profession; on the contrary, the advantage of a manual occupation was laid before him. A note received to-day from the monastery stated that he had left the school and is now employed as a shipping clerk in a business house.

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*Read at the College of Physicians of Philadelphia, Section in Ophthalmology, January 16, 1913.

CASE II. The second case is that of a boy of nine years, the son of an intelligent American whose family history shows deaths in the second and third decades, and instances of unstable nervous vitality. This boy started to school at six years, yet he is now only in the second grade. His failure to learn to read led to his being classed among the deficients, and those of his teachers who became impatient with him declared him to be vicious. He was taken to the psychological clinic when eight years old for general study. While there it was found that disorders of his nasopharynx existed, but nothing was done for their relief until several months later, when adenoid vegetations and swollen tonsils were removed. In February, 1912, he was taken again to the clinic. At this time he was known to have had great difficulty in reading, he became confused on little words such as "but," "if," "and," "so," yet larger words, when spelled audibly, he could read after a time. He had difficulty in naming individual letters and would commonly use the wrong letter, misplacing a w for a g, for instance, "wone" for "gone." The tasks were so painful and so ununderstood that he would fling the book across the room, and yet he was an expert in mental arithmetic, and was quick in figures, the values of which he had learned quite early, though the sight of the numerals, etc., were irritating to him.

I found him to be a neat, well developed, pleasant faced boy, who took the greatest interest in what I proposed to him. He could write words of four to six letters when permitted to spell them aloud. He could read sentences only with great effort, and when he was asked to repeat the same in writing it seemed all but impossible, even after three or four attempts. When asked to write a reply to a simple question, like his mother's name, he became totally confused. Printed written words of my own seemed to convey no sense of proportion or meaning to him. He had been in his class for three terms. He was extremely restless, though of good disposition. He has been eager to be with boys, but he has not gained a commanding position among them, he became rather the drudge or general utility member of his "set." The visual acuity of each eye was 5/5 by illiterate and character signs, and the accommodation ranged from 20-40 cm. for type 0.50 D.

The eyes were well formed, slightly less than 1 D hyperopic; the discs presented the same sort of sector shaped excavations observed in the first case. There were no other abnormalities. The boy made prompt and accurate selections of the colored wools. He did not know the musical signs, yet he was fond of music. I did not attempt to take his fields of vision, as there were no symptoms pointing to defects in them. He knew the playing card signs, but did not play cards.

The boy could not be sent to a private school or have a special tutor. His family agreed to help carry out my directions toward increasing the power of his visual memory. I suggested the use of child's blocks; games of word making; sliced words; the making of a double roll or "pony" with lists of words which could be rolled so that isolated words could be brought before him. His family was urged to be patient with him, to have his case properly explained to his school teachers, as well as to his mates, so that they would not ridicule him.

He was seen again, January 11, 1913. His family and others have done what they could to help and he has gained somewhat in the past six months. He spells well vocally, but his attempts to read even lists of simple three letter words were most imperfect—t-o-e was pronounced *tod;* he could not write a reply to a question, without first speaking it and then state each word and spell it out letter by letter. His father stated that he was able to play the game of *Authors* and could call off the names necessary for the "books" with ease and accuracy (this evidently by an association of ideas, with a memory of the position of the various titles on the card). He added that his lessons were read over to him each night, and then heard the next morning. He could recite excellently, his father said, but it was discovered that while appearing to be reading off from his book he perhaps had another page than that containing his lessons.

These cases may not be considered as at all extraordinary; they have been detailed largely in obedience to Hinshelwood's dictum in reporting a "case of congenital word blindness," that it is a "duty to record every case so that the attention of the profession may be called to this condition and the mind familiarized with its characteristic features." (*Ophthalmoscope*, II, p. 399, 1904). But in addition to a plain recital of my cases, it is not easy to resist the impulse to make a few remarks on the subject, which I prefer to call "developmental alexia."

Much has been written on the subject of congenital word blindness since it was first recorded in 1896. Yet barely fifty cases have appeared in the literature, and I believe it may safely be stated that no case has been formally presented to this section in the past ten or twelve years. Swanzy did not mention it in Norris and Oliver's *System*; but it was not until about 1900 that Hinshelwood described the condition scientifically and ascribed it to a congenital defect in the visual memory centre for letters and words.

It cannot be a rare condition. I have known school fellows who never cared to read, not because of ocular discomforts and hindrances, whose knowledge of subjects gained from lectures and demonstrations, however, was nothing short of profound. I once knew a good sized boy in my own class in the intermediate department whose name was Davis, who could not spell, not even his own name, yet from our patient and sympathetic teachers he gained a degree of learning that enabled him to pass in all oral subjects; and so I might go on to tell of many instances of boys who were classed as "stupid," whose general information was great notwithstanding the fact that they could not read.

It is a rather singular fact that this well known physiological anomaly should have been sudied almost solely by ophthalmologists, rather than by the neurologists, for, clinically, none of the pure cases have been visually blind nor have the semiological details required ophthalmological exactness for their elucidation. On the contrary, it is within the province of the pedagogue that they are discovered, and it remains for the psychoneurologist to treasure and direct the strength of these defective individuals in order that they may be brought within a useful field of existence. It remains for him to define accurately just which portion of the cerebrum is affected, and by what process the disease arises.

It is hard to understand why Hinshelwood and others selected the incongruous term "word blindness" for a condition in which the unfortunate subject is not at all blind, in the sense that we say a man is visually blind. He really sees the letters and the words, he can count each one, and, may be, imitate their forms with pen or pencil, but he does not know what they mean, nor can he pronounce them. Nettleship was near the truth when he said in his report of several cases (*Ophthalmic Review*, xx, p. 61, 1901) that he recalled how he used to speak of it as a "congenital want to acquire knowledge by printed signs," long before Hinshelwood collected his data and attempted to give the condition a definition. Jackson's selection of a distinguishing title is therefore reasonable, for it is "a developmental alexia" with which we have to deal (*American Journal of Medical Sciences*, May, 1906).

An analysis of the published cases shows that a great variety exists; some were "blind" for letters or for only certain letters; others were for certain words only, or, for the order of the letters in the words; while others have not been able to read words at all. I have not seen a case of complete inability to recognize letters—"literal alexia" must be rare indeed. Very few, with the advance of their intelligence, failed to learn to read arithmetical signs and figures; evidently that was because figures have complete mental values, whereas letters and even words are not entities and require therefore a context to impress their meaning. That all the cases should have been found, with two or three exceptions, in boys, and not in girls, and always in youths of British or American birth or descent, is one of the unexplained mysteries of the affection.

As I have intimated above, it is the neuropathologists who must locate the lesion for us. So far, they have offered only conjectures: whether it is a defect in the development of the centres in the region of the angular gyrus; or because it is due to an insufficiency of gray matter; or whether it is caused by an interruption in the course of the fibres through the commissure, we cannot say. Certain it is that something hinders the passage of impulses connecting the visual word memory centre and the auditory vocal memory centre.

235 South Thirteenth Street.

THE TREATMENT OF EPILEPSY WITH HYPODERMIC INJECTIONS OF CROTALIN.*

A Study of the Effect of the Venom on the Coagulability of the Blood; Report of Eighteen Cases Treated.

By Ralph H. Spangler, A. B., M. D.,
Philadelphia,
Chief of Medical Clinic, Methodist Episcopal Hospital.

In March, 1909, I began the empirical use of hypodermic injections of rattlesnake venom for the treatment of epilepsy. Since publishing a Preliminary Report (1) and a second article, Tabulating the Report of Its Use in Thirty-six Cases (2), I have received so many letters from physicians and patients from all parts of the world that I take this opportunity to report further my experiences in the study and observation of 148 cases which I have treated with hypodermic injections of crotalin solution during the past three and a half years.

The solution which I find most satisfactory and effective has been prepared by my druggists, and consists of the dried, crystallike scales, from the evaporated venom of *Crotalus horridus* dissolved in sterile water and glycerin, to which are added a few drops of trikresol for its preservative and antiseptic effect. This sterile, antiseptic solution is put into sterilized ampoules and sealed. Each ampoule contains one dose, which is made as strong as desired by the physician, i. e., each one represents 1/200, 1/100, 1/75, etc., of a grain of the venom.

The strength of the dose must be determined for each individual. It is my practice to start with 1/200 grain and gradually increase the strength as indicated. It is important to determine the patient's susceptibility to the venom and to regulate the strength of the dose required for each individual. The idiosyncrasy is judged by the local reaction at the site of injection and the effect it has on the character and frequency of the convulsions.

It has been my practice to give the injections in the forearm, alternating from left to right, as long as a good reaction is obtained. If the reaction is inadequate, I inject above the elbow, and occasionally I have injected into the calf of the leg. It is advisable to vary the site of injection when a good reaction is not obtained.

It is best to use an all glass aseptic hypodermic syringe and a platinoiridium needle, about one and a half inch in length. The syringe is sterilized by cleansing with alcohol and boiling. The needle is heated over a Bunsen flame or boiled. After breaking off the neck of the ampoule the crotalin solution is drawn into the syringe and, after expelling the air, is ready to inject.

The site of injection is cleaned with tincture of green soap and alcohol, or touched with tincture of iodine. The needle should be well introduced into the muscles (intramuscular) at an angle of about sixty degrees and the contents of the syringe expelled slowly. After withdrawing the needle, the wound is covered with a little sterilized cotton and collodium. The dressing should be removed with alcohol or ether as soon as the part begins to swell.

The frequency with which the venom should be given varies with the character of the attacks in an individual and depends upon the length of time the local reaction lasts. It seems best to wait two or three days after the swelling and cellulitis have subsided before giving another injection. In the average case the local reaction is over by the third or fourth day, so I give injections from five to seven days apart in most cases.

In a paper (3) read before The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, at Vineland, N. J., June 3, 1912, I reviewed the chemistry of snake venom and pointed out that crotalin is a preparation obtained from the poison glands of the American rattlesnake (*Crotalus horridus*), and that because of its composition it exercises a double action upon the organism into which it is injected (4). The peptone element contained in the venom has a paralyzing effect on the nerves when given in large doses, while in minute doses it has a quieting effect upon the nervous system.

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*Read before the Pennsylvania State Medical Society, Scranton, September 25, 1912.

The other principal compound of the venom, the globulin poison, acts on the blood; in large doses, completely destroying the power of the blood to clot, in smaller doses exerting a retarding action on the inherent tendency of the blood to coagulate.

Various observations which I have made in treating epilepsy have encouraged me to look for an explanation of the uniformly good, and, at times, almost brilliant results obtained in the treatment of this disease with the crotalin solution injections. Let me cite a few well known facts of common observation to physicians who have under their care many cases of epilepsy.

If in an epileptic an acute fever or an infectious disease develops, such as pneumonia, erysipelas, typhoid or scarlet fever, as a rule all epileptic symptoms disappear during the course of the intercurrent disease. The major attacks with convulsions are absent, the minor seizures with disturbance of consciousness do not occur, and the "dreamy state" or border line symptoms are held in abeyance. Only upon recovery from the acute illness, after a longer or shorter time has elapsed, do the epileptic symptoms recur; and what may be termed the normal condition of the epileptic, i. e., frequently recurring major and minor attacks with their concomitant manifestations, becomes reestablished.

The same observation is made in cases of pregnancy. During this time no attacks occur among many epileptic women. This fact leads the laity to the delusion that marriage often cures the epileptic girl. Again, operations performed for reasons that have no bearing on the epileptic condition nearly always cause a temporary suspension of all epileptic symptoms.

On the other hand, when an operation is performed for the purpose of curing the epilepsy, such as the removal of the irritation resulting from a diseased condition of a part or when the skull is trephined to remove a pathological condition of the brain or its membrane, the patient and relatives are frequently encouraged because of the absence, at times for several months after the operation, of any epileptic attacks. Their disappointment too often is only more keenly felt when the apparent improvement is found to be only temporary, and the old condition of recurring convulsions reappears. Thus it is seen that external influences, various diseases, and at times operations which exert a distinct influence upon the quality of the blood may alter the pathological condition in a given case of epilepsy, so that the attacks disappear for some time.

Is it not possible that these conditions may be explained by the fact that through a demonstrable alteration of the blood conditions an accumulation, so to speak, of substances in the blood may act as an etiological factor of the epileptic attack?

As is well known, after operations with which there is connected much loss of blood, a strong stimulus for the formation of new blood occurs. During this period of blood formation, when a changing of all the elements in the blood is taking place, the epileptic symptoms disappear. In due course of time, however, when the quality of the blood returns to its former conditions, the epileptic attacks recur. During an acute febrile disease or illness, during pregnancy and after operations, the composition of the blood is possibly altered to such an extent that the irritating bodies which bring about an epileptic attack, cannot be produced, or are not produced in such quantities as to cause a convulsive seizure.

Is it not possible, therefore, that the blood of epileptics may contain what we may call an epileptic toxine, which toxine accumulates more and more, from time to time, until a certain intensity is reached with increasing coagulability of the blood, and an explosion (the epileptic attack), as it were, takes place? Whether we have to do in this condition with an autointoxication which depends upon an hemogenetic or cerebrogenetic cause, is a question which needs further investigation.

Let me cite once more from observation that when an epileptic collapses as though struck by lightning, injuries frequently occur on the face, hands, or other parts of the body which are exposed to infection from dirt of all kinds. Rarely, however, will there develop inflammatory or infectious conditions from such wounds. But, on the other hand, these injuries heal very rapidly and much more rapidly than among more healthy persons. Again, severe tongue bites during a major convulsion seldom are attended by much loss of blood, notwithstanding the fact that this organ is rich in blood. May not these facts have a special significance and bear a close relation to the cause of epileptic symptoms? May not this condition point to a certain composition of the blood, especially a more rapid coagulability, and therefore a more rapid closing of the wound against external infection and hemorrhage?

During the past year I have studied the coagulability of the blood in eighteen cases of epilepsy, covering a period of six months in each case. So as to have uniformity in the results I used a standard Bogg's coagulometer and made all the tests myself. The following is a tabulated report of eighteen cases of epilepsy treated for six months (at weekly intervals) with hypodermic injections of crotalin solution. Special attention is called to the lengthening of the intervals between, and the modification of the character of the attacks as well as to the effect the venom had in gradually lengthening the coagulation time of the blood.

In studying this table it will be noted that in most of the eighteen cases, by the end of two months' treatment, and in all of these cases by the end of three months' treatment, a lengthened time of blood coagulation was produced. From a careful study of each case I also observed that in these cases when the coagulation time of the blood was taken twenty-four or forty-eight hours before an attack (whether major or minor) it was almost invariably the rule to find an increase in the clotting time of the blood. Conversely, if the coagulation time was determined from twelve to thirty-six hours after an attack, there was a corresponding increase in the clotting time.

These results are in accord with the results reported by Dr. John Turner (5) in his article published in the *Journal of Mental Sciences*, London, October, 1908, with the following conclusions:

1. The average rate of coagulation of the blood is greater in severe cases of epilepsy.

2. The rate is quickened during the period that the patient is having fits (serial epilepsy).

3. There is further quickening of the coagulation rate up to twenty-four hours before a seizure.

4. From twenty-four to forty-eight hours after a fit there is a rebound and retardation of the rate of blood coagulation.

Dr. William Alden Turner (6), in his Morrison Lectures of 1910, stated that it has been conclusively proved to his mind that rapid coagulability of the blood occurs during the twenty-four hours preceding a major seizure of epilepsy or a series of attacks.

Experimenters (7) in general agree that the blood of patients suffering from an acute infectious disease coagulates much more slowly than the blood of such patients in health. During pregnancy there has been found a decrease in the fibrinogen of the blood, with a corresponding slower coagulability. Blood depletion after an operation is attended by a decreased clotting time.

Without referring to the histological and chemical changes in the blood, without taking into account that the blood, the most complicated and interesting fluid in the living organism, has many other secrets hidden in it, may we not concede to this fluid portion of the human body a greater importance in the origin of epilepsy, than has heretofore been demonstrated?

That one effect of crotalin consists in decreasing the coagulability of the blood through the globulin-like element contained in it seems undoubtedly determined from the results noted in the above tabulated cases.

It seems therefore possible to accurately observe the effect of crotalin on the blood of epileptics. We are able to determine that:

1. The symptoms of epilepsy are closely related to certain changes in the composition of the blood.

2. It is possible to influence the composition of the blood through the hypodermic administration of crotalin solution.

3. We possess in crotalin a therapeutic means which can influence advantageously the altered condition in the blood of epileptics.

At a future time I hope to report as to the effect of the peptone poison, the other principal chemical element of snake venom, in cases of epilepsy.

The fact that crotalin decreases the coagulability of the blood and, I believe, at the same time the irri-

TABULATED REPORT OF EIGHTEEN CASES OF EPILEPSY TREATED FOR SIX MONTHS (AT WEEKLY INTERVALS) WITH HYPODERMIC INJECTIONS OF CROTALIN SOLUTION;

Noting especially the lengthening of the intervals between attacks and the modification in their character, as well as observing the effect of the treatment on the coagulability of the blood.

Case No.	Age.	Sex.	Character of attacks.	Frequency of attacks *before* using crotalin.	Frequency of attacks *after* using crotalin six months.	Clotting time of blood *before* using crotalin.	Clotting time of blood (monthly average of weekly observations) ***after*** giving crotalin injections at seven day intervals.					
							First month.	Second month.	Third month.	Fourth month.	Fifth month.	Sixth month.
1	19	F.	Minor (in series)	Daily.	Series stopped. 7 to 12 days between single seizures.	3.25′	4.5′	5.1′	5.00′	5.5′	5.75′	5.75′
2	30	M.	Major and ambulatory	Two to four a wk.	One major and 2 minor in 6 mos.	3.5′	4.2′	5.00′	5.25′	4.75′	6.1′	5.75′
3	31	M.	Major	Daily for 15 mos.	Two to 9 wk. intervals.	2.25′	3.5′	3.25′	5.1′	[1]6.25′	4.25′	5.1′
4	23	M.	Major series	Series of 2 to 5 during 24 hrs. at 10 to 14 day intervals.	Character of attacks changed to minor, 4 to 8 wk. intervals.	2.5′	2.5′	4.75′	3.1′	5.5′	5.75′	5.25′
5	57	M.	Major and minor	Three to 6 wk. intervals.	One major and 2 minor in 6 mos.	4.5′	5.25′	5.25′	5.5′	6.25′	5.75′	6.00′
6	23	F.	Major series	Series of 3 or more in 24 hrs. once in 5 to 7 days.	Series stopped, longest interval between single attacks 5 wks.	3.5′	4.00′	4.00′	5.25′	5.5′	5.00′	5.25′
7	26	M.	Major and minor	Series of minor followed by 1 or 2 major every 3 wks.	One minor and 1 major during first 3 mos., none during last 3 mos.	2.00′	3.00′	4.25′	5.25′	4.75′	5.5′	5.5′
8	20	M.	Major and minor	Average 3 major every 24 hrs. for 2 yrs.	No attacks for 4 mos. after third treatment, 2 minor during sixth month.	2.75′	3.25′	4.00′	5.25′	5.5′	5.25′	5.00′
9	32	M.	Major in series	Series of 3 or more, at 1 to 3 wk. intervals.	One series of 3 minor attacks and 2 single major attacks in 6 mos.	4.00′	3.5′	4.5′	5.25′	5.00′	5.75′	5.5′
10	30	F.	Major series	Series of 4 to 12 attacks during 3 to 5 days at 1 to 3 mo. intervals.	No attacks after second treatment.	3.25′	4.75′	4.25′	4.25′	5.75′	6.00′	6.00′
11	11	F.	Major and minor	Two to 3 major each wk. with daily minor in between.	Seven major during 6 mos., minor not much influenced.	3.5′	3.00′	4.25′	5.25′	5.00′	5.5′	5.75′
12	21	M.	Major and minor	Daily attacks for 5 to 6 days followed my same number of days usually with absence of attacks.	Series broken, 1 interval between major attacks of 6 wks.	1.5′	2.00′	2.25′	4.00′	3.75′	4.25′	4.5′
13	29	F.	Major and minor (automatism)	Series of major and minor with automatism manifestations at regular 3 wk. intervals.	No major attacks for 6 mos. 2 short series of minor.	3.75′	5.00′	4.25′	5.25′	5.75′	6.5′	6.5′
14	18	M.	Major and minor (series)	Series of 3 or more in 24 hrs, 2 to 3 times a wk.	Series broken, 4 major in 6 mos. Minor 2 to 4 times a wk.	2.75′	4.25′	5.00′	5.5′	5.25′	6.25′	5.5′
15	9	M.	Major (series) and minor	Series of 10 to 15 major 2 to 3 times weekly. Minor during intervals.	Single attacks at 7 to 10 day intervals. Series broken, 1 interval 2 mos. without attacks.	1.75′	2.25′	3.00′	2.5′	4.00′	5.25′	5.00′
16	44	F.	Major	Once in 3 to 4 wks.	Two attacks in 6 mos.	3.5′	5.00′	5.5′	5.25′	6.00′	5.5′	6.25′
17	24	M.	Major and minor in series	At weekly intervals had a series of 3 to 5 major with as many minor attacks in 24 hrs.	Attacks continue at 7 day intervals, but series are shorter.	3.00′	4.00′	4.5′	5.5′	5.75′	5.5′	5.5′
18	16	M.	Major	Two to three weekly.	One major in 6 mos., but a minor every 2 or 3 wks.	3.5′	4.25′	4.25′	4.75′	4.5′	5.25′	5.00′

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[1] Nine weeks interval between attacks.

tability of the nervous system, may not be absolutely proved theoretically, but the practical results obtained in the above tabulated report of cases treated during the past year will, I trust, lead to a more general use of crotalin injections in treating cases of essential epilepsy.

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2035 Chestnut Street.

INFECTION WITH *ENTAMŒBA TETRAGENA*.*

By W. M. James, M. D.,
Ancon, Canal Zone.

The first identification of a case of *Entamœba tetragena* in the Canal Zone was made by Dr. S. T. Darling, and reported by him to this society. In the stools of a negro patient admitted to Ancon Hospital he found the four nucleated cysts that are characteristic of this parasite. In this instance Darling reported that there was, as far as could be ascertained, no history of dysentery, and that the patient had been admitted for a disease other than dysentery. This was in September, 1911.

Some time later, a Spanish laborer, suffering severely with dysentery, was admitted to my section. The stools contained much blood and mucus, and entamœbæ were present in very great numbers. In the fresh specimens I was able to identify the eight nucleated cysts of *Entamœba coli*, and entamœbæ corresponding to the vegetative stage of this species, and also numerous entamœbæ which I took for histolytica. Specimens were sent to Doctor Darling, who expressed the opinion that a double infection with these two species was present. Slides stained with Hasting's and Giemsa's were sent to Dr. C. F. Craig, of the Army Medical School at Washington, who wrote that beside the entamœbæ corresponding to histolytica and coli, in his opinion a third was also present, which he took for tetragena. Unfortunately, no specimens from this case were wet fixed and stained with hematoxylin, but a later study of the slides resulted in the finding of two well defined four nucleated cysts, corresponding in every way to the four nucleated cysts found afterward in the stools of the patient, an account of whose infection I present.

I could not, however, otherwise identify in the same slides a third species. While my notes on the fresh slides record the finding of large, actively motile entamœbæ exactly resembling histolytica except, in some instances, for the presence of a well defined nucleus, the finding of these two cysts is all the proof I have that tetragena should be identified. Personally, however, I have no doubt that tetragena was present.

This patient made a rapid recovery under the bismuth method of treatment, and before his discharge *Entamœba coli* was again recovered from his stools. It is quite possible, in view of my recent experience with tetragena infection, that this patient was not infected with coli and histolytica, but with coli and tetragena, and that I confounded tetragena cysts with those of coli on the later examinations. At the time I was entirely unfamiliar with tetragena, and could easily have mistaken the "latent" stage of this (to which I shall refer later) for coli during convalescence. When I attempted later, with more knowledge of tetragena again to study the slides, the stain had blurred from much use and had faded, and I could recognize only the cysts to which I have referred.

The patient whose infection is the subject of this report was first admitted to Ancon Hospital, December 10, 1911, with a history of dysentery for a short time. The stools contained pus and blood and many actively motile entamœbæ, with well marked ectoplasm and endoplasm. Many of the organisms included erythrocytes, and some were literally stuffed with these. Also, a few cysts were seen. At the time I was busy with other work and gave no study to the case. I recorded a double infection with histolytica and coli, noting the latter on account of the cysts. The patient was placed on the bismuth treatment as advocated by Dr. W. E. Deeks, of this hospital. The dysenteric symptoms stopped at once, and in a few days the patient was passing formed stools with no return of his malady.

In the meantime I had received a copy of Doctor Craig's excellent treatise on the entamœbæ and read for the first time a detailed account of tetragena, according to his personal observations and those of the German school. I had already some knowledge of histolytica and coli, in fresh specimens, and in specimens stained with Hasting's and Giemsa's, after the method of Dr. S. T. Darling. This method, especially when the slides are further differentiated in sixty per cent. ammonia alcohol, as he advocates, gives very excellent and superior results for this class of stain after dry fixation. I had found out that while the bismuth treatment causes a rapid disappearance of histolytica, the drug has no permanent effect on coli. Since I thought coli were also present in this infection, salts were administered, with a view of obtaining some for study, a month after the admission of the patient.

Much to my surprise, I found the specimens thus obtained full of actively motile entamœbæ, and though many of them in the fresh specimen resembled coli, others differed from any that I had studied previously, in that the organisms, while presenting many of the characteristics of histolytica, had well defined nuclei, something that I had not observed in histolytica. Stools were sent to Doctor Darling, who identified the entamœbæ as tetragena. Numerous cysts were also present, and in a number of these I recognized four nuclei, in fresh as well as stained specimens. Neither Doctor Darling nor I could identify more than the one species in the stools.

In view of the absence of dysenteric symptoms in Doctor Darling's first case, the doubt as to the pathogenic species in the case in which I found the two cysts, and the presence in this case of so many vegetative entamœbæ in the absence of any indication of present dysentery, I was inclined to believe that tetragena is perhaps a rather harmless organism, like coli, and indeed this opinion was also expressed before this society by others. The patient was discharged January 10th, a week or more after the identification of the entamœbæ, apparently fully recovered from his dysentery, as he had had no symptoms for four weeks. The entamœbæ were still present when he went out.

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*Read before the Canal Zone Medical Society, May 8, 1912.

April 1, 1912, he returned with a history of dysentery for four days, but stated that he had had no symptoms in the interval between his discharge and the beginning of the second attack. I was ill at the time, and am indebted to Dr. H. R. Carter, Jr., for the clinical and many of the microscopical findings at the time of the second admission. As before, the stools contained much pus, blood, and mucus, and a very great number of actively motile entamœbæ, nearly all of which included erythrocytes, some of the organisms being completely filled with them. Doctor Carter, who had studied tetragena in the stools in the previous admission, recognized in many of the organisms a large and prominent nucleus, associated with the histolytica characteristics of active motility and a marked differentiation between ectoplasm and endoplasm. He, without at the time knowing the source of the specimen, identified the entamœba as tetragena. Specimens sent to the Board of Health Laboratory were reported on by Doctor Darling as "stained specimens of the entamœbæ present the characteristics of *Entamœba tetragena*, Viereck." I do not know if cysts were present on admission

Doctor Carter gave salol, ten grains, three times a day, ordered a milk diet, and within ten days the stools were again formed. Very careful examinations of the stools were made, and while no vegetative entamœbæ were found in the formed stools, they were present in very considerable numbers in the semiliquid motions following the administration of salts. Numerous cysts in all stages of development were also present.

But though the dysenteric symptoms had disappeared, the patient complained of vague abdominal distress, which, on examination, appeared to manifest itself as tenderness over the cecum and the transverse colon. Salts were administered several times to relieve constipation, and, April 30th, were given in larger doses to obtain specimens. The first stool was formed and contained cysts only, the second to the fifth were semisolid, and in them were numerous small entamœbæ, with well differentiated ectoplasm and endoplasm, but not very actively motile, and without visible nuclei. May 1st, another dose of salts was administered, and the second, third, and fourth stools on that day were almost pure mucus, heavily charged with blood. In the fourth stool, which was about half an ounce in quantity, entamœbæ were found in enormous numbers, and I counted over fifty in one field of a Zeiss 16 mm. apochromatic lens, with the No. 4 compensating ocular. These entamœbæ differed in several important points from those found in the semisolid stools of the day before, and I shall refer to the differences later.

It is not my intention to draw definite conclusions as to the pathogenicity of *Entamœba tetragena* from this one case, particularly since at the present time there is dispute as to whether this organism and that termed histolytica are the same or different species. I may add, however, that at present I have no proof that they should be classed in the same species. But I will call your attention to the reports of those who have studied tetragena in several cases. These observers, Hartmann, Prowazek, Whitmore, Craig, and others, have found *Entamœba tetragena* almost constantly associated with dysentery. Nevertheless, this organism, as far as I know, has not been identified in man before death, and at autopsy found to bear the same relation to intestinal lesions as does histolytica, although such a relation has indeed been found between tetragena and intestinal lesions in experimental infections of cats, and one case of a liver abscess in a cat, presumably caused by the experimental infection, has been recorded. But in this case, the finding of blood and mucus in considerable quantity, at a period when the patient was passing formed and normal stools, strongly indicates the presence either of localized ulcer formation or of some inflammatory process in the large bowel, probably the former.

Taken from the time of the first admission, the clinical features of this infection closely resemble those described for "chronic amebic dysentery," and also the so called "tropical dysenteries," as reported by Councilman and Lafleur, and others. An attack of acute dysentery is followed by improvement in the symptoms, with the reappearance of formed stools, and later there are similar attacks, likewise followed by remissions. Since the medication administered to the patient, on the previous admission as well as at the present time, has had no effect on the vitality of the entamœbæ, it is obvious that such improvement as has taken place is due to the milk diet and the rest in bed during the acute stage.

These facts raise the interesting query as to whether the "chronic amebic dysenteries," with their exacerbations and remissions extending over many years, which are reported from all parts of the tropical world, may not be due to infection with *Entamœba tetragena*, while the acute and rapidly fatal form of amebic dysentery may have as its etiological factor *Entamœba histolytica*. Recent reports make it very probable that in the Far East tetragent is a much more common parasite than histolytica. Or, if one believes with those who hold that there is a single species only of pathogenic entamœbæ, perhaps one may state that the variety known as tetragena is not as noxious as that known as histolytica.

It is not possible at present to predicate how frequently tetragena will be found in the Canal Zone. Since Darling's identification of the species, about ten months ago, it has been found twice only, while histolytica has been found ten times. Although I do not feel permitted to make generalizations from the clinical and therapeutical findings in this case only, I may point out that while we have had no recurrences previously in patients treated properly with bismuth in a series of over 300 cases, this infection has resisted a thorough course of the drug, despite the mildness of the clinical symptoms. Further, in many of the histolytica infections which I have followed from admission to discharge, a very marked degeneration of the entamœbæ is plainly visible as soon as the bismuth appears in the stools, and no such effect has been noted in this tetragena infection, nor in several infections with *Entamœbo coli*, in which the drug has also been tried.

As Doctor Darling will report later on the identification of the entamœbæ in this and his other case of tetragena infection, I shall note only a few points of interest in the morphology of this organism.

1. In the fresh specimens taken during the acute stage the entamœbæ resemble histolytica in every respect save one, the large and clearly visible nucleus in many of the specimens of tetragena. I have not, however, been able to distinguish between tetragenæ in this stage which do not have visible nuclei, and histolytica. In most of the Hastings and Giemsa stained specimens, however, the red staining part of the nucleus is much more prominent than in histolytica.

2. In the stage of remission, when the organisms are found in the semisolid stools after salts have been given, the entamœbæ present a much altered appearance compared with those present in blood and mucus stools. They are smaller, much less actively motile, and the nucleus is seldom visible. In stained specimens many of the organisms contain in the cytoplasm sausage shaped, or rod shaped masses. These masses persist after the cysts are formed, and disappear only when the four nuclear stage is reached. They are called chromidia, and are supposed to be derived from the chromatin of the nucleus. I do not think this is a correct supposition, because the masses take a blue stain after Romanowski methods, much denser than that of the cytoplasm, and no corresponding material is to be seen in the nucleus. In my opinion the appearance of these masses is an indication of beginning encystment, and I believe they are derived from the cytoplasm, and not from the nucleus, and further, that they do not take part in formation of the cyst nuclei, except as nutritive matter. I call his period in the life cycle of tetragena the "latent stage," because at this time the organisms are not associated with dysentery. In the latent stage tetragena may be mistaken for coli, even when the invisibility of the nucleus is given consideration, because it is not at all uncommon to find many of the latter without visible nuclei.

After wet fixation, I have obtained my best results by using Mallory's quick hematoxylin and chloride of iron method, and by using Mallory's phosphotungstic acid hematoxylin. With these stains all the entamœbæ found in the mucus and blood stools showed the typical nuclear structure described by Hartmann. With phosphotungstic acid hematoxylin the centriole stains well, and the caryosome is beautifully demonstrated, as is also the peripheral chromatin on the nuclear membrane. With other methods I have not been able to demonstrate the typical structures nearly as well. Either Schaudinn's fluid or Zenker's gives excellent results as a fixative. However, unless the specimens are very carefully differentiated after staining, the nuclear pictures may be easily confounded with those of histolytica, as the caryosome decolorizes very quickly.

Those who seek to assimilate tetragena with histolytica, solely on the morphology of the nucleus in the vegetative stage, are, in my opinion, misled by faulty staining, since in histolytica infections the caryosome, as seen in tetragena, is not present, and the nuclear chromatin is much more scanty. If more attention were paid to the life cycle of these organisms, and less to morphological resemblance or difference in so minute and easily altered a structure as the caryosome, many of the reasons for the alleged identity of the two would lose much value.

NOTE.

Since the foregoing paper was read, I have had an opportunity to make a more careful and definite study of the entamœbæ found in the human intestinal tract, in the Canal Zone. In all, over twenty-five other infections have been studied. While the points brought forward in my paper are, I believe, in the main correct, more recent study impels me to present my additional experience.

1. Tetragena infection, as recently pointed out by Dr. S. T. Darling, is more common in the Canal Zone than histolytica infection. Except in very urgent cases, treatment has been withheld to determine the species. About seventy per cent. of infections with pathogenic entamœbæ, in my personal experience, went on to the formation of four nuclear cysts, proving the presence of tetragena infection.

2. There is, however, apparently a distinct differentiation in these infections, clinically as well as morphologically. In the active vegetative stage, associated with dysentery, those entamœbæ which exhibited the characteristics of histolytica in wet fixed and stained specimens, did not go on to cyst formation, but persisted unchanged, even when the stools were semisolid, except for the formation in some instances of the so called chromidia. Two of these infections were carefully followed over a period of three weeks. On the other hand, in all but one instance, the infections in which the entamœbæ were of the characteristic tetragena type, went on to cyst formation, with a marked remission, even to an apparent cure of the symptoms, and without medication.

3. As far as we can judge at the present time, these tetragena infections, with one exception, have yielded readily and promptly to bismuth treatment, without relapse. One patient had a recurrence three months after the previous admission. All of the histolytica type infections yielded readily to the treatment, except once, when the patient died shortly after admission. The only abscess of the liver that developed followed an infection with the histolytica type of entamœba.

4. The best iron hematoxylin pictures are given by the use of Heidenhain's method, with iron and ammonium sulphate in a 3.5 per cent. aqueous solution as a mordant. The hematoxylin, however, must be old, have been used repeatedly, and when new solution is used, one half of the old and one half of the new should be used. Otherwise the definition will not be sharp. I am indebted to Major E. R. Whitmore, of the Medical Corps, U. S. A., for this valuable point in the technic.

I find that the best decolorizing agent after the phosphotungstic acid hematoxylin stain, after washinging in distilled water, is a strong aqueous solution of orange G, in which the specimens remain for at least twenty minutes. They are then washed again in distilled water until all of the orange dye comes out, and treated further as recommended by Mallory and Wright in their *Pathological Technique.*

5. I do not find that nuclear morphology, in specimens from stools with pus and blood, is a definite factor in the determination of species. Even with the most careful differentiation, many of the organisms in undoubted tetragena infections show nuclei that are exactly similar to those described for histolytica; and more than once, in infections in which the entamœbæ were nearly all of the histolytica type, and where there was no cyst formation, typical tetragena, nuclei were observed. These observations were not made after one fixing and staining process, but after several. Also, I have not, at any time, been able to observe the "spore formation" described by Schaudinn for histolytica.

6. However, in the "latent stage," the appearance in wet fixed and stained specimens of tetragena is very typical, and corresponds very exactly, as far as I can judge, to that described by Elmassian for the vegetative stage of *Entamœba minuta.* If it be true that *Entamœba minuta* is the same organism as is tetragena in this latent stage, the exact description of the life cycle of tetragena in man must be revised accordingly. Elmassian's account, in the November and December, 1909 numbers of the *Centralblatt für Bakteriologie,* should be carefully studied by those interested in this subject. His illustrations are not surpassed by any in the literature.

7. Notwithstanding the apparent identity of histolytica and tetragena in the active vegetative stage, I am not convinced that they are the same species, on account of the difference in the morphology in the "latent stage" in each species. Except that the organisms are smaller at this time, and sometimes contain the so called chromidia, histolytica nuclei, and cytoplasm are unchanged, while the whole appearance of tetragena is different. I agree entirely with Craig's statement that a proved differentiation of these two species will of necessity be based on a study of the entire life cycle, in fresh and in stained specimens.

8. *Entamœba coli* can be easily differentiated from the pathogenic species, especially by prolonged staining after any of the Romanowski methods, and differentiation as recommended by Darling.

I am still of the opinion at this time (December, 1912) that infections of the tetragena type are more chronic, but less virulent than infections of the histolytica type.

I do not believe that the problem of the identity or of the differentiation of the pathogenic species will be solved until the entamœbæ can be cultivated. Bass's success in the cultivation of the malarial parasites perhaps will afford a method of obtaining this.

I have not appended a bibliography, as a very complete one can be found in Craig's recent paper, Observations upon the Morphology of Parasitic and Cultural Amœbæ, *Journal of Medical Research,* xxvi, 1 (New Series, xxi, 1), April, 1912.

Ancon Hospital.

TABES DORSALIS WITHOUT LYMPHOCYTOSIS.

Lightning Pains Maintained by Conditions Causing High Blood Pressure; Failure of Specific Treatment; Success of Detoxication Treatment.

By Tom A. Williams, M. B., C. M., Edin.,
Washington, D. C.,

Corresponding Member, Societies of Neurology and Psychology of Paris; Neurologist, Epiphany Dispensary.

The most instructive case under discussion was one in which, although syphilis of thirty years' standing had produced the lightning pains of tabes for eleven years, yet no relief had been obtained by thorough specific treatment. The patient, who was referred to me by Doctor Briggs in May, 1912, had visited Hot Springs on nine different occasions, and had several inunction courses without benefit. He had taken as much as 450 grains of potassium iodide per diem for weeks at a time, and recently had received salvarsan, which only aggravated the pains; so that for a month he had been unable to work and had not slept without narcotics. There had been doubts concerning the diagnosis. Several Washington physicians called the condition rheumatism; Doctor Osler had thought it neuritis before he left Baltimore; later Doctor Thayer believed it was tabes. Increase of the pains had led the patient to New York, where he saw Doctor Dana, who also diagnosticated tabes. Other neurologists dissented from this opinion.

Case. There had been no disorder of miction, no visceral crises unless a rectal ache upon two occasions was such. There had been no girdle sensation or numbness, nor irritation of the nerves of special sense, no vertigo nor nausea except what was provoked by medicines. There had been no diminution or excess of libido, nor any irritability of temper; and his general health had remained good in spite of the intensity of the pains. These occurred in crises sometimes at an interval of months, sometimes as many as a hundred times a day.

He had never dissipated; but he took from three to fifteen drinks of whisky a week, but no beer or other intoxicants. He smoked three pipes and a cigar or two, and drank one cup of strong coffee daily. He considered himself a small eater, but took fish and meat for breakfast, the usual dinner and a milk and buscuit lunch.

Examination. The motility was normal, there being no trace of incoordination. As to the reflexes, the Achilles were absent, the patellar needed reinforcement, those of the arms were active, the bulbocavernosus reflex was absent on the right, and diminished on the left. The abdominal were active, especially the right, while the cremasteric was more active on the left. Of the plantar reflexes, the left showed the normal flexion as did the smaller toes of the right foot; but the right great toe extended slightly on stroking the sole. The vasomotor reflexes were equal on the two sides, on the thigh, the right exceeded the left, while on the abdomen the response was less on the right side. The pupils reacted fully to light, especially the left, which was oblate superiorly.

As to sensibility, there were no paresthesiæ. There was hyperesthesia to pin prick of the left chest and right thigh when tested against the left abdomen; also on the right side, in the fifth lumbar and first, second, third, and fourth sacral region, most in the third and fourth segments. On the left side, the diminution was similar, but was less in the first and second sacral and fifth lumbar.

The sense of deep pain in the Achilles tendon was delayed over three seconds; but when felt, was intense, much more so than normal. The diapason was everywhere felt, and the sense of attitudes was unimpaired except perhaps in the right foot.

The Wasserman reaction was negative. The cerebrospinal fluid contained 3.5 white cells to the c. mm.—two examinations. Of these, seventy per cent. were lymphocytes twenty-nine per cent. large mononuclears, half of one per cent. were endothelial cells, of the remainder none were plasma cells. The protein content was very slightly increased.

The systolic blood pressure was 170, the diastolic 95. The pressure was raised by pain and tenderness at once.

DIAGNOSIS.

Without going into detail, two conditions were present in my opinion: one was tabes dorsalis of *forme fruste*, the other was vascular hypertension. I reasoned that the toxicosis which elevated the blood pressure probably also aggravated the old lesions of the posterior spinal roots and helped to produce the lightning pains. I did not believe that an active luetic radiculitis could be present then without a lymphocytosis greater than the 3.5 to the c. mm., which was all that we found. Besides, the clinical sign of delayed and aggravated sensibility to deep pain is one characteristic of an inflammation of nerve of toxic etiology, although it is unusual at least to find a delay so long as three seconds. In this case the length of the delay might be attributed to the remains of the chronic radiculitis specific in type.

Another interpretation is possible, viz., that the hypertension and the causes which lead to it interfered with the vascularity of the posterior roots so as to permit of their attack by the tabetogen through interference with this man's strong natural immunity. Whatever the explanation, the treatment which ignored the syphilis and was aimed at the toxicosis succeeded perfectly, so that the patient obtained a relief which has lasted now over five months.

TREATMENT.

The treatment employed was diminution of the proteins to the Chittenden standard, fifty grammes per diem, and an abundance of saline and carbohydrates in the diet; the cessation of tobacco, alcohol, and coffee; a daily sweat bath followed by douches and massage; thirty grains of organic sodium three times a day for three weeks. The pains began to diminish. On May 20th the blood pressure was systolic 170, diastolic 120, temporary rise not accounted for. June 1st, systolic 154, diastolic 95. Only one day of pain necessitating codeine had occurred up to this. June 8th, blood pressure was systolic 150, diastolic 100. November 1st, systolic blood pressure 170.[1] He weighs 206 pounds—that is a loss of eleven pounds—and feels perfectly well.

It has been said that the recognizable symptoms of arteriosclerotic antecedents *show themselves only* when the disease can no longer be detected. It would be more accurate to say they they are *not usually diagnosticated* until too late for a return to normal.

An excess of lymphocytes in the cerebrospinal fluid is almost characteristic of meningeal syphilis, without a chronic form of which tabes dorsalis cannot occur, in the view of many authorities. Tabes dorsalis being merely a result of chronic radiculitis, one would expect lymphocytosis to be *sine qua non*. The fact that it is so is not altered by the failure of a single examination to reveal a lymphocytosis. To the rare reports of a normal condition of cerebrospinal fluid in tabes I now add another, provided that the number of 3.5 lymphocytes to the c. mm. is not regarded as excessive; for while three cells to the c. mm. is regarded by most cystologists as within normal limits, Sicard protests against not regarding it as pathological. He furthermore believes that lymphocytosis is never absent, except, perhaps, in cases of very long standing indeed, in which the evolution is arrested.

Of such a type was the case Souques reported in a woman of sixty-three years, who at forty-eight had diplopia followed by amaurosis, and when examined at sixty-three showed double optic atrophy, pupil rigidity, and loss of one knee and both Achilles reflexes.

In a recent symposium at the Paris neurological society, this was the general view, but Laignel-Lavestine, using his own method of enumeration, had found in 1901 a case with only one lymphocyte. He also had reported five paretics with less still. The improvements in technic since then, however, render his observations doubtful.

That lymphocytosis indicates active lesions is believed by many pathologists, with the corollary that its absence denotes an arrest of the morbid process in the meninges. It is believed, too, that one portion of the rhachidian sac may contain at the same time many more lymphocytes than another.

In line with these observations is the case of progressive, ascending amyotrophy reported by Leri, in which, while the cervical meninges were loaded with lymphocytes, in the dorsal region the thickened meninges contained none

This explanation can hardly apply to the case I report; for the few active symptoms were referable to that very region, the lumbar, in which the puncture was made; and the enumeration was not made by the old method of Ravaut, but by the extremely accurate method practised by Alzheimer and Nageotte.

1705 N. Street.

HYPERTRICHOSIS.

By Adolph Brand, M. D.,
New York.

In spite of its frequency, hirsuties has not received the attention it merits. True, the condition is not dangerous to life and limb, nevertheless untold misery is caused to the one afflicted with an abundance of hair on exposed parts of the body—especially on the face. Women suffering with this trouble are apt to brood over their misfortune, shun society, and finally become hypochondriacal and even melancholy. Not knowing the proper means to rid themselves of the superfluous hair, they resort to the tweezers and to various advertised depilatories. Some burn the hair, others use pumice stone, and still others have recourse to the razor as a final resort. All these measures give only temporary relief, to be followed later by an increased growth of coarser hair. Some of the depilatories used leave nasty scars in addition to the increased growth.

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[1] The patient has just suffered a violent relapse, which is again relieved by detoxication treatment in which diaphoresis and massage played a large part. The relief was only temporary, for the patient was careless regarding the diet; as, although he thought he was following instructions, crossexamination showed that he believed diminution of foods to be the cardinal point. He had therefore neglected to take sufficient of the saline constituents; whence, I believe his failure to improve now, as the blood pressure was 178 when measured in December, since when I have had no chance to examine him as he has left my care.

Hypertrichosis may be general or partial. The general form, hypertrichosis universalis, is very rare, while the other, hypertrichosis partialis, is the more frequent and familiar form. The universal hypertrichosis is generally congenital, the subject at birth being covered thickly with fine hair, which continues to grow till they reach full development. Cases of this kind have been found in different parts of the world, and are generally exhibited in museums and circuses. Probably the best known example of this type of hirsuties was the so called dog faced Russian boy. Other instances of excessive growth of hair on parts of the body or a heavy growth at an unusually early age have been reported, but such cases are mere curiosities, and do not interest us.

After the menopause has been passed, women very often grow a few straggling, coarse hairs on the upper lip and on other parts of the body, which are to them simply a sign of advancing age and therefore are accepted as the inevitable. The physician is concerned chiefly with that form of hypertrichosis which occurs in young women. This may be termed the acquired form, as it makes its appearance about the eighteenth year, and is mostly met with between the ages of twenty and thirty-five years. This being the period of a woman's life during which her physical charms receive her greatest attention, the appearance of such a disfigurement causes in many cases intense misery and calls for prompt attention on the part of her physician to save his patient an embarrassment which may bring on a neurotic condition and an impairment of the general health.

As to the causes of hirsuties, nothing very definite can be said. In universal hypertrichosis heredity may be an important factor, as families suffering with an overgrowth of hair have been recorded. Nervous influences have been assigned by some as a causative factor. Unna maintains that the condition is due to a persistence of fetal or primitive hair, which in some individuals does not change to lanugo but continues to grow coarser. Atavism has also been given as an explanation.

The application of heat and moisture seems to favor growth of hair. Under stimulation of poultices, hair often grows luxuriantly. Anything which determines an increased flow of blood to a part will aid in the growth of hair. Certain drugs, chiefly pilocarpine, causing hyperemia of the skin, are an aid in its production. Derangement of the sexual organs has also been credited with causing an increased growth of hair, but many women suffering with hirsuties have been found free from uterine disorders.

Interesting as these theories are to the scientific mind, the patient afflicted with this deformity seeks our services with one object only—to be rid of this blemish. Can we promise our patients permanent relief? The writer, basing his opinion upon an extensive experience along this line of practice, is convinced that we may answer in the affirmative. We may assure our patients of good permanent results if they submit to treatment by electrolysis, but we must also inform them at the very outset that the treatment is necessarily somewhat painful and tedious to both patient and operator, and requires time as well as patience for its consummation.

Facial hirsuties is a condition to be dealt with by the physician skilled in his kind of work, and should not be delegated to the quack and charlatan, whose only aim is to separate his victim from as much money as he possibly can. Were the pecuniary loss the only one, matters would not be so hard; but the trouble only begins here. Forced very often to seek the services of unskilled and ignorant advertising so called "beauty doctors," because the regular medical dermatologist frequently discourages such patients from seeking his services for fear that he might be classed as a "beauty doctor" and thus lose caste, the poor woman not only pays her own or her husband's money to an unskilled operator, who not only does not accomplish that for which he is paid very handsomely, but on the contrary, increases the existing disfigurement.

The unskilled advertising quack is wholly ignorant of the structure of hair or skin, and knows nothing, or at best, very little of the use of the electric current for this delicate work. The results of such treatment are severe pain to the woman, a mere epilation of the hair without destruction of the papilla, a positive return of the epilated hair, a stimulation of the lanugo and an increased growth, and, worst of all, scarring of the face, which adds to the deformity and causes more worry to the patient.

Such cases come to our notice only too frequently; hence we feel keenly upon the subject. Only recently a lady told the writer that she paid the magnificent sum of $500 to a woman who advertises to eradicate superfluous hair with the electric needle. The result of the treatment she underwent was a marked increase of hair—as the lady herself freely admitted—months of torture at the hands of this self styled expert, a complete nervous breakdown, and absolute loss of belief in the ability of any physician to rid her of the unsightly facial blemish. In connection with this case, I may add that this lady consulted the advertiser because she had never heard that medical men treat such conditions. Her own physician, to whom she spoke about her case, did not seem to know that a remedy might be had at the hands of his own fraternity. It is true that many women try to obtain cures for facial hirsuties as they do for other ailments, by answering alluring advertisements of their own accord; but a good many are actually obliged to seek the services of quacks because many competent physicians deem it beneath their dignity to treat hirsuties and other facial blemishes.

A parallel of this peculiar attitude of some dermatologists can be found in a similar attitude assumed some time ago by many physicians toward venereal diseases. Some of the older writers advised their younger colleagues to discourage venereal patients from seeking their help, as catering to such class of practice would put them into disrepute with other patients. Those times and those writers have happily passed, and we all know the modern attitude of the profession toward this class of sufferers and the progress that has been made recently in this branch of practice. May we not hope, then, that our dermatologists will also change their present attitude toward the patient with facial hirsuties?

In view of the unhappy results obtained by the so called "beauty doctors," is it fair to the patient who consults us to throw her upon the mercies of the ignorant worker with the electric needle? Is it just to endanger the health and happiness of a human being to whom Nature has been unkind, when proper remedies are at hand?

Indeed, it is the writer's firm belief that this attitude is unjustifiable. The removal of facial blemishes and superfluous hair requires skill and special knowledge of this kind of work. It requires a steady hand, just as much as does the practice of surgery. It has been very aptly remarked by Doctor Ravich, of Louisville, Ky., that the operator, to be successful, must possess an "artistic hand," and Dr. George Henry Fox, of New York, states that very few men possess the technical skill to do this work properly.

Now whatever demands the possession of an "artistic hand" and a high grade of technical skill for its execution, surely should not be looked upon by the physician as something unworthy of his endeavor, unless he feels that he is not the happy possessor of those two qualities. Painstaking work in the treatment of facial hirsuties and other facial blemishes does not detract from the physician's dignity. Skillful work insures good results to the patient, increases her happiness, and secures friends for the operator.

The eradication of superfluous hair by electrolysis is the achievement of Americans, Michel and Hardaway, of St. Louis. That the operation gives rise to some pain cannot be denied; but the degree of pain varies with the site treated; the upper lip, it seems to me, is the most sensitive part. Some patients stand the treatment very well, while others complain bitterly of severe pain.

A number of suggestions have been made regarding the use of local anesthesia. Jackson advises the oleate of cocaine to be rubbed into the skin for some five or ten minutes before beginning the operation. Cocaine and suprarenal extract have also been used by cataphoresis. Baum, of Syracuse, asserts that the operation is made painless by washing the part with absolute alcohol. I am sorry to say these local anesthetics have not given me the happy results claimed, and I have dispensed with them entirely, with the exception of alcohol, which I use merely as an antiseptic measure.

The instruments required for this operation are a galvanic battery, the motive power of which may be either cells or the street current; a milliampèremeter, in connection with the battery, which, although not absolutely necessary, is very useful, as it furnishes the only means of measuring the current; two conducting cords, one for the positive and one for the negative pole; a sponge electrode of the type generally used with electric batteries; a needle holder about three inches in length; and a dull pointed platinum needle. A magnifying glass mounted on a needle holder may be used; but is hardly necessary with good light and good eyesight. A small epilation forceps completes the outfit.

Patients are best treated by good daylight, although it is possible to do the work by good artificial light; but that is very trying to the operator's sight and should be discouraged.

The technic of the operation is as follows: The patient is put in proper position on a chair or on an operating table, and the site to be operated on is washed with tincture of green soap and then with absolute alcohol, till the soap is washed off and the alcohol is allowed to evaporate. The conducting cords are attached to the battery, and, to avoid mistakes, it is advantageous to have the two cords colored differently—red, a danger color, for the positive, and green for the negative pole. The sponge electrode is attached to the positive pole and the needle holder, with the needle in place, to the negative pole. The patient then grasps the sponge electrode by the handle with the left hand and is shown how to make contact by pressing the sponge against the palm of the right hand at the command of the operator. The sponge should be moistened with warm water to secure a better flow of current. Contact may be made with any part of the patient's body, but I believe it is best to make it with the palm of the opposite hand, as both hands are thus engaged, giving the patient no opportunity to grasp the hand of the operator when experiencing the first sensation of pain.

The operator then selects the hair he desires to work on, stretches it with his forceps in the direction it grows, and the needle is inserted into the follicle in a line parallel with the hair, to a depth of about a tenth or an eighth of an inch. The patient is now told to connect the sponge electrode with the opposite palm and the current is on. After a lapse of a few seconds, an effervescence of hydrogen gas is seen at the mouth of the follicle; very slight traction is then made on the hair with the forceps, and if the papilla has been destroyed the hair comes out very readily. To insure total destruction of the papilla the needle is left *in situ* for another second or two and worked around in a circular manner. The patient is now told to disconnect so as to avoid shock, and the needle is withdrawn.

This method is repeated for each individual hair. The operator should instruct his patient carefully before starting regarding the make and break of the current, so as to avoid shocking her unnecessarily. The needle should always be inserted into the follicle before the contact is made, and the patient should always disconnect before the needle is withdrawn. I make the following arrangement with my patient: When I say "on," the patient makes the contact, and breaks it at the command "off." The operator must bear in mind that it is the negative pole that gives rise to electrolytic action, while the positive pole is the indifferent one, and should guard himself very carefully against making the mistake of attaching the needle holder to the positive pole instead of to the negative. Such a mistake would cause charring, and a permanent black spot would be likely to result in a lawsuit. The first question a patient never fails to ask is regarding the amount of pain. I make it a point to tell my patients that the operation is more or less painful, but the results obtained are well worth a little pain.

It should also be explained to the patient at the outset that some hairs cannot be destroyed with one treatment, and that it will be necessary to treat them again should they return. To avoid having a very frightened patient returning to one's office the following day, it is advisable to inform her that punctate spots and redness and perhaps wheals will be the immediate result of treatment, but the skin assumes its normal condition after a few days.

To avoid scarring, as little current should be used as possible. Only the coarse hairs should be removed at first and lanugo is better left alone. The operator should spread his work over a large area, as many hairs removed at one sitting from a small region will give rise to too much inflammation with probable ulceration. A few days should elapse before working on the same area again. I make it a point not to touch the same region until all inflammation has subsided.

There is practically no after treatment; but the patient may be instructed to wash her face with warm water and rub in a little cold cream when she gets home. I have found that wiping off the froth from the mouth of the follicle after withdrawal of the needle shows the punctate openings too plainly, but if the effervescence is allowed to dry, the openings close up much better. These patients scrutinize their faces very carefully after treatment, and the less disfigurement they see, the more hopeful they are of ultimately being rid of this deformity.

In conclusion, I should like to say that electrolysis gives us the one means of eradicating superfluous hair permanently. The operation is absolutely safe, and if the proper amount of skill is attained and the operator is careful in selecting the right kind of a needle and exercises care and judgment in the amount of current for each individual case, he need hardly fear scarring his patients.

I will again emphasize that this particular line of work requires knowledge and skill on the part of the physician and is in full accord with the dignity of his calling; facial hirsuties should be treated therefore by him and not by the ignorant advertising quack.

1431 Madison Avenue.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By Henry S. Goodall, A. B., M. D.,
Lake Kushaqua, N. Y.

The symptoms of early tuberculosis, loss of weight and strength, slight elevation of temperature, rapid pulse, slight cough, etc., are familiar to all. They may, however, be produced by many other causes. Before considering these other causes and endeavoring to differentiate them, I desire to review some of the methods commonly used in diagnosticating pulmonary tuberculosis.

The presence of permanent râles over a localized area is probably the most positive sign that we have of tuberculosis. In most incipient cases, and a fair number of moderately advanced cases, râles can be elicited only by coughing. This is a very important point, and one not mentioned in many textbooks. There are two ways of coughing—the ordinary cough given with the lungs moderately full of air and the so called expiratory cough. The latter cough is given at the end of expiration with the last of the air that the patient can force from the lungs. In each case a quick inhalation must follow the cough. If there is an unusual degree of moisture in the lungs, one or the other form of cough will be followed by more or less numerous small râles. As a rule, expiratory cough will produce râles earlier in the progress of a case than will the ordinary cough, but occasionally the reverse is true. Therefore we must use both forms of cough before we are justified in denying the presence of râles. Fine crackling râles are not infrequently found at the bases of the axillæ and rarely elsewhere along the borders of the lungs in perfectly healthy people. These are probably due to the expansion of partially atelectatic areas of lung border, and they usually disappear after a few deep breaths. Aside from these, we may safely assert that any râle heard over the lung indicates some pathological condition. If the râles are limited to a definite localized area, especially at the upper part of the lung, and if they are found on two or three occasions, they indicate almost invariably pulmonary tuberculosis, or occasionally chronic influenza. I do not believe that any simple catarrhal condition produces, of itself alone, localized changes in physical signs. Our search for râles and other signs must be carried out with the chest bare to the waist, except for a light shawl, which may be shifted to expose the front, back, and sides of the chest in turn. Recently a patient was admitted to the sanatarium, in whose preliminary report mention of a considerable amount of disease at the base of one lung was omitted. This woman stated that only the upper part of the chest had been examined. The diagnosis in this case was correct, but the findings had been incomplete, and it was necessary to give a much less favorable prognosis than that of the physician who overlooked the basal lesion.

In a lengthy article published in the *Beiträge zur Klinik der Tuberkulose* (Brauer, xviii, 3), Dr. W. Neuman describes the changes in physical signs produced by scoliosis. Four distinct and characteristic areas are given, over which we find dullness and decreased respiratory sounds. The change in resonance is due to increased curvature of the ribs, and the decreased respiratory sounds to expansion of the lung and a consequent emphysematous condition under these over curved ribs. These regions are found next to the primary and secondary convexities of the point of scoliosis and at diagonally opposite areas at the same level. For instance, in scoliosis of the upper dorsal spine with convexity to the right we find, first, an area at the upper part of the right lung posteriorly, on the same side as the convexity, where there are dullness and impaired respiratory sounds; second, an area over the upper left lung in front, diagonally opposite to the first area and to the spinal convexity, where the same changes are noted, but in less degree; third, an area at the base of the left lung posteriorly; and fourth, an area at the base of the right lung anteriorly, the changes in signs being less over these areas than over the first two areas. Neuman further states that the vesicular murmur is sharpened over areas opposite to the areas of dullness, as at the upper part of the left lung posteriorly. The base of the lung opposite the primary scoliotic convexity stands at an unusually high level and is relatively immobile, while the base of the lung on the side of the convexity stands low and is freely mobile.

In contrast with the foregoing conditions, we usually find in tuberculous lesions that the vesicular murmur is sharpened over the area of dullness and that the base of the lung showing dullness is relatively immobile, while the base of the opposite lung is freely movable.

Neuman maintains that râles due to acute bronchitis may remain in the areas of scoliotic dullness after they have disappeared elsewhere, because of the emphysematous and relatively poorly aerated lung tissue present in these areas. The presence of scoliosis and the regular arrangement of the other changes in physical signs should enable us to distinguish this condition.

In a similar way râles may be present after acute bronchitis over an area of collapse induration at one apex, the induration being due to adenoids or other obstructions in the upper air passages and the râles persisting because of poor aeration of the apex in question.

While it may be possible to exclude pulmonary tuberculosis in the presence of localized râles and dullness in both these conditions, we must be very slow in reaching such a conclusion. We must have the complete picture of scoliotic changes, or of obstruction of the upper air passages, as well as a history of very acute bronchitis to account for the hang over râles, and these râles must furthermore disappear in at most two weeks after the other parts of the lungs are clear. If they persist longer, the condition should be considered to be due to tuberculosis.

Now and then the larynx will give us evidence to establish our diagnosis, and in all cases of suspected pulmonary disease the larynx must be examined. Swelling or infiltration of the arytenoids, the posterior commissure, a vocal band or true vocal cord, frequently accompanies early tuberculosis. It is rare not to find swelling in one of these locations in tuberculous disease with extensive physical signs. The presence of such conditions would point very strongly to the tuberculous nature of accompanying slight changes in pulmonary sounds, and their complete absence would be strong evidence against tuberculosis if we found widespread physical signs over the lungs, as in chronic bronchitis or bronchiectasis. The rather clean cut ulcer of syphilitic laryngitis may help to distinguish pulmonary syphilis from tuberculosis.

In all cases of suspected tuberculosis the presence or absence of slight fever must be clearly established. To exclude fever we must have the patient's temperature taken every two hours for a week or two, taking it on the even hours one day, the odd hours the next. If the patient has night sweats, bad dreams, sleeplessness, or is very tired in the morning, the temperature should be taken at night. A range of two and a half degrees or more in the daily temperature is very suspicious, even if the upper limit does not exceed 99° F. A daily temperature above 99° F. demands an explanation.

Radiography and fluoroscopy, in the hands of an expert, frequently give positive evidence of pulmonary and glandular tuberculosis when other means have failed. They do not, however, tell us whether the lesion is healed or active except when repeated observations reveal changes indicating the progress of the disease.

The hypodermic tuberculin test may at times decide our diagnosis in pulmonary disease—positively if it produces a reaction in the pulmonary focus with increased râles; presumptively when no fecal reaction is present. We have no way of telling with certainty whether a general reaction without reaction at the suspected pulmonary focus is due to conditions in the lungs or to some tuberculous focus in the lymphatic glands or elsewhere.

The various skin tests and the eye test are of little value except in young children, or when repeatedly negative. All the tuberculin tests may be negative in very active tuberculosis or after measles and other acute infectious diseases.

The absence of tubercle bacilli from the sputum does not speak against the presence of tuberculosis with much, if any, force. It is only when sputum is abundant and tubercle bacilli cannot be found by the antiformin or the Ehlerman test after repeated trials, and when Much's granules are persistently absent, that the negative finding has any weight. The presence of tubercle bacilli in the sputum positively establishes the diagnosis of pulmonary tuberculosis if the larynx and upper air passages are free from tuberculosis, but we have still to consider whether or not some other disease is also present.

Spitting blood is in the vast majority of instances due to pulmonary tuberculosis, though we should not fail to look for other causes, such as chronic endocarditis, especially mitral stenosis, a varicose condition of the veins of the lingual tonsil, bleeding gums, etc. It may be due to malignant disease of the lungs.

The diseases of the lungs that may give the usual symptoms of tuberculosis are chronic influenza, syphilis, chronic bronchitis, bronchiectasis, unresolved pneumonia, and malignant disease. It is almost impossible to distinguish between influenza and tuberculosis in some cases unless we find the bacillus of one or the other disease. Both produce localized condensation of lung tissue with râles, together with cough, slight fever, and loss of weight and strength. The history of the case or a tuberculin reaction with an increase of the focal signs may decide the matter. In the absence of pretty clear evidence to the contrary, the case should be pronounced one of tuberculosis. Syphilitic lesions are usually in the central or lower part of the lungs, but as tuberculosis may at times be also thus situated, we must rely upon the history of the case, the presence of other signs of syphilis, the appearance of the larynx, the Wassermann test, a negative tuberculin test, and the fact that syphilis of the lung usually produces less emaciation and other general disturbance in proportion to the physical signs than does pulmonary tuberculosis. The therapeutic test may be needed, but should be tried only when we are fairly sure that tuberculosis is absent, as the energetic use of antisyphilitic treatment is injurious to tuberculous patients free from syphilis.

Chronic bronchitis may produce all the symptoms of tuberculosis, including slight daily fever; but here again the general health is less seriously impaired than in tuberculosis, giving equally widespread signs. In bronchitis the signs are not limited to any part of the lung, but are widely scattered. Râles are more numerous, more liquid, and of larger size toward the base of the lungs in bronchitis, while in tuberculosis they predominate over the upper parts of the lung. Furthermore, in tuberculosis widely scattered over one or both lungs, we are pretty certain to find some regions where well marked dullness indicates consolidation, whereas in chronic bronchitis no such dull area is found, the resonance being pretty uniformly altered over the whole chest or else normal. With the presence of bronchiectasis we find signs of cavities usually in the lower lobe behind, with sputum raised in large quantities once or twice a day, which forms strata on standing and has a very offensive odor. Emaciation and weakness are not as great as one would expect with an equally extensive and active tuberculous process. Tuberculous cavities are usually at the upper part of the lungs, except in young people, where the lesion is not infrequently at the base.

In pulmonary abscess the history of a preceding pneumonia, the evacuation of considerable purulent fluid on one or more occasions according as the abscess cavity refills or not, the location of the abscess in the lower part of the lung, and the absence of tubercle bacilli will help to make the diagnosis. The signs of abscess are those of localized consolidation with râles in the surrounding irritated lung, or of cavitation if the abscess has discharged into a bronchus without subsequent collapse of the abscess cavity.

An unresolved pneumonia may simulate basal tuberculosis very closely. The dullness with small râles may persist for months and the general condition of health be persistently below par. The history of acute onset, the presence of diplococci or other cocci in the sputum, the presence of leucocytosis, the constant absence of tubercle bacilli, a negative tuberculin test, and the absence of apical tuberculosis, indicate a pneumonic condition. Marked tuberculous consolidation at the base without other tuberculous lesion in the lung is not common except in children under twelve or thirteen years of age.

Malignant disease is indicated by the presence of cancer elsewhere, of bloody pleural effusion, possibly particles of cancer tissue in the sputum, frequent hemoptysis, absence of tubercle bacilli, irregularly located dullness with faint or absent breath sounds. An editorial in the *Medical Record* for September 28, 1912, goes more fully into these points.

In asthma the presence of more moisture at one apex than elsewhere indicates quite frequently an independent tuberculosis of that apex complicating the asthmatic condition.

Certain other diseases not involving the lungs may give us the usual symptoms of tuberculosis—loss of weight and strength, rapid pulse, and slight rise of temperature. A little cough is so common from pharyngeal causes that it is often present in a great many conditions.

Several years ago a young woman was sent to us presenting the usual symptoms. She had had a cold and some cough and expectoration in which no tubercle bacilli had been found. This cough, as well as the expectoration, had disappeared before admission. She had lost some weight, became tired easily, had a pulse of 100 to 120, and a temperature of 99° to 99.5° F. in the afternoon. Physical examination revealed no definite change in the pulmonary sounds. The tuberculin test was negative. The thyroid gland was somewhat enlarged bilaterally, more on one side than the other, and there was a slight though clear tremor of the fingers. There was no exophthalmos. This patient was kept under observation for a time and finally sent back to the city, where part of the thyroid was removed. Since the operation she has had no further trouble.

Graves's disease not infrequently simulates early tuberculosis closely in its symptoms. Not infrequently also Graves's disease is present together with early pulmonary tuberculosis.

Autointoxication from the intestinal tract may give all the signs of tuberculosis. Recently a man was sent to the mountains for tuberculosis, in whose lungs I could detect nothing abnormal, but who presented the usual symptoms of tuberculosis. A further examination revealed a slightly enlarged liver, a hyperresonant abdomen, coated tongue, foul breath, and sallow skin. The urine was loaded with phosphates and showed excess of indican. He also complained of rather severe and nearly constant headaches, and of great fatigue after reading. A moderate degree of hypermetropia and astigmatism was found, correction of which stopped his headaches and enabled him to read with comfort. Attention to the intestinal condition led to great improvement, which a faithful observance of the usual rest and overeating treatment had failed entirely to produce.

Chronic appendicitis, tuboovarian disease, and chronic endometritis have served as the underlying causes of sickness diagnosticated as early tuberculosis. A careful inquiry as to symptoms and a painstaking exploration of the abdomen and pelvis, together with negative pulmonary signs, will usually lead us to the right conclusion. Anemia in such cases is often real, as shown by blood examination, whereas in early tuberculosis the anemia is frequently only apparent, the lips and mucous membranes are pale, but the hemoglobin and red blood cells are not much below normal. Leucocytosis is not common in incipient tuberculosis, but may be present with chronic suppuration in the abdomen or pelvis.

Tuberculous bronchial or mediastinal glands produce all the symptoms of pulmonary tuberculosis, including a positive tuberculin test. Signs of pulmonary condensation are absent. Enlarged glands in the neck are often present and easily palpable.

The veins over the upper part of the chest in front and those at the temples are abnormally conspicuous. There is dullness over the upper dorsal vertebræ or to one side of them. The peculiar whisper over the cervical vertebræ is heard over the upper dorsal vertebræ as low as the fifth or sixth. It is usually lost over the first dorsal vertebra in normal people. We also hear the so called concomitant whisper over the upper dorsal vertebræ. When the patient says "one, two, three" aloud and very slowly, we hear the voice and whisper both at once, as if the patient spoke aloud and whispered at the same time. Reflex paresis of a vocal cord or a dilated pupil may be noted. This form of glandular tuberculosis is common in children under twelve or thirteen years of age, and may be recognized now and then in adults. It is in connection with glandular tuberculosis and centrally placed areas of infiltration that the x ray will help us the most.

Dr. W. S. Thayer, of Baltimore, speaking before the National Association for the Study of Prevention of Tuberculosis, mentioned the following additional causes of continued slight fever with loss of weight, diminished strength, rapid pulse, etc.: Vegetative endocarditis, amebic abscess of the liver, pyelitis, decayed teeth, and local foci of infection in the nasopharynx, such as small cysts containing purulent matter situated in the tonsils or adenoids, cough being present in the latter cases. He cited enteroptosis in slender young girls as being a rather frequent cause of sickness very much like early tuberculosis, and also related a very interesting case in which fever with localized dullness and râles in one lung were present. The sputum showed no tubercle bacilli, but did show Loeffler's bacilli, and the case was quickly cured by injecting diphtheria antitoxine.

One cannot dismiss the subject of diagnosis of pulmonary tuberculosis without first attempting to answer one very practical question, namely, upon how little evidence should one make the diagnosis of pulmonary tuberculosis?

Loss of weight, loss of strength, lassitude, and the feeling that one's ordinary work has become a burden, are sufficient symptoms, when of some weeks' duration, to warrant a presumptive diagnosis of this disease. The presence of slight cough increases the presumption. This presumptive diagnosis becomes positive if we can add to the foregoing picture a pulse of 90 or more while at rest, a daily rise of temperature to 90.5° F. or more, or a history of spitting blood. With this picture we should make a positive diagnosis, even if we can find nothing definite in the chest. Evidence of localized lung condensation or irritation strengthens the diagnosis, but is not necessary for it. A tuberculin reaction with increased activity over the suspected pulmonary area, or the presence of tubercle bacilli in the sputum settles the question beyond peradventure. If, however, we have neither of these absolute evidences at hand, we must set up our diagnosis of pulmonary tuberculosis and consider it against the other conditions which have been mentioned.

The burden of proof rests heavily, indeed entirely, upon the other disease. It must be able to cover fully all symptoms and conditions found, and it must be in harmony with the history of the case. Any deficiency at any point at once rules out the other condition as the principal cause and leaves the diagnosis of tuberculosis still standing. In all cases where there finally remains any doubt as to the presence or absence of pulmonary tuberculosis the diagnosis of tuberculosis must invariably be made. It is far better that any number of nontuberculous patients be pronounced tuberculous rather than that one really tuberculous patient should be pronounced nontuberculous.

STONY WALD SANATORIUM.

A COMPARISON OF TYPES OF CONTINUED FEVER.

By WILLIAM ALLAN, M. D.,
Charlotte, N. C.

Leonard Rogers (1), in a study of the fevers of Calcutta, has demonstrated the greater severity and duration of typhoid fever in the Tropics, has given a good account of a functional low continued fever encountered in Europeans, and from among the unclassified short continued fevers has singled out seven day fever and three day fever.

Cabot (2) lays down tuberculosis, sepsis, and typhoid as the causes of continued fever in New England. Recently, Brill's (3) work has shown that in cities with a large foreign element, typhus fever will occasionally be met with; at present, however, typhus fever is unknown in the south.

It seems desirable to compare the fevers of the Piedmont region of the south with those of New England and the Tropics. For this purpose I have analyzed the records of the Presbyterian Hospital of Charlotte from the beginning of 1909 to July 1, 1912. Discarding tuberculosis and sepsis, I find one chart of benign tertian malarial fever, the only form of malarial fever so far reported from this section (4); one chart of amebic abscess of the liver, up to the present time the presuppurative stage of amebic hepatitis has not been recognized as a cause of continued fever, in spite of the common occurrence of abscess here (5); one chart of functional fever, reported elsewhere (6); and 110 charts of continued fever with comparatively slow pulse, diagnosticated as typhoid and including paratyphoid.

Although many of these charts are from three to nine days in duration, not a single one corresponds with either the saddle backed curve of the seven day fever of the Indian coast, or the rapidly falling curve of the three day fever of upper India, as described by Rogers (1), so that these two fevers probably do not occur in the south.

In comparing this typhoid series with Rogers's, it will be noticed that in Calcutta typhoid is pretty evenly distributed throughout the year, while in Charlotte seventy-four per cent. of the cases occurred during the last half of the year, as shown in table I.

TABLE I.

	First quarter. Per cent.	Second quarter. Per cent.	Third quarter. Per cent.	Fourth quarter. Per cent.
Calcutta	18.1	31.3	28.1	22.4
Charlotte	4.55	21.82	45.45	28.18

The age incidence cannot be compared, as this series is composed practically entirely of adults. The sex incidence is as follows:

TABLE II.

	Males.	Females.
Rogers	37	35
Presbyterian Hospital	69	41

The duration of the Charlotte cases after admission to the hospital was as follows:

TABLE III.

Up to 15 days	60	36 to 42 days	7
15 to 21 days	20	43 to 49 days	5
22 to 28 days	10	50 to 56 days	3
29 to 35 days	4	57 to 63 days	1

Compared with hotter and colder climates, the duration of fever here is shown in table IV.

TABLE IV.

	Less than 21 days. Per cent.	22 to 33 days. Per cent.	Over 33 days. Per cent.
Curschmann	50.5	29.3	14
Rogers	37	38	25
Presbyterian Hospital	72.72	12.73	14.55

The number of cases of less than fifteen days' duration (excluding deaths) was 4.7 per cent. in Rogers's series of 129 cases, and 48.18 per cent. in the Presbyterian Hospital series of 110 cases. This easily bears out Rogers's statement that typhoid fever is of longer duration in the Tropics.

A comparison of the mortality rates also bears out his statement that typhoid is more severe in the Tropics.

TABLE V.

MORTALITY.

	Per cent.		Per cent.
Rogers	16.3	Osler	9.1
Curschmann	9.3	Presbyterian Hospital	8.18

A comparison of the types of fever curve shows a marked variation between the two series; following Rogers's classification, this series shows: 1. High continuous type with a diurnal variation of not more than 2° F. and remaining constantly above 101° F. for two or more consecutive days, thirty-one cases. 2. Low continuous type, falling below 101° F., two cases. 3. High remittent type with a diurnal variation of more than 2° F. and not falling below 101° F. for two or more consecutive days, twelve cases. 4. Low remittent type, falling below 101° F., sixty cases. 5. Intermittent typhoid, four cases, and one chart which can be classified only as abortive typhoid. The relative frequency of these various types is shown in table VI.

TABLE VI.

	High continuous. Per cent.	Remittent. Per cent.	Low continuous. Per cent.	Intermittent. Per cent.	Abortive. Per cent.
Rogers	71.72	23.91	1.09	3.28	....
Presbyterian Hospital	28.18	65.45	1.81	3.63	1.81

The character of onset was known in twenty-six of the Charlotte cases and in fifty-eight of the Calcutta cases, as follows:

TABLE VII.

	Charlotte		Calcutta	
	Cases.	Per cent.	Cases.	Per cent.
Gradual	19	79.17	28	48.28
Abrupt	5	20.83	30	51.72

Only one of Rogers's cases ended by crisis and in our 101 nonfatal cases none ended by crisis; eighty-seven showed a slowly declining temperature, and fourteen a fairly abrupt decline.

Contrary to experience in the Tropics, subnormal temperature during convalescence seems almost universal here, occurring in ninety-eight out of 101 cases. In twelve cases there was recrudescence of the fever, and in one case two recrudescences. In nine cases relapse occurred, and in one case relapse was followed by recrudescence. The type of fever in the cases having relapse is shown in table VII.

TABLE VIII.

Low remittent after high remittent	1	Low remittent	3
Low remittent after low remittent	2		
High remittent after low remittent	2	High remittent	3
High remittent after high continued	1		
High continued after high continued	1	High continued	2
High continued after low remittent	1		
Low continued after low remittent	1	Low continued	1

The complications are shown in table IX.

TABLE IX.

	Rogers. Per cent.	Presbyterian Hospital. Per cent.	Osler-Curschmann. Per cent.
Pneumonia	9.7	3.6	14 to 8
Vomiting	25	18.2	......
Hemorrhage	17	10.9	3 to 5
Diarrhea	62.8	8.2	20 to 30
Thrombosis	5.4	.9	1
Perforation	1.5	.9	2.87
Pleurisy	...	.9	8
Acute nephritis (fatal)	...	.9	......
Cholecystitis	...	.9	1.4

From this brief comparison it will be seen that in the Piedmont region of North Carolina more than half of the typhoid fever cases exhibit a low remittent temperature and that the duration of fever after admission to the hospital is less than fifteen days in fifty-three per cent. of them. These cases were practically all seen during the first week of illness, so that the short duration of fever and the remittent curves are not due to late admission during the third and fourth weeks. However, the mortality of the low remittent typhoid in this series (ten per cent.) is not less than the general mortality.

The preponderance of these short and often mild cases must be due to a liberal admixture of paratyphoids. In the absence of the tropical causes of continued fever, our diagnostic problem is the same here as in New England; our prognosis as to recovery is about the same as is that farther north and better than that in the tropics; our prognosis as to duration of illness is nearly a half better than that farther north and about twice as good as that in the Tropics.

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1207-1208 REALTY BUILDING.

MULTIPLE NEURITIS IN A CHILD.*

By J. M. WALLFIELD, M. D.,
New York,

Multiple neuritis in children is a very rare disease, except after the acute specific fevers, especially diphtheria, according to Holmes (1). B. Sachs (2) remarks that few writers have had much to say about multiple neuritis in children. Thomas and Greenbaum (3) held that the disease is not so rare, but that the cases are not reported, because they are not diagnosticated as such, being mostly mistaken for infantile paralysis or are not considered interesting. The case which is to be reported could be mistaken for one of tuberculous meningitis

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*Read before the Williamsburgh Medical Society, December 9, 1912.

Case. Helen S., American, schoolgirl, seven years of age, came to the Williamsburgh Hospital April 14, 1911, in the service of Dr. L. Kerr. The family history showed that the father was well, but a heavy user of alcoholic drinks. One sister died at the age of three years of tuberculous meningitis, according to the mother's statement. Otherwise the family history was negative. The previous history showed that, except for an attack of measles at the age of three years, Helen was well till about five weeks ago when he mother noticed that she started to fade away.

About two weeks ago she came from school complaining of pain in the head. Two hours later she vomited. During the night she vomited a few times, but felt well on rising in the morning, and went to school. Toward evening of the following day, after a couple of hours of play in the street the child complained of severe pain in her right knee and in the occipital region. During the night she was restless and screamed from pain. She was treated by her physician for indigestion, but did not improve. During the last two weeks that she remained at home she lost rapidly in weight.

Present status. Child looked thin, apathetic, and was tender all over, especially at her lower extremities. She was lying on her back with thighs and legs flexed. Sordes were on both corners of the mouth; marked muscular atrophy of both legs. Patella reflexes were absent. Kernig's sign was present. Eyes reacted to light and accommodation. Pulse 100, respiration 30, rectal temperature 97.6° F. No other signs of interest. Within eight hours her temperature rose to 99° F.

For the first few days the girl refused to answer any questions at all, was constantly moaning, could not be moved on account of pain, especially in the legs. When she became accustomed to her new surroundings she answered questions with difficulty. She could not recollect how many sisters she had. There seemed to be hesitation of speech and thought.

April 17th. Temperature fell again to 97.2° F. at 8 a. m. and gradually rose within twelve hours to 100° F.

April 18th. Foot drop was noticed.

April 19th. Wrist drop appeared. There was no response to faradic current in all four extremities. Examination of urine showed a trace of albumin; specific gravity 1.005.

April 26th. An eruption appeared, at first macular, and within twelve hours wheals resembling urticaria, extremely irritating and covering entire body and face. The eruption lasted thirty-six hours and a coarse desquamation followed.

April 28th. A crop of furuncles developed on lower dorsal and lumbar regions. One furuncle was quite deeply situated, very painful, and bled freely on dressing. Otherwise the child seemed brighter.

May 5th. There was general improvement; patient was sitting up; less tenderness except at the seat of the furuncle.

May 8th. Deep reflexes were still absent. The gait of the patient resembled steppage; limbs very weak; no response to electric current.

May 16th. Patient left the hospital much improved. She was last seen in September, 1912, in perfect health.

Herter (4) reported a case of multiple neuritis in a child three years of age which was due to acute alcohol poisoning, where the temperature showed a drop below 98° F. He was also inclined to diagnosticate the case as meningitis till the symptoms cleared up.

This case presented several features which resembled very strikingly the alcoholic type of multiple neuritis, viz., 1, the low temperature; alcohol reduces body temperature. 2. Pain in the legs; Zappert (5) lays stress on pain along the nerve trunks as a symptom of alcoholic neuritis. 3. The loss of memory; Bury (6) holds that failure of memory is one of the earliest symptoms of alcoholic neuritis. 4. Trophic changes in the form of furuncles were prominent in this case; Muratow (7) never met a case with trophic changes in children with polyneuritis. 5. The history of an alcoholic father; Tomlinson and Freeman (8) state that children of syphilitic, alcoholic, gouty, tuberculous parents are victims of degenerative diseases in the nervous system. 6. The positive statements of the mother that the child had no sore throat and the behavior of the case excluded diphtheria as the cause of neuritis. The alcoholic father may have been the cause of the child's trouble.

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4101 Twelfth Avenue, Brooklyn.

A CASE OF PSORIASIS.

By J. Epstein, M. D.,
New York,
Clinical Assistant in Medicine, Vanderbilt Clinic; in Diseases of Children, Mount Sinai Hospital Dispensary.

This case is reported because of the very good results it gave me under a treatment which is not new, but in a disease which is difficult to cure.

Case. Miss Z., aged twenty years, of unimportant past and family history, came to me complaining of a skin disease which began six months ago with a few red spots on the left thigh, which soon increased in number and size. In a few weeks after the onset, a similar eruption appeared on the right arm, the red patches later becoming gray. Two months ago, and within a short time, the entire body was covered with this eruption. On examination I found that she was covered from head to foot with psoriasis.

The patient was treated by two physicians before she came to see me, with no benefit.

I ordered thyroid extract, three grains, three times a day, and a ten per cent. chrysarobin ointment to be used in rotation, one night on the upper extremities, the next night on the lower extremities, and the following night on the trunk. She was also told to take a warm bath three times a week with two tablespoonfuls of sodium bicarbonate dissolved in the water, using ordinary soap for cleansing purposes.

The good results at the end of a week's treatment was very striking. The same treatment was continued for another two weeks, when nothing was left of the psoriasis except in a few places reddish areas where they once existed.

One is inclined to wonder what credit in this treatment is due to the thyroid action. Chrysarobin is an old and tried remedy in psoriasis with uncertain results, and in this particular case it had been used only once in three days on each particular spot. I think the chrysarobin action could not account for the excellent results and the good effect of the thyroid seems very suggestive.

225 Henry Street.

TETANUS SUCCESSFULLY TREATED WITH ANTITETANIC SERUM.

By Lewis J. Friedman, M. D.,
New York,
First Assistant House Surgeon, Volunteer Hospital.

I have frequently heard of physicians expressing their doubts as to the value of antitetanic serum in the treatment of tetanus. Personally, I also felt so inclined because I have seen two cases terminate in death, although the serum has been administered in heroic doses.

The behavior of the case that I am about to report with the serum treatment convinced me to my satisfaction that antitetanic serum is a specific if given in time.

Case. J. P., aged nineteen years, Greek, had his left hand caught in an ice cream machine, sustaining dedermatization of palm and fingers, and laceration of tendons of both middle and little fingers. Patient had tenorrhaphy and dermatorrhaphy performed under a general anesthetic. after a cleansing bath of the hand. After two well spent days, the patient's temperature shot up to 103° F. and varied between 101° and 104° F. for the next ten days, while after that it varied between 100° and 102° F. for another period of sixteen days. A sponge bath was ordered periodically for the pyrexia.

On the twelfth day the nurse reported that the patient could not open his mouth as usual and could not chew his food on account of rigidity of the muscles of mastication. Physical examination revealed the presence of trismus, rigidity of the neck, back, and abdominal muscles. There were also twitchings of the facial muscles and those of the lower extremities, and a general irritability.

An initial dose of 1,500 units was given subcutaneously. For the next three days, he received 5,000 units three times daily into the superficial veins of the arms. Phlebitis developed which was readily relieved by cold applications. For the following six days he received two injections daily, and for six more one daily. These were administered subcutaneously.

In all he received 136,500 units of the serum[1]. On account of excessive irritability the patient received an olive oil solution of sixty grains of chloretone as required *per rectum*, which he retained.

The antitoxine was discontinued on the fifteenth day of the disease, when the rigidity was practically gone. The skin and tendons involved in the impaired hand sloughed off, and the area healed by granulation. The patient was discharged thirty-nine days after admission to the ward, feeling first rate.

I should like particularly to thank Dr. Ralph A. Stewart, visiting surgeon to the Volunteer Hospital, for permission granted to report the case.

93 Gold Street.

Abstracts and Reviews.

THE SCIENTIFIC BASIS FOR THE ARTIFICIAL FEEDING OF INFANTS.*

By John Howland, M. D.,
Baltimore,
Professor of Pediatrics, Johns Hopkins University.

It has been only within the nineteenth century that very much attention has been given to the matter of the artificial feeding of infants. The problem was approached in a purely empirical manner and, by the slow elimination of methods which were shown to be harmful or not suitable, we have arrived at very satisfactory methods. This empiricism ruled the field until within the past twenty years and, by the adoption of some one or other of the laboriously worked out methods, one was able to feed the infant artificially by the rule of thumb application of the teachings of any given school. As has been said, these methods were in general very successful, but there were not a few infants encountered, in health or in disease, who did not thrive upon any of the methods in vogue. Cow's milk had formed the common basis for all artificial foods, and the cause for the failure in the unfortunate instances was sought in this basic food. Analyses having shown that the protein content of the milk of the cow is much greater than that of human milk, this fact was made use of in attempts to explain the failures.

One of the earliest problems to arise was that of deciding the proper quantity of food to be given to a child in the artificial feedings. The solution was approached by metabolic methods; that is, by the measurement of the metabolism of the infant at different times. This means was unsatisfactory because it was possible to carry it out for only brief intervals, not over four hours at a time, and during these intervals the infant was kept quiet, so that the results were not typical of the total daily metabolism. Valuable information was obtained, however, from calorimetric studies made upon the sleeping infant, but these were not such as to give the solution of the question as to how much food should be given at each artificial feeding.

The statistical method was also adopted, consisting in the careful weighing of the infant from day to day after his nursing. The error of this method lay in the fact that it was carried out only upon those infants that were breast fed, and the breast milk is subject to great variations in composition at different feedings and even at different times in a single nursing. Hence this gave no accurate information as to the amount of food, in calories, which was needed for an infant of any given age. Even when these studies were combined with estimations of the excreta the results were not adequate for the solution of the problem. Now that it is possible to feed an infant artificially and satisfactorily, it should be possible, by painstaking weighings from day to day over long periods, to obtain an accurate determination of the caloric needs of the average infant. Such studies cannot be carried out in hospitals, for the infants in hospitals never thrive as do those similarly fed in their homes. This method, then, offers an opportunity for the practitioner to solve the problem by such weighings of infants fed in their homes, and fed upon milk made up in some milk laboratory so that the composition of each feeding shall be accurately known.

We have said that the excess of casein, or proteid, in cow's milk was blamed for the failures of this as a food. Two principal theories have been offered to explain how this may be at fault.

The first is that there is a difference in the mode of absorption of cow's milk casein from that of the human casein. It has been held that this cow's casein in part passes through the intestinal wall unchanged and is absorbed as such. This contention was supported by experiments upon the permeability of the infant's intestinal mucosa for bacteria, etc. The experiments, however, were faulty, and we now have proof that such absorption of the cow's milk protein in an unchanged form does not take place, except in the rarest of cases. If it was so absorbed, being an *artfremdes Eiweiss,* that is, a foreign proteid, an anaphylactic hypersusceptibility toward this form of protein would be promptly developed. That such is not the case is readily demonstrated, and has been shown repeatedly. We must conclude, therefore, that cow's casein is not absorbed as such from the intestine of the human infant.

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[1] The serum used was that supplied by the New York city board of health.

*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, March 29, 1913.

The second theory was to the effect that *artfremdes Eiweiss* underwent a different catabolism in the infant's intestine from that of the human casein. This difference in catabolism was supposed to lead to the production of toxic products which were absorbed and which gave rise to the faulty nutrition, or to the unfavorable symptoms sometimes encountered in the artificial feeding of infants. This theory was also supported by experiments, but these have been shown to have been defective. Recent careful studies have shown that there is absolutely no difference in the completeness of the digestion of the casein from cow's milk, and that the end products are precisely the same as in the case of the human protein. This theory, then, like the first, can no longer be accepted.

Just why cow's milk fails in some instances cannot be explained upon the different protein content alone, and it is altogether probable, from a large number of studies, that the proteid is not at fault. At least, no injurious effect has ever been noticed in properly controlled cases as a result of excess of proteid in cow's milk.

The human infant has an enormous capacity for the retention of nitrogen and an equally striking avidity for this element. This nitrogen retention has three offices: 1. To replace the nitrogen lost in the wear and tear on the tissues; 2, to supply a small amount of energy; 3, to supply the material for growth. A very small amount is used for the second purpose, a somewhat larger portion for the first, and about fifty per cent. for the latter. It is to be noted that the proteid nitrogen of cow's milk is retained quite as well as is that from the human milk.

Turning to the question of fat in the cow's milk, it is well known that the infant's tolerance to this ingredient is very variable. It is also known that when once this fat intolerance is developed, it persists longer than is the case with any other of the food ingredients. Fat in excess is known to retard the emptying of the stomach, and this gastric fat retention is even selective for certain forms of fat. The fats so retained undergo butyric acid decomposition, become irritant, and so cause vomiting. Another factor in the dangers of excessive fat is that the fats, being passed out mainly as soaps, bring about an excessive loss of calcium, which ingredient is highly essential to the nutrition of the growing infant, as, together with the nitrogen, it plays the so called most important rôle in the synthesis of the body proteins. The development of "soap stools" is due to a combination of the following factors: The presence of a moderate amount of fat; a sufficient amount of casein and calcium; and an absence of a sufficient amount of carbohydrate. The condition can be overcome by the addition of carbohydrate alone.

The diarrhea induced at times by fat is due to still another factor. The fats of cow's milk may undergo decomposition in the intestine with the liberation of the lower fatty acids which are irritant to the intestine. These cause excessive elimination and carry with them, in combination as soaps, a great excess of the alkaline salts. This loss of alkali causes a relative acidosis, which, in turn, leads to an excess in ammonia formation and to its elimination in the urine. This chain of changes is not specific for fat indigestion, but is secondary to the loss of alkalies and may be the result of vomiting or of starvation.

The carbohydrates and sugars in the diet of the infant supply the energy chiefly. The only sugars which are used are the disaccharides, and of these the one generally employed is lactose or saccharose. Maltose is not employed as such, owing partly to its excessive expense, but it is used, along with many other sugars and some carbohydrates, in the form of the malt soups, but these are seldom applicable to the feeding of infants in the very earliest months of life. The infant's limit of tolerance for carbohydrate is very high when he is normal and healthy. These foods are probably seldom at fault in the artificial feeding of the infant with cow's milk.

The last important ingredient of the infant's food is the mineral matter. Upon this subject there have been no experimental observations made which give concordant results. The mineral metabolism in breast and artificially fed infants is materially different. There are many experimenters who hold that cow's milk whey is most at fault in the failure of this food. They have found that the feeding of infants upon a mixture of fat and protein from cow's milk with the whey from human milk, enables the child to thrive normally, whereas, when cow's whey is mixed with human fat and protein, the child does not thrive. This has been attributed to the difference in the salts in the whey of the cow's milk. These salts, and others, have been experimented with, but the experiments are not conclusive, and it is probable that the whey alone is not at fault; at least there is no unequivocal evidence to show that such is the case.

It is probable, in view of the facts related, that we have still far to seek before we can speak definitely as to what the cause of the occasional failure of cow's milk may be. It is noteworthy that the studies upon the individual ingredients have tended to show in the case of each that it alone was not at fault. From this we are led to the conception that the difficulty lies in some subtle interrelation existing between the several ingredients. It is probable, furthermore, that the defect is not the same necessarily in any two cases. The matter is so intricate and complex that its solution must remain for the future. One guiding law must be laid down at present for the establishment of a criterion by which to judge of the success of any method of feeding; i. e., the superiority or success of any method of feeding must be judged solely by the clinical results obtained. The results must not be considered for weeks or months merely, but must be judged by the ability of the method to carry the infant into childhood with all his mental and physical powers equal to those of the breast fed infant. Methods which depend upon the estimation of the metabolism of the infant are too fragmentary to be of any real value in the estimation of the adequacy of any mode of artificial feeding.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Closed March 15th.)

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Answers due not later than April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Answers due not later than May 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXI was awarded to Dr. Jacob Bressler, of New York, whose article appears below.

PRIZE QUESTION CXXXI.

THE TREATMENT OF PSORIASIS.

By JACOB BRESSLER, M. D.,
New York.

We treat disease most successfully by properly understanding its etiological factor or factors. In the case of psoriasis, however, no valuable etiological information is given us. What with the parasitic theory believed by some, the neurotic theory of others, the gouty and rheumatic diathesis adduced by a third class, I have concluded that the sum total of all these causative factors amount to a large round o (zero). Therefore, having no well defined cause, we treat this disease from a standpoint of large clinical experience and according to the success we have had with various methods.

In our dermatological clinic, where a great many cases of psoriasis are seen annually, we find it convenient to classify them into three groups, so as to facilitate the treatment:

1. Those having only a few lesions.
2. Those having a moderate number of lesions.
3. Very severe cases, with psoriatic lesions all over the body.

Four methods of treatment are followed in our clinic:

1. External treatment.
2. Internal treatment.
3. Internal and external treatment combined.
4. Special treatment.

Prophylaxis. In the beginning we always make it a point to inquire into the general health of the patient. Usually, patients are in good health and no general treatment is needed. If, however, associated pathological processes do exist, we treat them first. This has often resulted in a cure of the skin lesions. In these latter cases we institute proper treatment for the existing disease, together with general tonic treatment, country air, change of diet, etc. This method often works wonders, but as soon as the general health again becomes poor, a recurrence of the psoriatic lesions is the rule. Restricted diet is another motto we advocate to our patients; those who follow our directions do best. Recognizing that an outbreak of psoriasis is often precipitated by an acute debauch or the regular use of alcohol, we strictly prohibit any excesses if the patient expects relief from our treatment. In people susceptible to attacks, the least traumatism, as scratching or rubbing, will bring out the lesions; therefore we warn patients against use of the tight belt, suspenders, or tight lacings.

Actual treatment. No matter of what location, the parts are first thoroughly washed with spirit of green soap and water; then, for the first variety—a few lesions on any part of the body except face and scalp—we paint with:

℞ Chrysarobin, ...ʒss to ʒi;
Salicylic acid, ...ʒss;
Flexible collodion, ...℥i.
M.

We also employ the chrysarobin as an ointment, this being a more active form of treatment for some cases:

℞ Chrysarobin, ...ʒii to ʒi;
Salicylic acid, ...ʒss;
Petrolatum, ...℥i.
M.

We continue to use the ointment until scaly lesions drop off, then we push the ointment a little longer, finally covering the remaining erythematous area with the zinc oxide ointment. In this way a few lesions are usually cured, but we never guarantee that an outbreak will not occur at any time in some other part of the body.

For the second variety—a moderate number of lesions—the same procedure is adopted, only larger amounts of chrysarobin ointment are used. With us chrysarobin is the drug of choice. It should be pushed until it produces a slight dermatitis, then covered with zinc oxide ointment. Each night the drug is applied and in the morning a bath is taken. In some individuals we find that a five per cent. chrysarobin ointment will produce a severe dermatitis, and so we use only a two or three per cent. ointment. We usually begin with a three per cent. and gradually increase until ten or fifteen per cent. chrysarobin is used. The discoloration of the skin from the drug we do not fear, as it soon passes away. Never use chrysarobin on face or scalp; we have seen a number of cases of severe conjunctivitis as a result. For the scalp use tar, ammoniated mercury, or pyrogallol ointment.

Next best result is obtained with an ointment of pyrogallol:

℞ Pyrogallol, ...ʒi to ʒii;
Petrolatum, ...℥i.
M. ft. unguentum.

This drug produces less of a dermatitis than chrysarobin and may be used in large amounts. Tar is a famous and reliable old remedy, especially when combined with mercury. It is especially adapted to face and scalp lesions, but care must be used not to prescribe too large doses of mercury, because of danger of absorption and poisoning. We usually give:

℞ Oil of cade, ...ʒi;
Ammoniated mercury, ...℈ii;
Petrolatum, ...℥i.
M.

Many other drugs are used, as thymol, oil of turpentine, salicylic acid, etc., but we confine ourselves to the drugs already mentioned, with very good results.

Internal treatment. If the continuous use of chrysarobin ointment does not help, and especially in extensive chronic cases, we are in the habit of stopping all external treatment and beginning a course of internal treatment alone for a period of from two to four months. We use arsenic in the form of Fowler's solution in five to fifteen minim doses three times a day after meals. Or, we sometimes use the cacodylate of sodium by deep injections with excellent results, especially in the hospital cases. We continue to use arsenic from two to four months, and in some cases get very decided cures. Not all cases, however, will respond to internal treatment, and in such we try the combined internal and external treatment with chrysarobin ointment. A good many patients have been cured by this combined method. The internal administration of potassium iodide has benefited some of our chronic cases.

Special treatment. The use of the Röntgen rays for chronic obstinate patches has given us excellent results with almost permanent cures. We expose the patient's lesions for about two to seven minutes, three times weekly, using a soft tube and placing the parts from six to twelve inches from the target. Treatment is given for two weeks, then suspended for two weeks; then another course is allowed. From four to eight weeks' treatment cures the psoriatic patch. Recently we had a very severe case of psoriasis in the dermatological wards of the hospital (Mt. Sinai). I gave this patient an intravenous injection of 0.45 neosalvarsan to see how it would influence the lesions. In forty-eight hours the lesions seemed to be getting smaller, but in a few days they were the same as before the injection. I gave him another dose of 0.45 neosalvarsan seven days later, but it had no effect on the disease whatever, and we had to continue our old treatment with chrysarobin ointment.

Prognosis. From our wide experience in the clinic and hospital we are all agreed that an outbreak of psoriasis can usually be cured, but as for the permanency of such cure, none can be promised. The disease lasts for many years, and those who have treated psoriasis for any length of time will readily testify that recurrence is the rule and will do best never to promise a permanent cure, no matter what treatment has been followed.

319 East Eighth Street.

Dr. Ralph Boice, of Sisterville, W. Va., writes:

By psoriasis we understand a chronic, nearly always incurable, disease of the skin, of doubtful origin. A so called skin disease, it depends upon a general condition which repeatedly produces the eruption. The fact that in most patients with psoriasis it is hard to discover appreciable reasons for the existence of a skin disease, should lead to a most thorough investigation of every organ in the body and of all the excretions.

Psoriasis seems dependent, to a great extent, upon a blood state closely allied to that belonging to gout and rheumatism—the uric acid diathesis. Occurring in males more often than in females, and by no means rare in infancy, it is most frequently met with in subjects between ten and thirty years of age.

The primary lesions are typical and consist of one or more small, red points which quickly become covered with firmly adherent scales, of a shining, silvery, mother-of-pearl color. The localization is mainly on the extensor surfaces and the scalp. The lesions heal frequently at the centre (psoriasis annularis), but at times spread at the periphery, the coalescence of several patches causing symmetrical figures to be formed on the skin (psoriasis gyrata vel figurata). The patches may assume the size and shape of silver coins (psoriasis nummularis), or they may appear like spots of grease or mortar spattered over the skin (psoriasis guttata).

The treatment should be general and local. That metabolism should be made to go on as nearly normal as possible, I insist that the patient take systematic physical exercise, starting in the morning with dumbbells or Indian clubs, followed by a cold sponge bath and brisk rubbing of the skin. As much exercise in the open air as is possible is also ordered.

The diet is regulated according to the needs of the particular case, but a restriction as to meat, especially beef and mutton, is ordered in nearly all cases.

I impress the patient with the fact that the lesions must be kept as free from scales as possible. This can be accomplished in mild cases by washing the lesions in a saturated solution of salicylic acid in alcohol, or with spirit of green soap (Sapo viridis two parts, alcohol one part). With numerous lesions and thick scaling, alkaline baths of sodium bicarbonate, amonium chloride, or borax, with the addition of one half to one ounce of oil of cade, will prove of benefit.

In acute attacks and with the lesions decidedly inflammatory in character, I have often started treatment with some mild ointment such as calamine, forty grains to the ounce; subgallate of bismuth, forty grains to the ounce, or ammoniated mercury, ten to twenty grains to the ounce. Some cases respond nicely to these ointments, but the majority do not.

Chrysarobin is the remedy *par excellence* for psoriasis, and I have always found it efficacious in clearing up the lesions. I use it in collodion, forty grains of chrysarobin to the ounce of collodion. Apply this to the lesions, and after the ether has evaporated paint over with plain collodion. This prevents staining the skin and clothing and keeps the scales *in situ* for two or three days, when they can be removed and a new application made. I have better results from this treatment than any other. I have used tar in the form of oil of cade and liquor carbonis detergens. Pyrogallic acid has been much heralded, but I have never tried it. It is toxic if used over large areas.

Internally, arsenic seems the best drug. I have used it in various forms, but for the past two years I have been using subcutaneous injections of cacodylate of sodium with excellent results. Starting with three quarters of a grain, I increase the amount up to three grains daily, continuing this for a week, then after an interval of ten days repeating the three grain doses for another week. In some cases the clearing up of the lesions is remarkable, in others slower, but with good results in all.

In patients with the uric acid diathesis the salicylates have proved efficacious. Strychnine, assisted by the static machine, has been beneficial when the nervous system was at fault. Potassium iodide has proved useful in some cases when given in full doses.

On the whole, I have been fairly successful in treating psoriasis, especially since I began the use of sodium cacodylate. I have been fortunate, inasmuch as the great majority of my cases were of the mild type, with no great areas of involvement.

The following case, taken from my case records, shows the best results I ever had:

CASE. Mrs. D., aged thirty-two years, married, weight 145 pounds, well nourished, general health excellent, family history good. Eruption on right arm and forearm. Tried various salves and powders at home with no result. Saw her first, January 12, 1911. Eruption spreading at periphery. Eight patches of various sizes, moderately scaled. Washed lesions with spirit of green soap, dried with sterile gauze. Applied chrysarobin in collodion and painted over with plain collodion. Gave three quarter grain subcutaneous injection cacodylate of sodium. Repeated cacodylate every day for a week and chrysarobin every two days. At end of week three small patches had healed. Increased cacodylate to two grains daily for another week, and chrysarobin as before. At end of second week only two large patches remained, which were decreased from former size about one third.

Gave ten days' rest from cacodylate, but continued chrysarobin every three days. Both patches were reduced in size and scaling was very light. Increased cacodylate to three grains daily and by end of week all the lesions were cleared up. Discharged February 16th and has had no recurrence to date. During whole course of teatment patient had taken much outdoor exercise, and had been allowed meat but once a week.

Dr. Abr. B. Pemsler, of New York, observes:

In my service at the New York City Children's Hospital and School on Randall's Island, I have occasion to come in contact with numerous skin conditions, and I find psoriasis of rather frequent occurrence in children; I should judge about from three to five per cent. of all dermatological cases in this institution. The only etiological factor I have found which seems of any importance is heredity.

After employing numerous methods of treatment, I have adopted the following as giving the best results:

Upon admission to the ward, the patient is given a hot bath, body is scrubbed with soap, and as many scales as possible are removed.

If the lesions are not very large or numerous, I employ a six per cent. chrysarobin ointment. This is applied to all spots daily. A valuable method to employ this, so that it will not soil the clothing, is in the following prescription:

℞ Chrysarobin, }
Salicylic acid, } ....āā grs. 1;
Ether, ...ʒi;
Flexible collodion, q. s. ad. ....℥i.
M. Sig.: Apply with camel's hair brush.

This forms a coating over the lesion, which should be removed every other day and a new application made.

If the lesions are more diffuse, I prefer a ten per cent. ammoniated mercury ointment, as this is less apt to produce a dermatitis. This ointment is applied daily. Care must be taken that the mercury is not absorbed in sufficient quantities to produce poisoning.

In conjunction with these local remedies, I regulate the bowels by drachm doses, morning and evening, of the aromatic fluid extract of cascara sagrada.

The diet consists of easily digested food with a minimum of meat. No rare meats, spicy food, tea or coffee, are permitted.

For external medication I give arsenic, chiefly in the form of Fowler's solution. This is given in graded doses, beginning with one minim, three times a day, increasing up to a certain limit, depending upon the age of the patient.

After the drug has been taken for a few weeks, it should be stopped for a day or two and the dose should be decreased. Care should be taken during its administration, and if toxic symptoms, such as puffiness under the eyes, develop, it should be discontinued at once.

The results of the foregoing treatments have, as a rule, proved very satisfactory, an improvement occurring within a few days. Several weeks and sometimes even months are, however, necessary to cause all lesions to disappear, and recurrences are rather frequent after the treatment has been discontinued for a time.

Therapeutical Notes.

Treatment of Typhoid Fever.—Arnozan and Carles, in *Semaine médicale* for December 4, 1912, are credited with an investigation of the value of administering tincture of iodine internally in this affection. Lortat-Jacob having shown that iodine is a powerful agent in the production of a leucocytosis, with which is coupled a relative mononucleosis, the drug seemed particularly indicated in typhoid infection. Forty-four patients received the tincture in daily doses of fifteen to twenty-five minims (one to 1.6 c. c.), in admixture with wine of cinchona or milk. While other measures were simultaneously employed, the conclusion was reached that the drug was of considerable value in the treatment. Many patients who had been admitted with serious symptoms, such as profuse diarrhea, distention, nausea, etc., after having already undergone various forms of treatment, showed prompt improvement when receiving iodine. Recovery was generally prompt, especially where the measure had been begun early. Complications were not prevented, however. Where relapses took place, they were slight and occasioned no alarm.

Vaccine Treatment of Acute Tonsillitis.—S. P. Shivdas, in the *Lancet* for October 26, 1912, reports a case of very severe tonsillitis which was found to be of pneumococcal origin and for which a large variety of local remedies was tried for four days without effect. Vaccine treatment was then decided on, and material obtained from the abraded surface of the tonsil, after spraying the latter with a solution of citrates and chlorides, was implanted on blood agar. A preliminary dose of fifteen millions of pneumococcus stock vaccine was given, followed, two days later, by a like dose of the autogenous vaccine prepared. The first injection caused aggravation of the symptoms for ten hours, but after this the pain, swelling, dysphagia, and fever steadily decreased, so that two days after the autogenous vaccine injection the patient could eat without difficulty. No measures were employed during the vaccine treatment beside the injections themselves.

Treatment of Flatulence and Colic in Infancy.—George Frederick Still, in *Pediatrics* for July, 1912, reminds us that in babies with upset digestion it is usually necessary to reduce both the strength and amount of the food given below that natural for infants of corresponding age. Where milk is being used, screaming will generally be stopped most quickly by giving a very dilute peptonized milk without added cream for a few days. The mere discontinuance of barley water often brings prompt relief, and in the less severe cases the addition of sodium citrate, three grains (0.2 gramme) in a teaspoonful of water, to each feeding, is sometimes sufficient.

As a carminative for overcoming the abdominal pain the author uses the following:

℞ Tincturæ cardamomi compositæ, ...♏i (0.06 c. c.);
Sodii bicarbonatis, ...gr. ii (0.12 gramme);
Glycerini, ...♏v (0.3 c. c.);
Aquæ, q. s. ad ....ʒi (4.0 c. c.).
M. Sig.: Three or four times daily, ten minutes before a feeding.

Or, one minim of the aromatic spirit of ammonia may be substituted for the cardamom tincture, or one minim of the following combination, which is official in the *British Pharmacopœia*, given:

℞ Asafœtidæ, ...gr. vi (0.4 gramme);
Liquoris ammoniæ fortioris, ...♏viii (0.5 c. c.);
Alcoholis, ...♏lxxii (5.0 c. c.).
M. ft. solutio.

Magnesium carbonate, two grains, may do more good than the sodium bicarbonate, or sodium phenolsulphonate, one to two grains, according to the age of the infant, may be used for its possible antiseptic effect.

Bismuth is distinctly valuable if gastric flatulence is very constant. Three or four grains of the subcarbonate with two grains of sodium bicarbonate, suspended in a drachm of water by two grains of compound tragacanth powder (tragacanth, one part; acacia, one part; starch, one part; sugar, three parts), make an appropriate combination, but bismuth should be used only a few days, as its continued adminstration tends to aggravate the constipation so often present. Nux vomica, in doses of one quarter minim of the tincture, for an infant up to six months of age, and one half minim from six months to one year, is useful where distention is marked.

Syrup should be avoided in prescribing for these cases, as it may favor flatulence. Chloroform water or spirit of chloroform, with or without the addition of glycerin, should be substituted as a sweetening agent.

Treatment of Erysipelas.—Oddone, in *Semaine médicale* for November 27, 1912, is stated to have found the administration of iron salicylate of great value in this affection. It was prepared by the author by first dissolving

℞ Sodium salicylate, ...gr. xxx (2 grammes);
Water, ...ʒx (40 grammes);
then add:
Solution of perchloride of iron, ..ʒi (4 grammes);
Glycerin, ...℥ss (15 grammes);
Water, enough to make ....℥iv (125 grammes).
M. Shake. Sig.: Five teaspoonfuls every two hours.

The resulting mixture is fairly well borne by the stomach, and in the rare cases in which it causes nausea, perfect tolerance can soon be attained by diminishing the dose.

This treatment was tried in 35 severe cases of erysipelas, and it was found that after twelve hours a reduction in the temperature by crisis generally took place, its level even falling below the normal, although no collapse effects were observed. Simultaneously all the signs of profound general toxemia—coma, delirium, intense headache—as well as the local pain, were seen to disappear. While the erysipelatous process itself did not subside as rapidly as the general symptoms, its progress was checked, and recovery took place earlier than would otherwise have been the case.

Coley's Fluid in Melanotic Sarcoma.—H. H. Greenwood, in the *Lancet* for September 28, 1912, reports a case of melanosarcoma of the shoulder in which recurrence had taken place in ten days after excision and Coley's fluid was given as a forlorn hope. The first injection consisted of one half minim of the fluid, diluted with twenty minims of sterilized water, and was given deeply in the pectoral muscles below the nipple. Temporary collapse followed. Injections were then continued on alternate days in increasing doses, the site of the injection being each time brought nearer to the tumor, until in a month's time the dose had been raised to twenty minims and was made into the site of the growth. Later the injections were given less frequently, and, finally, at monthly intervals. Although each injection gave rise to a hard, brawny swelling, and on several occasions the reaction was very marked, the influence on the tumor was excellent. The growth gradually disappeared, and eighteen months after the beginning of the treatment the general health was good. Greenwood thinks it reasonable to conceive of malignancy arising from lack or excess of some internal secretion, and that Coley's fluid provokes the laggard secretory organ to renewed activity or restrains the exuberance of the gland at fault.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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NEW YORK, SATURDAY, APRIL 5, 1913.

THE DANGERS OF ANTITYPHOID VACCINES.

An important contribution to the literature of typhoid prophylaxis comes from Doctor Louis and Doctor Combe, of the French army, assistants to Professor H. Vincent in his laboratory, of antityphoid vaccination at the Val-de-Grâce in Paris (*Monde médical,* December 5, 1912). They have reported 115 cases of typhoid among the unprotected in an epidemic on the Algero-Moroccan frontier in 1911, but none among the vaccinated. Similarly in the Avignon epidemic, July to September, 1912, the 687 unvaccinated soldiers had 155 cases with twenty-one deaths, while the 1,366 protected soldiers had no cases at the date of publication. Vincent uses a polyvalent vaccine sterilized by ether.

These excellent results indicate that a higher percentage receive some immunity than by the English vaccine, but give no indication as to how long the protection lasts. The French think it should not wear out for two and a half years at a minimum, and that from analogy with typhoid fever it should last from five to seven years. From the English and American experience we are justified in greatly reducing this estimate, for it is now advised to revaccinate every two years. The surgeon general of our army reports that one third of the eighteen cases of typhoid occurring in 1912 were among the "immunized."

Interest centres in the long list of contraindications. Vincent insists upon making a most careful examination of all persons to be sure that they are in a condition of perfect health in the strictest sense of the word. The operation must not be done if any of the following conditions exist: Pharyngitis, pains in the limbs, influenza, enteritis, stomach troubles with fever, coryza, bronchial and pulmonary affections, acute gonorrhea, primary or secondary syphilis, most chronic affections, cachectic state, unsatisfactory general state, heart diseases, Bright's disease, diabetes, and mucomembranous enteritis. In orthostatic albuminuria, the injections may cause albumin to appear. The injection is to be postponed in the debilitated, exhausted, or fatigued (want of sleep, preparation for examination, etc.) until the general health is satisfactory, and it must not be given to menstruating women. The vaccine will awaken a dormant malaria and bring on attacks in the same way as an injury, fatigue, or chilling, but this can be prevented by administering a gramme of quinine hydrochloride seven hours before the expected chill. Syphilitics who do not present active symptoms and are not debilitated may safely take it.

Special efforts must be made to detect tuberculosis, for the vaccine acts in the same way as tuberculin, with constitutional reaction and fever lasting perhaps several days—a fever declared to be due to the tuberculosis and not the vaccine. In fact, an abnormal reaction causes suspicion of latent tuberculosis, and the French surgeons have had several such cases in which careful search revealed lesions which had previously escaped notice. They make an absolute rule to avoid vaccinating persons with active lesions in any form. "Cured" cases must be treated cautiously, beginning with smaller doses to feel the way, and discontinuing if any reaction occurs.

The report of Spooner, of Boston, that the vaccine brought out every latent disease, made us suspect that we were dealing with danger. A vaccine must be harmless. Vincent says that in from ninety-four to ninety-five per cent. the reaction is trifling or absent, in from five to six per cent. moderate, and that severe reactions are very rare unless tuberculosis is present. Since English and American observers report from two to four per cent. of severe reactions, it is likely that some of them were tuberculous.

We do not share Dr. F. F. Russell's pessimism as to the many generations our sanitarians will require to make this country as clear of typhoid as England and Germany (Harvey Lecture, February 8, 1913; see this JOURNAL for February 15th, page 351), for the movement is already a strong one, but we agree with him that in the meantime there will be people who are unduly exposed now and then and who should be vaccinated *if it is safe*—nurses, laboratory workers, and travelers. It would be a serious matter to fail to warn them of the dangers of the vaccine and let them decide which risk to run.

Russell has stated that no ill effects, such as found by Spooner, had been noticed in the army (*Journal of the American Medical Association,* October 12, 1912), but we presume that they will be noted and published now that Vincent has also called attention to them. We have been forcibly struck by the manner in which all vaccination advocates except Vincent have minimized the dangers and failures, and the great newspaper publicity given to the attacks of typhoid among the unprotected. It is, therefore, impossible to come to an accurate conclusion as to the benefits and evils. Until all the facts are published impartially the medical profession must hold the matter *sub judice.* As the vaccine acts like tuberculin, compulsory vaccination cannot be practised in civil life.

NEOSALVARSAN IN THE LOCAL TREATMENT OF SOFT CHANCRE.

Some time ago, Lebenthal tried salvarsan in the local treatment of soft chancre, but obtained untoward effects. This, it must be said, might have been anticipated when we recall that this substance, when exposed to the oxygen of the air or of watery solutions, becomes oxidized and that the toxic action of the oxide is twenty times more active than that of salvarsan in its original state. The effects of subcutaneous injections in the treatment of syphilis, which caused the use of this method to be abandoned in favor of the intravenous route, should also have suggested the likelihood of morbid effects, since, as is well known, tissue necrosis is produced. The untoward effects witnessed by Lebenthal only served to verify the teachings of clinical experience, that tissues adjoining the soft chancre underwent necrosis.

In a recent monograph (*Thèse de Paris,* 1913) Melun contributed valuable observations indicating how the untoward effects of salvarsan, when locally applied, could be avoided and its beneficial effects insured. His method was to mix the salt with liquid petrolatum in the proportion of one part of salvarsan to ten of petrolatum. In view of the explanation we have given in the preceding paragraph the petrolatum simply prevents oxidation of salvarsan, and the marked toxicity it acquires as a result of this process is forestalled.

The best results, however, were obtained by using neosalvarsan in the same manner. It seemed to produce less irritation than salvarsan and not to coagulate albumins, while interfering in no way with osmosis or the vitality of the tissues. Moreover, it presented the marked advantage of penetrating more energetically the pathological structures. Cicatrization of the soft chancre was found to occur very rapidly at first, the process of healing becoming less active after this first phase. Nevertheless, even large, soft phagedenic processes yielded in from six to twelve days.

Obviously, this need not banish the use of solutions of salvarsan or neosalvarsan, but bearing in mind the reducing activity of these agents, only weak solutions should be used. Thus Rosenmeyer recently obtained excellent results in the treatment of parenchymatous keratitis due to congenital syphilis by means of local applications of but a two per cent. solution. This treatment arrested promptly the morbid process, which had failed to yield to classic measures. He also used neosalvarsan in its normal state, but in view of the chemical properties of the salt, prudence imposes itself particularly in ophthalmic therapeusis.

THE DIAGNOSIS OF ACUTE SUPPURATING HEMATOCELE OF THE THYROID GLAND.

In making a diagnosis of acute suppuration arising in an hematocele of the thyroid gland, there is no necessity of discussing the possible errors that occur in differentiating between an hematocele and other enlargements of the organ. The pathological process under consideration is rapid in development; the gland suddenly increases in size to such an extent that phenomena of compression occur at the same time that evident indications of infection appear.

If the hematocele always offered the same clinical picture, obviously the diagnosis would be easily made, but unfortunately, according to the factor giving rise to it, the symptoms vary greatly; while, on the other hand, there is similarity with the other numerous types of thyroiditis. For example, a grippal thyroiditis may present points in common with a grippal infection of an hematocele. In this type of strumitis, contrary to what is observed in the typhoid form, the initial symptoms are usually very much accentuated, because the organism is not severely infected.

The first phenomena develop during convalescence from an attack of influenza, beginning with a chill and a swelling in the neck. Pain is generally dull, but may increase by pressure or movements of the neck. Phonation, deglutition, and contraction of the sternomastoids are all painful, and in a few days the tumefaction, although distinctly limited, increases, becoming hard and tense. The local temperature is raised. Then dyspnea, dysphagia, and phonetic disturbances, compression of the large vessels, and other complications supervene.

The formation of pus gives rise to irregular chills, while the local symptoms may tend to improve, but usually the tumefaction increases and the pain is more acute.

The same applies to typhoid or puerperal strumitis, so it appears that the causative agent manifests its action in an identical way, either in an infection of the gland itself or in a purulent transformation of an endothyroidal collection of blood.

It is, however, important to make a correct diagnosis, because, although in many cases the treatment is the same, there are some in which interference would be dangerous. A thyroiditis has a greater tendency to involve the entire gland, while a suppurating hematocele remains localized in one lobe. Usually the infection of the gland begins with a marked chill and the temperature is higher than in a suppurating hematocele. And what may still better differentiate the two affections is the knowledge that there have been successive periods of sudden increase during the evolution of the struma, a characteristic evidence of endocystic hemorrhage. When there is any hesitation an exploratory puncture is justifiable.

It may be said that in cases of goitre developing in successive periods of sudden increase in size, the absence of lymphatic involvement, the mildness of the systemic symptoms, and a manifest development of the peripheral venous system in the neck should be very accurate indices in favor of a suppurating hematocele, although in some cases the diagnosis will have to be reserved.

MEDICAL STATISTICS OF THE LYING-IN HOSPITAL.

In the March *Bulletin* of the Lying-in Hospital of the City of New York, which hospital, by the way, was founded in 1799, Dr. Ross McPherson as registrar gives very interesting statistics. We observe that the number of confinements were 5,606, with 5,657 births, 525 women (9.36 per cent.) being brought in by the ambulance as emergency cases. Operative assistance became necessary in 731 cases (13.04 per cent.), many of which were brought in by the ambulance after having been treated at home by midwives or other physicians. There were 245 abortions, and the mortality is given for the mothers as 1.01 per cent. (fifty-seven women), for the fetus as 2.89 per cent. (165 fetuses), and 4.59 per cent. stillbirths (262). The high mortality of the mothers is accounted for by the above mentioned ambulance cases, while there was only one death of the total number of women (5,081) confined in the hospital. The high mortality among the ambulance cases brings up the question of the education of the midwives. This is discussed in a communication in the same bulletin by Dr. G. W. Kosmak, attending surgeon of the institution. The only solution this writer sees of this vital question lies in two methods, either suitably trained midwives or extended public lying-in charities In New York State a six months' course of instruction is all that is necessary, a period which Doctor Kosmak thinks is absolutely insufficient. The poorer class of people cannot engage a physician, and must, therefore, depend upon the midwife or seek the help of a lying-in institution. This condition brings up the cases of confinement attended by midwives to forty-five per cent. But if this class of women should be cared for by hospitals, the number of these lying-in institutions would have to be greatly increased.

SUGAR IN THE TREATMENT OF WOUNDS.

About a year and a half ago, Kuhn recommended that the normal saline solution used in the treatment of peritonitis be modified by the addition of some four per cent. of glucose. Magnus, König's assistant in the faculty of medicine at Marburg, according to *Semaine médical* for March 19, 1913, has been using sugar in the treatment of wounds with surprising results. In large, septic wounds due to acute or chronic osteomyelitis, and in varicose ulcers of the leg sugar has proved most efficacious; tuberculous lesions only seem to be absolutely refractory to sugar. Beside its bactericidal and disinfectant power, sugar has a dissolving action on fibrin, which causes a rapid detergent effect on a wound, even after such dressings as clay, silver nitrate ointment, etc., have proved useless. Under the influence of daily applications of sugar, by a process of osmosis an abundant secretion is established, which keeps the dressings moist and prevents their adhering to the wound; an inveterate varicose ulcer becomes rapidly clean, odor disappears, and cicatrization is favored without the occurrence of exuberant granulations.

A fistula which had persisted after a joint resection for two weeks despite all the usual measures, healed in three days after the application of sugar; and Magnus reports equally gratifying results in operative wounds after purulent appendicitis, cholecystitis, and gland resections. He has yet to note the slightest contraindication to the use of sugar in wounds, and repeated examination of the urine fails to disclose any change attributable to the remedy even in cases where very large quantities had been applied in extensive loss of tissue.

UNPLEASANT WINDOW DISPLAYS.

The *Lancet* for March 22, 1913, takes certain shopkeepers in London sharply to task for exhibiting in their windows vaginal syringes, often with notices or pictures calling attention to the "ugly wares." The object of these syringes is well known to men and women of the world, and, the English journal remarks, it is disgusting that appliances of the sort should be flaunted before decent people, and especially before children, who should not have such articles and their uses brought to their attention. Police interference being difficult, the *Lancet* thinks that neighboring shopkeepers, recognizing that proximity to such offensive displays is detrimental, should find a remedy.

"DIRECTIONS FOR TAKING."

In a recent issue of the New York Medical Journal attention was directed to the danger to the patient involved in labeling prescriptions "take as directed." This subject was discussed in Berlin, last summer, when the police president of that city issued, on July 12th, a circular to the medical association directing the attention of the members to the complaints made by pharmacists for careless prescribing by doctors. Special reference was made to the absence of directions for use, which made it difficult in many cases to control the correct reading of a badly written prescription, three instances of such errors being cited. In these particular cases "Rem. ctr. taeniam" (remedium contra taeniam) was understood and dispensed instead of "Pil. ctr. tussim" (pilula contra tussim); "Tinct. stomachic." (tinctura stomachica) was dispensed instead of "Pulv. stomachic." (pulvis stomachicus) and "Pil. ferr. arsenic." (pilula ferri arsenicosi) instead of "Tinct. ferr. arsenic." (tinctura ferri arsenicosi). The fact that this subject has received official notice in Berlin further emphasizes the importance of writing out in full, on every prescription, the directions for taking medicine.

Obituary.

GEORGE McCLELLAN, M. D.,

of Philadelphia.

Doctor McClellan, the noted anatomist, died on March 29th at his home, 1116 Spruce Street, Philadelphia, following an attack of some cardiac disorder. He was born in Philadelphia in 1849, the grandson of the founder of Jefferson Medical College and a nephew of General George B. McClellan. He made his preliminary studies in the faculty of arts of the University of Pennsylvania and graduated at Jefferson Medical College in 1870. After postgraduate study in Europe, he was elected surgeon of the Howard Hospital, Philadelphia General Hospital, and St. Joseph's Hospital. In 1873, he married Harriet, a granddaughter of Robert Hare. Subsequently he became president of the Philadelphia Medical Club. Doctor McClellan was an authoritative writer on scientific subjects, particularly on anatomy of which he was a master, and his *Regional Anatomy*, admirably written and magnificently illustrated from his own subjects, went through six editions and achieved the honor of translation into French. He was greatly esteemed by his friends and fellow practitioners and was noted for his courtly manners and charming disposition.

News Items.

Physicians' League of the Bronx.—This organization of Bronx physicians was organized recently for the avowed object of aiding to abolish hospital and dispensary abuses. The officers are. Dr. William H. Kahrs, president; Dr. J. A. Keller, general secretary; Dr. Gustave H. E. Starke, treasurer.

Arkansas Medical Association.—The annual meeting of the Tenth District of the Arkansas Medical Association was held in Rogers on May 22d. Officers for the coming year were elected as follows: President, Dr. J. L. Smiley, of Siloam Springs; vice-president, Dr. C. F. Perkins, of Springdale; secretary, Dr. I. A. Fergus, of Rogers; treasurer, Dr. W. A. Pickens, of Bentonville.

New Tuberculosis Hospital in Yonkers.—In addition to the Sprain Ridge Hospital for Incipient Tuberculosis, given to the city of Yonkers by Alexander Smith Cochrane, that city now has a municipal hospital for advanced cases of tuberculosis, partly due to the generosity of Mr. Cochrane, who donated the site for the building. This hospital has accommodations for forty patients.

New York Physicians' Association.—This association held its annual dinner on the evening of March 29th, at the Hotel Marie Antoinette. Dr. Percy Fridenberg, chairman of the dinner committee, was toastmaster. The address of welcome was delivered by Dr. Charles Herrman, president of the society, and among those who responded to toasts were Assistant District Attorney Frank Moss, Marcus Marks, and Carl Hauser.

Sixtieth Anniversary of the Sheppard and Enoch Pratt Hospital.—The trustees of the Sheppard and Enoch Pratt Hospital, Towson, Md., are planning to celebrate the sixtieth anniversary of the granting of the charter for the institution. While the hospital has been receiving patients for only twenty-one years, it was incorporated and a board of trustees named on May 24, 1853, Moses Sheppard, founder of the institution, being the first president of the board. It is expected that the celebration will be held either just before or just after the Congress of American Physicians and Surgeons, which will be held in Washington, D. C., on May 6th and 7th.

Medical Study of the Hydromineral and Climatic Resorts of France.—The thirteenth excursion with this study for its object will begin August 25, 1913, and continue until September 5th under the presidency of Professor Landouzy. The resorts of the southwest of France will be visited in the following order: Arcachon, Dax, Biarritz, Hendoye, Cambo, Salies-de-Béarn, Pau, Saint-Christau, Eaux-Bonnes, Eaux-Chaudes, Argelès, Barèges, Saint Sauveur, Gavarnie, Cauterets, Bagnères-de-Bigorre, Capvern, Barbazan, Siradan, Bagnères-de-Luchon. For further information, address Dr. Carron de la Carrière, 2 rue Lincoln, or Doctor Jouaust, 4 rue Frédéric-Bastiat, Paris.

A Warning Concerning an Italian Diploma Mill.—A number of prominent men in the United States have received offers of elaborate membership titles, medals, etc., from an institution in Palermo, Italy, styling itself the Académie Physico-Chimique, and requesting a five dollar fee. We have now heard from three sources that the object of the "Académie" seems to be a mercenary one. The last letter received contains the following: "The institution in question is not looked upon with favor nor does it deserve any consideration. It would even seem proper and legitimate to suspect that the institution, under the pretext of being an institution of science, is exercising an unworthy and low speculation."

Medical Association of the Greater City of New York.—A special meeting of this association, under the direction of Dr. L. Howard Moss, of Richmond Hill, chairman for the Borough of Queens, will be held in Jamaica, on Monday evening, April 7th, at 8:45 o'clock. The programme includes the following papers: Report of a Case of Perforating Ulcer of the Stomach, by Dr. Albert L. Voltz, of Queens; Report of a Case of Twin Pregnancy, Uterine and Tubal Combined, by Dr. Otto C. Stumpf, of Queens; Dystocia and the Unflexed Head, by Dr. A. Ernest Gallant, of Manhattan; Healthy Sick Children, by Dr. LeGrand Kerr, of Brooklyn; New Rules for the Treatment of Syphilis, illustrated by stereopticon slides, by Dr. William S. Gottheil, of Manhattan. A cordial invitation to the meeting is extended to all.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Monday, April 7th: Wills Hospital Ophthalmic Society, Academy of Surgery, Philadelphia Clinical Association, Clinical Society of Jewish Hospital, Northwestern General Hospital Medical Society. Tuesday, April 8th: Pediatric Society. Wednesday, April 9th: County Medical Society. Thursday, April 10th: Polyclinic Ophthalmic Society and Pathological Society. Friday, April 11th: Northern Medical Association.

Alumni Society of the Medical Department of the University of Pennsylvania.—At the twenty-first annual meeting of this society, held recently in Philadelphia, three hundred members were present and voted $500 to found a scholarship in memory of Dr. Roland G. Curtin, the first president of the society, to be called the Roland G. Curtain Alumni Scholarship Fund. This sum will be increased each year. The following officers were elected: President, Dr. Clarence P. Franklin; honorary vice-president, Dr. Edgar Fahs Smith; first vice-president, Dr. Howard Sutton; second vice-president, Dr. William P. Robinson; third vice-president, Dr. Charles Claxton; corresponding secretary, Dr. B. Franklin Stahl; recording secretary, Dr. William S. Wray, and treasurer, Dr. Morris B. Miller.

Pellagra Commission to Continue Investigations.—Colonel Robert M. Thompson, of New York, and John H. McFadden, of Philadelphia, have agreed to supply the funds necessary for a continuation of the work of the pellagra commission in endeavoring to learn the cause of the disease and a remedy for its cure. The commission will leave New York very soon and take up its headquarters in Spartansburg, S. C., where its members worked last spring and summer. The personnel of the commission is the same as last year, comprising Captain Joseph F. Siler, medical corps, U. S. A.; Dr. Philip E. Garrison, passed assistant surgeon, U. S. N.; Dr. Ward J. MacNeal, assistant director, department of laboratories of the New York Post-Graduate Medical School and Hospital; and Allan H. Jennings and M. V. King, entomologists, of the bureau of entomology of the Department of Agriculture.

Medical Society of the Missouri Valley.—The twenty-fifth semiannual meeting of this society was held in Kansas City, Mo., on March 20th and 21st, with the second vice-president, Dr. B. T. Quigley, of Mound City, Mo., in the chair. There was a large attendance, and an excellent programme was presented, an interesting feature being a symposium on cancer, in which the importance of educating the laity in regard to early symptoms was emphasized. It was suggested that as a means to aid in this education campaign, every State medical society appoint a publicity committee, backed by the authority of the State society, to prepare proper articles for the daily press and the weekly papers in the country. Among those who participated in the discussion were Dr. Franklin H. Martin, of Chicago; Dr. Joseph C. Bloodgood, of Baltimore; Dr. W. L. Brosius, of Gallatin, Mo.; Dr. John F. Binnie, of Kansas City; Dr. Donald McCrea, of Council Bluffs, Iowa; and Dr. Henry S. Munro, of Omaha.

Occupational Diseases in Chemical Trades.—At the February meeting of the New York Section of the American Chemical Society a committee on Occupational Diseases in Chemical Trades was organized, with Dr. Charles Baskerville, professor of chemistry and director of the laboratory, College of the City of New York, as chairman. The objects of this committee may be briefly stated as follows:

"1. To hold itself ready to advise the legislatures of the States of New York and New Jersey in reference to matters pertaining to occupational diseases in the chemical trades;

"2. To study various bills presented in the legislatures in an effort to avoid unwise legislation; especially that which might be inoperative or ineffective from one or many reasons resulting from lack of technical knowledge at the time of writing the laws;

"3. To inaugurate and superintend such investigations as might be decided upon which look toward improvement of conditions of labor in the chemical trades."

At the last meeting of the committee, held on March 7th, it was decided to notify the proper committees of the legislatures of New York and New Jersey and also local municipal authorities of the organization of this committee, and to make public announcement of its objects, in order that manufacturers might learn of its existence and perhaps make use of its services in carrying on investigations of their own problems.

Smallpox in Washington.—In the District of Columbia, which for administrative purposes is identical with the city of Washington, there were notified between January 1 and March 24, 1913, 58 cases of smallpox. On March 26th, there were 18 cases still under treatment. The disease has been of the usual mild type and to the present no deaths due to it have been registered. Several cases have occurred among employees in the government departments with the result that extensive vaccination has been carried on among those in these departments. The infection has invaded the White House through an employee, and the President himself submitted to vaccination.

Improved Hospital Service in Havana.—It is reported that two new automobile ambulances will soon be put into public service in Havana, at a cost of $10,000, the necessary appropriation having been approved by the municipal council. Considerable fault is found with the present ambulance service of the city, the complaint being that doctors use the ambulances for private uses. The city medical services will also be reorganized. The council has resolved that the city should engage the services of twenty physicians to attend and give first aid, and ten other physicians to devote their time exclusively to the poor while a new plan of having charity inspectors visit the needy as it is done in other countries, is to be put in force. A new emergency hospital is being planned for Luyan's, a suburb of Havana.

An English Speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon, and Tuesday morning, August 4th and 5th. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress. A tentative programme has been issued by the committee which indicates that the papers will consist largely of medical opinion. The subjects treated will concern the responsibility of central and local authorities in infant and child hygiene; the administrative control of the milk supply; the necessity for special education in infant hygiene; medical problems in infant nutrition; and antenatal hygiene. The president of the conference will be the Hon. John Burns, M. P., president for the Local Government Board. The chairman of the English Executive Committee is Sir Thomas Barlow and the secretary, Miss J. Halford, 4 Tavistock Square, London, W. C. The American committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference. Dr. Henry L. Coit, chairman, 277 Mt. Prospect Avenue, Newark, N. J. Dr. Philip Van Ingen, secretary, 125 East 71st Street, New York.

Memorial to Lord Lister.—A committee was recently organized at the suggestion of the Royal Society and the Royal College of Surgeons for the purpose of raising funds for the establishment of a suitable memorial to commemorate the notable services of the late Lord Lister to the cause of science and the alleviation of human suffering. An executive committee has been appointed for the purpose of deciding what should be the form of the memorial, and of taking the necessary steps to organize the collection of subscriptions and to carry the design into execution. This committee has decided that the most suitable memorial would be one comprising: 1, A tablet with medallion and inscription in Westminster Abbey; 2, the erection of a monument in a public place in London; and, 3, the establishment of an International Lister Memorial Fund for the advancement of surgery, from which either grants in aid of researches bearing on surgery or awards in recognition of distinguished contributions to surgical science, should be made, irrespective of nationality. To carry out these proposals a large sum will be required. The sum already subscribed or promised is, perhaps, sufficient for the completion of the first two parts of the proposed memorial, but the third object is international in character and the funds in hand are as yet insufficient for its adequate establishment. An appeal is therefore made for assistance from other countries, in order that the provision of an International Lister Fund may be accomplished on a scale worthy of the illustrious man and of the debt under which the entire civilized world lies to him. Donations may be sent to the Treasurer of the Lister Memorial Fund, Royal Society, Burlington House, London, W.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

February 2, 1913.

Death Following Momburg's (Exsanguination) Anemia and Lumbar Anesthesia.—C. Sternberg gives detailed post mortem findings in cases where death followed these procedures. Momburg's anemia when applied, with the prescribed precautions, when the indications are present and in carefully chosen cases, is a satisfactory process. The failures reported are due to faulty technic, indiscriminate application, especially in patients having heart lesions, nephritis, or intestinal affections. The post mortem findings in six cases where death was directly traceable to lumbar anesthesia are described, and the statistics prove that the number of deaths are relatively large compared with other modes of anesthesia.

Pressure-Relieving Procedures in Choked Disc.—R. Hessberg mentions five palliative operations in this connection, namely, lumbar puncture, ventricular puncture, trepanation, puncture of corpus callosum, and the permanent drainage of the ventricle after Paye and Henle, and discusses the indications and advantages of these different methods.

Atony and Gastroptosis.—Disqué defines at length atony and illustrates by various drawings the shape and position that the stomach may assume when this condition obtains. He describes the habitus of the patient, the therapy indicated, the diet, especially easily digestible fats and carbohydrates, the latter being the best proteid sparers and leaving the stomach most rapidly. Under general treatment are included two hours' rest after meals in the recumbent posture, light gymnastics, local physical treatment of the body, faradization, massage of the stomach and intestines. lavage, interdiction of corsets and their replacement by abdominal binders.

Appendicitis from Oxyurids.—Rheindorf finds: 1. In children having clinical symptoms of appendicitis a large percentage show oxyurids, while in adults these are found only occasionally. A systematic examination for these in the latter would be advantageous. 2. Careful microscopical examination shows changes in the appendicular processes of such persons. 3. These changes vary; large and small defects in the mucous membrane which reach deep in the wall and may lead to extensive destruction. They are caused by the worms. 4. These changes produce secondary inflammatory processes of either deep or superficial nature which, 5, threaten the health and life of the patient in many ways. 6. The oxyuriasis is a widespread evil the elimination of which is a necessity. 7. Enlightenment on the subject should begin in the schools and be continued in practice by the physician.

Treatment of Dysmenorrhea and Essential Hemorrhage from the Female Genital Organs.—Margoniner recommends liquor sedans a palatable remedy which consists of extract of viburnum prunifolium, hydrastin, etc. Thirty minims are given three times a day one week before menstruation, increasing in a few days to one half teaspoonful, while during menstruation one teaspoonful is given three times a day. The cases cited exhibited a markedly hemostyptic and anodyne effect. The author has also found it effective in severe menorrhagias with subsequent anemia and hemorrhages accompanying the climacteric.

February 9, 1913.

Calotropis procera.—L. Lewin relates that the African *Calotropis procera* secretes a milky juice which exerts a digitalislike effect on the hearts of cold and warm blooded animals beside other poisonous side effects. The active principle is contained in the serum of the milky juice and by evaporation is eventually found to be a brownish black mass called calotropin by the author, of which 0.33 mg. will kill a rabbit in six minutes, the heart stopping in systole. The remedy, which may be kept for years, is capable of internal and subcutaneous application.

Salinofer, a Salt Containing Skin Cream as a Substitute for Brinebaths.—Th. Rosenbaum recommends salinofer, an easily absorbable skin cream containing fifteen per cent. of sodium chloride for local treatment in rheumatic and neuralgic conditions. The preparation may be rubbed on the affected parts once or twice daily without producing irritation of the skin.

Permanent Drainage under the Skin without the Use of Drains.—Euler's principle of subcutaneous drainage, as first worked out for ascites, is to establish a connection between the secreting cavity and artificially formed fistulas with the subcutaneous skin tissues, the lymphatic vessels of which will transmit the flow. The skin above the fistulas is closed by sutures. Spontaneous drainage of pleuritic exudates is successfully accomplished by the formation of an opening into the ribs. In hygromata and the flow from bursæ, after the opening of the sac, the inner displaced capsular parts are sewed to the outer parts by iodine catgut. All these minor operations are without danger to the patient and may be performed under local anesthesia in ambulant cases.

February 16, 1913.

Abortive Treatment of Gonorrhea.—L. Lilienthal and J. Cohn conclude: 1. Every gonorrhea the first subjective symptoms of which are not longer than of twenty-four hours' duration, where no complications exist, and only a slight seropurulent discharge is present, should receive the abortive treatment. 2. On three successive days three injections daily of eight c. c. of four to five per cent. protargol are given, each injection retained in the anterior urethra for four minutes. 3. About one half of the patients thus treated were free of all symptoms from the fourth day on, and a number of the cases treated as far back as 1905 remained free from all further manifestations. 4. Severe complications were not noted, even in cases not successfully treated. 5. In all of the cases there was a marked curtailing of the gonorrheal attack.

Gadiol, a New Codliver Oil Preparation.—Bruck considers gadiol to be a new and valuable preparation which is gladly taken and well borne, and therefore particularly well suited for cases of rhachitis and in forced feeding. Gadiol contains the oil in pure unchanged form and its digestibility is due to the addition of ethereal oils. These substances also prevent its disintegration, guarantee its permanence, and make possible its use in summer. A cool dark place is to be chosen for its keeping.

February 23, 1913.

Cleaning Out Placental Secundines.—Himmelheber advises "Hands off" in puerperal fever, whether a placental fragment has remained in the uterus or not. In a case of retention he urges the use of secale in large doses, preferably the simpler freshly prepared pulvis secalis cornuti, which acts much better, in his experience, than ergotin, secacornin, etc., which he has dispensed with entirely. Locally nothing should be done. Vaginal douches are worthless and uterine douches are dangerous.

Amidobenzol Dehydration in the Urine of Scarlet Fever and Scarlatinoid Eruptions.—O. Hesse avers that a positive reaction of the urobilinogen test may make the diagnosis of a doubtful case of scarlet fever certain and thus establish the differential diagnosis between the serum exanthemata and a series of other infectious diseases. A positive diagnosis solely on its presence should never be made. A negative reaction at the height of the eruption does occur, but is rare.

ZENTRALBLATT FÜR CHIRURGIE.

February 15, 1913.

Modification of Roux's Gastrojejunoesophagostomy.—O. Uffreduzzi and G. Giordano simplify this operation by first making an ordinary Y shaped anastomosis between the intestines outside of the chest and then between the stomach and the intestines at the point where they are already in contact. An incision is then made in the pleura in the sixth or seventh intercostal space, the esophagus is resected from the cardia to above the stricture, and the cardia is buried. A loop of small intestine is drawn up and joined to the esophagus, and an anastomosis is made between the loop and the stomach outside the chest as in the Roux operation.

Anesthesia of the Sciatic Nerve.—P. Babitski says that the sciatic nerve can be rendered anesthetic by an injection through the gluteal muscles, the needle being guided by the finger of the operator in the rectum of the patient, which which the sciatic nerve can be felt. The spine of the ischium is to be located with the finger as the guide to the nerve, as the latter passes from beneath the pyriform muscle just above it. Babitski has used this method successfully in fifteen cases. The anesthesia was complete in from two to five minutes, and operations from resection of the veins to amputation of the thigh could be performed.

PRESSE MÉDICALE.

February 26, 1913.

Nature of Neurasthenia.—J. Déjerine and E. Gauckler state that in studying 300 cases labelled "neurasthenia" they did not meet in a single instance the classic picture of this affection as originally described by Beard and Charcot. The only three features common to all neurasthenics are fatigue, abnormal susceptibility to fatigue, and depression. Yet a tuberculous patient presenting each of these three conditions would not be looked upon as a neurasthenic. The term neurasthenia is applied where these conditions cannot be accounted for. Upon inquiring closely into the initial disturbances preceding neurasthenia in their series of cases the authors found that in 103, or thirty-four per cent., there had been mental phenomena, such as attacks of melancholia, periods of depression in a confirmed periodic psychosis, or, more frequently, hypochondria or psychasthenia; in no case was abnormal suggestibility an original factor. In a second class, comprising 121, or forty per cent. of the patients, were those in whom there had been definite physical disorder, e. g., thyroid affections, malaria, mild tuberculous states, various intoxications, arteriosclerosis, as well as those suffering from simple debility or physical inadaptability, the cases arising merely from excessive strain, and finally, those in whom incipient organic disorders—hepatic cancer, movable kidney, gastric ulcer, or even periostitis and tuberculous abscess of the ensiform cartilage—cause pronounced "neurasthenic" states by reason of a neuropathic constitution of the individual. In the third remaining class of neurasthenics, comprising seventy-six, or twenty-five per cent. of the patients, the primary disturbance had been emotional; among these were cases of "mental inadaptability" to environment. Persistent emotional disturbance appears to the authors the sole effective cause of neurasthenia; in the first two classes of neurasthenics mentioned, the mental and physical disturbances present lead to the neurasthenic state through the emotional perturbation they engender, this, in turn, reacting on a neuropathic subsoil predisposing to neurasthenia.

SEMAINE MÉDICALE.

March 5, 1913.

Curettement in Febrile Abortion.—R. de Bovis questions the wisdom of Winter's recommendation not to evacuate the uterus in cases of abortion in which bacteriological examination shows the presence of hemolyzing streptococci. The recent reports of Warnekros and Schottmüller render it certain that the results obtained by curettement or other methods of emptying the uterus are not worse than those of noninterference; judging from the statistical data now at hand, in fact, they are distinctly better. The chief merit of Winter's views has been to emphasize the fact that hemolytic streptococci in abortion generally signify an unfavorable prognosis. Among this category occur most of the patients in whom infection has been generalized. In these curettement is useless, and it may even do harm. But even admitting this, curettement should not be denied to other patients in whom generalization has not occurred, exposed as they would then be to constant febrile disturbances, hemorrhages, and sapremia.

Hypodermic Injection of Quinine.—G. H. Lemoine discusses the various methods of injecting quinine that have been tried in order to avoid untoward local or general results. He concludes that the basic hydrochloride and the formate are the only salts that should be used for this purpose. Both should be employed in a twenty per cent. solution in distilled water; to render the hydrochloride sufficiently soluble, ethyl carbamate in the same percentage should be added. The solution of quinine formate must be gently heated before use, as in the cold the salt is soluble only in the ratio of one to twenty. In 470 injections of the hydrochloride into the subcutaneous tissues or the muscles the author witnessed no untoward results. The best site for the injection is the upper gluteal region, more particularly any point along the inner third of a transverse line two fingerbreadths above the great trochanter. The injection must be made deeply, and the antiseptic precautions carefully taken. In giving an intramuscular injection a slight contraction of the muscle to be injected should first be elicited at the moment of introducing the needle; when the muscle relaxes the fluid is slowly injected. Previous heating of the ampoule or syringe tends to diminish pain; in fact, in most instances, there is no pain, and where it occurs it is slight and evanescent.

March 12, 1913.

New Technic for Neosalvarsan Injections.—P. Ravaut showed experimentally that solutions of neosalvarsan in normal saline solution soon became turbid, whereas solutions in distilled water did not. Sodium chloride having been thought by others to be responsible for some of the untoward effects of neosalvarsan, Ravaut discards it. Since lead, lime, and other substances which may be present in the distilled water used have also been considered harmful, Ravaut reduces the amount of water injected to a minimum—ten c. c. for 0.45 to 0.6 gramme doses of neosalvarsan, and fifteen c. c. for 0.75 to 0.9 gramme doses. These represent the minimal amounts that will not produce hemolysis, as the author showed experimentally. The injections are given with a twenty c. c. syringe and completed in fifteen or twenty seconds; on one occasion thirty-six patients were treated in two hours. Each of 184 injections administered in forty-seven patients were well borne; no venous induration followed, though some patients received six injections in the same vein. Fever, nausea, and vomiting seemed less frequent than where other procedures were followed, and the remedial results were the same.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

February, 1913.

Congenital Partial Absence of Spinal Column and Cord, with Thoracoabdominopelvic Fissure.—P. Stauffer reports a case of this kind, and gives a complete anatomical description, with histological details. Labor occurred at term, but the fetus was macerated and had evidently been dead from three to four weeks. Both malformations could be accounted for by injury to the posterior extremity of the body of the embryo before the end of the third week, i. e., before the muscular plates had given rise to the membrana reuniens. The mother had fallen from a height of 1.5 metre in the third week of pregnancy.

Surgical Treatment of Hepatic Cirrhosis.—Juilliard discusses chiefly Talma's operation or omentopexy. Collected statistics show that while the percentage of operative deaths is steadily diminishing, the ratio of cures remains about the same, viz., one third. An additional one sixth of the cases shows improvement, so that about one half of all the patients operated upon are benefited. Cases of hypertrophic cirrhosis are more favorable than those of the atrophic variety. Cure results only some time after the operation in certain instances; thus in a case reported by Pal and Frank, the condition was arrested only eighteen months later. On the whole, the results of surgical treatment are fairly encouraging, considering the unfavorable prognosis of cirrhosis in general.

Sabrazès-Eckenstein Method in Diagnosis of Syphilis.—A. Perelmann points out that in pediatric practice the use of the Wassermann reaction is sometimes attended with difficulty owing to the fact that mothers object to the removal of the ten c. c. of blood required for this test. In the Sabrazès-Eckenstein procedure only 0.3 or 0.4 c. c. of serum, obtainable from three or four c. c. of blood, is necessary. The antigen used is an alcoholic extract of human heart tissue, heated to 60° C., then kept in the dark. It is titrated with syphilitic and nonsyphilitic sera and a five per cent. mixture of defibrinated sheep's blood with normal saline solution. In making the test blood is obtained by wet cupping, allowed to stand in the cup for a time, and the serum then withdrawn for use by means of a sterile pipette. Comparison of the results with those of the Wassermann in a series of thirty-one cases showed lack of concordance only in one instance. An attempt was made to reduce the amount of blood required still further by using only half quantities, but in one case this obscured the result. The general conclusion reached is that the Sabrazès-Eckenstein method may with advantage be substituted for the Wassermann, especially where the latter is impracticable. The test is simple and takes up only two and a half or three hours. The serum must be fresh, should be kept in contact with its clot, and must be hemolytic for sheep's red corpuscles.

ROUSSKY VRATCH

January 26, 1913.

A Case of Prolonged Cessation of Heart's Action Caused by Injury with a Needle.—N. I. Leporsky reports the case of a woman, twenty-six years old, who, in falling downstairs, had a sewing needle enter her chest. The clinical signs indicated that the needle entered the heart, a small end projecting under the skin. The removal of the needle was followed by shock, both respiration and heart's action stopping for twenty minutes. Two shorter attacks of a similar character followed within an hour. The woman recovered. The author attributes the condition to injury of the pericardium or the surface of the heart by the end of the needle during extraction.

February 2, 1913.

Dementia Præcox.—B. I. Vorotynsky discusses the character and nosology of dementia præcox, summarizing his discussion as follows: 1. The teaching of Kraepelin regarding early dementia and manic depressive psychosis aids but little in our progress in the field of clinical psychiatry. 2. Kraepelin's views on the etiology of dementia præcox do not stand criticism. In this connection, it is not proper to place this psychosis in Kraepelin's classification among diseases caused by disturbances of metabolism. The name of this psychosis, dementia præcox, is also wrong. 3. Clinical observations and recent investigations permit the conclusion that the so called dementia præcox is a psychosis of a degenerative hereditary character determined by organic changes in the brain. In view of this it should be classified among the psychoses of degeneration and placed nearer the condition of mental deficiency. 4. Instead of dementia præcox it is more correct to name this psychoses *dementia primaria degenerativa.* 5. Primary degenerative dementia develops mostly between the ages of fifteen to twenty-five years; more rarely between twenty-five and thirty-five, and in only a very few cases over thirty-five. 6. The prognosis is absolutely unfavorable. Slight amelioration or temporary improvement may take place, but entire recovery is impossible. 7. Primary degenerative dementia generally begins slowly and gradually, often by a succession of nervous manifestations. The further progress is marked by explosions and jumps, the individual attacks lasting from two to three months and often ending in amelioration which the friends regard as complete recovery. There may be several such attacks in the course of two or three years. 8. The individual attacks of primary degenerative dementia often differ from each other and present a different clinical picture. Following the first maniacal outburst with a period of amelioration, the second attack may be ushered in with stupor, and this again may be followed by paranoiac or hebephrenic attacks. 9. Catatonia and dementia præcox paranoides should not be regarded as distinct clinical forms of the disease; they are merely variations of primary degenerative dementia, and from this standpoint may be considered as the catatonic, hebephrenic, and paranoiac forms of this psychosis. 10. Dementia primaria degenerativa often develops in connection with mental deficiency, and this often coincides with puberty. 11. The fact that several cases may occur in the same family is a proof that primary degenerative dementia has often a substratum of hereditary psychopathy. 12. The initial periods of primary degenerative dementia frequently occur in the form of manic depressive states, which explains the fact that this condition in the early stages is frequently diagnosticated as manic depressive psychosis. 13. The question of separating manic depressive psychosis into a distinct form of the disease is still open.

So Called Scarlatinal Spirochete.—I. A. Barannikoff calls attention to the inclusions in the neutrophiles in scarlet fever of spirochetelike bodies which he discovered and described in 1910. These inclusions occur invariably during the first week of the disease. When stained with azar or Unna's methylene blue they appear as clumps, or ringlike or snakelike formations within or on the protoplasm of the neutrophiles. The author has been able to establish a positive diagnosis of scarlet fever by finding these inclusions. Recently Döhle reported similar findings.

Transplantation of Living Tissue into Bone Cavities.—M. P. Lavrova reviews the literature on the subject and reports two cases of osteomyelitis in which the cavities in the bones were filled with adipose tissue removed from the buttocks, in one case, and the thigh in the other. The results were perfect.

Strangulation of Malignant Tumors. — L. A. Chachloff reports a new method of treating new growths by depriving the surrounding tissue of oxygen. This, he states, he accomplishes by injection of leucomethylene blue. This substance possesses a great avidity for oxygen and also readily penetrates the nucleus of the cells during life. He reports no clinical observations, but states that he has succeeded in producing loss of hair without injury to the underlying tissue. He has also produced local recoveries by injecting the substance into the blood supply of the given part. The ulcer which formed healed very readily.

BRITISH MEDICAL JOURNAL.

March 15, 1913.

Alimentary Toxemia.—W. Hale White says that if the poisons giving rise to the symptoms covered by this term are bacterial the amount of them produced will depend upon the number of microorganisms and the suitability of the medium for their growth, which might be so favorable that toxemia would result without stasis. Therefore, the presence of toxemia is not proof of stasis. Those who attach great importance to mechanical stasis differ as to its cause. Some attribute it to excessively large valves of Houston, some to pericolitis, dropping of the colon, adhesions around the ascending colon, spur formations at the hepatic and splenic flexures, abnormal mobility of the cecum, the development of various bands and abnormal mesenteries which drag upon the bowel and kink it; but the reasons given for thinking that these bands are evolutionary are not convincing. There is no sufficiently large number of cases proving that any of these conditions is more common in those supposed to be suffering from intestinal toxemia than in those who are not. It is strange that when the bowels are matted into one mass by chronic peritonitis, so that great interference to peristalsis must exist, the symptoms indicative of alimentary toxemia are not constantly present, and even intestinal obstruction is rare. Although it may be that some of these mechanical causes lead to alimentary toxemia, the matter cannot be regarded as proved, and it must be remembered that the coexistence of two phenomena does not prove that they stand in the relation of cause and effect. The symptoms and conditions which are ascribed to alimentary toxemia cover the widest possible range, from exophthalmic goitre and cystic disease of the breast to the most trivial, and there is grave danger that the term will become a cloak for ignorance just as gout, uric acid diathesis, etc., have been in the past.

Bacteriology of the Alimentary Canal.—F. W. Andrews sums up his observations in the following propositions: 1. In an important group of cases the poisoning is by foreign proteids as such, the defect lying in the liver, which ought to shield the body from their effects. With this bacteria have, as a rule, nothing to do. 2. The main effect of bacterial activity in the production of elementary toxemia lies in their ability to carry out protein cleavages beyond the capacity of the ordinary digestive ferments, with the formation of products which, when in excess, the body is unable to neutralize. 3. There is at present little evidence that true toxines, derived from the ordinary flora of the gut, soluble or intracellular, play much part in alimentary toxemia.

LANCET.

March 15, 1913.

Spastic Cyclophoria.—A. A. Bradburne calls attention to the fact that when astigmatism lies obliquely there is added to the ordinary blurring a distortion or obliquity of vertical or horizontal objects. Before such an object can be viewed correctly with both eyes it is necessary for the eyes to rotate around an anteroposterior axis to form a correct single mental impression. The effects produced by oblique astigmatism are greater, more exacting, and more profound than those produced by rectangularly placed errors. It is not uncommon to meet with old cases of neurasthenia of unassignable cause completely cured by the correction of a small degree of oblique astigmatism. The reason that a horizontal line will seem to lie obliquely is that the patient views it with eyes rotated in an attempt to correct the astigmatism, so that the patient ascribes the oblique direction to the line, while ignorant of the changed position of the eyes.

Treatment of Carbuncles, Boils, Staphylococcic Infections, and Certain Streptococcic Infections.—John and Russell J. Reynolds have used dilute sulphuric acid (B. P.) internally in doses of twenty to thirty minims, each dose diluted with two ounces of water as a remedy for these conditions. The doses are repeated every four hours. In the case of carbuncle large doses must be used and changes are observed in the following order: Within twenty-four hours the infiltrated area becomes strictly circumscribed; then the slough is observed to soften; during the next few days pus is freely discharged, and the whole affected area shrinks and healthy granulation tissue forms, filling up the cavity until the part is healed. The only external application is a dressing of carbolized petrolatum, one in twenty. In cases apparently of streptococcic infection a somewhat different, though favorable, course obtains; the high temperature is quickly reduced and the pain and swelling and malaise gradually subside, the patient progressing uninterruptedly toward convalescence. Where the lymphatics are inflamed and the glands enlarged and painful, these all subside in a few days. Similarly, recurrent crops of boils and pimples and severe cases of acne have yielded readily to this treatment. The treatment having proved so uniformly effectual in many similar classes of cases, the authors tried it in other conditions where pyogenic organisms were responsible for some of the symptoms. Cases of bronchiectasis and pulmonary tuberculosis, where there is often a staphylococcic infection, have been benefited. The remedy seems to have a wide sphere of usefulness.

Treatment of Pulmonary Tuberculosis.—Noel D. Bardswell compares the results, with regard to the disappearance of bacilli from the sputum, obtained in two series of cases treated similarly, save for the use of tuberculin in one and its absence from the other series. In cases in the first stage the use of tuberculin increases the chances of freeing the sputum from bacilli by 16.6 per cent. over the chances of the patients treated without tuberculin. Much the same is seen in the group in the second stage, where the chances are some seventeen per cent. better for those treated with tuberculin. As is to be expected, the use of tuberculin in the cases of the third stage has little or no influence on the clearing of the sputum.

Some Anatomical Considerations of the Disposition of the Sciatic Nerve and Femoral Artery.—Frederic Wood-Jones suggests that with the extension of the lower extremity of man the structures upon its anterior aspect become stretched and the femoral artery and nerves become kinked over the brim of the pelvis. The sciatic nerve has a right angled bend removed from its course at the hip joint, but this is compensated for by the extension at the knee. The sciatic nerve lies upon the pelvic bones at the prominent junction of the ilium and ischium, above and behind the acetabulum, and at this point the pressure may be increased by irregularities of the acetabular margin developed in osteoarthritis. The sexual differences in the pelvic bones make this normal bony prominence a far greater interruption in the course of the nerve in the male than in the female, for in the female, with the opening out of the sciatic notch, this point is carried forward and outward. It is not improbable that this sexual difference accounts for the greater frequency of this form of sciatica in men. Pressure or tension sciatica is the true counterpart of brachial neuritis from rib pressure.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

February 1, 1913.

Etiology of Sprue.—Aldo Castellani and G. C. Low found fungi of the genus *Monilia* in the saliva or stools of all but one out of eight cases of sprue. All the species seen, however, had also been detected by the authors in the stools and occasionally in the mouths of normal individuals, as well as in patients suffering from various diseases, including typhoid fever. Rabbits and monkeys, given the fungi in moderate amount in their food, showed no definite symptoms, though agglutinins to a certain extent specific were formed in rabbits inoculated subcutaneously. The authors conclude that fungi are not the real cause of sprue, though they may constitute a secondary infection, especially in the last stages of the disease, and give rise to some of the symptoms, such as frothiness of the stools. It was found that when the patients were given large repeated doses of sodium bicarbonate the fungi decreased or disappeared, together with the frothy diarrhea and flatulence often complained of.

February 15, 1913.

Indian Oropharyngeal Leishmaniasis.—Aldo Castellani records the case of a European living in Ceylon who had ulcerations on the posterior wall of the pharynx and on the soft palate, of nine years' standing. Antisyphilitic treatment gave no relief and cauterization but little. Leishman bodies were found in the blood. Oriental sore and kala azar were excluded by the prolonged course of the affection and the absence of cutaneous lesions or marked general symptoms; neither were the ulcers frambesiform. The existence of an Indian or Asiatic type of oropharyngeal Leishmaniasis is therefore suggested.

Paramalta Fever. — P. W. Bassett-Smith reports from Hyères, in the Riviera, a case of irregular, undulant fever of two years' duration with arthritic and neurotic symptoms and moderate wasting and anemia. All reactions for ordinary undulant fever were persistently absent, but when a culture of *Micrococcus paramelitensis* later became available for test purposes, a positive agglutination reaction with this organism was noted.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

March, 1913.

Penalties of Late Diagnosis of Diseases of the Urinary Tract.—G. S. Gordon briefly considers various infections and diseases of the urinary tract and emphasizes the following points: 1. The importance of the brood of diseases which follow gonorrhea is not sufficiently recognized in their incipient stages; 2, in the urinary tract, as elsewhere in the body, it is important to know the chief microbe present in disease; 3, any obstruction to urination causes serious progressive damage; 4, blood or pus, whenever found in the urine, peremptorily calls for an explanation of its source.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 20, 1913.

Seasonal Variation of the Symptomatology of Pulmonary Tuberculosis.—N. B. Burns says that phthisical patients are apt to lose rapidly in weight and general condition in May, June, and the first two weeks of July, which season constitutes an unfavorable and critical period. They make an extraordinary recovery in weight and general condition in the month of August, which is a surprisingly favorable time of the year. August, September, January, and February are the most propitious months for obtaining successful results in treating pulmonary tuberculosis. Forced feeding in the unfavorable season seems to have availed very little.

Facts, Ideas, and Theories Relating to Success in Treatment of Joint Diseases; Visceral Ptosis and Arthritis; Mild Intestinal Toxemias and Gout.—H. W. Marshall concludes in this number his very long paper giving the results of his study of arthritic cases met with in actual practice, and his consideration of the various methods of treatment, good and bad, that had been tried upon these patients. Some of the points made are: Anatomical and physiological data are often confounded by clinicians, presumably because both are encountered always in every situation, but it should be kept clearly in mind that they are not identical, that structural and functional peculiarities of living tissues each are independent variable quantities. Variations, anatomical and physiological, are common in living tissues and not infrequently of marked degree; a fact frequently ignored or minimized, with the result that erroneous assumptions of constant or average values for variable factors lead to inaccurate conceptions and failures in treatment. Substances that are harmless ordinarily and constantly present in the circulation have their complete significance ignored or minimized because they are so familiar. Variations in amounts of comparatively harmless circulating waste products, like urates and certain metabolic products from intestinal bacterial activity, probably give rise to pathological changes in various tissues. Etiological obscurities at times are caused by combinations between two or more exceptional variations in well known conditions. Any single factor may have either large or small values independently without upsetting normal healthy relations, provided other factors vary in the same proportion and in the same direction. On the other hand, when variations among related factors occur simultaneously in opposite directions, and lead to deviations in the blood from normal healthy proportions, then pathological changes make their appearance as soon as tissue resistances are overcome. Comparatively slight variations combined in this way can produce pathological appearances in some instances. Therapeutic measures should be controlled by thorough knowledge of physiology, physiological chemistry, bacteriology, cellular biology, and anatomy, all of which may be included under the term biology. With a biological conception of each patient it is possible to estimate the defects present among the many factors that regulate the patient's health, and the only reliable way to increase efficiency of treatment is to become familiar with general biological conceptions. Pronounced lack of precise knowledge is the most serious obstacle to progress that is seen commonly among practising physicians, and the paramount importance of this defect has been forced upon the writer by his personal experience.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 22, 1913.

Opportunities for the Preservation of Hearing.—W. Sohier Bryant includes under this head systematic aural inspection for the detection of objective signs of the impairment of hearing, and the adaptation of the operative technic to include the preservation of the hearing. The former would apply to all ear diseases and defects not congenital, among them those originating in the pharynx, the nose, the Eustachian tube, external canal, the ear complications of general diseases, nervous conditions, and trauma. As to the operative technic, clinical experience has shown the writer that in mastoid operations hearing can be both preserved and improved by the exercise of more care and attention to detail. In acute aural infections, operative interference should not only restore the original activity, but in certain cases should even raise the hearing to a more efficient level. Mastoid operations demand early and careful operation and rapid convalescence. Lesions of the labyrinth capsule through endotympanic interventions, and especially by the radical operation, may easily cause suppuration of the labyrinth, and in such cases meningitis is imminent and can be averted only by a timely labyrinth operation. Rapid convalescence is assured by removing all diseased tissue, operating as aseptically as possible, and by having no devitalized parts, such as shreds of connective tissue or detritus (bone chips or threads of gauze) in the wound. In purulent middle ear inflammation there is little excuse to delay operation after incision of the membrane, if the purulent discharge persists for four or five days in conjunction with a solid mastoid as shown by a skiagram. The hearing is preserved by an early operation.

Influence of Gastroenterostomy on Gastric and Duodenal Ulcers.—A. A. Berg emphasizes the point that simple gastroenterostomy can influence pyloric or duodenal ulcer only when pyloric spasm is present, otherwise all the food passes through the patent pylorus, even though a gastroenterostomy is present and the ulcerated area is not therefore protected from trauma. After a gastroenterostomy the reflux of duodenal contents into the stomach is natural and serves to neutralize the excessive acidity, but this reflux does not hasten the healing of the ulcer. Recurrence of the ulcer will not be prevented by a gostroenterostomy. Excluding the question of malignant degeneration of a healed or healing ulcer, excision of an ulcer has no particular merit over a gastroenterostomy toward preventing recurrence or recrudescence. Pylorectomy protects against recurrence, but is attended by a higher mortality. Gastroenterostomy with pyloric exclusion favors the healing of the ulcer and has equal value in preventing recurrence as has pylorectomy, beside the great advantage of a very low mortality.

Pellagra; Pathology of Gastrointestinal Tract.—H. P. Mills prepared microscopic sections from different portions of the gastrointestinal tract of pellagrous patients, so that the findings would fairly represent the conditions present. The lesions found were those of a chronic catarrhal inflammation, but in some areas the condition was that of an acute process and closely resembled the description given by Coplin of hemorrhagic inflammation of mucous membranes. These findings would seem to support the theory that toxic products cause pellagra, whether taken with food products or of endogenous origin.

Perineorrhaphy with the Figure of Eight Suture.—Charles G. Child, Jr., has devised an operation for the repair of the perineum, in which the vaginal sutures are passed and tied in the usual manner. In the perineum a figure of eight suture is used, the first bight of which catches up the levator ani muscles, and the second bight the transverse perineal muscles and skin. In tying the sutures, care should be taken not to bring them too tightly together, to avoid cutting into the tissues and to facilitate removal. The tissues included are to be snugly approximated—no more. The writer asserts for this operation a high percentage of primary union, perfect approximation, and obliteration of all "dead" space. Fewer sutures insure less interference with the nutrition of the tissues. There are, moreover, no buried sutures of uncertain strength and doubtful sterility, with low power of resistance to infection and an uncertain period of absorbability, but removable sutures unquestionably strong, nonabsorbable, noninfectible, and absolutely sterilizable.

MEDICAL RECORD.

March 22, 1913.

Relative Value of Living or Dead Tubercle Bacilli and of their Endotoxines in Solution in Active Immunization against Tuberculosis.—Karl von Ruck believes that all students of immunity in tuberculosis agree with him, that in the light of present evidence there is no apparent advantage to be expected from the antigen for which Friedmann has made his remarkable therapeutic assertions. The writer believes also that a vaccine consisting of the extractives of tubercle bacilli in suitable combination and proportions, representing all the endotoxines essential for active immunization, is ample and sufficient. He has supplied good evidence as to its prophylactic and curative qualities, and he fails to see how it could be augmented or made more conclusive. This evidence appears in the following summary: "After the administration of a single full dose of the vaccine all the specific antibodies, including the several amboceptors, can be demonstrated in the blood serum of every case, with the whole and with all partial antigens, after the fourth or fifth day, and these antibodies suffer no quantitative diminution for periods up to twenty months. Under proper coincidence of complement fixation with the several partial antigens, such sera have a maximum bacteriolytic power *in vitro* sufficient to cause complete disintegration of the bodies of virulent tubercle bacilli to a state of granules and free fats, and *in vivo* to cause their complete destruction to a degree that after twelve to twenty-four hours no bacillary residue is demonstrable under any method of staining. The sera completely destroy all virulence of the bacillary residue in the tubes used for bacteriolytic tests *in vitro,* and properly immunized animals withstand the test *in vivo,* as do also normal animals when a proper amount of the immune serum is injected at the time when the injection is made with virulent tubercle bacilli or when the latter have been exposed to its action. Animals can also be immunized to a like degree, their sera showing the same bacteriolytic and germicidal action *in vitro* and *in vivo,* and the immunized animals resist completely a virulent infection, quantitatively many times greater than is necessary to invariably kill the control animals. In over 150 cases representing the early stage of pulmonary tuberculosis, a single full dose was invariably followed by what may be termed a clinical cure."

Treatment of Lime Starvation.—John F. Russell presents the practical suggestion that to insure the absorption of lime in an assimilable form, in these cases, we must supply lime phosphate, casein, and dilute hydrochloric acid together. No one alone is sufficient. They must all be present in the stomach at the same time. Milk and eggs to which diluted hydrochloric acid has been added, also fulfill this requirement.

Further Experience with the High Calory Diet in Typhoid Fever.—Montgomery H. Sicard is an earnest advocate of Coleman's high calory diet in typhoid fever, and his experience proves that its use is accompanied with great advantages to the patients. They have a cleaner, moister tongue, more comfortable mouth, less offensive breath, less emaciation (some show a positive gain in weight), less nervous exhaustion, which was manifested by continuous muttering and constant picking at the bedclothes, a cleaner, healthier skin, greater comfort, less diarrhea, probably lessened mortality, and fewer complications. Maintenance of weight and nutrition, the amelioration of hunger, and the lessened tedium of convalescence are marked features of high calory feeding in typhoid fever.

Medical Treatment of Appendicitis.—Beverley Robinson enters an earnest plea for great conservatism, as opposed to the prevailing, and, in his belief, erroneous judgment of frequent operation almost as soon as the diagnosis is made. The writer promulgates certain rules of treatment, judicious and safe, especially for all travelers in localities lacking experienced surgeons and modern hospital facilities. The essential features are dorsal decubitus, liquid food, enemas of warm water, egg yolk, and sweet oil, warm flannels wrung out of alcohol and water and applied to the belly, covered with rubber tissue, and renewed when dry. Codeine tablets (one tenth grain) are given every two hours until pain is notably less, then less frequently. Transport from the bed or sitting up is forbidden so long as the belly pain continues, even if there is little or no fever. Cracked ice and the best brandy (a teaspoonful frequently) will relieve nausea or weakness. Strong broths or milk, alternately or mixed together (one or more ounces every two hours) should supply nutrition when prostration is present and will preserve life for many days. Operation is absolutely forbidden during the acute period, unless a good surgeon is available and the conditions for operation are favorable. A "cure" will follow in a few days, in most cases. Later on, in the interval or quiescent period, operation may be indicated, the patient being apparently well, and may then be done at home or in a properly equipped modern hospital.

AMERICAN MEDICINE.

February, 1913.

Operations upon the Rectum under Local Anesthesia.—J. F. Saphir reports twelve cases of rectal disease operated in under local anesthesia, one under ethyl chloride spray, two under cocaine hydrochloride solution, two under beta eucaine solution, three under sterile water solution, and four under quinine and urea hydrochloride solution. Ethyl chloride spray is useful in thrombotic hemorrhoids when outside the sphincter muscle, in opening abscesses or furuncles on the buttocks or about the anus; it is contraindicated in all conditions within the rectum or above the anal or sphincteric margin. Beta eucaine solution (one tenth per cent. to one eighth per cent.) is useful in all rectal conditions, and although less toxic than cocaine, it may produce toxic effects within five or ten minutes after the operation. Cocaine solution (one tenth per cent. to one eighth per cent., never stronger) produces toxic symptoms more frequently and sooner when used about the rectum than when used elsewhere. While there is no pain during injection of solutions of cocaine or beta eucaine, or during operation, five or ten minutes after operation there may be excruciating pain, weakness, and faintness attended with a cold sweat; when using either, morphine (one fourth grain) in suppository or by hypodermic should be used, the former before, the latter after operation. Sterile water solution produces some distention pain during infiltration, but no pain during or after operation, and is preferred in mucous membrane work, but not in skin work. Quinine and urea hydrochloride solution is the writer's choice (one per cent. solution in mucous membrane work, where sloughing followed by scar tissue is desired, and one fourth per cent. to one third per cent. for use in skin work), as anesthesia is induced in from three to twenty minutes and lasts for from three to ten days.

INTERSTATE MEDICAL JOURNAL.

February, 1913.

Diagnosis of Gallstones.—Henry L. Elsner makes the point that it is for the good of the patient and of the profession that there be concerted action of the physician and surgeon. The writer is satisfied from his past experiences that the surgeon will always require the physician's knowledge of pathology and diagnosis, and possibly some of his conservatism to guide him. Together they will break loose from the extreme views of each to meet on common ground where deliberate judgment and reasoning will prevail.

Dementia præcox.—Bernard Oettinger gives an excellent clinical picture of this malady, especially in presenting details designed to depict the early symptoms—hypochondriacal, neurasthenic, hysterical, and such slight mental changes, intellectual and ethical, that together comprise the first stage of a serious disorder. Advised by the general practitioner, prophylaxis of the greatest value to the patient and his environment may be instituted, for care in a proper hospital would guard against these impulsive attempts at self destruction which are frequently the first intimation that a serious condition exists; would prevent criminal acts directed against person and property, such as arson and criminal assault; would lead to protective segregation of social delinquents with all that this means to society. On the other hand, proper institutional régime for these unfortunates not only conserves the intellectual residue, but yields a certain amount of happiness to those who retain some mental capacity by giving them suitable work and removing the stress of competition for a livelihood.

Principles of the Technic of Skin Grafting.—Arthur E. Hertzler says the preparation of the surface to be grafted should be done with a knife and not with a curette. Dry gauze should be used with pressure to control bleeding from the prepared surface, heat and moisture being avoided. Transfer of the grafts should be made without the use of moisture of any kind. When the ideal conditions for the graft are obtained, the dressing and aftercare are of minor importance. The writer covers the engrafted area with strips of gauze smeared with petrolatum, changing them after five to seven days. Daylight is the ideal dressing after this.

Poison Oak Experiments.—Edward von Adelung has employed the control experimental method which consists of applying the chosen therapeutic agent to a selected area of affected skin, employing other areas for controls. These areas should, if possible, be symmetrical. He showed that in every case the dermatitis was limited to the exact area of the applied poison and was not distributed by the body fluids. By another experiment he proved that the serous discharge from rhus dermatitis is innocuous. As to poisoning by smoke from burning poison oak leaves, he concludes that the smoke can readily carry incompletely burned particles, thus remaining toxic. Another experiment proved that the poison was nonvolatile. In the therapeutic tests, potassium permanganate, in hot solutions, alone was found curative, acting probably by uniting chemically with the toxine. Other remedies (peroxide of hydrogen, ammonia, sodium hyposulphite, etc.) tested by control methods gave negative results.

Advantages of the Noguchi Technic in the Diagnosis of Syphilis.—Florence W. Miller describes the chief advantages. The specimen of blood to be tested, one tenth the amount necessary in the Wassermann reaction, is taken from the finger, and not from a vein. Antigen made from normal beef heart, syphilitic fetus, or liver employed in the Wassermann test, is not always to be obtained. The amboceptor may be preserved on paper for an indefinite time, the Wassermann test requiring a more or less constant supply of rabbits for a satisfactory liquid amboceptor, which frequently deteriorates within several months. Less complement is required for the same amount of guineapig serum (two and one half times the number of tests may be made in the Noguchi technic). The red blood corpuscle suspension can be taken from the finger of the operator or from any other person, being more practical and economical than the keeping of sheep for that purpose. As for the Noguchi serum diagnosis of syphilis being too delicate, the main argument in its defense is that in this method one works with absolutely known quantities whose units have been formally standardized and which remain fixed.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

January, 1913.

Localized Encephalitis of Left Motor Cortical Region with Epilepsia continua. — Sigmund Krummholz presents a detailed clinical and pathological report of a case of continuous localized convulsions lasting for twenty days and ending with the death of the patient. After three days of prodromal headache and irritability, clonic contractions appeared in the right hand and later invaded the right leg and face. Only one generalized convulsion occurred. The contractions were lightninglike in character and persisted day and night. The temperature was almost normal throughout the illness. Aphasic disturbances, intermittent delirium, torpor, and stupor were the principal mental symptoms. There was motor weakness in the right arm and leg, tendon reflexes were diminished, abdominal reflexes absent, and Babinski's sign was positive on the right side. Lumbar puncture revealed the pressure of the spinal fluid to be between 130 and 180 mm. water, liquor clear, globulin negative, Fehling's positive, and very few round cells present. At necropsy the brain was found to be edematous, the lower two thirds of the left precentral convolution was firmer than normal, and the adjacent parietal region, on section, presented evidences of punctate hemorrhages. Microscopically the findings consisted of general hyperemia, small hemorrhages, and gliosis of varying degrees. The author concludes that, although the history of the case reveals no etiological factor for the disease, the pathological anatomy bears the finger marks of a toxic agent; the acute cerebral changes are characteristic of encephalitis hemorrhagica; and it is probable that the vehement gliomatous proliferation of the left motor cortical region was an essential factor in the production of the convulsions.

February, 1913.

Examination of Ductless Glands in Dementia præcox.—F. X. Dercum and A. G. Ellis, holding the view that dementia præcox is associated with a state of autointoxication, have been prompted to study pathologically eight cases of this disease with special reference to the glands of internal secretion. All the patients died of tuberculosis, an interesting point in the pathology of dementia præcox, but complicating the interpretation of the pathological findings. One of the most striking points noted was the underweight of the thyroid gland in seven of the eight cases discussed. The adrenals also presented notable variations from the normal in weight and in size; the small amount of fat in the cortical cells of the adrenals was a constant feature, probably indicating diminished functional activity. The condition of the other organs can probably be attributed to tuberculosis. In conclusion, the authors consider that "it is a remarkable fact that the almost universal cause of death in dementia præcox is tuberculosis, and if the feebleness to resistance to the tubercle bacillus is due to a fault of the adrenal system (pituitary, thyroid, and adrenals) we have reason to infer that it is one of the factors in the make up of dementia præcox. The conclusion is not justified that an abnormality of the adrenal system is the cause of the mental symptoms, but our findings are at least in keeping with the inference that anomalies of the ductless glands exist in dementia præcox."

Segmental Distribution of Spinal Root Nucleus of the Trigeminal Nerve.—Andrew H. Woods believes that the arrangement of the spinal root of the trigeminal nerve, representing the sensations of pain and temperature for the face, is segmental, analogous to that of the spinal cord, and bears no relationship to the peripheral branches of the nerve. This view is supported by the correlated clinical and pathological observations of two cases of syringomyelia which he records. His conclusions are as follows: 1. It is probable that touch and pressure sensations are conducted to the Gasserian ganglion, pass to new axones, enter the sensory root, and go directly into the chief trigeminal nucleus. Thence new axones conduct them to higher levels, across the rhaphe, and into the lemniscus. 2. Pain and temperature sensations pass from the ganglion and go through the sensory root down within the "spinal" root to the nucleus of that root. Thence new axones pass cephalad within the formatio reticularis, decussate, and finally reach the lemniscus. 3. The two cases here presented suggest that the facial area connected with the caudad point of the spinal root nucleus is a band lying along a line (from the vertex, in front of the ear to the angle of the mandible), and that each higher level of the nucleus is connected with a band of skin roughly concentric with the first, but nearer the mouth. Finally, a zone of skin around the mouth and nostrils is connected with the cephalad end of the nucleus. The fibres extending from any skin zone to the corresponding point in the nucleus may pass through all three peripheral branches of the nerve.

New Esthesiometer.—Siegmund Auerbach describes a perfected form of pocket esthesiometer which offers the possibility of testing all of the qualities of cutaneous sensation with the exception of compass points and electrocutaneous sensibility. Tactile and pain sensations are tested by a small camel hair brush and a needle respectively; pressure sense by a graduated spring; heat and cold are tested by two hollow metallic cylinders connected by a solid hard rubber cylinder serving as a handle. The recrystallizing properties of sodium acetate after being melted are utilized to maintain heat in one end of the instrument, while the other end is kept at a low temperature by filling it with crystals of ammonium nitrate and water.

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Proceedings of Societies.

SOUTHERN MEDICAL ASSOCIATION.

Sixth Annual Meeting, Held at Jacksonville, Fla., November 12, 13, and 14, 1912.

The President, Dr. J. M. Jackson, of Miami, Florida, in the Chair.

(*Concluded from page 684.*)

Effect of Antisyphilitic Remedies on the Wassermann Reaction.—Dr. William Litterer, of Nashville, drew the following conclusions: 1. From the serological point of view, injections of the biniodide of mercury gave better results, while the protiodide pills were the least satisfactory. 2. Apparently there was no very great difference serologically between the administration of salvarsan intravenously or intramuscularly in treating secondary syphilis. 3. Neosalvarsan appeared to be more efficacious than salvarsan. 4. In the primary stage of lues, especially before the appearance of a positive Wassermann and chancre excised, repeated intravenous injections of salvarsan or neosalvarsan gave promise of aborting the disease in quite a number of cases. 5. Serologically a combination of mercury and salvarsan appeared to have a distinct advantage over the administration of either of the drugs. 6. The Wassermann test as a therapeutic guide in the treatment of syphilis was paramount if one wished to carry it to a successful termination; in fact, it was the only method available of controlling the external manifestations of the disease.

Syphilis of the Eye.—Dr. Dunbar Roy, of Atlanta, said the longer he practised ophthalmology and the more extensive became his experience, the more he realized the importance of considering syphilis as the most important factor in connection with ocular diseases. Diffused interstitial keratitis was exceedingly rare in the acquired forms of syphilis, and yet a number of cases had been reported. Iritis in various forms was by no means infrequent during the secondary stage of syphilis, less frequent during the so called tertiary stages. Paralysis of the various muscles of the eye was frequently caused by syphilis. Ophthalmoplegia interna or paralysis of the sphincter of the pupil, usually unilateral, was by no means an infrequent form of syphilis. According to Alexander, three fourths of such cases were due to syphilis, while according to Uhthoff, only one fourth. Disease of the eye due to congenital syphilis frequently showed many of the symptoms which were seen in the acquired variety. Usually those cases of the congenital variety were comparatively mild because the severe ones ended fatally either in utero or soon after birth.

Syphilis of the Nose and Throat.—Dr. H. H. Martin, of Savannah, said the secondary lesions occurring in the nose and throat were interesting and sometimes troublesome, but were usually selflimited and seldom caused serious or permanent damage. They were of considerable diagnostic value and furnished fairly accurate indications of the progress or arrest of the disease. The tertiary lesions, on the contrary, played havoc with the bones, cartilages, mucous membranes, and fibrous tissues of the nose and throat, and since they often made their appearance some years after all active symptoms of the disease had disappeared, we must be constantly on our guard against them. In the nose a tertiary lesion might exhibit merely the symptoms of a bad cold, but the secretions very rapidly became purulent and offensive, and a careful inspection would reveal the lesion in the form of a more or less diffuse infiltration, or in a periosteal or perichondral abscess.

The treatment of syphilis of the nose and throat was essentially constitutional, but there were some local measures which had proved valuable in his hands, and among them the mixture of calomel and lime water, known as black wash. This could be used as a douche, a spray, or a gargle, and was essentially valuable in the specific coryza of the newborn, in ulceration, and in necrosis. The tincture of iodine was very useful in treating ulcerations when they were accessible. The secondary lesions required no local treatment and were best left alone.

Chronic Nasal Diphtheria.—Dr. Clifton M. Miller, of Richmond, reported three cases of nasal diphtheria. In one case the nasal discharge was bloodstained with a blood crust around the margin of the nares. The third case differed from the others in that the diphtheritic condition in the nose was chronic and lasted about six weeks, during which time the child had several attacks of follicular tonsilitis, which, in his opinion, were due to the mouth breathing and lowered resistance. Bacteriological examination of the throat during one of the attacks showed the absence of the bacillus of diphtheria which was present in the nasal discharge. The diagnosis in all of these cases was confirmed by bacteriological examination. All of them occurred in private practice. The circumstances surrounding the patients were good.

Treatment of Chronic Laryngeal Stenosis.—Dr. Homer Dupuy, of New Orleans, after giving a description of some specially devised intubation tubes, drew the following conclusions: 1. When a laryngeal stenosis was the result of hyperplastic changes, some form of dilatation was the most logical method of overcoming it. 2. Gradual, systematic dilatation by intubation offered very favorable prospects of success. 3. The tube with a low retaining swell and a wide head seemed to meet a want in the treatment of this form of stenosis. 4. In children, hypertrophic laryngitis was largely responsible for a chronic laryngeal stenosis. 5. In this particular affection tracheotomy was more apt to induce connective tissue changes than to effect a final cure.

Surgical Importance of the Breast.—Dr. E. Denegre Martin, of new Orleans, said that if one tenth of the time and labor expended in the elaborate operations devised for the cure of cancer had been devoted to its prevention, more women would be alive to-day to sing their praises. An important duty was the instruction of patients as to the care of the breasts. The expectant mother or nursing women should be taught how to care for the nipples, for infection through a fissured nipple would not only lead to abscess and sometimes to complete destruction of the gland, but would leave scars to light up at some future time into inoperable carcinomata. In an experience of more than 150 cases of cancer of the breast in which he had operated, three fourths being in colored women, the latter already malignant when operated upon, he was not able to-day to point out more than four of these who had lived over a period of six years, and only twelve whites. Here the percentage was larger because they were seen earlier. Every week he turned away from his clinic cases too far advanced for even temporary relief. The surgeon who picked his cases would of necessity get the best results, but the benefit should always be given to the patient, even if it meant but a short prolongation of life. The mortality from operations was less than two per cent. and his with fifty per cent. in advanced cases was less than one per cent. These statistics were improving daily, so far as cures were concerned. Still, the prevalence of cancer was on the increase, and we could and must reduce it.

Tubal or Extrauterine Gestation.—Dr. J. Hugh Carter, of Memphis, said we should operate in all cases as soon as possible, as we never knew when hemorrhage was going to take place, even after it had seemingly been stopped. The six cases he had seen, four of which were his own, operated in by himself, two being of about six weeks' duration, and the other two about four and one half months, all ended in recovery. The other two he saw while an interne at the City Hospital. One occurred at full term, the operation being done during shock. The patient died in a short time. The other one, about two months, recovered after a long convalescence from subsequent infection.

As to what operations should be done, he did not believe one could say until the abdomen had been opened. Then the operator should do whatever he thought best. Each patient and the conditions found in the abdomen must be dealt with individually. He would insist upon a careful diagnosis of each case of suspected tubal gestation as early as possible, thereby giving the patient a much better chance for her life.

Clinical Value of the Tuberculins in the Diagnosis and Treatment of Tuberculosis.—Dr. Wallace J. Durel, of New Orleans, said in his personal observation of several hundred cases, it was evident that of eighty cases which were treated previously to 1909, of all those discharged as apparently well, and who were given the tuberculin test, the test proving negative, not one relapsed, yet many of the cases showed a distinct positive reaction upon their discharge and afterward relapsed, and three died since. This evidence convinced him that repeated tuberculin tests would show whether treated and supposedly cured cases were free from any tuberculous focus, active or latent, regardless of its size or location, and that the negative reaction meant more than a mere toximmunity in such cases.

The clinical therapeutic value of the tuberculins was exemplified in the tabulated records of eighty cases of tuberculosis treated in Louisiana previous to 1909. In this report, in the first stage, thirteen cases were treated, with recovery of all, and no relapse until 1912. In the second stage, sixteen cases were treated, with recovery in ten, and arrested in one. In the third stage, thirty cases were treated, fourteen apparently well, and sixteen arrested. In 1912, one of the apparently well cases had relapsed, and one ended fatally. Of the arrested cases, three relapsed and two were fatal. Of the third stage, twenty-one cases were treated; not one got well, nine were arrested, ten were improved, and two nonimproved. In 1912, sixteen of the twenty-one cases had terminated unfavorably. These figures taught the practical lesson that the early diagnosticated cases of tuberculosis could be treated with far better and more lasting results than the advanced cases.

Surgical Complications in the Abdomen during Typhoid Fever.—Dr. Charles M. Remsen, of Atlanta, said that if they would put typhoid on a true pathological and surgical basis, view it from this standpoint, and look upon it as a potential abdominal calamity, and if they would familiarize themselves with the signs and symptoms of the normal typhoid abdomen and with each separate case, and if they would realize that with speedy operation under proper conditions that there need be little fear for the safety of their patient, and if they would make as their criterion for operation the absence of a certainty that perforation did not exist, rather than a certainty that it did exist, and if they would realize the fatal issue that was involved in delay, it was not possible, but certain, that many cases of typhoid dying from perforation, entirely unrecognized, would be reduced to a minimum, and the cases of recognized perforation would enter more and more into their true surgical sphere and be eliminated from the known causes of death in typhoid fever.

Early Tuberculosis with Especial Reference to Its Confusion with Malaria.—Dr. William Redin Kirk, of Hendersonville, North Carolina, said that without attempting to go into physical diagnosis in detail, he would like to call attention to a few points in connection with the recognition of tuberculosis in its early stage. Altered breath sounds were the rule, and not the exception in early cases. Lessened motion of the diaphragm was an early sign which William had demonstrated by the fluoroscope. It was also observed by Litten, whose shadow test was familiar; and Kronig had called attention to the fact that the motion of the lower border of the lung was diminished when the lung was involved to a small degree, while Pottinger asserted that the entire side lagged even in slight involvement of the apex. Exploration of the entire chest was always necessary, but especial care should be used in observing certain areas, the apices, front and back, the first intercostal spaces, the area under the scapula, which was partly uncovered when the hand was placed on the opposite shoulder, the area on each side of the vertebra between the scapula and the lower border of the lungs.

Rist, in a recent paper, had averred that the lower lobe was almost invariably the site of the initial lesion in children, and that the apex was involved secondarily in both children and adults, explaining that cough forced infectious material into the apex. Of the accessory means of diagnosis, he should say that search for the bacillus should be thorough, and negative cases examined repeatedly, for while finding the bacillus was the only absolute proof, a negative result was not positive evidence of the nonexistence of tuberculosis. Too often patients were assured they had tuberculosis upon this evidence alone. The general practitioner was not expected to make use of Arneth's method of differentiation of the nuclei of the neutrophiles, the opsonic index, and other more difficult laboratory means of diagnosis, but in all suspected cases he could and should use some of the tuberculin tests, Moro's, von Pirquet's, or the old method of the subcutaneous injection of Koch's old tuberculin.

Diagnosis of Plague.—Dr. R. L. Wilson, of Charleston, said that in plague work, great care should be taken in handling infected animals, tissue, cultures, and other material. Even persons accustomed to bacteriological laboratory work had to be reminded of danger as several laboratory cases of infection were on record. The principal things to look out for were fleas from animals, skin abrasions, soiling of fingers, use of pipettes, and smoking. To summarize, the principal points in diagnosis were: 1. Typical lesions especially characteristic buboes. 2. Production of the disease in animals by inoculation. 3. The unmistakable presence of the plague bacillus in smears, cultures, and inoculated animals.

Symptoms and Clinical Diagnosis of Bubonic Plague.—Dr. J. Birney Guthrie, of New Orleans, stated that the appearance of the patient sick with bubonic plague was somewhat similar to that of one under the influence of alcohol. The face was swollen; the eyes were injected. There was a general loss of coordination, staggering gait, thick and stammering speech. This speech disturbance frequently extended into convalescence, and with persistence of lymphatic enlargement and recent scars of suppurating buboes, might furnish the clew to identification of a previously unreported case. The recognition of cases of bubonic plague, where it was known to exist, presented small difficulty to the physician. It was the identification of the first cases, especially if they were of mild type which would present the severe problem in diagnosis. In a suspicious case careful and continuous observation of the superficial lymphatic glands should be maintained and puncture with the needle and examination of aspirated fluid made by smears and culture methods. Finally, let this be emphasized: The early identification beyond any doubt of bubonic plague depended upon the microscope. It was the duty of the attending physician to submit to the bacteriological laboratory slides made from the fluid aspirated from every suspicious bubo and from sputum in every case of pneumonia showing more than ordinary depression at the outset with a bright red sputum instead of the typical rusty sputum of ordinary pneumonia. The services of the public bacteriologist should be available. Possibly it might be wise to require the specimens to be submitted. The only hope of limiting an outbreak was that of a prompt diagnosis of the disease. To-day every seaport of the world was menaced by plague and the menace would be still further increased by the opening of the Panama canal. It, therefore, became the duty of every one of them who practised medicine in a seaport to keep constantly in mind the possibility of encountering the disease. To this end examination of the superficial lymphatic glands during the progress of every acute febrile case became a matter of necessary routine.

Treatment of Plague.—Dr. Isaac Ivan Lemann, of New Orleans, said unfortunately the story of the plague therapy was brief and discouraging. The mortality rate of those stricken, without previous prophylactic treatment, was still in the neighborhood of ninety per cent. Their chief and first attention must, therefore, in this disease above all others, be given to prophylaxis. Several methods of producing active immunity had been proposed. Haffkine, working in India, in 1907, proposed his well known prophylactic. This consisted of a bouillon culture of the pest bacilli, killed by heat and carbolized so as to represent a 0.5 per cent. solution of phenol. The dose of this varied from 0.5 to one c. c., and in special cases as much as twenty c. c. were given, according to Jackson. Llewellys Barker had said that adult males received three to 3.5 c. c., adult females two to 2.5 c. c., children over ten years one c. c., small children 0.1 to 0.5 c. c. of the prophylactic injected subcutaneously. The reaction varied greatly in different individuals; as a rule, there was slight fever, malaise with local swelling, and edema for twenty-four or forty-eight hours. Ten days later, a second, larger dose might be given, the size varying according to the reaction following the first dose. The protection afforded by the prophylactic was not absolute. When repeated several times it afforded a relative immunity for some months. From four to twenty per cent. of the inoculated contracted the disease, and from two to eight per cent. died. Passive immunization by means of sera derived from animals in whom an artificial immunity had been created, had been used prophylactically and therapeutically. The immunity produced by immune sera was said to last but a few days. Aside from the specific treatment the management of a case of plague was entirely symptomatic. Treatment was inaugurated with a brisk calomel purge, followed by a saline. The patient must be kept in bed in a well lighted, well ventilated room. The diet throughout the acute stage should be liquid, principally milk and water with the addition of alcohol, in cases where there was great prostration. Later a soft bland diet was permitted. In convalescence regard must be paid to the probability of change having occurred in heart muscle and in the kidney. The buboes must be dealt with surgically.

As to the treatment of pneumonic plague, the authorities contented themselves with the vague suggestion that expectorants might prove useful. They laid much more stress upon the high degree of contagiousness of pneumonic plague and the great care with which these patients and their sputa must be handled in order to prevent the spread of the disease.

Tamponade Treatment of Accessory Sinuses and Its Effect on Intraocular Inflammation.—Dr. William S. Manning, of Jacksonville, said it was particularly in so called idiopathic cases of those in which there was apparently no cause for the inflammation that he found this treatment of special value. In these cases the ordinary methods were almost valueless. He was thoroughly convinced that chronic frontal sinus and ethmoidal infection were the sole cause of many of these so called idiopathic cases of choroiditis and retinitis. A tampon, of such length and size as would snugly fit between the middle turbinated body and the septum, and extend from the exterior portion of the nose to the sinus posteriorly, was first saturated with an aqueous solution of argyrol, forty grains to the ounce and then introduced. Through capillary attraction, it would deplete the proximate soft tissues and drain the ethmoid cells and other sinuses. In order to drain the maxillary sinuses, these tampons should be placed under the scroll of the middle turbinated body and above the upper part of the inferior turbinated body. It was his custom to allow them to remain *in situ* for from twenty minutes to one hour. The first effect was congestion of the conjunctiva, sneezing, and nasal discharge. On removing the tampons when infection was present, they would be found to be bleached on the upper surface, and sometimes throughout, the bleaching being in proportion to the amount of infection. He had treated by this method five severe cases of idiopathic retinochoroiditis in which blindness threatened, and in every case had obtained splendid results. He had treated by this method twenty-six cases of iritis, and marked improvement followed in all except two, in which syphilis was an etiological factor. By far the largest class of cases that he had treated, however, had been those of obscure frontal headache variously diagnosticated as malaria, gastric, refractive, etc.

Gangrenous Tonsil.—Dr. U. S. Bird, of Tampa, Florida, said that so rare was this disease that it was not a textbook nor reference book subject. Five cases only could be found in medical literature, all of which were fatal. In addition to these he now personally reported five cases, four in patients of his own, and one in the practice of a brother physician. These five cases, as compared to the five previously reported, suggested some interesting conclusions. In the first five cases the mortality was 100 per cent. The cases that he reported included two deaths, but neither of these was due to gangrenous tonsil, which in these cases appeared to be an intercurrent condition, more or less due to the general depression that had rendered them vulnerable to such attacks. In his fourth case only were operative measures indicated. When a small area was involved and the general condition was good, instrumentation was indicated; but in great depression and extensive involvement, two conditions that seemed to be associated, active interference might result unfortunately. Only one of his cases was of interest in connection with pathology, the noma bacillus being present. Unless his experience proved to be unique, it might be assumed that gangrenous tonsils, and the recoveries therefrom, were more observed than the literature suggested.

Fatal Thrombophlebitis of Orbits by Ozena Bacillus.—Dr. M. Feingold, of New Orleans, said that in fact many an affection of the eye and the orbit was dependent upon a primary disease of the nose and its adjoining cavities, had well been recognized, but certain points needed further discussion. He saw in consultation a girl of fifteen years who had an edema of the upper and lower lid, so extensive that the eye could not be opened voluntarily. There was a hard infiltration through the upper lid to the depth of the orbit. The temperature was about 101° F. The patient denied that there had been any previous affection of the nose. An operation was immediately performed, and an extensive focus of sticky, grayish, gelatinous pus was found and evacuated. Necrotic bone was also discovered in the orbit. The patient stood the operation well and spent a comfortable night. The next day, however, pulse and temperature gradually rose and the patient complained of pain in the head. Probing revealed no further focus, but the edema on the right side had increased and dilated veins were visible over the forehead and nose. Atrophic retinitis was found in each side, with crusts and pus in the middle meatus under them. On the following day the Killian operation was performed, and pus was found in the frontal and sphenoidal sinuses. After the operation the patient gradually grew worse and died on the night of the following day. The temperature had reached 106.1° F. with profuse perspiration and very labored respiration. The pus was found to contain a pure culture of *Bacillus mucosus capsulatus.* No post mortem examination was obtained. The interesting points in the case were that a sinus affection might be latent for some length of time, and that orbital affection might be brought about by the affection of the adjoining nasal cavities.

Cæsarean Section.—Dr. John M. Wilson, of Mobile, said the most common indication for Cæsarean section was a contracted pelvis, but there might be other causes, such as uterine myoma, situated at the lower part of the uterus, and ovarian cyst with adhesions, cancerous or undilatable cervix. This operation might be employed in some cases of placenta prævia, as well as in some cases of eclampsia with a very rigid cervix. The success of Cæsarean section depended greatly upon the time when it was performed, the best results being obtained in those cases that could receive the proper preparation and operated on just before or at the beginning of labor. Those cases gave the worst results that had been in labor some time and had had repeated examinations made on them, which were likely to produce, as stated before, an exhausted patient and an infected uterus.

Fee Splitting.—Dr. Stuart McGuire, of Richmond, Va., introduced the following resolutions concerning fee splitting:

Whereas, it is stated that among some physicians there had developed a pernicious custom of commercializing the most intimate and sacred confidence committed to their honor, by referring their patients who needed special or expert treatment to specialists or surgeons, who financially remunerated them for this reference, either by paying a commission or by dividing with the regular physician their fees as specialists or surgeons; and

Whereas, it was prejudicial to individual physicians and to the medical profession at large to allow such injurious rumors to circulate unproved or unchallenged; and

WHEREAS, it was the duty of the profession to protect the honorable position won by generations of faithful, unselfish service; there it was

Resolved by the Southern Medical Association, that they earnestly condemned such dishonorable dealings on the part of any one professing the high calling of medicine; and

Resolved that they urged all State and county medical organizations vigorously to oppose such dishonorable dealings and to appoint investigating committees whose duty it should be to learn whether any of their members were thus dishonoring their calling and if any were so accused to summon them before a tribunal of their professional brethren to be acquitted or convicted of this crime against honor and humanity; and

Resolved that no guilty doctor, whether donor or recipient of such a fee or commission in any way, shape, or manner should be allowed to escape a suitable penalty, such as private reprimand, temporary suspension, or public expulsion; and

Resolved that these resolutions be spread upon the minutes of this association and that a copy thereof be forwarded by the secretary of every State and county medical organization within the geographical limits defining eligibility to membership in this association.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Frank A. Jones, of Memphis, Tennessee; first vice-president, Dr. Stuart McGuire, of Richmond, Virginia; second vice-president, Dr. J. D. Love, of Jacksonville, Florida; secretary-treasurer, Dr. Seale Harris, of Mobile, Alabama.

Lexington, Kentucky, was selected as the place for holding the next annual meeting.

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Letters to the Editor.

THE LATEST ATTEMPT TO REFORM THE MEDICAL PROFESSION IN NEW YORK STATE.

BUFFALO, *March 31, 1913.*

To the Editor:

Dr. Augustus S. Downing, first assistant commissioner of education, has sent me a copy of Bill 869 now before the Public Health Committee of the Senate, which bill, he asserts, is, it seems to him, "vital to the integrity of the practice of medicine in this State."

The bill provides that the license of a physician may be revoked for certain acts of unprofessional conduct, one of which is "wilfully betraying a professional secret." If, therefore, a physician on the witness stand in court under cross examination answers a question involving a professional secret, such as the infection of a wife by her husband, his license can be revoked. Should he refuse to answer, he is liable to punishment for contempt of court. Furthermore, when a physician who has given a death certificate naming "rheumatism," "narasmus" or "dropsy" as a primary cause of death, is asked to furnish a more accurate certificate, he can contend that to change "rheumatism" into "chronic nephritis," or "marasmus" into "tuberculosis of mesenteric glands," etc., would render him liable to loss of his license. Should this clause become law, fraudulent death certificates will become more common than they now are, and, in my opinion, life insurance companies will be cheated more often than they are at present. Again, if a physician knows that a male patient suffering from a venereal disease intends to marry, he ought not, in the interest of the public health, to be debarred by statute from warning the prospective wife.

Any law which will put out of business the advertising gonorrhea and syphilis "specialists" would confer a great benefit upon the community. But the United States Constitution must be obeyed. Bill 869 proposes to revoke the licenses of all physicians who advertise that they can "cure diseases or defects of the sexual organs." First, what constitutes a *sexual* organ in the legal sense? Is a prolapsed uterus a defect of a sexual organ? Is a hypertrophied prostate? Nobody (except a Christian scientist) would deny that the uterus is peculiar to one sex and the prostate to the other. These matters, however, are unimportant because the clause referred to in the proposed statute is discriminatory and, for that reason, unconstitutional. If one class of physicians is forbidden to advertise, all physicians must be forbidden to do so. Moreover, although excellent results might be obtained by prohibiting all physicians from advertising, the constitutionality of this procedure is doubtful.

Doctor Dowling's pet bill, as printed, is unconstitutional, ambiguous in meaning, and impracticable. He should try again, and this time he should obtain assistance from somebody who knows both medical and legal terms.

LAWRENCE IRWELL, M. A., B. C. L.,
Consulting statistician.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Reference Handbook of the Medical Sciences. By Various Writers. First and Second Editions Edited by ALBERT H. BUCK, M. D. Third Edition, Completely Revised and Rewritten, Edited by THOMAS LATHROP STEDMAN, A. M., M. D. Complete in Eight Volumes. Volume I. Illustrated. New York: William Wood & Co., 1913. Pp. viii-928.

The first volume of the first edition of this work appeared in 1885, the first volume of the second edition was published in 1900, and the first volume of the third edition has just been issued. In general appearance the new volume is an improvement on its predecessors, the binding, paper, and printing being more attractive. The general plan of the work is the same as before, the chief new feature being the inclusion of several short biographical articles of some of the more noted investigators in medicine and science. This is a distinct gain to the work, and one which will be welcomed by all readers. There are several new contributions of special interest, among which may be mentioned the articles on adolescence, age, albuminuria, anaphylaxis, pernicious anemia, secondary anemia, anesthesia and analgesia, general anesthesia, angina pectoris, animal experimentation, medical anthropology, anthropometry, arrhythmia, acute and chronic arthritis, association, astereognosis, and hygienic relations of the automobile. The new material, taken as a whole, is of a high order of merit, and we wish there were more of it. Unfortunately, a large part of the volume is taken up with the matter that appeared in the second edition, and in some cases even in the first edition. The first and third articles, on the surgical anatomy of the abdomen, are practically reprinted from the former edition. The same may be said of the article on abdominal injuries. Thus, except for the insertion of a few B. N. A. terms and the addition of a few lines here and there, the first twenty pages contain nothing new. Indeed, if we exclude the two and a half pages on abdominal section, the first forty pages contain hardly one page of new material. The article on abortion has certainly done yeoman service; with a few trivial alterations it is just as it appeared in the first edition as the work of our late editor, Frank P. Foster; it also appeared in the second edition over the same honored name; here, it is credited to a new writer, who has done almost nothing except to substitute his own name for that of the scholar who wrote the article. Doctor Foster's article on amenorrhea has been similarly listed, adopted, and appropriated as it appeared in the first and second editions of this work. This is certainly a cheap and easy way to earn distinction as an "author," but is it allowable? We cannot get the viewpoint of a man who appends his name to, and so claims as his own, some eight columns of printed matter, of which he himself has written only about a dozen or twenty lines. The articles on criminal abortion, therapeutic abortion, abscess, and absorption, are practically reprinted from the former edition—possibly some half dozen lines have been added to them. Other articles of which the same may be said, are acanthosis nigricans, active constituents of plants, adenoma, agenesis, etc. So we might go on. Of the first 150 pages probably over one hundred are taken from the former edition. Our space will not allow us to go through the remainder of the volume, and we will draw attention to only one more article, that on the important subject of amputation. This article of nearly forty pages was written for the first edition, about thirty years ago; it received a few slight additions in the second edition, and again appears with the addition of about a couple of pages of new matter. Not only the text, but the illustrations, have again been pressed into service. Of the seventy-seven cuts in the third appearance of this article nearly seventy are to be found in the 1885 edition. These illustrations, showing the operator and his assistants with coat sleeves and cuffs slightly turned back, will certainly give foreign readers a very antiquated and erroneous idea of American methods of asepsis. These cuts, with several others, have a decidedly antique appearance, and should have been destroyed years ago; they are entirely out of place in a book with the pretensions of the *Reference Handbook*. The claim on the title page that this edition has been "completely revised and rewritten" does not seem to be borne out by the facts. The article on amputation looks as if much of it had not been read by either author or editor. "*Early in the last century* J. L. Petit originated the first decided improvement . . ." (First edition 1885, page 143; third edition 1913, page 263). "Amputation by a single circular incision down to the bone has since been revised by Louis and Brünninghausen *in the beginning of our century* . . ." (First edition, 1885, page 143; third edition, 1913, page 263). Some one must have been asleep for a hundred years. Again; "*Nearly a year ago* a lad of eighteen had his left arm caught in the belt of a wheel" . . . (First edition, 1885, page 144; third edition, 1913, page 265. All the italics are ours.) Time apparently moves with leaden feet in Cincinnati and New York.

Where there is so much matter repeated from edition to edition we can only conclude that the original articles were of such superlative merit that improvement is considered impossible, or that but little advance has been made in medical science during the past fifteen or thirty years, or that the publishers find it cheaper to reprint matter of which they hold the copyright than to pay for new matter. We can only surmise which is the true explanation. Owners of the second edition will probably find that they already have considerably more than half of the present volume; they should therefore hesitate before indulging in the possession of a work which can hardly be said to live up to the promise of the prospectus that it is "almost completely rewritten."

Surgical Operations with Local Anesthesia. By ARTHUR E. HERTZLER, M. D., Surgeon to the Halstead Hospital, Halstead, Kansas. New York: Surgery Publishing Company, 1912. Pp. ix-205. (Price, $2.)

This work, as the author points out, is intended for the general practitioner and for the surgeon who works far from the conveniences of a hospital. Those whom the author had in view have reason to be grateful for an admirable little book, which as far as it goes is authoritative, for Doctor Hertzler describes nothing that he has not accomplished personally. The style is clear and simple, the 104 illustrations, semidiagrammatic in nature, are ample, and the book itself, with its handsomely rubricked hints in the margin, is a most creditable production of the publishers.

Diet and Hygiene in Diseases of the Skin. By L. DUNCAN BULKLEY, A. M., M. D., Physician to the New York Skin and Cancer Hospital, etc. New York: Paul B. Hoeber, 1913. Pp. xiii-194. (Price, $2.)

This volume contains a series of six clinical lectures delivered at the New York Skin and Cancer Hospital. These lectures are an epitome of the author's personal views and experiences along the lines of diet and hygiene in diseases of the skin, as observed mainly in private practice, augmented, however, by the scientific support of the latest literature on the chemistry of foods and nutrition. With the premise that the rebelliousness and recurrence of many cutaneous affections indicate some underlying cause, he takes up the question of faulty metabolism and autointoxication and their relation to skin lesions, errors in diet and their mode of operation, and the elements affecting digestion, the dangers of an excess of nitrogen in the food, and the danger signals exhibited by the skin. After a consideration of the various articles of diet and their relation to skin diseases, the author discusses in a general way the principles of diet in the various cutaneous disorders, together with the importance of proper hygiene. In a well filled appendix practical and definite dietaries are outlined, in which are included a great diversity of cereals and other vegetable products.

The subject matter in this volume supplements the information usually found in the various standard works on diseases of the skin.

Treatment after Operations. By WILLIAM TURNER, M. S., F. R. C. S., Senior Surgeon to the Dreadnought Seamen's Hospital, Greenwich; and E. ROCK CARLING, B. S., F. R. C. S., Surgeon to the Dreadnought Seamen's Hospital, Greenwich; with a Chapter on the Eye by L. V. CARGILL, F. R. C. S., Senior Ophthalmic Surgeon and Lecturer in Ophthalmology, London School of Tropical Medicine, etc. London: University of London Press, 1912. American Agents, Oxford University Press, New York. Pp. x-247. (Price, $3.75.)

This is a very good book, particularly well adapted for nurses and hospital internes, but useful also to all practitioners who only occasionally have to conduct the aftertreatment of a surgical case. Beginning with the management of the sick room, and of patients recovering from a general anesthetic, the aftertreatment of a multitude of operations on all parts of the body is presented in careful detail. A very commendable point is that the individual practices of the writers' are presented, rather than a collection of the opinions of others, for they state at the outset that they have made little reference to other books. This gives a certain freshness to the writing, and a weight to their opinions as the result of personal experience, although experienced surgeons and nurses may find some things to criticise. It is not to be expected indeed that the details will conform in every respect to those observed in every hospital, for the methods of no two hospitals and of no two surgeons agree in every detail. But this is a good guide to those who need one, and those who do not may gain from a perusal of its unhackneyed directions. The final chapter, on the aftertreatment of operations on the eye, is open to the same line of critcism, but is an excellent addition to the work.

Die akute allgemeine Miliartuberkulose. Von Prof. Dr. G. CORNET, in Berlin und Reichenhall. Zweite, Auflage. Wien und Leipzig: Alfred Hölder, 1913. Pp. 79.

An article by Doctor Cornet on tuberculosis needs little recommendation. In this contribution of sixty-five pages to Nothnagel's system of medicine the author gives a clear picture of the various phases of this usuallly rapidly fatal form of tuberculosis, one that may occur at any age, old or young. In various chapters are presented the etiology, pathological anatomy, symptoms, course, diagnosis, and prognosis; and a final, but very brief one, dealing with prophylaxis and treatment. This treatise is a very good one and is of added value on account of the many references to the literature.

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Meetings of Local Medical Societies.

MONDAY, *April 7th.*—Clinical Society of the New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association (annual).

TUESDAY, *April 8th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Medical Society of the County of Schenectady; Practitioners' Club of Jersey City; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine (Section in Medicine); New York Obstetrical Society; Jamestown Medical Society; Rome, N. Y., Medical Society.

WEDNESDAY, *April 9th.*—New York Pathological Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Richmond County Medical Society; Dunkirk and Fredonia Medical Society.

Thursday, *April 10th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers; Society of Sanitary and Moral Prophylaxis; Auburn City Medical Society; Buffalo Ophthalmological Club; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown; West Side Clinical Society, New York.

Friday, *April 11th.*—New York Academy of Medicine (Section in Otology); Society of Clinical Serology, New York; New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-Internes of the German Hospital, Brooklyn; Saratoga Springs Medical Society; Society of Alumni of St. Luke's Hospital (annual).

Saturday, *April 12th.*—Therapeutic Club, New York.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending March 19, 1913:

Banks, C. E., Senior Surgeon. Granted one day's leave of absence, March 12, 1913. **Fox,** Carroll, Passed Assistant Surgeon. Granted seven days' leave of absence, en route to Washington, D. C. **Francis,** E., Surgeon. Granted two days' leave of absence, March 5th and 6th, under paragraph 191, Service Regulations. **Krulish,** E., Passed Assistant Surgeon. Directed to return to Juneau, Alaska, and continue his duties under the direction of the Bureau of Education, Department of the Interior; granted fourteen days' leave of absence en route to Juneau, Alaska. **Kucera,** J. F., Acting Assistant Surgeon. Granted twenty-two days' leave of absence from February 28, 1913. **Markoe,** W. W., Acting Assistant Surgeon. Leave of absence for thirty days from February 1, 1913, amended to read "twenty-four days' leave of absence from February 1, 1913." **Mullan,** E. H., Passed Assistant Surgeon. Granted seven days' leave of absence, on account of sickness, from February 26, 1913. **Ridlon,** J. R., Passed Assistant Surgeon. Granted one day's leave of absence en route to station. **Stimpson,** W. G., Surgeon. Directed to proceed to Marcus Hook, Pa., for the purpose of looking into the quarantine inspection of vessels arriving upon the Delaware River. **Sundwall,** John, Assistant Surgeon. Granted leave of absence, without pay, from December 2, 1912, to July 1, 1913. **Terry,** M. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from April 1, 1913. **Walker,** W. S., Acting Assistant Surgeon. Granted two days' leave of absence, without pay, March 7 and 8, 1913.

Boards Convened.

Boards of medical officers convened for the physical examination of officers of the Revenue Cutter Service to determine their fitness for promotion, as follows:

At the Marine Hospital, Stapleton, N. Y., Monday, April 7, 1913, at 11 a. m. Detail for the board: Senior Surgeon H. W. Austin, chairman; Passed Assistant Surgeon William M. Bryan, recorder.

At the Marine Hospital office, Seattle, Washington, Monday, April 7, 1913, at 11 a. m. Detail for the board: Surgeon B. J. Lloyd, chairman; Acting Assistant Surgeon F. R. Underwood, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending March 29, 1913:

Darnall, M. H., Lieutenant, Medical Reserve Corps. Relieved from active duty on March 21, 1913. **Fauntleroy,** P. C., Major, Medical Corps. Ordered to proceed to Columbus, Ohio, and report to the Governor of Ohio for duty with flood relief work. **Goldthwaite,** Ralph H., Captain, Medical Corps. Upon arrival in the United States will proceed to Fort Hamilton, N. Y., for duty. **Hutton,** P. C., Major, Medical Corps. On leave in Chicago, will proceed to Columbus, Ohio, and report to Major Powell C. Fauntleroy for duty pertaining to flood relief work. **Levanture,** L. A., First Lieutenant, Medical Reserve Corps. Upon arrival in the United States, will proceed to Fort Sam Houston, Texas, for duty. **Poust,** Luther R., First Lieutenant, Medical Corps. Relieved from temporary duty in the Southern Department and from duty at Fort Riley, Kansas, and will proceed to the Army General Hospital, Fort Bayard, N. M., for duty, relieving Captain George H. Scott, Medical Corps, who will proceed to Fort Jay, N. Y., for duty. **Priest,** Howard, First Lieutenant, Medical Corps. Will proceed to his home and is relieved from active duty at Fort George Wright, Washington; leave of absence granted for one month and twelve days. **Simpson,** J. A., First Lieutenant, Medical Reserve Corps. Upon arrival in the United States will proceed to Fort Moultrie, S. C., for duty. **Wilds,** Robert H., First Lieutnant, Medical Reserve Corps. Ordered to active duty in the service of the United States, on account of an existing emergency, and will report to the Commanding Officer, Fort Leavenworth, Kansas, for duty.

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Births, Marriages, and Deaths.

Married.

Baker—Weldie.—In New York, on Saturday, March 15th, Dr. Carroll Royal Baker, Medical Corps, United States Army, and Miss Florence M. Weldie. **Clark—Bronson.**—In Onondaga, N. Y., on Wednesday, March 26th, Dr. Howard Fitzgerald Clark, of Syracuse, and Miss Lillian Belle Bronson. **Golly—Dingman.**—In Mount Forest, Ontario, on Tuesday, March 25th, Dr. Joseph Lloyd Golly, of Rome, N. Y., and Miss Marion A. Dingman. **Mosher—Clark.**—In Boston, on Saturday, March 22d, Dr. Harris Peyton Mosher and Miss Helen A. Clark. **Novak—Rogers.**—In Boston, on Monday, March 24th, Dr. Emil Novak, of Baltimore, and Miss Elizabeth Grace Rogers.

Died.

Beede.—In Auburn, Me., on Friday, March 21st, Dr. Joshua W. Beede, aged eighty-one years. **Bristow.**—In Brooklyn, N. Y., on Wednesday, March 26th, Dr. Algernon Thomas Bristow, aged sixty-two years. **Chamberlin.**—In New York, on Saturday, March 29th, Dr. Frank Warren Chamberlin. **Currey.**—In Beverly, N. J., on Monday, March 24th, Dr. Joseph Currey. **Dolph.**—In Sodus, N. Y., on Wednesday, March 26th, Dr. Benjamin VanEtten Dolph, aged thirty-eight years. **Francis.**—In Montclair, N. J., on Saturday, March 29th, Dr. Richard Pearce Francis. **French.**—In Natchez, Miss., on Thursday, March 20th, Dr. James Clement French, aged fifty-eight years. **Hayes.**—In Somersworth, N. H., on Friday, March 21st, Dr. John Alfred Hayes, aged seventy-four years. **Hazeltine.**—In Clarksville, Mich., on Tuesday, March 18th, Dr. Lewis Hayward Hazeltine, aged seventy-five years. **Lapointe.**—In Biddeford, Me., on Sunday, March 23d, Dr. Jovite A. Lapointe, aged sixty-nine years. **McClellan.**—In Philadelphia, on Saturday, March 29th, Dr. George McClellan. **Reber.**—In Reading, Pa., on Wednesday, March 19th, Dr. Mayberry S. Reber, aged seventy-five years. **Saeger.**—In Allentown, Pa., on Monday, March 24th, Dr. Luther Jacob Saeger, aged thirty-five years. **Shupe.**—In Connellsville, Pa., on Saturday, March 22d, Dr. Marcellus B. Shupe, aged fifty-six years. **Stedman.**—In Denver, Colo., on Saturday, March 22d, Dr. Arnold Stedman, aged seventy-four years. **Stewart.**—In New York, on Saturday, March 29th, Dr. Hugh Angus Stewart, aged thirty-one years. **Sugg.**—In Clinton, Iowa, on Friday, March 21st, Dr. John F. H. Sugg, aged sixty-eight years. **Taylor.**—In Richmond, Ky., on Thursday, March 20th, Dr. T. J. Taylor, aged sixty-four years. **Trotter.**—In Yonkers, N. Y., on Friday, March 28th, Dr. Richard R. Trotter, aged sixty-five years. **Van Gieson.**—In New York, on Monday, March 24th, Dr. Ira Van Gieson, aged forty-seven years. **Young.**—In Newark, N. Y., on Wednesday, March 26th, Dr. Joseph Coddington Young, aged sixty-five years.

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Communications.

POLIOMYELITIS AND VARIOLA

A Discussion of Their Etiology.

By Frederick Proescher, M. D.,
Pittsburgh.

POLIOMYELITIS.

The successful transmission of acute poliomyelitis to monkeys by Landsteiner and Popper (1), Flexner and Lewis (2), Landsteiner and Levaditi (3), Leiner and Weisner (4), and Knopfelmacher (5), has made possible the experimental study of this disease. Poliomyelitis of the monkey is clinically, pathologicoanatomically identical with human poliomyelitis, as has been shown by the excellent work of Flexner and Lewis and their coworkers. The virus is constantly found in pure organic cultures in the central nervous system. It is seldom found in the large internal organs. It belongs to the easy filterable viruses. It passes the Berkefield filters V and N, Chamberland, Reichel and Pukall filters (Landsteiner and Levaditi, Flexner and Lewis, Leiner and Weisner).

This proves that it does not belong to the common microorganisms, and that the microorganisms found from time to time with the ordinary staining and cultivation methods were secondary infections. To a certain extent, the virus is resistant to freezing and drying and to glycerin. Peculiar cell inclusions as in rabies are found in the nerve and glia cells of the spinal cord of infected human beings and monkeys (Bonhoff, Proescher). The biological properties are therefore similar to those of the virus of rabies and may have the same staining properties.[1]

With methylene azure carbonate (6) I found a great number of small cocci in smears of the spinal cord from a case of human poliomyelitis. To confirm these findings, I examined the central nervous system of monkeys inoculated with poliomyelitis virus. For the virus for experimental purposes, I am indebted to Professor Flexner, of Rockefeller Institute.

Two monkeys were inoculated intracerebrally. They were killed with ether during the paralytic stage. The brain and spinal cord were removed under aseptic precautions and different parts of the same were at once emulsified and inoculated in numerous bouillon-agar and serum tubes. Anaerobic cultures were made in glucose agar. All the culture media remained entirely sterile after incubation of several days at 37° C.

Thin smears were made from the emulsified brain and cord on clean cover glasses. The smears were fixed in methyl alcohol and stained from one half to two hours in a one per cent. carbolmethylene azure carbonate solution (0.1 gramme azure carbonate Unna-Grüebler to ten c. c. distilled water and 0.1 c. c. concentrated carbolic acid); then washed in water and when necessary differentiated in equal parts of acetone and alcohol and mounted in Damar balsam. The following microorganisms were found:

Extremely small cocci stained pale blue, deep blue, or metachromatic violet. These were on the limit of visibility (0.1 micron), appearing single or in chains or groups. Deep blue diplococci shaped like gonococci, approximately 0.2 micron in diameter; short, thick, oval bacilli, about 0.1 micron long, in form of diplobacilli, and single ones, one to two micron long, stained deep blue: slender bacilli. about two micron long, stained pale blue; a spirochete form, from three to five micron long, slightly curved, and stained pale blue. The bacilli are the predominating form. The virus is extracellular and intracellular and intranuclear.

So far, the following method has proved the best for staining the microorganism in sections: The tissue is fixed in concentrated bichloride solution for three to six hours at 37° C. The tissue is then washed in running water for twenty-four hours, immersed in iodine solution[2] for twenty-four hours, then immersed in ninety-six per cent. alcohol until all the iodine is washed out, and imbedded in paraffin in the ordinary way.

Before staining, the thin sections are immersed for ten minutes in a solution of potassium iodide (2 grammes + 100 c. c. distilled water + 3 c. c. Lugol's solution), then washed in water and immersed in 0.5 per cent. sod. thiosulphate until the iodine color fades entirely. They are then washed several times in distilled water, stained with carbolazure carbonate solution for one half hour, washed in water, dried with filter paper, immersed in ten per cent. pyridine solution (pyridin purissimum) for three to five minutes, washed in water, dried

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[1] In rabies were found: Barely visible small round cocci, either violet or blue; their diameter is approximately less than 0.2 micron: diplococci 0.3 to 0.5 micron in diameter, some of them like gonococci; thick oval bacilli about 0.5 micron long; slender bacilli, straight or slightly bent, their ends thinner than the body, similar to the fusiform bacilli and 1.5 micron long, 0.1 micron thick; thick bacilli with blunt ends, 2.5-micron to 3 micron long and 0.3 micron thick, stained deep blue; bacilli, isolated or in clumps, about 1.5 micron long, stained metachromatic; curved filaments 2 to 3 micron long. some with cocciforms on one end or the centre of the filament; slender bacilli about 3 micron long, ends slightly bent, others decidedly curved and some of these forms segmented; also straight, thick bacilli 2.5 to 4 micron long, ends either square or slightly rounded, homogeneous, stained deep blue; a few spirochetes, 2 to 7 micron long with wide turns and stained pale blue.

[2] One half gramme potassium iodide is dissolved in 5 c. c. water plus 0.2 gramme iodine dissolved in 45 c. c. of ninety-six per cent. alcohol. This mixture is diluted half with ninety-six per cent. alcohol.

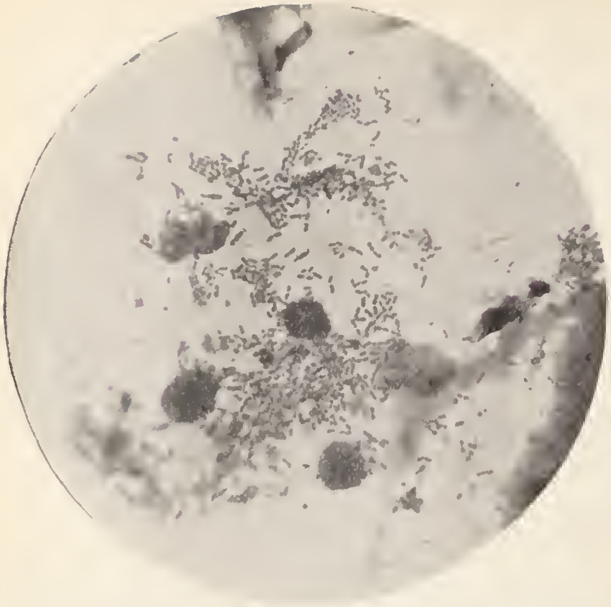

FIG. 1.—Poliomyelitis virus. Flexner. Smear of spinal cord. Methylene azur. Ocular 4, oil immersion 1/12. Showing extracellular and intracellular bacilli forms.

well with filter paper, washed in absolute alcohol for one half to one minute. Clear in xylol and mount in Damar balsam. With this method counterstaining is not necessary.

The neuroglia are stained pale or light blue, the ganglion cells deeper blue with well differentiated nuclei. The microorganisms appear deep blue, intracellular, intranuclear, and between the nerve fibres and the neuroglia mesh work. They seem to be very irregularly distributed and are found in clumps. Sometimes many sections must be examined to find them.

The presence of the spirochete indicates that the virus may travel actively inside the nerve fibres, as illustrated by the injection of the virus into the larger peripheral nerve trunks, and also by Rosenau, who demonstrated that the artificially infected stable fly, through its bite, can transmit the disease to monkeys. The virus has never been demonstrated in the blood, and it is therefore probable that on being implanted through the bite of the fly, the virus travels along the nerve fibres.

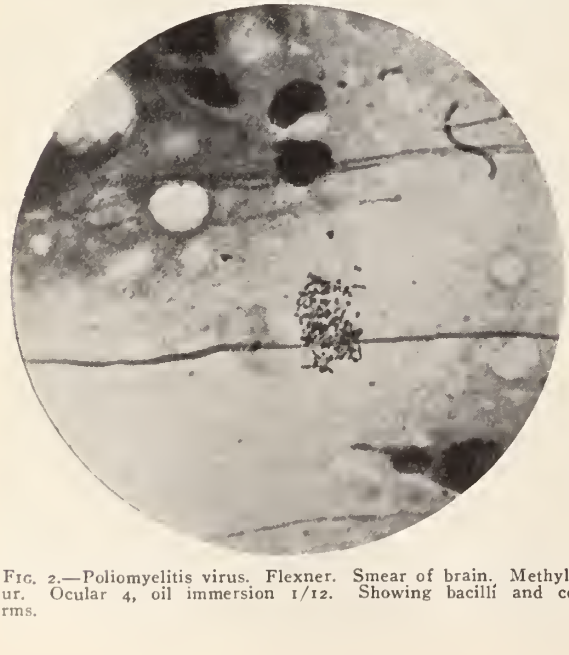

FIG. 2.—Poliomyelitis virus. Flexner. Smear of brain. Methylene azur. Ocular 4, oil immersion 1/12. Showing bacilli and cocci forms.

The general opinion as to the ordinary mode of infection, is that the virus travels from the nasal mucous membrane through the lymph vessels which accompany the nerve fibres of the olfactory nerve, through the lamina cribrosa into the arachnoidea. into the brain substance and spinal cord. But I think it may be that the virus travels actively through the olfactory nerve into the central nervous system and is not passively carried through the lymph stream.

CULTIVATION OF THE VIRUS.

Many efforts have been made to cultivate the poliomyelitis virus. Flexner and Lewis and Levaditi inoculated the filtrates from spinal cord emulsion into bouillon to which rabbit or monkey serum was added. The bouillon became cloudy after several days' incubation at 37° C., but on reinoculation in the same culture serum, the cloudiness was observed only twice. The proof of these being true cultures has not been given. Levaditi was able to find round or oval and sometimes groups of very small bodies in the cloudy fluid with Loeffler's mordant and Giemsa stain.

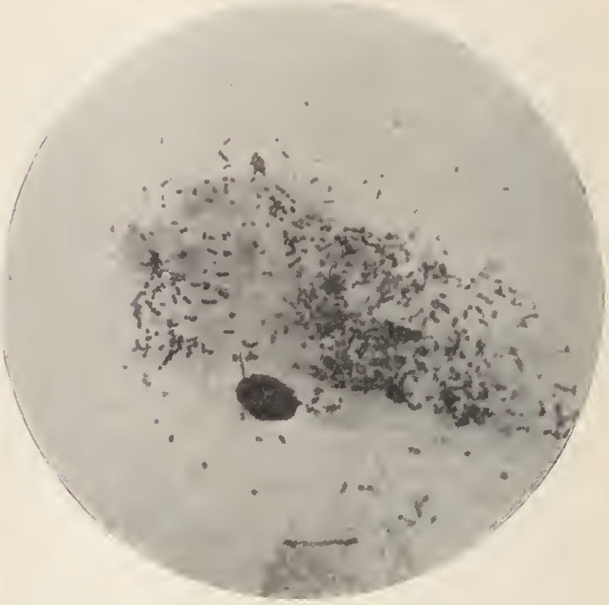

FIG. 3.—Poliomyelitis virus. Flexner. Nerve cell filled with microorganisms. Methylene azur. Ocular 4, oil immersion 1/12.

On account of the extremely small size of these bodies, it is a question whether they were stained precipitates or cocci identical with those which I found with methylene azure.[3]

Flexner and Noguchi (7) have recently resumed their efforts toward the cultivation of poliomyelitis virus. They used ascitic agar or brain extract, to which fragments of sterile rabbit kidney were added and cultivated under anaerobic conditions. In the first medium no growth was perceived, but in the second, after several days, minute colonies showed, clouding the tubes. The colonies consist of globular or globoid bodies which average from 0.15 to 0.3 micron in young cultures, and are arranged in single, double, short chains and masses. In older cultures, bizarre forms were noted. With Giemsa solution, they stained reddish violet, and appeared to be identical with bodies demonstrated by Noguchi in films prepared from nervous tissues. The third culture obtained from human strain and the fifth culture from monkey tissue caused typical poliomyelitis in monkeys.

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[3] Herein lies the priority in the demonstration of the causative microorganism of poliomyelitis. Hitherto, no microorganism has been made visible in an otherwise sterile spinal cord in human poliomyelitis. (NEW YORK MEDICAL JOURNAL, January 4, 1913.)

If these are true cultures or only diluted virus carried over accidentally which produce disease, they do not decide. However, they have in progress a third series of inoculations with older generations of the cultures, which should exclude the possibility of carrying over original virus with the culture of globoid bodies sufficient to cause paralysis in the inoculated monkeys.

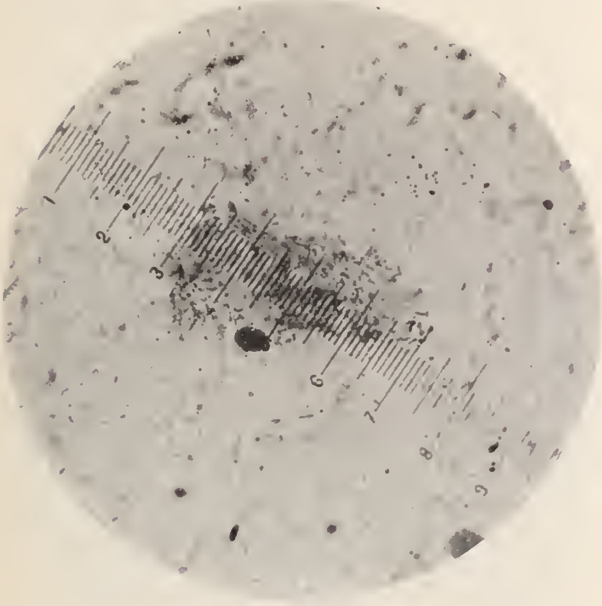


Fig. 4.—Same as Fig. 3, photographed with ocular micrometer.

VARIOLA.

Since the inauguration of the modern bacteriological era, many efforts have been made to demonstrate the causative agent of variola, but it may be asserted that none of the many microorganisms, including those described by Prowazek and Paschen are generally accepted as the causative microorganism.

Under Koch's guidance, Wassermann (8) has shown that the virulent contents of the variola pustule, previous to the suppurative period, is free from visible microorganisms and is absolutely sterile on the common culture mediums. This proved that the variola virus does not belong to any form of the commonly known microorganisms; therefore all microorganisms described previously or later may be disregarded as the causative agent of variola. This is further confirmed by the production of typical pustules by inoculation with otherwise sterile vaccine.

Certain investigators, as L. Pfeiffer and Van der Loef, described protozoalike formations in the pustular contents, and believed these to be the specific microorganisms of the disease. Guarnieri found similar formations in the vaccinated cornea of rabbits and believed these to be the virus of variola, which he designated as *Cytorcycetes vaccinæ*. He stated that the same shows a certain developing cycle. Wasielewski was of the same opinion. Protozoalike microorganisms were further described by Councilman, Dombrowski, Bosc, Thomson, Foa, and others.

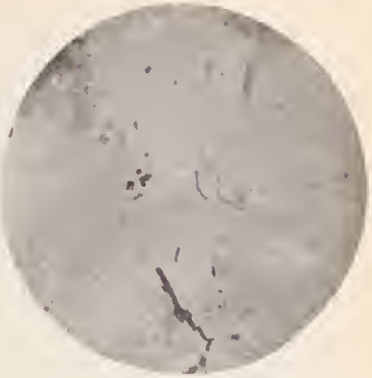


Fig. 5.—Poliomyelitis virus. Flexner. Smear of spinal cord. Methylene azure. Ocular 4, oil immersion 1/12. Spirochete form.

In 1898, Hueckel showed that the Guarnieri bodies are developed from certain parts of the protoplasm of the epithelial cells, and he was able to produce similar bodies by irritation of the cornea with osmic acid.

Siegel asserted that he had found protozoic formations in the blood and organs of vaccinated rabbits. His crude technic of diluting the blood and tissue with distilled water destroys the cells so that all kinds of pseudoprotozoic formations are formed.

Thorough investigations by Prowazek have shown that the Guarnieri bodies are not the variola microorganism. They are not protozoa, and he did not observe different developing stages. He described round and oval bodies which he found in the protoplasm of the epithelial cells, thought they were developing stages of variola virus, and designated them as "initial bodies."

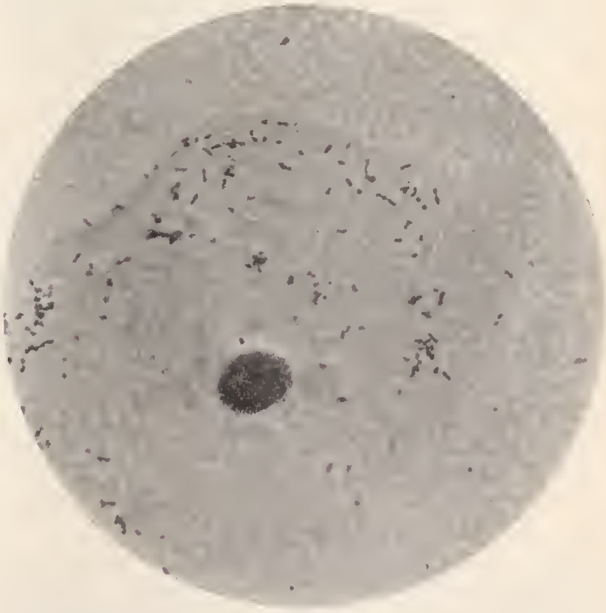


Fig. 6.—Smear from variola pustule. Methylene azure. Ocular 4, oil immersion 1/12. Showing epithelial cell filled with cocci and bacilli forms.

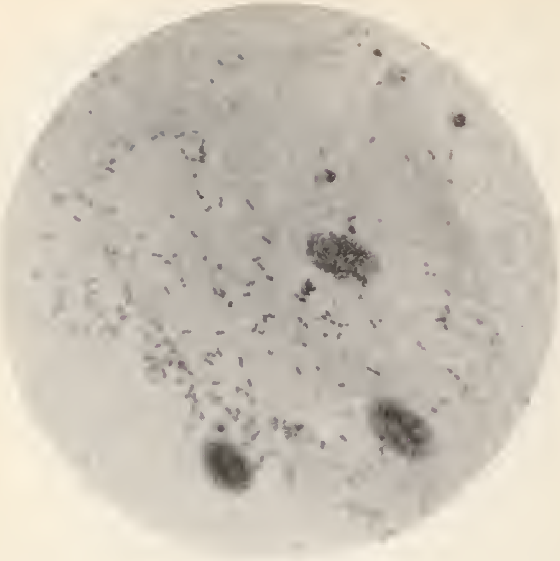


FIG. 7.—Same as Fig. 6, showing intranuclear located microorganisms.

In 1905 (12), I concluded from the previous investigations and from my extensive staining experiments that the variola virus has not as yet been made visible and cannot be made visible by any of our common staining methods. Its invisibility in fresh condition is probably due to its light refracting condition. I also predicted that the variola virus would be found to lie inside microscopical visibility.

In 1905 (13), Negri first demonstrated that the variola-vaccine virus could be filtered through Berkefeld filter V. He asserted that the failure of earlier investigation was due to incomplete destruction of the epithelial cells containing the virus. The material must be thoroughly crushed and shaken, and filtered through several layers of cotton and filter paper prior to filtration through the Berkefeld filter. The filtrate must be thoroughly rubbed in the skin or cornea to obtain positive inoculation results. The filtration results were confirmed by Remlinger and Nouri, Vincent, M. Nicolle, Abdil Bey, Carini, Levi Della Vida.

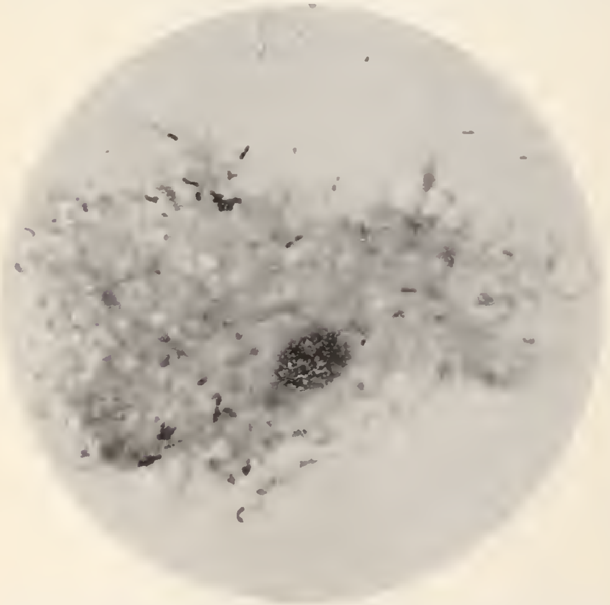


FIG. 8.—Original smear of fixed virus. Pasteur Institute, Paris. Methylene azure. Ocular 4, oil immersion 1/12. Showing bacilli form microorganisms.

In 1906, Casagrandi announced filtration of the virus through Berkefeld filters N and W as well as V, and also through Chamberland filter F and Kitasato B. After several failures, Paschen (14) finally succeeded in filtration of vaccine virus through Berkefeld filter V.

In their latest attempt to make variola virus visible, Prowazek and Baurepaure used the colloidal filter method. The diluted contents of variola pustules was filtered, first through a Berkefield filter, then through a layer of agar. From the residue on the agar, smears were made and stained with Loeffler's carbol fuchsine, Giemsa, and thionine. They found roundish formations which were smaller than the smallest known bacteria. Unstained, they appeared as very minute light refracting bodies. With this same method Paschen found similar bodies in the pustular contents in vaccinated children. Also, Volpino in 1907, with the dark field illuminator, found round, slightly refractable, movable bodies which were usually intracellular. In smears they could not be stained with either Giemsa or hematoxylin. I believe all these bodies as described to be stained detritus.

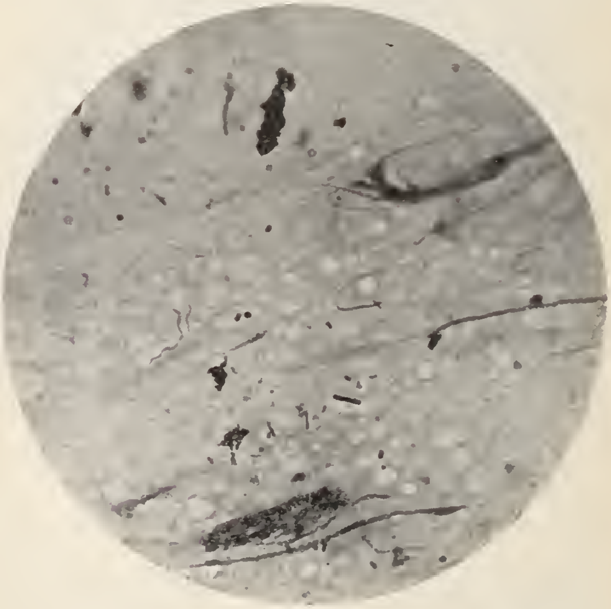


FIG. 9.—Original smear of fixed virus. Pasteur Institute, Paris. Methylene azure. Ocular 4, oil immersion 1/12. Showing spirochete and cocci forms.

The smallpox epidemic in Pittsburgh, September, 1912, afforded me the opportunity to examine about thirty cases. The pustular contents were taken with sterile glass pipettes previous to the suppurative stage. Smears were made only from such cases as proved to be entirely sterile on our common culture media. Twenty of these proved to be absolutely sterile. With the hanging drop method, no microorganism could be seen. With dark field illuminator, many fine corpuscles were seen, but no definite conclusion could be reached on account of much cellular detritus. With the common staining methods no microorganisms were made visible. Smears stained according to Prowazek and Paschen with Loeffler's flagella mordant and stained with carbol fuchsine, Giemsa, or thionine, showed no microorganisms whatever, but minute bodies which, I believe, are stained protein substances.

Smears from sterile pustular contents stained with methylene azure carbonate showed many microorganisms, their size ranging less than 0.2 micron to one micron. There were isolated or diplobacilli; chains or groups of short oval bacilli; very small diplococciform pneumococci and bean shaped diplococci, all divided by a small, pale stained zone; large, round cocci, sometimes divided into four parts like tetragenus. The majority of these microorganisms were intracellular and quite often intranuclear. Some of the epithelial cells were entirely filled with these microorganisms. Extracellular, they were few in number. These were also found in different strains of glycerinated vaccine and in the filtrate of greatly diluted vaccine filtered through Berkefeld filter V.

CULTIVATION.

Results from attempts to cultivate variola virus have not proved that these are true artificially grown cultures. Vanselow and Czaplewski cultivated a staphlococcus, and Kent a diplococcus from variola vaccine and asserted that these cultures inoculated in a heifer produced typical pustules.

These cultivation experiments are without value because there are no controls made which show the limit of dilution of the original virus which produces pustules. The staphlococcus and diplococcus were contaminations which concealed the vaccine virus.

More exact were the experiments of Ishigamis (15), who used as artificial medium fresh epithelium cells from cattle. The original diluted virus, one to 1,000, one to 2,000, one to 3,000, did not produce pustules by inoculation in a heifer, but if the dilution one to 1,000 was kept for five to seven days at 37° C. and then diluted one to 2,000 or one to 3,000 with the same fresh culture medium and each of these kept for five to seven days at 37°, the inoculation from all these dilutions showed typical pustules. Bonhoff (16) used a certain culture medium, consisting chiefly of alcoholic extracts from certain organs, and says a few pustules could be produced with the seventh generation of the vaccine culture.

I employed horse blood plasma, which was treated with calcium chloride and coagulated at 60° C., as a culture medium. Completely sterile but otherwise potential variola vaccine was used for the cultures. On this medium, kept at 37° C. under aerobic conditions, a grayish white smeary growth was observed, but with the ordinary staining methods no microorganisms could be found. The inoculation of these cultures in the third and fourth generations produced small but distinct pustules, but beyond these no pustules were obtained, although avirulent cultures could be carried on indefinitely.

Convincing proof that the variola virus has been artificially grown is not yet forthcomnig, because the virulence of the culture is lost after a few generations. This indicates an original diluted virus rather than a growth of the culture.

SUMMARY.

Rabies, poliomyelitis, and variola viruses can be made visible with methylene azure carbonate; their invisibility is therefore not due to their submicroscopical size, but to their special staining properties.

The size of all these viruses averages the same. The smallest visible forms are about 0.1 micron to 0.2 micron or border on the line of microscopical visibility. This size corresponds to that of the smallest pores of the filter, which Esmarch and Rosenthal (17) believed to be the actual pore size of the earthen filters. They found in microscopical sections of stained earthen filter masses, that the smallest visible clefts were from 0.1 to 0.2 micron, and concluded that only through these clefts the microorganism can pass. According to this, the term filterability does not mean microscopical invisibility. The filterability depends, as will be seen, on a certain chemical constitution of the protoplasmic substance which enables them to pass the smallest filter pores. We have seen that the filterability of these three viruses is not equal, and we can distinguish between difficult and easily filterable viruses. The poliomyelitis virus is the easiest filtered, through all kinds of filters. The variola and rabies virus is very difficult to filter, especially rabies virus, which will pass the Berkefeld filter V only in small quantities.

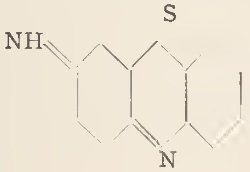
The difference in the filterability of these viruses demonstrates clearly that not only the size but also individual differences in the chemical constitution of the protoplasmic substance play a rôle in the filterability. If the size alone controls the filterability, all three viruses should pass the same filters with the same ease as the poliomyelitis virus.

The staining properties of these viruses may give a key to their chemical constitution which will satisfactorily explain not only the cause of filtration but their other peculiar biological properties.

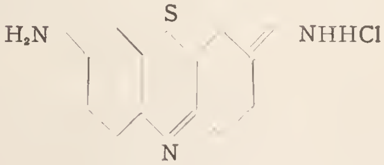
It is necessary to refer to the chemistry of the aniline dye group from which the methylene azure is derived. The methylene azure belongs to the group of thiazine dyes, of which the methylene blue is the main representative.

The simplest body of this group is the thiazine, but is only of interest theoretically.

Thiazine (imidothiodiphenylimid)



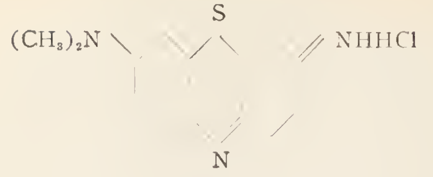
The amido derivative is the thionine.



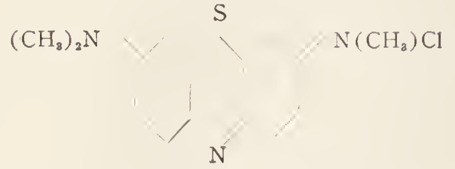
Thionine chloride.

If for both H atoms, of one of the amido groups of the thionine are substituted by two methyl groups, we obtain dimethylthionine. If all four H atoms of the amido groups are substituted by four methyl groups, the tetramethylthionine or methylene blue is obtained.

Dimethylthionine (chloride).

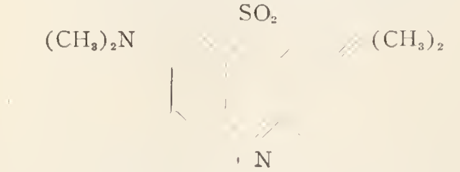


Tetramethylthionine (chloride).

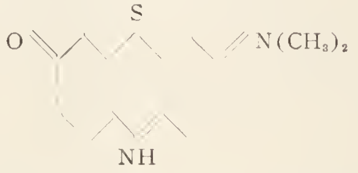


By the action of alkali on methylene blue, two different products are obtained.

Methylene azure, free base (Bernthsen).



Methylene violet (free base).



Michaelis pointed out that the character of methylene azure is more like thionine. Later on, Kehrmann showed that the methylene azure is not a sulphone as believed by Bernthsen, but a mixture of trimethylthionine and asymmetrical dimethylthionine, chiefly the latter. This was then confirmed by Bernthsen.

The methylene blue is distinguished from the foregoing thiazine bases by its strong basic character. It is chemically an ammonium base and cannot be obtained from its salts by caustic alkalies, but with fresh precipitate silver oxide, and is the same color as its salts and is readily soluble in water. The caustic alkali splits the methylene blue into methylene azure and methylene violet. This is the difference from other thiazine dyes which have the character of amine bases; their free bases are precipitated from their salts by caustic alkalies. Their free bases are soluble in ether giving a red or yellow red color; in chloroform, violet to violet red color; in carbon bisulphide, a carmine red color.

I found that the thiazine bases are also soluble in neutral fats and higher fatty acids as oleanic acid, stearinic acid, also lecithin, all giving either the color of their free base or their dye salt.

By evaporation of the ethereal solution of the free methylene azure base, the red color changes to blue. This is believed to be due to the formation of the carbonic acid salt by absorption of carbonic acid from the air.

It is doubtful whether the free bases of the methylene violet, thionine, and dimethylthionine will form carbonates.

We know that the free bases of the thiazines are noted for their polymerization and may exist in two tautomere forms in analogy to other aniline dyes, for instance, parafuchsine. By tautomere we understand that a dye may exist in two different constitutions without changing its empirical formula, but that one form may change to the other, and it is not possible to isolate the molecules of one constitution from the other.

Two tautomere forms of the thiazine dyes can be demonstrated in a watery solution (a red and a blue modification). For instance, if we dilute a concentrated methylene violet solution with water, the violet color changes to pure blue. This shows that both modifications are present in a watery solution. From the fact that by dilution the blue modification only exists, we may conclude that the blue methylene violet, is a dissociation product of the red methylene violet. The blue methylene violet polymerized to the red modification, forms a larger molecule.

According to this theory, the ether or chloroform solution of the dyes contains the thiazine bases in a polymerized form, which will on evaporation dissociate in the blue modification through absorption from water. The blue color is therefore not necessarily due to the formation of a carbonic acid salt, but is only the dissociated form of the red modification, and which is stable only in ether or chloroform.[4]

That the red modification is the polymerized form can be clearly demonstrated in still another way. As already stated, the thiazine base, with the exception of methylene blue, can be precipitated with caustic alkalies, yielding a reddish brown precipitate. The precipitate is insoluble in strong alkali solution, and represents the polymerized form of the thiazine bases. This can be shown by dissolving the precipitate in water, giving a red violet color, but by weaker dilution it turns to pure blue. The red polymerized form dissociates in water into the blue form. The watery solutions of these bases are very unstable. They are easily polymerized and dissociable in contrast to their salts with inorganic acids.

This is demonstrated by shaking a watery solution of methylene azure base and a methylene azure chloride with ether. The free methylene azure base can easily be extracted, giving a reddish color (polymerized form). From the chloride no free base is extracted. The same is true of the above mentioned thiazine dyes.

As we have seen, rabies, poliomyelitis, and variola virus can be stained with azure carbonate, but cannot be stained with the chloride. I believed this was due to the greater dissociability of the carbonate than the more stable chloride, but the foregoing experiments with the free methylene azure base in the hydrogen atmosphere make the existence of a carbonate salt doubtful. The blue color of the watery solution is probably only the soluble dissociate form of the red polymerized base, and the staining of these viruses is principally with the methylene azure base. This theory was borne out by the staining of these viruses with the watery solution of the free bases of methylene violet and dimethylthionine,[5] while no results were obtained with the chlorides. In contrast to the common microorganisms, the protoplasmic substances of these viruses cannot anchor the dye salt, but only the free base. The metachromatic staining of some of the microorganisms suggests that the dye base is probably absorbed by a fatty substance. The solubility of the free thiazine bases in fat substances, as oleanic acid, neutral fats, makes this clear. The different color of the microorganisms may be explained by the presence of two tautomere forms of the thiazine bases, the red and blue modifications.

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[4] That the free polymerized methylene azure base can dissociate in a watery solution to the blue modification without absorption of carbonic acid can be shown by dissolving the free base in freshly boiled water saturated with hydrogen gas. The blue modification can therefore exist without salt formation. The same can be demonstrated with the other thiazine bases.

The real chemical nature of the protoplasmic substance cannot be determined, but it is likely of a peculiar lipoid protein nature.

The lipoid nature of these viruses may explain why they are filterable. The lipoid component gives the protoplasm great plasticity, also lessens the cohesion and allows passage through the smallest filter pores. That the quantity of the lipoid substance is not equal in all three viruses may account for their difference in filterability. Their lipoid character may account for their resistance to drying, freezing, and to glycerin; also, the microscopical invisibility of the viruses in a living condition may be explained by the high light refracting properties of the lipoid substances.

The application of this staining method may reveal the etiological cause of other unknown viruses of the filterable type, as scarlet fever, measles, typhus fever, fowl pest, etc.

The peculiar staining properties of these viruses distinguish them from other microorganisms and form a new group. Beside their filterability, they are characterized by their formation of specific cellular incision products, as the Guarnieri bodies in variola vaccine, Negri bodies in rabies, and similar bodies in poliomyelitis. We know that these inclusions are not the causative microorganisms, but only degeneration products of protoplasmic nuclear origin.

According to Prowazek's belief, and as my investigations have shown, these microorganisms are intraplasmic and intranuclear. The cell inclusions are no doubt pathological products produced by the action of the microorganisms.

The metabolic products formed by these viruses can act directly on the cellular structures, in contrast to that of the common pathogenic microorganisms which usually thrive in the cell free body fluids.

Of the common microorganisms, we know that only the lepra bacillus is intracellular, but this may be a phagocytic action of the cell and not a cell habitus of the lepra microorganisms. Further, we know that the common bacteria by intracellular parasitism in lower vertebrates never produce intracellular inclusion products. Another characteristic is that by transmission to other hosts they acquire different biological properties. We see that in the transmission of smallpox to cows, the virus is attenuated and is almost avirulent to man, and by inoculation produces only a localized pustule with no tendency to generalize the disease, but gives the individual a high grade immunity. The same is observed in rabies. The street virus loses its virulence to man and certain animals, after passage through the rabbit (fixed virus), and immunization with the fixed virus gives immunity against street virus infection. This may be true of poliomyelitis. The poliomyelitis virus transmitted to monkeys will probably lose its virulence to man. As far as I know, no infection has occurred to man through handling the highly virulent monkey poliomyelitis virus. An artificial immunity with attenuated poliomyelitis virus seems possible, but as yet it has not proved constant enough to justify its use on man.

The intracellular situation of the microorganisms explains the difficulty in obtaining the artificial culture. As yet their cultivation *in vitro ad indefinitum* is not accomplished.

We see that these microorganisms cannot be cultivated on the common culture media which contain certain protein split products (hemialbumose, peptones, amidoacids), with or without unchanged protein bodies (fresh blood serum or blood serum or blood plasma). This shows that the growth of these microorganisms depends on certain metabolic split products which are formed during the life of the cell. They are unable to split the large protein molecule, as they are circulating in the living body fluid. It is, therefore, not probable that this microorganism will ever grow in a cellular free organic fluid. It seems that the presence of living cells which produce certain protein split products are necessary for their growth.

I designate this group "azurephile or thiazineophile microorganisms" on account of their staining with methylene azure or more generally, with certain thiazine dyes.

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THE PATHOLOGY OF NEURALGIA.

By Guthrie McConnell, M. D.,
Philadelphia,

Professor of Pathology and Bacteriology, Medical Department, Temple University.

In discussing any aspect of a subject it is well to have a clear understanding as to what is indicated by the term used. Neuralgia is a word that has almost as many meanings as rheumatism or neurasthenia. Do we understand by it that we are dealing with a definite entity or is it merely a convenient method of covering up a lack of information concerning the condition that gives rise to the symptom that stands out so preeminently?

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[5] With methylene blue or thionine base, the viruses could not be stained. It is probable that the methyl groups control the tinctorial affinity. It seems that the unmethylized (thionine) and the completely methylized thiazine bases (methylene blue) are acromatophile. Only the partially methylized thiazine bases (methylene violet, methylene azure, and dimethylthionine) can be anchored. Whether the toluidine blue base will stain the virus has yet to be tried.

Is there any underlying difference between neuralgia and neuritis, or is the division one that is of value from the clinical viewpoint only? To give a definition, one might refer to neuritis as a constant pain, and to neuralgia as a spasmodic one.

When we come to consider the pathological changes we shall discover that we cannot divide our findings into those that indicate neuritis and into those that point to neuralgia. There are in fact those changes only that are indicative of neuritis in its broadest significance, including not only the inflammatory, but the degenerative as well. In fact the more we advance in medicine the less common become the idiopathic and functional diseases. We find that definite primary causes can frequently be found if our investigations are sufficiently painstaking.

From a clinical standpoint, neuralgias can be classed according to the nerve involved, sciatica when the sciatic nerve is the site of trouble, tic douloureux when the fifth nerve is at fault. In either case one would probably be speaking with accuracy if he referred to the condition as a neuritis.

Although there may be as many forms of neuralgia as there are nerves, yet as the classical form, and likewise the most painful, is tic douloureux, it will be the variety referred to principally under the title of this paper. As we well know, the fifth nerve is made up of both sensory and motor portions, the former fibres constituting the greater part.

The question again arises as to whether or not we are dealing with a neuritis or a neuralgia. Is it a functional or an organic process? But as functional is a very comprehensive term, we do not get very far ahead, even if we make use of it for the purposes of classification.

According to some investigators, tic is a neurosis, to others it is a neuralgia, a distinction that seems to be without much difference. Others believe that it is a neuritis, and it would appear that this is the more logical belief, although we find that this class may be subdivided into those who hold that tic is peripheral in character, that it is primary within the Gasserian ganglion, or that the lesion may be a central one.

The microscopical examinations that have been made of Gasserian ganglia removed at operation, would indicate that the view of tic being a neuritis is on a firm pathological basis. As a result of such examinations Spiller is more than ever inclined to believe that neuralgia cannot be separated sharply from neuritis; and in some cases of so called chronic neuralgia, such as obstinate sciatica, we may be able by the microscope to detect evidences of chronic inflammation.

Putnam also states that, as a rule, neuritis is present in trifacial neuralgia, and probably exists far more often than we think. This seems exceedingly probable, for the dividing line between neuralgia and neuritis cannot be drawn sharply. He likewise is of the opinion that physicians have been more favorable to the view that in chronic forms of neuralgia at least, the pain is simply the expression of the inflammation of a nerve. Dana expresses the view that trifacial neuralgia is due to degenerative neuritis of the peripheral sensory neurones of the fifth nerve, depending upon or associated with obliterating arteritis.

When we consider the changes found, it would be of the greatest value if we could determine whether or not such alterations were primary or secondary. Do they appear in consequence of the long continued pain or are they the cause of the disturbance? Unfortunately that point cannot be satisfactorily determined, but some decidedly interesting points have been disclosed by comparing the pathological findings with the clinical course.

We do know that the Gasserian ganglion, whether or not primarily, does in the end become affected. But the lesions are, however, not sufficiently characteristic to consider them typical of a particular disease. Again we are forced to the opinion that neuralgia and neuritis cannot be definitely separated.

In an examination of seven Gasserian ganglia removed by Doctor Keen, Doctor Spiller found that, in a general way, the pathological changes were as follows:

1. The medullary substance of the nerve fibre within the ganglion and its branches is immensely swollen, atrophied, or entirely absent, depending upon the intensity of the disease.

2. The axis cylinders similarly are markedly degenerated or entirely destroyed.

3. In one case the cells of the ganglia were so degenerated or atrophied that there would be doubt whether we were dealing with ganglionic tissue were it not for the occasional nerve cells seen.

4. The vessels were very distinctly sclerotic. In one case the lumen was obliterated.

5. In one case there was a decided increase in the amount of connective tissue, enough to call the alteration a distinct sclerosis.

In these examinations, with perhaps two exceptions, the possibility of the changes in the ganglia being secondary, cannot be overlooked. In five of the cases portions of the peripheral nerves had been removed at previous operations. In one instance there had been as many as six operations on the peripheral branches before the ganglion itself was removed. In the two cases in which previous operations had not been resorted to, teeth had been pulled in the hope of alleviating the pain. In one of these cases the microscopical examination showed most distinct evidences of degeneration, as well as sclerosis of the small vessels. In the other instance some of the vessels were sclerotic, but there was little change in the nerve fibres. The smaller ganglion cells were abnormally abundant and in some places the medullary sheaths were somewhat swollen. However, in two other cases of tic reported by Lexer, there were found no histological abnormalities whatever, and no peripheral operations had preceded the ganglion extirpation in either instance.

From the fact that in some cases relief is obtained by peripheral operations, it seems quite possible that the trouble may have started at that point. Rose found in some of his specimens great alterations in the peripheral nerves in trifacial neuralgia. The appearances were those of chronic neuritis, and were often more marked at the peripheral than at the central ends of the fibres. That the pain eventually returns may be due to an ascending neuritis, the possibility of which, though often disputed, must be acknowledged. Another and possibly a more plausible explanation, is that the peripheral operation has merely destroyed the means of conduction, and that the pain returns when regeneration of the fibres has taken place. This would appear to be the explanation in a case reported by Weisenburg. This, however, was not one of true tic, but was due to a tumor involving by pressure the ninth and twelfth cranial nerves.

When an attempt is made to differentiate degeneration of the nerves from inflammation, a difficult task is undertaken, because degeneration may follow inflammation, and conversely inflammatory changes may follow upon degenerative ones. In true inflammatory neuritis the involved portion may appear to the naked eye as a pinkish, swollen, edematous area with foci of hemorrhage or suppuration. The change is an interstitial one, and microscopically there will be found an extensive round cell infiltration of the connective tissue. There will usually be degeneration of some of the fibres.

Such a simple condition, however, seldom exists, because in a short time degenerative, parenchymatous changes appear. When nerve involvement, call it neuralgia or neuritis, has continued for some time, the degenerative processes make their appearance. Microscopical examination will show broken up and disintegrated myelin sheaths, the fragments of which stain black with osmic acid. In later stages this fatty detritus may have been removed. In the early stage the axis cylinder may show no change, but as a rule they are swollen, irregular in outline, and stain feebly. Eventually they may be broken or completely disintegrated.

In the neurilemmal sheath there will be reactionary changes. The nuclei proliferate, some of the newly formed cells acting as phagocytes, or, becoming fibroblasts, lead to the formation of an excess of connective tissue. Others form nucleated strands of undifferentiated protoplasm into which the newly formed axis cylinders penetrate when regeneration sets in.

At the present time it would seem that the question of the pathology of neuralgia resolves itself into the histological changes that are found in the nerves and which we understand as indicating neuritis. The difficulty that arises may be somewhat obviated if we do not restrict the term neuritis to those changes alone that are purely inflammatory. As has been stated already, it is next to impossible for such alterations to be present without indications of some degenerative conditions of the parenchymatous portions of the nerve fibres.

HOW MUCH OF EUGENICS IS SCIENTIFIC?*

By Charles Edward Nammack, M. D., LL. D.,
New York,
Professor, Clinical Medicine, Cornell University Medical College; Visiting Physician, Bellevue and St. Vincent's Hospitals.

Eugenics is the study of the agencies under social control by which future generations may be improved either physically or mentally. It is a question of immense biological complexity, and cannot be settled by a verbal disquisition. It requires an intensive study of heredity in man, of differential marriage rates, differential fertility, selective death rates, immigration and emigration, and of the correlation of all these with the social and antisocial qualities of the several reproductive groups in the community. According to Karl Pearson (1), the advancement of national eugenics depends mainly upon heredity, and while he will not dogmatically assert that environment matters not at all, he assigns to environment an influence not one fifth that of heredity, and quite possibly not one tenth of it. In other words, he holds that it is essentially the man who makes his environment, and not the environment which makes the man. He compares the environment to the grindstone and oilstone upon which a workman sharpens his chisel, and says that they are useless to make an effective tool when there is a flaw in the steel. This view accords to heredity an importance which has been made the basis of much restrictive legislation, legislation which rests upon a hypothetical and sentimental foundation, rather than upon the proved facts of biology.

While it is indisputable that heredity may be responsible for many physical defects, for a vulnerable nervous system, and for the direct transmission of certain blood diseases, it has never been proved that acquired characters, such as criminality, alcoholism, and sexual immorality, are transmissible by hereditary influence or are inherent qualities of the germ cell (2, 7). Those who uphold the theory of the primacy of heredity rest their case upon the occurrence of insanity in families, or upon the occurrence of such abnormal physical conditions as congenital deafness or color blindness or supernumerary digits or brachydactyly, in which the fingers have one joint less than normal, or congenital cataract or night blindness, in which the affected individual cannot see in dull light (3). But all these cases come under the heading of inherited defect of the somatic or body cells of the parent, and in no wise depend upon the qualities of the germ cells. The most careful analysis of the statistics of the biometricians or the most elaborate deductions of the Mendelians serve but to show that the value of the intensity of inheritance relates to stature, eye color, physical ability, or tendency to congenital disease. Even the common belief that the children of alcoholic parents are deficient in health, intelligence, or physical development has recently been upset by the studies of some 1,400 children in the schools of Edinburgh (4). That brilliantly successful advertising genius, Mr. George Bernard Shaw, in his usual luminous fashion, sums up the situation in the epigram: "The bubble of heredity has been pricked" (5). We cannot compare a human soul to a plant, the future life of which is admittedly determined in advance. A human being may bring into the world with him the future shape of his body, but he does not bring in his mind, his character, his free will, his entire disposition. We still have the comfort of knowing that all these can be moulded by education, and especially by moral education, the biometricians to the contrary notwithstanding. Yet, Sir Francis Galton, himself secure in the serene contemplation of an unblemished intellectual hereditary tree, would have us believe that culture, gentleness, fearlessness, truth seeking, and intelligence have been in large measure weeded out from the human stock, partly by the rule of celibacy, partly by persecution, for both of which he accuses the Church of the Middle Ages of being responsible. For, he says, whenever a man or woman was possessed of a gentle nature that fitted him or her to deeds of charity, to meditation, to literature, or to art, they had no refuge elsewhere than in the bosom of the Church, which then exacted celibacy from them, and so left us none but brutes for forefathers. Galton also asserts that not content with that, the Church, by means of persecutions, brought thousands of the foremost thinkers and men of political aptitudes to the scaffold or imprisoned them during a large part of their manhood or drove them as emigrants into other lands (6). And having unburdened himself of these calm judicial utterances, the placid Sir Francis goes on to say that in consequence of this inbred imperfection of our natures, there is now no health in us.

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*Read before the Guild of St. Luke, February 6, 1913.

Think, O gentle reader, what you might have been if your ancestry had not been so brutalized and demoralized. Such is one of the absurd lengths to which the study of plant metaphor and of biometrics carries its disciples. Biometrical philosophy, as exemplified by Professor Karl Pearson, asks: "What reason is there for demanding a special evolution for man's mental and moral side?" No reason, if we regard man as analogous to a plant, or even to a "horse, a greyhound, or a water flea," or if we can settle the question of his evolution by the computation of tables of statistics. With these biometrical gentlemen, heredity is everything, environment and education futile, except with selected stock. While acknowledging that the Fagins of London can train criminals and thieves, they deny that philanthropists can evolve useful citizens from unpromising material. Yet of the castaways in Doctor Barnardo's institution, ninety-eight per cent. became respectable citizens, while a similar result (ninety-seven per cent.) has been obtained in the city of Glasgow (5). This is one of those nasty little facts which give the death blow to the most beautiful induction of the biometrical philosophers. Even those who deny to man the possession of an immortal soul, are compelled to admit that Nature has given him a plastic brain, and that mental and moral energy, unlike physical energy, obeys no laws of "conservation," but may go on increasing and complicating indefinitely, and that the fate of the child, so far as his mind is concerned, depends not on heredity, but on environment and education. The startling epigram of Mr. Bernard Shaw that "the vilest abortionist is he who attempts to mould a child's character," like many another of his famous (or infamous) sayings, was probably delivered with the well calculated design of drawing attention to himself and to his works. Mr. Shaw is but a disciple of an era which is rapidly passing away, an era of destructive criticism, and of mental and moral obliquity of vision. Those who can see more clearly have perceived, with the dawn of the twentieth century, a clearer vision of paths of advance, which heralds the coming of a new day, a day which is bringing us, from a sociological standpoint, nearer to the Kingdom of God.

The idea of the regeneration of the race does not need to strike that leaden note of despair—the hopelessness of heredity, but rather the ringing tones of a new and certain hope in the reunion of religion with moral education.

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42 East Twenty-ninth Street.

ATYPICAL CHILDREN.*

The Etiological Factors in Their Production.

By S. P. Goodhart, M. D.,
New York.

Statistical records and histories of the truly defective afford us valuable data as to the etiological factors underlying the direct and indirect causes of this class of unfortunates. Reviewing a large number of histories in private practice and in the course of many years of clinical experience, agreeing with practically all other observers, I find that heredity plays an unquestioned rôle; there is the oft emphasized history, either in the direct, or collateral lines, of syphilis, alcohol, one of the many forms of insanity, epilepsy, consanguineous marriage, etc. Indeed, it can no longer be a question of dispute that in those instances of marked mental deficiencies showing themselves in the very early years of life, or later in the juvenile period, on one or both sides the prenatal influence is the dominating factor. While we all admit the importance of heredity, especially in the organic nervous diseases, yet in some cases the influence of environment and education is far greater in the strengthening of the forces of the child than is the case in those of marked physical defect, in which we may also expect to find organic changes in the ideational centres of activity.

The value of studying the needs of so called atypical children will become evident when we consider that among them are found some of the best minds—those that give to the world intellectual, artistic, and moral qualities. Exalted intellectual power in the arts has time and again been found in those atypical beings who have begun life under the cloud of early instability and deviation. These children comprise the great mass of the "misunderstood," and many a life has been thus begun and, through ignorance of its needs, doomed to pitiless drudgery in an atmosphere dark and distasteful. The child loses much; mankind may lose more. These children are often born of neurotic stock and, although endowed with special qualities, are usually deficient in certain practical—what might be said to be elementary features. There is in some a lack of emotional stability; a want of proper self control; perversities in the exercise of the control of the will. Some are not just ordinary children; often they are extraordinary ones. Rarely are they well poised. Sometimes music, again dramatic power, active imagination—often, however, not of the true constructive type—marked mathematical faculties, or the reverse, stand preeminently forth in a mind lacking in the coordinating elementary mental processes. Allow these children to develop in the forced environment of an uncongenial, unsympathetic atmosphere, and the very sweetness from the flower that may blossom in its maturity will turn to acrid vapor in barren soil. To abandon metaphor, we may say that instead of good, useful members of society, these children, if improperly educated and brought up in unsuitable environment, often bring to development the criminal traits that eventually cost themselves and society the price that ignorance and neglect have so often imposed upon us. In adult life, these children find themselves at variance, out of tune with their surroundings. They lose the incentive of life work; their mental attitude is at war with the conditions of life imposed upon them. Eventually, there is forced out another, an incomplete, a weaker personality; a composite perhaps of elements partly atavistic. That child has been robbed of his best inheritance by injudicious education and environment. In the soil of just such conditions lies the seed that may lead to that sepulchre of early mental life—dementia præcox.

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The redemption of these young human beings, born with abnormal potential forces within an unstable brain; housing, as it were, a mind not poised for adaptation to the demands of routine work, is of the highest order of pedagogic interest. It aims at the deliverance of those who in literature and art may finally stand among the foremost. The genius of the world belongs to this unstable type. They need special care and attention during the delicate years of developmental life. There is not so much of interest in that large class of truly defective, the best of whom can only be raised to a mediocre degree of social activity and for whom the State has liberally provided.

The influence of the experiences of the early years of life upon the development of the various forms of neuroses later, although long conceded, has been emphasized within the last decade by the methods of psychoanalysis. This form of investigation and cure was originally introduced by Freud and has in later years been modified by Jung and others. Freud announced that the sudden so called "nervous breakdowns" of neurotic individuals, especially those who showed instability in their early years of life, were due to shocks, or sexual experiences in early child life; and that these experiences, always occurring in the highly organized, neurotic child, were suppressed and forced into the subconscious realm of mental activity and for the time forgotten. Lingering in that undermental life, they were ready, years later, to form the nucleus around which functional neuroses might at any time burst forth under unusual strain in the life of the individual.

Later investigation shows that these experiences of child life need not be of a sexual order; but that any form of mental injury, or suppressed disagreeable experience attended by strong emotional reaction, may suddenly emerge and be the basis for severe psychic disturbances. In the atypical, or exceptional child, we see a parallel in that borderland of psychic uncertainty wavering between the normal and abnormal and represented by cases in adult life of the various obsessions, *folie de doute*, psychasthenia, etc. We are familiar with that vast multitude hovering between limitation of the normal and the borderland of recognizable mental alienation. In just these neurotic individuals, the mental imagery of juvenile life occurs and is particularly prone to take on a sexual complex, as has been shown in morbidly affectionate and erotic children.

This emotion is likely to associate itself in the case of male children with the mother, and with the father in female. Sublimation, or turning the energy of sexual impulses into channels of productive activity, must be begun early in the child's life. No matter whether or not we consider the process of inversion—that is to say, the sexual desire of one for its own sex—entirely of a congenital nature and hence, in a sense, fatalistic; or whether we assume that it is purely acquired; or whether we accept the possibility of educational influences upon its trend; we must be alive to the necessity of carefully observing evidences of the tendency to inversion in children. I personally believe that there are bisexual elements in all, and that the development of the invert is frequently due to some one. or perhaps repeated sexual experience, such as seduction, early masturbatory indulgences among children of the same sex, etc. Sublimation develops the will of the child, especially in overcoming obstacles. The necessity for this is emphasized by our knowledge of the etiology of what is psychologically known as regression, a term meaning the turning back of the energy of the individual to the primitive, the juvenile habits of thought and action; thus at a critical moment of adult life, the early habits become of immense importance in their bearing upon the form and depth of the neurosis. It occurs in the later life of the neurotic when, confronted by what appears to be an unsurmountable obstacle, there is a renunciation; effort is abandoned, and the psychic energy becomes anchored to its juvenile fantasies.

Imagery, which plays such a rôle among the children of unstable psychic nervous organization, should be discouraged and an effort made to turn their interests into the materially productive. The tendency of imaginative children to become self centered, and thence have their perceptions aroused by autoerogenous stimuli of a sexual nature, should be combated. If allowed automatic repetition, complexes form, the perversities adhere to the subconscious and, in time of regression in later life, become active fantasies around which the neurosis develops. If the energy—that is the ambitions—becomes thus anchored, this anchorage must be lifted, and the energy will develop and ripen with maturing years and properly adapt itself to environment.

The morbid affection for the parent of these children, sometimes with sexual taint, at other times of a more esthetic, higher emotional nature, must be carefully guarded against. The parents must be instructed as to the danger of nurturing it, for frequently it finds a ready response, this manifestation not being understood as the symptom of a morbid fancy. This does not occur among normal children, for, associated with these desires, in the neurotic, as a rule. are other features of affective instability. These children are frequently day dreamers; live a fanciful existence, and their psychology is sometimes identified with later serious psychic aberration. Their energy, often of a very unstable but impulsive character, should be directed toward its discharge in the practical and material things of life, and their daily work carefully supervised so that it may gradually assume the nature of the average individual of corresponding years.

The atypical neurotic type must be distinguished from the more self controlled child, the one who has himself well in hand; has especially vivid imagination, but of a highly constructive type, with a mild—not constant—tendency to day dreaming, a fondness for solitude and reflection; extremely sensitive; apparently timid. This child requires great delicacy in handling. He is liable, under unsuitable environment, and especially under suppression of his innate qualities, to develop into the truly neurotic.

It has always seemed to me that our routine pedagogical schemes were entirely unsuited to the education of the atypical child. In practical school work, he is found to be frequently deficient, but usually shows some special aptitude. I believe that in many instances this aptitude should be further developed, special attention being given to its fostering. It is in some instances absolutely impossible to educate these children according to the curriculum of our regular school system; an effort to do so often places them in the category of the seriously deficient, rapidly depleting their energy in fruitless effort, and bringing about an internal conflict due to their own rebellion against what is to them most difficult and distasteful. The brilliancy. along certain lines, of some of these children warrants devoting more time to their special qualifications.

The suggestibility of these neurotic, high strung children of unstable affective organization invites regression in later life and demands great care in not allowing their emotions to become unduly awakened. Let us not forget that the basic radical of the true juvenile psychosis is an internal strife —an inadequacy in the reasoning faculties and judgment; that of psychasthenia, extreme emotionalism; of the neurasthenic, rapid fatigue. I have found by psychoanalysis that later in life morbid fears not infrequently find their inception in sad experiences associated with a high degree of emotion. For instance, a horror of death can often be traced to the impressions in childhood of the funeral ceremony, the house of mourning, the memory of all the highly emotional features of that period of stress and suffering. This has frequently helped to aggravate a neurosis in sensitive children. I have been able to bring the emotional complex out of the subconscious by stimulating the olfactory centre; that is, by allowing the patient, while in the hypnoidal state, to smell a tuberose, a flower so common at funerals. The morbid horror of being buried alive; the night terrors frequently associated with this apprehension, can often be traced to the early experiences and the unnatural reality given to the appearance of the dead. The fear of the dark, sometimes hereditary, of some of these children, should not be harshly disregarded. Gentle persuasion and a large measure of intelligence will often prevent a development of a fear neurosis later in life.

It must be remembered that the hypnoidal state is not a state of hypnosis; the patient is entirely conscious, though in a condition of mental passivity.

Adequate psychological pedagogy, adapted to the individual, can be applied as are orthopedics and gymnastics to physical inefficiencies. Psychological clinics are needed, with social workers; their function would be both scientific and practical, devoted to restoring the abnormal to as near the normal as possible for that particular child. The clinic would study and alleviate mental and moral deflections and give pedagogical advice and could be made a great philanthropic institution, as trained medical psychopedagogues would often detect the mind of the predement or of the paranoiac. Psychoanalytical studies of to-day are revealing the intimate relationship between the mental operations in various forms of functional psychoneuroses. We observe that within wide limits there can be grouped together a variety of symptoms revealing close relationship in juvenile life, eventually developing into serious forms of mental aberration; or, modified by adaptive psychological educational methods, pass over into normal activity.

The years of puberty particularly and, in a lesser degree, of adolescence are fraught with great danger to psychic life. These are the years when medicopedagogic advice can be of most service. Imagination, at the time of puberty, becomes heightened in neurotic children. Those who have ever been introspective become more so, and the mental play becomes more active. Illusion, the result of day dreaming. becomes varied and unrestrained. This habit of imagery becomes more insistent and, as in the psychology of dementia præcox, the horizon of productive mental activity more circumscribed. The child may delight in the illusory life. made up of complexes that by repetition take form and root; later, perhaps, to become the nucleus of true paranoid entities.

The later psychology of Bleuler, Jung, and others has brought the morbid psychological features of the true juvenile phychoses into close relationship etiologically with the atypical features of early child life. The exaggerations of the normal psychological perceptive and apperceptive processes, or the persistence of those that should be modified or assimilated by experience and development of the intellect, bring us close to the question of how far psychological pedagogy can save the child. A careful examination along scientific lines is necessary to differentiate the needs of a particular case. I emphasize psychological—I should rather say medicopedagogical—psychoanalytical would be even more accurate. It is not sufficient to examine these cases of atypical children from the neurological and physical standpoint alone; we may find practically nothing that indicates deviation from the normal. I do not by any means concede that in all cases of atypical children, careful examination—either of neurological or physical character—reveals some evidence of the mental astigmatism. Of course I believe that mannerisms, certain slight but suggestive peculiarities of gait or posture, the manner of response, a slight so called habit spasm, perhaps a tic, if present, at once arouse our suspicion and direct attention to the neurotic element. To the trained observer, there is an indefinable something that gives him the impression that a neurotic soil lies within the psychic region of certain children. However, where there is nothing to be determined by the most careful physical and neurological examination, psychological methods of examination often reveal a deep seated defect in the psychic makeup of the child. There seems to be, in a figurative sense, a mental "color blindness" limited to some special feature of psychic activity. In some children, for example, there appears a striking disparity between judgment and memory; or again there is manifest a lack of proper emotional response; there may be a want of imaginative power; or, as is more often the case, an overimaginative tendency as a result of unmodified, or uncontrolled projected mental visualization, or unreal mental representation, soon crowding out the reality and developing unfruitful imagery. There follows lack or loss of concentrative power. Out of this state of perverted mental activity there may gradually emerge the element from which is built up that form of mental deterioration, often ending in final decay, known as precocious dementia. The vast importance of immediately correcting these early psychic perversions becomes manifest. The histories of a large number of abnormal children—subnormal, or atypical, as we may choose to classify them—are replete with illustrations.

There is a class of children which has been described by various writers, some cases of which have doubtless come under your observation, which are of psychopathic constitution, and, as a rule, have a hereditary taint. Intellectually, they may be up to the average, although there is often an intense emotionalism. They suffer from seizures of an epileptoid nature; the earmarks, however, of the true epilepsy are wanting. There is a psychic deterioration; no rapid mental decay such as is common to epileptics from the thirteenth to the twentieth year. The seizures are episodical, often brought on by long mental strain, attended with emotional excitement. The attacks are rarely of the *grand mal* order and usually of the nature of psychic equivalents. There may be unconsciousness, vertigo, periods of hallucinatory confusion, so called *Dämmerzustände*. These patients not infrequently show moral obliquity and unsettled mental states. The attacks occur usually in the first decade. They may occur just once, or may recur for years, without, however, psychic deterioration. Unless the proper adjustment is made in their environment and education, their later life shows the various deflections of the psychasthenic.

Hall has well expressed the situation when he says: "There are two missing links indispensable to a full acquaintance with the many forms of precocious mental decay; first and chiefly, knowledge of the actual changes during the stage of puberty, and later adolescence, which go on within the limits of sanity. This age has often been characterized as that of mental and moral inebriation and of psychic madness, and from many studies of its phenomena, I am convinced that nearly all of its symptoms can be paralleled in the inner and outer life of youth who do not lapse toward the terminal imbecility, but develop to sane and efficient maturity."

In an interesting article on what he speaks of as "predementia præcox," Jeliffe has set forth the need of pedagogic prophylaxis, as he expresses it, for the prevention of the later development into real psychoses of symptoms that present themselves in pregnant form in juvenile life; symptoms suggestive of later serious psychic manifestations.

Writers of such ability as Jung, Ricklin, and Bleuler show clearly from their studies that many of the symptoms of dementia præcox are really evolved perversion of the activity of normal juvenile life. Indeed, if we follow out the bizarre and kaleidoscopic variations of the psychic life of neurotic, and sometimes even of normal children, we can see the parallelism in the psychological phenomena between that within the borderland of the normal mind and those juvenile forms of alienation.

In any case under observation, a careful history, ancestral and personal, is necessary from the first; a painstaking and, if essential, repeated observations of the child; psychoanalytical methods sometimes to bring out the nucleus of the psychological effect. Personally, I find the Binet tests of general value only; they are doubtless useful in schools and institutions to determine the psychological error. However, I find other methods necessary. The Binet tests do not enable me to reach the child's true emotional sphere, nor can I reach conclusions as to the psychic equivalent between judgment, memory, and emotion. While it is true that the moral development of a child is largely a matter of education, some cases seem lacking in the general groundwork, the inherent basic principles necessary for the normal development of the moral side of man. These children are really moral imbeciles. With them, wrong doing, sometimes committed with what seems diabolical viciousness, is analogous in its initiative to the impulses of the kleptomaniac and of the pyromaniac. In this class, though there be intellectual efficiency, the influence of environment and teaching is small.

For example, I have a case; a boy of eight years, precocious for his ability in most appropriate extemporaneous speaking. He has an engaging manner, an attractive personality, and is physically well developed. He is, however, willful, being difficult to manage because of this condition and also because of his desire to play only in the imaginative sphere. He does not interest himself with material things and does not enjoy the games and the usual interests of the average boy of his years. He absolutely cannot learn to spell correctly; on examination, I found that he could not associate the sound of the letter and syllable, and the defect amounted to a psychological obliquity. He was profoundly lacking in concentrative power except when the distractions of visual impressions were removed. Peripheral stimuli interfered with his apperceptive powers. This child had gone to school for two years laboring under the severe strain incident to his psychic deviation. Appropriate methods for adaptation by a qualified teacher have brought improvement.

I have another case which is likewise illustrative. The latter demonstrates the oft observed fact that in some children, in whom there is partial want of motor adaptation, usually of organic origin and resulting in abnormal movements of the body with or without parallel want of proper speech coordination, we see a corresponding psychic incoordination resulting in impulsive and imperative concepts disturbing mental equilibrium. I could give many illustrative histories if time permitted.

It is surprising to find how frequently we meet with true paranoid psychological elements in neurotic children. A careful analysis of their psychology reveals much that needs active corrective measures. A large percentage of mental cases show indications in early life. Even that chronic form of congenital disease, doubtless an original psychosis, paranoia—that is, chronic, delusional insanity—proclaims its coming in the early life of the individual. There are eccentricity and peculiar deviation from the standard of conduct which are characteristic of the future mental delusions. Even here, early training, the cultivation of self restraint in a properly adapted environment, will develop such qualities as will enable the patient to exercise inhibitory impulses holding sway over morbid ideation. The atypical child is just the one in whom, if hereditary predisposition prevails, we see the making of the different forms of mental disease. In this mental subsoil lies the nutriment for the development of true mental aberration in later life. From this material the great criminal class, the cranks, the harmless, and the homicidal often take origin. When we consider that over a quarter of a million of our population are insane and that it seems that the number is increasing; that our case histories of the various forms of atypical, exceptional, and abnormal children unequivocally show alcoholism, syphilis, epilepsy, and various forms of insanity as an ancestral taint; when we further consider that a very large percentage of the mental aberrations of later life signal their approach by mental deflection, or anomalies in early life—we must awaken to the need of a greater activity along lines of prophylaxis.

In spite of the fact that I hold that heredity, both in physical and in mental disease, is a powerful factor—man probably does not enter the world with an unalterable fate of tuberculosis, or of mental deficiencies; but this tendency lies within him. Alcoholism, syphilis, tuberculosis, epilepsy, etc., may appear in our progeny as a most varied group of physical and mental stigmata; psychopathic tendencies, present in one's ancestral strain, may descend upon the offspring. Unsuccessful have been the attempts to reduce to mathematical accuracy direct and indirect heritage. Mendel's law can be applied only in a restricted way to the human race, although it has reached a remarkable degree of accuracy in the lower animals. Nevertheless we are gradually getting nearer to some of the regularities of transmission in heredity.

I believe that psychoanalysis and the Mendelian law of heredity are the most important achievements of science within recent years. Psychoanalysis gives us a method for the study of subconscious activity, a phase of mental operation that exerts a tremendous influence upon the conscious activity of the individual. Psychoanalysis and its methods of reeducation for the complex, unstable mind show the remarkable influence of subconscious activity. In evolution the subconscious mind antedates the objective—the truly conscious, or organic mind of man—by eons of time. The subjective mind in animals seems to be identical in its operation to the subconscious mind of man. It is transmitted from one to another in both animals and in man, and it would seem that many of the obscure problems of inheritance are to be accounted for by this means of transmission. In man, superimposed upon the intuition, induction, and emotions of the subconscious, is reason.

As has been said: "Knowledge is acquired first as an inheritance and secondly by education, or training of our conscious mind which exerts an influence over our subconscious mind and inherited powers." I would emphasize the great importance of mental material accompanied by strong emotional complex which has been acquired and relegated to the subconscious in early life. Psychoanalysis has shown us how strong is the working of the subconscious in its influence upon the development of character and deportment.

Unfortunately, as our methods improve for the betterment of those afflicted with nervous diseases, as well as with other hereditary diseases, such as tuberculosis, etc., so, too, the total hereditary influence is increased, since the afflicted ones survive longer and in larger numbers. "The vicious seed," as Dr. Charles Dennison, speaking of tuberculosis, has so ably said, "is not destroyed, but preserved to be again mixed with the good." The lay conscience must be awakened by the dissemination of knowledge on certain subjects. Particularly, the young man must know what syphilis means; how easily it is acquired; how frightful are its results. He must realize that its consequences are delayed sometimes beyond one or more generations.

I have no sympathy with the man who says syphilis is curable. No one knows whether in any particular case a cure is, or is not effected. Blood examinations, treatment by the newly discovered salvarsan, etc., do not warrant us in saying whether or not the disease is eradicated. Case histories, carefully taken, will show that this scourge is at the seat, sometimes very remotely, of the various disorders that affect the human brain and mind. We who have carefully studied ancestral and personal histories in a very large number of cases of defectives in and out of institutions, find syphilis a very prominent factor in etiology. Young people and parents must look forward to the results of a marriage in which, on one or both sides, there is direct or indirect mental derangement, syphilis, or alcoholic history. The contracting parties must feel that each is sealing the fate, by reason of the inexorable laws of heredity, of unborn offspring.

Of the utmost importance to a human being is the selection of his ancestry. This is delegated to his parents, and if they fail in observing natural laws that in a measure give them option in the matter, they are responsible for the result.

As to consanguinity, it seems that the character of the stock is the important factor. The presence of neuropathic tendencies in one or both parents, especially if there is similarity in the character of the neurosis, means almost invariably neurosis in the offspring in definite measure. Even a consanguineous marriage between those of good stock results as a rule in high class offspring. But when neurosis is introduced. the progeny suffers far more than in indifferent mating. There is in this a logical suggestion of high prophylactic value.

I do not agree with the learned New York jurist, Judge Foster, who asserts that sterilization of the criminal—he might better have said the unfit—is the cure for crime. In my opinion, you must go far back of the individual who is already afflicted.

Individual conscience must awaken, and public sentiment crystallize so that general laws of mental hygiene will be enacted and carried out under the supervision of competent scientists, and then we may eventually hope to be relieved of the awful burden of caring for the mental and physical anomalies.

34 West Eighty-seventh Street.

HEMORRHOID OPERATIONS.

A Local Anesthesia Technic.

By Leigh Watson, M. D.,
Oklahoma City, Okla.

I am describing a case of internal varicose hemorrhoids of ten years' duration. There is an external connective tissue pile, Tuttle's skin tab, on the left side. The patient is a printer, thirty years of age. The hemorrhoids frequently protrude and the patient is often annoyed by bleeding and tenesmus. The patient is lying on his left side in the Sims position. The internal hemorrhoids are above the sphincteric ring and are not visible (Fig. 1).

A small pledget of cotton saturated with a one fifth per cent. cocaine solution is introduced into the anus as the patient strains, as he relaxes the pledget is drawn up within the sphincteric ring.

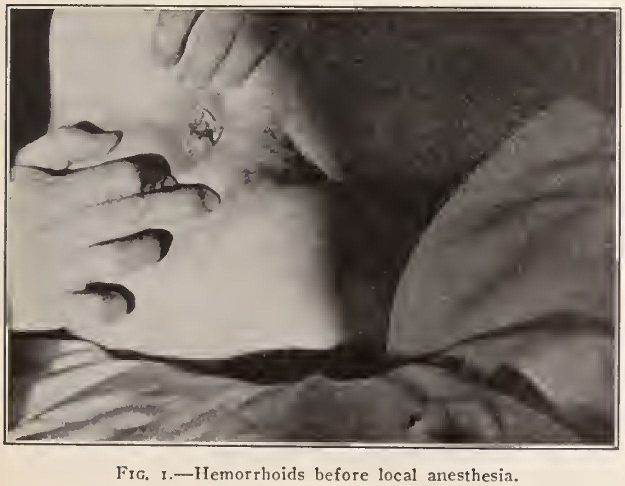

Fig. 1.—Hemorrhoids before local anesthesia.

The local applications are repeated with pledgets of increasing size, until the mucosa is completely anesthetized and the sphincter sufficiently relaxed to admit the index finger without pain.

The needle is now introduced through the anesthetized mucosa and the mucocutaneous margin is carefully infiltrated with a one tenth per cent. cocaine solution. The needle should be very superficial and always in sight beneath the epidermis. The infiltration is made into the deep layers of the dermis, and not under the skin. After each injection the needle is reinserted well within the anesthetized area.

The skin infiltration is now complete, a series of small tense wheals encircling the margin of the anus. This is all that is required for external hemorrhoids when it is not necessary to dilate the sphincter. Note the small amount of infiltration necessary when it is properly placed in the deep layers of the dermis. Massive infiltration distorts or obliterates the hemorrhoids and is a frequent cause of failure when physicians neglect to remove all the pile tumors when using local anesthesia (Fig. 2).

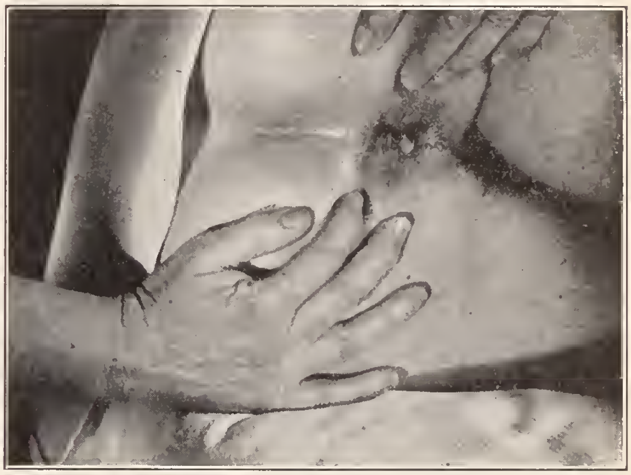

Fig. 2.—Showing complete cocaine infiltration; a very small amount of solution is required if it is properly placed in the deep layers of the dermis.

The index finger of the left hand is now introduced into the anus and the sphincter muscle is located. With this finger as a guide the sphincter muscle is cocainized. From six to eight punctures are made around the circumference of the anus at equidistant points, each time fifteen to thirty minims of the one tenth per cent. cocaine solution is injected directly into the sphincter muscle. This step is difficult and painful unless the mucosa has been anesthetized and the muscle partially relaxed by means of the cocaine pledgets. The sphincter is now painlessly and completely relaxed by digital dilatation. Only a moderate degree of dilatation is necessary. Extreme divulsion, as practised by some operators, is not only unnecessary, but the traumatism causes the dull aching pain that so often follows these operations.

A remarkable degree of dilatation is possible with local anesthesia. The sphincter must be well dilated before any operative procedure is attempted, so that no pile tumors will be overlooked, as sometimes happens when the sphincter is rigid and resisting, even under general anesthesia. The internal hemorrhoids are easily everted after the sphincter is completely relaxed. There is no chance of overlooking the smallest pile tumor (Fig. 3).

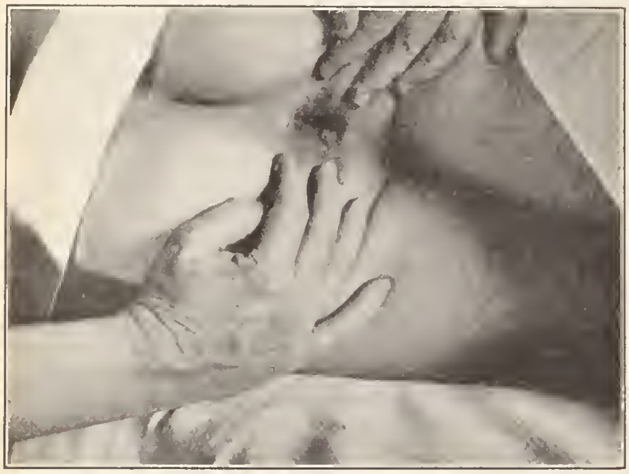

Fig. 3.—Showing ease of eversion of internal hemorrhoids after complete relaxation of the sphincter.

The anesthesia usually lasts from one to two hours, depending upon the thoroughness of the infiltration and the tenseness of the skin wheals. For abolishing pain after operation a one per cent. urea and quinine solution may be injected into the tissues at the base of each hemorrhoid just before it is removed. This nerve block persists for five to seven days: by the time it disappears the tissues have healed.

611-613 Colcord Building.

IMPROVEMENTS IN THE SPECULUM.

Two Simple Modifications, of Value to the General Practitioner.

By P. Z. Hebert, M. D.,
New York.

There is no doubt that operations on the female genital organs have often been performed when a well directed course of treatment, either local or general or both, would have saved the patient from mutilation. Many times, in cases of chronic pelvic inflammation after tampons of glycerin, boroglyceride, boric acid, ichthyol, etc., had failed, I have felt that applications of iodine, for example, would have given better results, if these could have been made with more precision than can generally be attained with an ordinary speculum. The cervix uteri often comes in the way and receives most of the application, which should go to the region of the broad ligament or to the Fallopian tube or ovary or to Douglas's pouch, as the case may be.

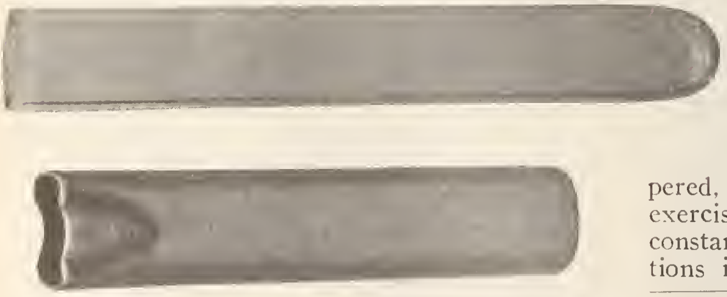

Fig. 1.—Hebert's speculum for the application of tincture of iodine over the broad ligament and about the cervix uteri; showing also the glass obturator.

With the object, therefore, of improving our methods of applying iodine in such cases, I have devised a speculum made of plain aluminum tubing cut to length. At the internal end of the tube length I made a depression on one side of the tube (Fig. 1), which would receive the cervix uteri, so as to press it aside out of the way, leaving a space in a state of tension in the roof of the vagina about one half to three quarters of an inch wide, which could be exposed all around the cervix by sweeping the speculum from one broad ligament through Douglas's pouch round to the other broad ligament. A shallow indentation in the end of the speculum will permit the broad ligament to arch over it when in that position. This exposed tense space would enable the iodine to penetrate and dry up and to be concentrated by several successive applications while the speculum is in position. In general, it is advisable to avoid applying iodine directly in front of the os uteri, as this is apt to produce dysuria.

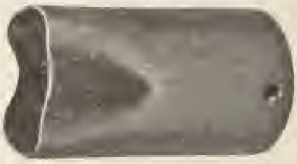

Fig. 2.—Same as Fig. 1, but of different length and thickness.

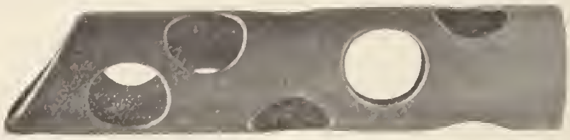

Fig. 3.—Hebert's speculum for the treatment of warty growths; the latter are made to protrude through the holes and are readily snipped off.

I also devised a perforated speculum (Fig. 3), intended for excising papillomata or warts inside, or at the entrance of the vagina. These excrescences are made to protrude through one of the perforations, when they can be snipped off their base with little or no difficulty.

Any ingenious mechanic can make these two forms of speculum with but little difficulty.

331 West Fifty-eighth Street.

EXERCISE AND DIET IN RELATION TO GROWTH.*

By Roger H. Dennett, M. D.,
New York.

In considering these two important elements in the growth of the child, exercise and diet, it would perhaps seem more appropriate that the diet should come first, because I believe that the average healthy child, if left unhampered, will get the proper amount and kind of exercise. On the other hand, the diet needs constant supervision and the child's inclinations in eating are far less apt to be right. I remember receiving a letter from a physician's wife who had read one of my articles upon diet in childhood. She wrote that she disagreed with me, for she had two healthy children who had always eaten whatever they chose and whenever they liked. As she expressed it, she turned them loose out of doors, and when they got hungry they came in and ate whatever their desires dictated. I could not help thinking that, unless these children were of an entirely different variety from those I have known, they must have been sick most of the time. But they had always enjoyed excellent health, probably because their exercise in the open country was strenuous enough to work off any ill effects of an improper diet. We are facing a different problem in a large city, where this active outdoor life from early morning until late at night is impossible.

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*Read at open lecture before the Public Health Education Committee of the Medical Society of the County of New York, Academy of Medicine, January 8, 1913.

We do not always seem to realize what an artificial life we are leading, and it is only because we have gradually become accustomed to such an artificial life that our children survive at all. It is perfectly astonishing to see in the hospital clinic great, strong, strapping, robust mothers bring to us such puny, sickly, little babies. It certainly gives us a very slight regard for heredity in comparison to environment. The parents have been brought up in the country and have come to the great city to bring into the world sickly infants, who serve only to fill our clinics and hospitals, and increase our death rate. Many of these children are eating the same food that sustained their parents, and nourished them well in the old country. Now, this difference between parent and child is not all due to diet, because fresh air and sunshine have a great deal to do with it, but the diet with the change of environment is responsible for the greater part of such a condition of affairs. In their own country the diet seems to suffice, surrounded as they are by ideal conditions in other ways, but here it is absolutely insufficient and works havoc with them. The Italians who have practically no protein in their food, that is milk, meat, and eggs, and the lower class of Russian Jews who do not even know what the word vegetable means, and the more Americanized foreigners whose children eat ice cream cones, soda water, cakes, chocolate, and candy are all examples of wrong feeding. Many children of the so called better class do not differ so very much from these foreigners.

It goes without saying that the growth of the child is almost entirely dependent upon the diet. Every physician who treats many children would tell you that more than half of the patients he sees, under six years of age, are brought to him for various conditions which are caused by errors in diet. This is not by any means due entirely to the lack of care in the selection of the proper diet for children, even among the hospital cases. Usually the mother's first thought when she sees her child failing in health or becoming poorly nourised, is to change the diet in one way or another according to her lights. It is her lack of knowledge that causes her to fail, rather than the want of care and thought. In my experience this is true both in private practice and hospital work. There are careless parents and there are lazy parents, but these are not in the majority.

Perhaps the first of the various details of children's diet to consider, would be the time at which the food is eaten. One of the most striking things in going around in the tenement houses, is the lack of any regular meal time. Often the family never pretends to sit down together to eat, as the well regulated family of the better class does. When the inclination seizes them, perhaps one or two members of the family at a time, take whatever food is provided. If meat, soup, or something of the sort is to be the main meal of the day, it is cooked whenever it is most convenient and eaten when the children come in from the street or from school. In our history blanks at the hospital, we have a space devoted to the diet throughout the day, which includes breakfast, dinner, supper, and between meals. The time of each meal is stated that we may determine the actual food taken by our little patients from morning until night. It is positively funny to see the amazement with which the average tenement mother looks at any such schedule. This is entirely wrong, but just as harmful a state of affairs is seen among the better class, owing to an entirely different cause. Here the child has regular meal times and sits down with the family, but he lunches all day long, often because the mother thinks he needs the food. The less he eats at meal times, the more anxious is the mother to have him lunch because his appetite is so poor. Many times in the course of the year, I am told that a child eats so little at meal times, that the mother has thought it necessary to give him something in between, so that he will get sufficient nourishment. It is unnecessary to say that three good meals a day will result in a far larger intake of food when the appetite is poor.

In private schools, as well as in some of the public schools, a luncheon is given about ten or eleven o'clock, absolutely spoiling the appetite for the noon meal, which should be the main meal of the day. The argument is made that city children eat a very poor breakfast. This is not so if the child is in good health, and the diet is carefully regulated for the rest of the day. The breakfast should be well taken, and is, unless the child is allowed to imitate his elders in eating a hearty indigestible meal at night. Whenever, through poverty, an insufficient breakfast is eaten, the luncheon should be given before school begins.

Three meals a day then, and these at a regular time, are all that are needed, and more do harm. Although this is a well known fact in older childhood, the tendency in this country has been to give four or five feedings until the child is three or four years of age. For a long time I have been accustomed to ordering three meals a day for children as early as the eighteenth month, and I have found as an actual fact that they do very well upon this schedule. They eat better, learn to take new articles of food more readily, and come to the table with an appetite which gives a relish for everything that is set before them. Frequent feedings have the same effect as eating between meals, and eating between meals has been discussed so much that the well trained mother will throw up her hands in horror at the suggestion of allowing her child to nibble whenever he chooses.

It would, perhaps, be tiresome to take up each article of diet and discuss it thoroughly, but I should like to say a word about some of the foods upon which there have been various erroneous ideas in the past.

In the first place, younger children, particularly in the early part of the second year, have not been allowed enough solid food. This is simply the reaction from just the opposite error, that of allowing the child to come to the table during its first and second year to eat all the indigestible foods which the adult is apt to put into his stomach. One error is just as bad as the other, but it is because the physician has preached against this indiscriminate eating of solid foods, that so many mothers have kept to the use of milk and cereals throughout this period. I, therefore, recommend the use of potatoes, beets, carrots, spinach, green peas, and string beans early in the second year. After the child has acquired a fondness for vegetables, this taste is retained throughout childhood. It is very important that it should be so.

Milk is undoubtedly a good food, and every child would be better off to have a certain amount of it each day, but when too much of it is taken the other necessary foods are neglected. A great many children who have a poor appetite are drinking one and one half or two quarts of milk a day, and it is only natural that they do not care for other things. Milk contains very little iron and other minerals which the vegetables supply, as well as the vegetable acids and other constituents. Children who are fed upon an almost exclusive milk diet may be fat, but they are apt to be anemic and flabby. Where, for financial reasons, children are unable to get sufficient nourishment, milk may well be given to supply the deficiency. Undoubtedly the tenement house child who has a roll and a cup of tea or coffee for breakfast, would be far better off with a glass of milk. The Italians who consider a pint of bad grocery milk as an extravagance, are very much benefited by the use of good milk because their food is lacking in the protein element.

The use of cereals is also very frequently overdone. Many children eat cereals two and even three times a day, which is, I believe, to the detriment of their health. This habitual eating of soft foods makes the child prone to rapid eating without sufficient mastication, so that later all foods are eaten hastily. This is not the only harm that it does, for the teeth are not brought into their proper use in chewing, and we all know that any organ of the body which is not made to work, degenerates. The teeth decay because they are not used. I, therefore, recommend that hard crackers and bread which has been toasted hard in the oven, be given to children of all ages as soon as the teeth have come through. The Swedish race have a very hard bread which they eat instead of our soft foods. I have seen a number of Swedish families in this country who have persisted in this custom of eating their own hard bread, with the result that the children have perfect teeth.

Meat is another article of diet that should take up our attention. It is not uncommon to hear a mother brag that she has never allowed her children to eat meat. In my mind, this is just as bad as the excessive eating of meat. Growing children need the muscle and bone building matter contained in meat, and even eggs will not take its place entirely. After eighteen months, or at the most two years, children should have meat in moderate quantities, once a day, at the noon meal. Given oftener than this, it is apt to be harmful. Steak, chops, roast beef or lamb, chicken, and occasionally boiled fish may be allowed.

Meat soups are not of the greatest necessity in the diet. Their chief use is in giving a relish to other foods which are eaten with them, but a child who is properly fed always has a relish for any food which is offered him. It has long been known that soups contain only the extractives of the meat, and very little of the protein or muscle building constituents. On the other hand, legume soups, that is, those made of such things as dried beans and peas, if cooked in a manner that renders them easily digestible, do contain far more protein that is available, and are very nourishing.

The place of fruits in the child's diet is a very important one. They help to regulate the bowels and contain elements of food which are very necessary, although in actual nourishment they are deficient. Naturally we should not always consider foods from a nutritional standpoint alone. If we thought only of the actual nourishment we were giving a child without considering the form of the food, a very ridiculous diet might result. For instance, a diet of crackers, cheese, and butter would make a highly nutritious one, with the correct proportions of fat, starches, and proteid, but few of us would think of giving our children such food exclusively.

Exercise is just as essential to the child as the proper diet, but, as I have said, under the right conditions, every child gets sufficient exercise of his own accord. In the country, children do not have to be urged to play. All that is necessary is to allow them to go out of doors where they have perfect freedom, and where there is something interesting to do every day. The problem of exercise should really be no problem at all, but, unfortunately, city children differ in this respect from country children. It is common to see children who are sick and prone to frequent illnesses during early childhood, suddenly pick up in health and become robust when they reach the age of five or six years. This is because they have, at that age, started to school and mingled with others of their kind, where the incentive to play originates, and with play comes exercise. Companionship, then, is one of the essentials in exercise. Children will not play vigorously alone, nor are they apt to do so even with their brothers and sisters unless, possibly, where there is an exceptionally large family. When a lot of children get together, each brings a new idea into the play, each one incites the other to a spirit of rivalry, and the enjoyment is far keener. One can see this illustrated daily, if one will take the trouble to watch a little child alone with his mother in the park and see how listlessly he enters into his play. On the other hand, the public playgrounds, crowded with children, are a perfect babel of voices and activity. If you should bring two or three children into the same park with all the swings and various appliances for having a good time, they would soon lose their enthusiasm.

The fact that there are many children there, doing the same thing, seems to keep them going. If you give a child a jump rope, he will not jump alone very long, but if there are half a dozen or more children, each waiting for his turn at the rope, he will be content to keep at it all day.

In going through the tenement districts, one is apt to regret the fact that little tots, perhaps two or three years of age, are allowed to play upon the street alone. It is indeed too bad that they cannot have a better playground, but, dirty as the surroundings may be and as dangerous as it may be for them to come in contact with the bad moral influences of the street, it is far better than having to stay cooped up alone. So, perhaps, as far as exercise itself is concerned, they are better off than our own children who have a small yard, of which they soon tire, or who go to the park with mother or nurse and play alone without other children to stimulate them.

Monotony is another discourager of exercise. The city child has very few places to go, especially if he belongs to the better classes. Each day he takes the same walk, goes to the same spot in the same park. Is it any wonder he does not have much enthusiasm for his play? It is a terrible bore for the mother or nurse, even though she has her sewing or book to take up her attention. It never occurs to her that the child may be far more bored than she would be with this constant repetition of the same acts.

We are not apt to think much about the matter of exercise in infancy, because the babies kick and cry and roll around to their hearts' content, but it is well to have the necessity in mind of allowing the infant to do so unhampered. Tight clothing and improper dressing in general, is the only restriction that we are apt to place upon them. Nowadays, the well informed mother dresses her baby comfortably, and allows him an hour to exercise each day, lying on the bed with his clothing off, to kick and squirm. As he gets older, he begins to creep and then walk, and he is in constant motion all the time that he is awake, and if he is strong and well, I defy any mother to prevent his getting the proper amount of exercise. During the latter part of the second year, however, there is the mistake frequently made of taking baby out in the carriage instead of allowing him to run about and get his exercise in this way. Often at this age children are far wiser than their parents and will not allow themselves to be confined to the baby carriage unless they are absolutely suppressed.

I cannot understand why this suppression is so popular, because I believe that throughout childhood—there are very few exceptions to the rule—a child should be allowed to be as active as he wishes. In fact, in the city it is only the lack of desire for active exercise on the part of the child that needs attention. The other day, I asked a mother whose child did not seem to be in the best of health, if she was very active in her play. The mother replied that her child was very lively indeed, but that she was not allowed to run when she was out of doors, for fear of getting overheated, there was so much danger of her catching cold afterward. This is not at all unusual, for I meet this suppression almost every day. If such mothers could only realize that their children are far more apt to catch cold when they do not get the proper amount of exercise, than they are when allowed to run and play all they like.

In conclusion, then, I would say: Let your children be as lively as they wish and play all they like. If they are not naturally active, encourage in them a fondness for games and sports of all kinds. I have had under my care boys who did not seem inclined to play baseball and other games with children of their age, but who cultivated a taste for it through my advice. I have frequently advised girls to take up roller skating, jump rope, and dancing, as such pastimes are very helpful in giving the body the proper exercise. Gymnasium work, basket ball, and all the indoor sports are possible for older children, often with little or no expense incurred in a city like New York, where there are so many gymnasiums. Most of us have caught the spirit of the fresh air treatment, and it would be well if we could learn that exercise is just as important.

121 East Thirty-eighth Street.

THE TREATMENT OF PNEUMONIA.*

By Maurice Packard, M. D.,
New York,
Clinical Professor of Medicine, Polyclinic Hospital and Medical School.

In order to take up rationally the management of any infectious disease, it is absolutely essential to study the organism or organisms causing the condition, and to seek the means whereby they gain mastery over their host. It would be well if we could go further and measure, as it were mathematically, the strength and weakness of the invading foe and contrast it with the forces of the defense, but despite a hundred years of general progress in medicine, and despite the fact that the principal offending organism is known, pneumonia still occupies that unique position in infectious diseases that its mortality figures remain unabated. I use the term unabated, notwithstanding that here and there some enthusiastic clinical observer may report, in his limited experence, a marked reduction of twenty per cent. mortality.[1]

In pneumonia, just as in every other infectious disease, it must be thoroughly understood that there is, whatever may be the etiological microbe, a bacterial invasion, in consequence of which there is an inflammation and a bacteriemia or toxemia, and that the inflammation is only a local manifestation of a general constitutional disturbance. It is immaterial whether the pneumonia is lobar or catarrhal, whether it is produced by the pneumococcus or the grippe bacillus, the pulmonary lesion is merely the local expression of the disease and is secondary in importance from the standpoint of investigation and treatment.

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*Read at Eastern Medical Society, January 10, 1913, as a part of a symposium on pneumonia.

[1] It is too early to pronounce judgment on the new so called specific of Morgenroth. Although arthylhydrocuprein hydrochloride has been efficacious in experimental pneumonia; according to Wright, it has not lived up to Morgenroth's expectation in man.—*Lancet,* December 12, 1912, p. 1703.

I need not remind you of the cases where the toxemia is so great, while the pulmonary lesion remains slight, that the patient is overwhelmed with his infection, and a fatal termination rapidly takes place; or, again, where there is a marked pulmonary involvement, but with very little constitutional agitation. After all, it must be evident that the lungs present the same peculiar conditions a few hours after the crisis, as they did when the patient was in the throes of his pneumonia. If such is the case, to which, I believe, we are all agreed, the pulmonary lesion is but a minor factor in overcoming Nature's opposing forces.

What are then the causes of a losing fight, and against what agents must we direct our ammunition in the combat over pneumonia?

As a general rule, it may be stated that death takes place in one of the following three ways: 1. By toxemia; 2, by cardiovascular failure; 3, by complications.

Treatment of toxemia. It is rather sad to report that the specific treatment of pneumonia has not produced the beneficial results which have been obtained in other infectious diseases. I believe it was Klemperer who first tried out antitoxine treatment. Now and then you will hear of some one who reports wonderful results in a short series of cases, but any one who has had experience in the treatment of this baffling disease must realize how fallacious are conclusions drawn from a limited number of cases.

It must also be remembered that no specific germ causes the disease. Leaving the bacillus of Friedlander, the bacillus of influenza, and even the pneumococcus out of the question, the researches of the pneumonia commission have shown quite clearly that there are several types of diplococci, one which resembles the pneumococcus, but does not ferment inulin, and *Streptococcus mucosus capsulatus*, which must be taken into consideration. Then, again, each of these types has several strains, and in order to treat rationally with vaccines, you must use the particular strain of that culture which produces the pneumonia. Still, even with autogenous vaccines the results have been disappointing. The best results have been obtained, however, in delayed resolution, which by the way occurs very seldom and in extrapulmonary lesions. The so called polyvalent bacterins have been used in my service, but their results are doubtful.

As the virulence of the toxemia depends much upon the resistance of the host and his ability to neutralize or eliminate the poisons, our first consideration must be to fortify these as much as possible. This would indeed take up preventive measures of which I will not speak.

But, after the individual has his pneumonia, in order to fortify his resistance, it means that he must be placed at rest in a comfortable bed and that he must not be overdressed, in order not to catch cold, as "fever patients do not catch cold." The bed should be well made and well cared for, and the nurse and all other attendants should not be too meddlesome. As the patient needs mental quiet, it is absolutely necessary to exclude everybody but the nurse and the medical advisers. If the patient is very sick, all muscular efforts should be avoided, and that precludes too many medical examinations. The room should be the best and sunniest in the house. The windows should be kept open from the top and bottom so that oxygen may be given by Nature rather than from the chemist's tank. The temperature of the room need not be lower than 60° F., and your patient's feet and body should always be warm.

The diet should be nutritious and, if possible, should consist principally of milk. If this causes tympanites, it should be immediately stopped, and other foods, such as gruels, broths, coffee, albumen water, should be substituted. Tympanites would embarrass the heart's action, not only by abdominal distention, but by splanchnic engorgement. The amount of the food intake may be increased by adding milk sugar to each feeding. The intervals between feedings should be at least three hours, and medicines are to be given at the same time so as not to disturb the patient too often.

The tepid sponge bath, in the morning and evening, adds to the comfort of the patient, and this should be done, for the family's peace of mind, between blankets, and exposing only one part at a time. An ice bag to the head may assist us in adding comfort to the patient, but cold baths are absolutely unnecessary. The temperature in pneumonia means nothing, as the disease is of too short a course to allow worry about the fever. After all, high temperature is essentially as McCollom has demonstrated, a protective reaction.

Sleep should be encouraged in every way, by hydrotherapy or by hypnotics. If the patient remains wakeful that will predispose to delirium, and delirium means anything but rest to the body or mind. If veronal or trional is ineffectual in producing sleep, do not hesitate to use morphine.

To reduce the toxemia as much as possible, eliminative measures should be started immediately. At the outset, a good dose of calomel followed by salines should be given. Hot saline injections or those by Murphy's method should be given every morning and evening. Hot salines will not only keep the bowels clean and sweet, but will stimulate renal secretion and act as an antipyretic. Saline solution has a peculiar affinity for the pneumococcus, and Rosenow has tried a vaccine of pneumococcus washed out in salt solution, asserting that it renders the virulent pneumococcus avirulent. The work at Rockefeller Institute has also shown that salines, when given before the autogenous vaccine, increased the resistance of the animal to the pneumococcus. It causes leucocytosis, which means phagocytosis, and in such a short disease as pneumonia, phagocytosis must be one of the great factors in immunity. Water should be given as often as the patient wishes. If the patient is semiconscious, five or six glasses should be given daily.

As stated previously, the usual causes of a fatal ending in pneumonia are toxemia, cardiovascular disease, and complications. Technically speaking, cardiovascular failure is but another result of toxemia, and it is characteristic of the pneumonia germs to have a selective action on the cardiovascular apparatus. It might be said, just as rabies has its selective action of the nervous system, so pneumonia toxines have a specific chemical affinity for the heart and bloodvessels. Romberg and Passler have shown that the toxic albuminates of pneumonia paralyze the vasomotor centre, thus resembling the section of the splanchnic nerve.

There is first an engorgement of the vessels of the intestines and the abdominal viscera. The blood supply of the heart is thereby diminished, the right side receives less blood and thereby cannot send as much to the left side, causing anemia of the nervous system and other organs. The endocardiac pressure will naturally sink, and the heart will have to contract faster and faster until it finally stops. How great an influence engorgement of the splanchnic vessels has on cardiac failure can be shown by the killing of normal rabbits just by holding them upright. Turkingen maintains, and he has been corroborated by pathologists, that in all his autopsies in genuine pneumonia cases, he has found fatty albuminous material in the myocardium.

Clinically, we depend as much upon the state of the bloodvessels as we do upon any other organ. The presence of degenerated vessels, even in the young, make us wonder, after all, is not this particular pneumonia a terminal infection, and is this not Nature's way of removing one of the unfit? In this connection it is well to call attention to the relationship of blood pressure to the prognosis of pneumonia. To cite Gibson's words: "A pressure appreciably below normal is invariably of evil omen and any considerable fall bodes disaster. When the arterial pressure expressed in millimetres of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as an excellent augury; while the converse is equally true." Practically these laws still hold good, and it has marked a step in advance to previous haphazard measures of treatment. In other words, when the blood pressure is falling, vasomotor constrictors are imperatively needed. If the blood pressure remains higher than the pulse rate, and if the heart signs are satisfactory, Nature is making a winning fight and your help is not called for. If it so occurs that while the pressure remains normal, the speed of the pulse increases, while the first sound of the heart becomes muffled and the second sound not distinct, with increased area of heart dullness, the cardiac stimulants are indicated. Thus, according to indications, vasoconstrictors or cardiac stimulants, or both combined, will be employed in our fight against this treacherous disease.

Of the vasoconstrictors, camphor in three or five grain doses, dissolved in sterile sweet almond oil, has given me the best satisfaction. The next best drug has been the double salt of caffeine. I have used the adrenalin chloride intravenously in salt solution for the sudden sharp falls, and it has certainly proved of inestimable value. If I was limited to one drug, though, in the treatment of pneumonia, my choice would be camphor first and last.

Digitalis heads the list of the cardiac stimulants. This drug has certainly not lived up to its reputation in acute fevers, but there are any number of cases that absolutely require it. On account of its slow action, strophanthin in 1/120 grain dose should be used intravenously, followed by the tincture or some other potent preparation of digitalis. The strophanthin will hold the heart until the slower digitalis derivatives begin to be efficacious.

The indications for the use of nitroglycerin and the nitrates are but few. If the pressure is abnormally high in the early stages, it is probably due to Nature's stimulation by the fever for the purpose of creating more antibodies in the blood.

Aconite, which has been lauded by a distinguished clinician, is not only of little value, but may be harmful. There are any number of patients who will get well in spite of any treatment; and it may be that the drug had very little influence on the blood pressure. Price, in Cushny's laboratory, has shown that aconite, as sold and prepared to-day, is practically inert in medicinal doses. This has been confirmed by Rudolf and Cole, of Toronto.

In cases where the pulse is good, but where there is a great deal of blueness of the skin, dyspnea, albuminuria, large liver, and an increased area of heart dullness to the right, symptoms of right heart embarrassment, venesection is the proper procedure.

Edema of the lungs, with low arterial pressure, should be combated by epinephrine hydrochloride and atropine sulphate. Atropine not only acts as a splanchnic vasoconstrictor, but dilates the peripheral vessels as well, thus restoring circulatory equilibrium; but in those cases of edema where the tension of the pulse is increased, your best success would be with venesection and artificial respiration.

Pain is best relieved by cupping, by mustard plasters, or by adhesive strappings, but if despite these procedures it still persists and is at all distressing, opium or its alkaloids should be administered.

Cough, unless nagging and exhausting, should be let alone. If the cough, though, is due to pleurisy, it accomplishes nothing, and that can be treated in the usual manner, but if it is due to bronchitis, the cough is a conservative symptom and it should not be interfered with unless it is exhausting in its nature.

To prevent reinfection of the lungs, creosote, iodide of ammonium, and hexamethylenamine have been used. All have been given too much credit, as their influence upon the course of the disease is a mooted question.

The toilet of the mouth, tongue, and nasopharynx should be religiously attended to during the entire course of the infection.

The complications of pneumonia with their treatment are too many and varied to be discussed in this paper, but I cannot close this subject without alluding to the aspirating needle. In all cases of protracted temperature, or after postcritical rise, thoracic puncture should be tried. Again, in conditions where the delirium is marked, but with a slowing of the pulse and retraction of the neck, plus symptoms of endocranial pressure, lumbar puncture may not only aid in diagnosticating a meningitis, but prove of decided therapeutic benefit.

Judgment should be exercised in handling convalescence. Laxity at this time may defeat a happy termination by producing a pulmonary embolus or an acute cardiac dilatation.

As a rule, if the case is of average severity, the patient must not be allowed to leave the bed before a week after complete resolution. The pulse and blood pressure should be frequently noted, and only until both are normal after muscular effort should the patient be permitted to sit up.

At first this period should be short to avoid exhaustion, and should be increased only slowly. Exercises should be graduated and increased daily so as not to cause cardiac overstrain.

This concludes the general rules and indications for our treatment of pneumonia. In summing up, it is well to recall that each patient is a law unto himself, and that each individual patient's blood pressure and vascular state will probably differ in some degree. Some cases will demand vasoconstrictors, such as camphor, caffeine, or epinephrine. Others will demand only cardiac stimulation, and even a few will demand venesection and vasodilatation. The combination of all methods may be required, but it is only by means of the intelligent study of the blood pressure and vascular state that better results can be realized in the treatment of pneumonia.

203 WEST SEVENTY-NINTH STREET.

JEQUIRITY IN OPHTHALMIC WORK.

By JOHN ALLAN, M. D,. D. P. H.,
London, England.

The therapeutic uses of jequirity in ophthalmic work are not unknown, yet the services of this medicament are but seldom invoked. Its value in chronic affections of the eyes has long been recognized in India and, in my opinion, it merits more widespread acceptance. In a short paper in the *Prescriber* for March, 1911, I drew attention to the use of infusion of jequirity in ocular practice, and, as I have since then had further opportunities of testing the drug, it may not be without interest to discuss my later experiences, although continued trials have merely confirmed my previous findings.

Jequirity seeds are obtained from *Abrus precatorius,* a shrub of the natural order leguminosæ commonly met with in India and Brazil. In the *British Pharmaceutical Codex* we find the characters of the seeds thus described: "The seeds are well characterized by their smooth, glossy surface and bright scarlet color, with a black patch at the hilum; they are ovoid and subglobular in shape, and vary from five to eight millimetres in length, their breadth being about four or five millimetres. The hard kernels possess the characteristic leguminous odor and taste." These familiar scarlet and black beans are frequently formed into necklaces.

In making use of it in ophthalmic practice my custom has been to employ the infusion of jequirity in the strength of one in 12.5. The cases in which it has been prescribed were cases of granular conjunctivitis and corneal opacities. A requisite knowledge of what is expected to occur is very desirable, for to the uninitiated the intense reaction frequently provoked is somewhat alarming. It is also but right to inform the patients that in all probability the eye condition will temporarily become worse. Such a precaution will avoid much needless mental anxiety. The effect of the instillation of infusion of jequirity into the eye is to produce a marked inflammatory reaction of greater or less severity—the so called "jequirity ophthalmia." There is generally severe conjunctival chemosis and there may be considerable edema of the lids. Such symptoms as intolerance to light, lacrymation. pain, etc., which are common to all acute inflammatory affections of the eye, are present. The acme of the inflammatory reaction is, as a rule, reached in from twelve to eighteen hours after the instillation, and the acute symptoms have generally subsided in three or four days' time. The infusion of jequirity may have to be exhibited several times, but it is inadvisable to repeat the instillation until the acute symptoms have subsided. The interval between applications will naturally depend to a large extent on the intensity of the reaction produced. Very often a further instillation of jequirity may be permissible after four days; in other cases an interval of a week or ten days must be allowed to elapse.

In my article in the *Prescriber* I cited the case of J. G., who was cured of trachoma by the vigorous application of copper sulphate subsequent to the use of infusion of jequirity. This patient was a boy from a training ship and a few weeks later I had a companion of his from the same ship. He was treated in the same way with good effects. It is almost superfluous to mention the seriousness of an outbreak of granular conjunctivitis in an institution such as the one just referred to, and any means which will effect a prompt cure is welcome. My experience has been that jequirity properly applied will considerably lessen the time required to cure granular conjunctivitis.

I had often wondered what would happen if jequirity were employed in cases where some acute manifestation was superimposed on an old trachoma. I had recently an opportunity of trying the effect and the record of the case may be of interest:

CASE. E. M., a young adult female, twenty-five years of age was training for a nurse, and in the course of her duties she contracted trachoma which affected the lids of both eyes. After a preliminary course of the usual remedies, including sulphate of copper, the operation of "rolling" was practised on both sides. Subsequent to this the copper sulphate was continued, and in time the left sided granular conjunctivitis was cured. The right side proved intractable, and a perfect cure could not be said to have been effected. For a time she disappeared, but she again came under observation for keratitis in the right eye; that is to say, in the eye in which the trachoma was imperfectly cured. The condition of the lids was much the same as when she had been last seen some months before. I was extremely anxious to try infusion of jequirity, but hesitated in view of the keratitic condition present. When the acute stage of the keratitis had passed I decided to try the jequirity treatment. The patient was kept under constant observation and one drop of infusion of jequirity (one in 12.5) was instilled into the right eye. A reaction of moderate severity followed, in which pain, lacrymation, chemosis, etc., were evident. There was a slight rise of temperature, the evening temperature after the instillation of jequirity being 99° F. In four days' time the jequirity was again applied and after another four days a further instillation was made. In the evening after each instillation a rise of temperature of 0.5° F. was noted, but on the following days the thermometer registered 98.5° F. or rather less. The jequirity did not appear to aggravate the keratitic condition in the least, and at the conclusion of the treatment the corneal condition was much improved and very little opacity has remained. The granular condition of the lids has also disappeared, and the woman appears to be quite cured.

In making use of infusion of jequirity in eye affections it is very important that the infusion should be properly prepared, and there are several details which must be attended to. It is essential that the infusion should be freshly prepared, because decomposition quickly takes place and we can no longer be certain that the solution is a standard one. It is frequently advised that a little boric acid be added as a preservative, but even with that addition it is impossible to guarantee that the strength of the solution will be maintained. The actual preparation of the infusion must be carried out with all possible care. A certain temperature is necessary and must be exactly determined with the aid of a thermometer. On no account must the temperature exceed 50° C. If heated beyond that point the enzyme responsible for the peculiar reaction is destroyed and the solution is rendered inert. As described in the *Prescriber* the infusion is prepared in the following manner: "Some distilled water is boiled and then allowed to cool to 120° F (49° C.); twelve and a half drachms of this are measured out, a drachm of powdered jequirity is taken, and the distilled water at this temperature is poured on the powdered seeds. This is allowed to stand until cool and the infusion is then decanted." In my opinion the solution should not be filtered, but the slightly opalescent fluid obtained after decanting should be employed for the instillations.

If no reaction follows the instillation of a drop of infusion of jequirity, one must not jump to the conclusion that the solution is inert, for it will be found that some people do not respond. A drop of the infusion placed in the eye of another person will often induce a vigorous reaction. In referring to infusion of jequirity, I have always spoken of one drop being instilled, and this I consider of practical importance. In some books I have seen the statement that infusion of jequirity is applied as a lotion to the eyes and if used in quantity to flush out the conjunctival sac it is quite possible that serious consequences might arise. Judiciously applied, infusion of jequirity can with perfect confidence be presented, and is a valuable addition to the medical man's therapeutic armamentarium in ophthalmic work.

31 Prince of Wales Road, Battersea, S. W.

HEART BLOCK (ADAMS-STOKES SYNDROME).

Report of a Case.

By I. W. Held, M. D.,
New York,
Adjunct Attendant Physician, Har Moriah Hospital.

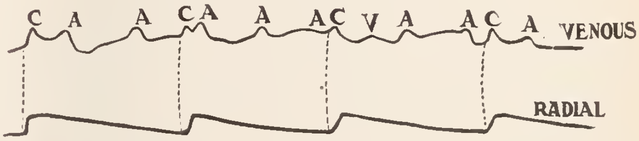
The conclusions drawn from the large percentage of all cases of clinical heart block are founded upon experimental demonstrations. Pathological observations alone, numerous though they are, do not suffice to establish the fact that heart block is due to a lesion of the bundle of His. Positive proof is the outcome of experimental work. Therefore, I do not consider it superfluous to review the most important experimental work done in that line.

The experiments of Romanes upon the umbrella of the jelly fish, in which transmission of contraction first received careful study, laid the foundation of our present knowledge of the subject. The researches made by Gaskell established the dependence of conduction upon direct continuity of musculature, thereby giving us a conception of the mechanism of impeded conduction (heart block) in the cold blooded animals.

The earliest experiments on the mammalian heart are those of Tiegerstedt (1), Wooldridge (2), and McWilliams (3). They proved the subservience of the normal ventricular rhythm to impulses from the auricle. We are chiefly interested in the localizing of the path through which these impulses are conveyed in the mammalian heart. That dissociation may occur in the mammalian heart was known for centuries, only the cause remained obscure.

Harvey, in his essay on the movement of the heart, states that he noticed a prolongation of the interval between ventricular and auricular contraction, and at times one ventricular contraction would follow several auricular contractions. Tiegerstedt and Wooldridge attempted to dissociate the auricle and ventricle, but the result is not conclusive, as the operation caused widely spread damage to the heart.

Two years after His described the auricular bundle, he, together with Graupner (4), succeeded in destroying the connection between auricle and ventricle in the heart of a rabbit, producing dissociation. Hunblet (5) excised the heart of a dog, nourished it by transfusion, and passed ligatures tightly around the bundle. In eight experiments he obtained seven positive results, viz., heart block resulting. In 1905-6, Hering (6) published his results, where damaging the bundle of four dogs resulted in heart block, two cases being accompanied by tracings. The first experiment on the heart *in situ* was done by Erlanger (7). He did not succeed, however, until a special clamp was employed, by which he was able to destroy the bundle without damaging the heart proper. In seventeen experiments he obtained sixteen positive results. Tabora (8) experimented after a similar method and obtained equal results. The latest and most laborious work is that of Cohn and Trendelenburg (9). Their work was done with such care that their original article is worthy of study by all interested in the subject. Their observations were conducted upon the perfused hearts of twenty-six cats, seventeen dogs, four rabbits, two apes, and four goats, and published with a complete report of the disturbance in the heart, a diagram of the bundle and lesion, a tracing of the heart's mechanism, and frequently macroscopic photographs of the lesions. The results were as follows: Where the incision failed to reach the bundle, or where the bundle was but partially out, there was no disturbance or but a partial disturbance; where the bundle was transsected, complete heart block resulted.



Contradictory observations were reported by Kronecker and Busch (10), who announced that they had destroyed the bundle in the rabbit without causing heart block, but they did not produce any histological proof of their work.

Imchanitsky (11) worked on the heart of a rabbit and a dog *in situ*, destroying the bundle and also showing the destruction of the bundle microscopically without having caused heart block. He did not, however, demonstrate having made serial sections of the bundle.

Pankul (12) experimented on twenty-four rabbits and found that heart block did not result because of damage to the bundle; on the other hand, it did result whenever he damaged the neighborhood of the bundle.

The objections to the conclusions are that Kronecker and Busch have no histological proof. Imchanitsky has only a single observation. The more extensive work of Paukul shows that the sections were made at right angles to the course of the bundle, so that it is probable that branches of the bundle leaving the main track in the earlier part of its course would escape observation as a result of his technic, especially in the rabbit, where such early outgoing fibres are present.

In summing up the observations, it may be said that the coordination of auricle and ventricle depends upon the integrity of a limited tract of tissue stretching between the auricle and ventricle, and destruction of that tract causes dissociation.

CLINICAL HISTORY.

In 1761, Morgagni published the report of a case of slow pulse. In 1827, Robert Adams (13) reported the case of a man, sixty-one years of age, with a pulse of 30, fainting spells, and apoplectic seizures, without paralysis. Burnett (14) reported the case of a similar character in the same year. Holberton (15) reported a case, in 1846, of slow pulse, with fainting fits, and in the same year William Stokes (16) described his case, characterized by persistent bradycardia, fainting spells, and convulsive seizures, but no unconsciousness. Since then the disease has borne the name of Adams-Stokes.

Heart block, it should be remembered, is not synonymous with Adams-Stokes disease, as the latter is only the symptom complex that is very frequently associated with heart block, but there may be heart block without the Adams-Stokes symptom complex.

The first suggestion of dissociation of the auriculoventricular junction in man dates back to 1875, when Galabin (17) reported the case of a slow pulse of thirty-five a minute and remarked: "We have here a heart, the auricle of which contracts twice as often as the ventricle." He based his account upon auscultatory phenomena and tracings of the apex beat. In 1885, Chaveau (18) obtained tracings of the neck and apex beat and the radial pulse in a case of bradycardia, showing dissociation. He attributed the lesion to the medulla, where the nucleus of the vagus was diseased. In 1899, Wenckenbach (19) and His (20) described cases of heart block in the human subject and suggested a lesion of the auriculoventricular junction. The former based his diagnosis upon arrhythmia of the ventricle and the latter furnished polygraphic curves. Mackenzie's early publications (21) advanced the knowledge on the subject immensely, and during the last few years a multitude of cases was reported both clinical and post mortem, notable among which are those of Osler, L. F. Bishop, von Leube, Fleming, Hoffmann, James, Ashton, Norris, and Lewinsohn.

The pathological changes may be impressed on our memories by citing some of the findings. Ashton, Norris, and Lewinsohn (22) reported a gumma of the bundle of His, Bishop (23) also a gumma of the bundle, Hay (24) stretching of the auriculoventricular bundle with obliterations, Fleming and Kennedy (25) lymphatic deposits in the nose and bundle, Sendler (26), in 1892, a round cell sarcoma of the septum, Jellinck and Cooper (27) auricular infarction of the bundle. And there are many others.

The conclusions that can be safely drawn therefrom are as follows:

1. A slow pulse is due to a dissociation between the auricle and ventricle (heart block).
2. The syncopal attacks (Adams-Stokes syndrome) are due to cessation of the ventricular beat, but not to that of the auricle.

Aside from the local lesions, pathological changes are also found at other portions of the vascular system, such as sclerosis of the coronary arteries, fatty heart, dilated aorta, etc.

While we saw from the foregoing that bradycardia, or rather heart block, is the result of a lesion of the bundle of His, we should not forget that there are cases where heart block results and the bundle of His is completely intact. Nagayo (28) reports two cases of heart block which histologically, microscopically, and macroscopically show absolutely no lesion in the bundle of His, but the left ventricle was diseased. To this group may also be counted the cases described by E. Neusser (29), and cases that are so frequently observed where heart block is of a transient nature. Bradycardia in the course of acute articular rheumatism, or in the course of acute infectious diseases, or as a result of an advanced arteriosclerosis or myocarditis and fatty heart belongs to the myogenic type.

Nagayo tries to explain the heart block in his cases by the fact that the ventricle is so diseased that it fails to respond to all impulses of the auricle, that the conductivity between auricle and ventricle is not disturbed, but as the conduction reaches the ventricle it is too weak to respond to more than the second or third impulse. Such heart block he designates the "mural type." In this form, in contradiction to the heart block where the bundle of His is diseased, there exists incomplete dissociation, which means that with the improvement of the heart the normal condition returns. This condition is transient.

There is still a third type of heart block, viz., the neurogenic type, which will be best illustrated by citing some of the published cases. A typical example of temporary vagus heart block was mentioned by Hirschfelder (30), citing Tannhoefer, in which a physician, compressing his own vagus, suddenly gave a staring look, could not move his hands, and became unconscious. His pulse became very slow and his hands had to be moved, after which he recovered consciousness in the course of a few seconds.

Holberton (31) describes an autopsy in the case of a man, aged sixty-four years, where the clinical symptoms were those of the Adams-Stokes syndrome, but where the post mortem examination showed a narrowing of the spinal canal compressing the medulla, and no changes in the cardiovascular system were found.

Neuburger and Edinger (32) also describe a case of syncopal attacks and slow pulse, where post mortem there were no heart changes; instead, the spinal cord in the cervical region was very much diseased.

Lépine also describes a similar case. An interesting case is cited by Lanois, where a girl, twenty-two years of age, had contracted typhoid fever and died in an attack of syncope with slow pulse. Autopsy showed, aside from the pathological changes of typhoid, the bronchial glands pressing upon the left vagus.

The bradycardia that is associated with the symptom complex known to-day as "vagotonia," can be classified as the neurogenic type.

Other influence of the vagus, endocranial disease, tumor or abscess of the brain, inflammatory changes, and cerebrospinal meningitis are causes of bradycardia. For the neurogenic type of bradycardia we can add to-day the type of slow heart that goes along with the vagus tonus, where there is a set of symptoms including contracted pupils, vasomotor disturbances, and a slow pulse.

Among the drugs that cause extreme bradycardia, digitalis should be mentioned first. E. Neusser (29) reports a case where owing to administration of digitalis, bradycardia and arrhythmia set in. The patient went into convulsions, from which he never recovered. Johanson reported a case where there was softening of the brain on account of a thrombus of the left middle cerebral artery, causing heart block.

Mackenzie (34) demonstrated that, whenever the polygraph shows a marked delay between the auricle and carotid curves, digitalis ought not to be used. Poisons of the type of muscarine, aconite, and tobacco are causes of transient bradycardia. Transient bradycardia is also frequently associated with catarrhal jaundice and postscarlatinal fever. Cases of meat poisoning have also been reported as cause of transient bradycardia.

From what was said above, it follows that when diagnosticating a case of heart block, we must decide to what pathological group it belongs. By far the most important as well as the most dangerous type is where the bundle of His is diseased. These are cases of complete dissociation, and the condition is never influenced by drugs.

The second variety is the one described by Nagayo as the mural form, which is one of transient nature; with the improvement of the heart muscle there is still a possibility for the heart block to disappear.

Finally, there is the third type, the neurogenic, where the heart block is influenced by atropine. Administration of atropine sulphate, one sixtieth grain, hypodermically, will remove the heart block temporarily. This is very important for the diagnosis.

As to symptoms, I shall try to cover them by describing a case of my own.

CASE. M. B., sixty-four years old, male nurse, good family history, had six healthy grown children. Denied venereal infection; smoked moderately up to eight years ago. Up to about that time he was perfectly well, but suddenly began to feel weak and one day, while in the street, he became unconscious and those around him reported that he had a short convulsion. He was taken to the Mount Sinai Hospital, edema developed of the lower extremities, and he was treated for several weeks. While in bed, he had never any attacks, but the first day after he left the hospital he had another seizure. Then there was a few weeks' intermission free from attacks. As he understood his own pulse, he observed that it never went any quicker. He also seemed to be able to foretell an attack, his pulse being slower still on those occasions. He also learned to prevent an attack by sitting down and bending his head down.

Physical examination. Patient was fairly well nourished; complexion pale. Pupils reacted normally. No sign of endocranial pressure and no sign of syphilis. Pulse twenty-eight a minute, not easily compressible. Maximal blood pressure 190, minimal 160. The heart beat could not be seen, at the apex it was hardly palpable. Percussion disclosed the heart to be slightly enlarged to right and left, which was confirmed by the x ray.

Auscultation. A slight systolic bruit was heard at the apex; second sound hardly audible at the apex, second pulmonic and aortic sounds not audible at all; jugular pulse more than twice the number of the carotid.

The observation made by Denicke, and confirmed by others, that fluoroscopically two or more contractions of the auricle can be seen to one of the ventricle was also well demonstrated in this case. Other signs that have been described could not be observed in this case, such as a faint sound like the tick of a watch near the left sternal border, described to be auricular, and the same sound said to be felt in the radial pulse.

The electrocardiogram, according to Kraus and Nicolai (35), Hirschfelder, and others, aided in the diagnosis, but I have not been able to avail myself of it.

The atropine did not remove the heart block in this case. For the accompanying polygraphic tracing, which is the most conclusive aid in the diagnosis, I am indebted to the kindness of Dr. Selian Neuhof, to whom I also wish to express my gratitude for advising me in selecting the literature on the subject. Another tracing should have been made after the use of atropine in order to complete the diagnosis. My patient was asked to attend again so that a second tracing might be made, but he failed to do so.

The urine and blood examinations, as well as the Wassermann test, were negative.

PROGNOSIS.

In complete heart block, the prognosis as to life is bad. Sooner or later the patients succumb to one of the attacks. Some last only months, others years. Osler described the case of a man who suffered from bradycardia for thirty years and the Adams-Stokes complex for the last nine years. My own patient has had the disease now for the last eight years. The other varieties of heart block, such as the mural type and the neurogenic type, depend upon the degree of the lesion.

TREATMENT.

The treatment also depends upon what kind of heart block we have to deal with. In the most frequent cases, viz., where the bundle of His is diseased, we can only hope to be successful if the lesion is due to a gumma, as in that case antisyphilitic treatment is most satisfactory. In the other forms which are not due to syphilis, treatment is purely symptomatic. Physical and psychic emotions should be avoided. If the patient must follow an occupation, it should be of the lightest kind, never allowing any exertion.

Hydropathic procedures should consist only in lukewarm baths, never longer than from ten to fifteen minutes, always under observation of another person, and rest and friction after the bath.

If the blood pressure is not too high, carbonic acid baths under careful supervision, not more than twice weekly, and lasting no longer than two minutes, may be used to advantage.

The diet should also be such as to meet general arteriosclerosis and myocarditis, viz., small quantities at frequent intervals, partaking of very little water and certainly of none with meals, and also reducing the proteids to a minimum. The deficiency should be made up by vegetables and easily absorbable fats, such as cream and butter. Care should also be taken not to give any fermentative food, so as not to cause pressure on the diaphragm which might bring on an attack. Bending the head down often prevents an attack.

As to drugs, we are quite at a loss. There seem hardly to be any that have a direct influence. Atropine has only influence in the neurotic type; caffeine and sodium benzoate may sometimes be used. According to Osler, spirit of nitroglycerin ought not to be used at all, as it is even dangerous; potassium iodide may be tried in almost every case, as, sometimes at least, it has a beneficial influence.

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51 EAST SEVENTH STREET.

SUITABLE AMUSEMENTS FOR THE GROWING CHILD.*

By PHOEBE M. VAN VOAST, M. D.,
New York.

What shall I play? What shall I do next? How many times we have heard it, sometimes because the child was fretty, sometimes because he was unimaginative. Whatever the reason for this incessant demand or appeal, we must be able or learn how to satisfy it. If we answer it even incompletely, our effort will not perhaps seem in vain to fathers and mothers, uncles and aunts, to say nothing of the neighbors.

It may be paradoxical, but play is really a serious matter, that is, to the parents. They should, and often do acquire a respectful attitude toward it when they understand its object. The child from the beginning has an instinct for play, and in his games does everything that men in the past have done, to the improvement of the race. Running, chasing, hunting, catching, all helped the savage to master his environment. So *play* helps to make the child strong, physically, mentally, morally. We must make it *our* duty to provide the right kind.

In solving the problem, we shall consider the environment of the family and suggest games that are at present practicable or that can be made so. We shall take into consideration that the complex conditions of modern city life make it impossible for the parents of to-day to do just what their parents did. Every mother realizes that the kind of freedom which she enjoyed as a girl is not the inheritance of her daughter. Every father realizes that, in these days of narrow streets, automobiles, and apartments his son's recreations differ from those he enjoyed or submitted to when a boy. But both parents should realize that they may share their responsibility with proper authorities, such as the recreations, the Y. M. C. A., the settlements, etc.

The problem may be more difficult to-day, but parents can learn to overcome their environment. In planning homes, precedence should be given to playrooms rather than to dens. Or, if no special room can be set aside, let some spot be allotted to play for at least part of the time; and a sympathy between mother and child will do much to relieve the constant friction between the active boy's restlessness and the mother's desire for calm. It is not, Peabody says, bad books, bad habits, bad companions that first make the bad boy; it is *homelessness*. Let us then make the home brighter with a few flowers in the window, a kitchen garden if possible, an occasional pet. Let us make the home the centre of attraction, the centre of amusements.

All the fun cannot be in the house, however, for fresh air and sunshine are the proper conditions for play. The father and mother must plan to let their children enjoy what the public offers if vacant lots and back yards are not their own. There are parks with their valuable collections of flowers, birds, and animals, and public playgrounds and settlements. If only streets are available, the parents must know what streets are used for play and try to make them safe. This winter the directors of the Museum of Public Safety are going to give, under the auspices of the board of education, a course of lectures to children, and hope to show them how the streets can be safely used for play. If there could be an ordinance for assigning certain streets for play, mothers would have less to fear.

We are going to submit gracefully to our lot then, since submit we must. If we have a few rooms, not a house, we are going to let the children call part of it theirs part of the time. If we have no back yard, we are going to get out in the sunshine, somewhere, in a safe spot.

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Having spoken of play in general, let us, in order to be definite, now consider the various ages with their suitable amusements. Before school age, the mother knows the constant activity of her child and makes provision for it. At the creeping stage, it is wise to have a small pen or yard, either in the house or, in favorable weather, outdoors, in which the baby can play. If it is provided early enough, the child is content because of, or in spite of his remoteness from the outside world. He will play as long as his muscles allow, or perhaps until feeding time. Repetition is his delight, and with a few standard toys from which the paint cannot be licked or the woolly down eaten, he can be safely left alone and the mother can do her work.

This method of entertaining will obviate the necessity of giving the child that vicious plaything, the pacifier. If he is well fed, he is perfectly happy when very young to play with his hands, and later with toys. Do not confine his activity to the muscles of his jaw. If he is to sit on the floor, let him use his legs, arms, and back as he will, and exercise *them.* If he is on the street, let him get his pleasure with his eyes. Do not thrust the pacifier, which at best is somewhat dirty, into a clean little mouth. I speak at length about this because the use of the pacifier brings in its wake a long train of bad results; in the young, colic; in the older, badly formed jaws from constant sucking, large adenoids and tonsils. To every mother I say beware! The easy thing is the harmful thing.

But what should a child in his first year play *with?* His natural instinct of curiosity will guide you. Do not, therefore, constantly try to divert his attention by something striking. He will get his fun from the motion of his hands and feet at the same time that he is developing his senses of touch, sight, hearing, etc. Give him a few things: keys to jingle, some tissue paper to twist, pull, or shake, a spoon for pounding, the well known rattle, a few spools on a string, some brightly colored objects. These will keep him happy at the same time that play is serving its purposes of helping him to grow and understand his physical environment.

At *twelve* months the child is playing with blocks and picture books. From *one* to *three* years he likes and should have celluloid balls, nests of boxes, harmonicas, trumpets, whistles, bells, flags, dolls, carts, toy furniture, and best of all, the sand pile. The sand pile is so important as an amusement that it is worth while studying it a moment. What does it do for the child? Why should he have one? He needs material for his play, and if the material is plastic so much is it nearer the ideal. In the sand pile the child has something that he can play with endlessly, with infinite variety, and yet with the repetition that he loves. It encourages the imagination marvellously and continuously, and is suitable for a child from *two* to *fourteen* years. Preferably let it be outdoors; if necessary, inside.

From the years *three* to *six,* outdoor amusements become prominent. The child begins to run and skip, jump and slide, toss and catch. He visits the park and real country, and satisfies his curiosity in birds, animals, and flowers. He likes a wheelbarrow, a rake, a hoe, and a watering pot if his mother doesn't object. The girl wheels her doll carriage, and the boy rides his velocipede. A word of caution seems necessary here. Be sure that the power expended upon the velocipede or hand worked automobile does not overtax the heart. The mother must know whether her child's heart is weak or strong.

From *four* to *six* years various new instincts become noticeable. Our child now likes to collect things; he is happy who can come home from a walk with sticks, stones, leaves, or other unimportant things which attract his eye. He begins also to reason about things: Why is the snow white? Why is it cold in winter? and an inexhaustible number of other whys. His imagination, too, begins to emerge; the little boy has a spirit friend to whom he talks and who has to take the blame for his own naughtiness. This first appearance of the imaginative mind, which seems silly to some, is perfectly normal and not to be discouraged. In play the child will now occupy his time very well with imitation games. "Play house. Play store!" he says. A little later, when there may be a more complicated type, the boy says, "Play doctor. Play Indian!" The girl says, "Play school!" The boy also likes his trains; the girl, her dishes. And they are both especially content, if they can have scissors, paste, beads, crayons, or clay for modelling. There should be at this time, furthermore, a strongly developed interest in story telling, music, and dancing games.

The age from *six* to *twelve* years we find to be essentially, in play with other children, one of contest. Ever active, children aim when playing together to do the very best that their strength permits. The spirit of rivalry is so strong that no excuses for halfway results are tolerated. Joseph Lee, in one of his pamphlets, very aptly says: "The other fellow does not care for the mother's remark, 'Little Johnnie did his best.'" Failure means punishment. The games involve not only strength, but alertness, endurance, accuracy; and the boys now try to make records for themselves. Tag, hide and seek, and ball are the favorites; in these we see the game elements of chasing, hunting, throwing. In this age where fifty per cent. of the boy's interest is connected with motion, where his games are naturally active, do not get mechanical toys with elaborate machinery which need only to be wound. Let the boy be happy with kites and tops. If he himself cannot put his Humpty Dumpty together, he soon tires of its uselessness. The father must not criticise his son for a seeming lack of appreciation of an expensive toy.

At *seven* or *eight* years thought power comes into the game interest: the children love riddles, guessing games, and magic. Outings, too, should now be provided, for there is an ever increasing appreciation of the country. The boy loves to explore for stones and shells, bugs and butterflies, flowers and ferns. Nutting, hunting and camping are his delights. From *seven* to *nine* years certain apparatus may be supplied; see saw, stilts, wheelbarrows, bows and arrows, and fish nets. For constructive work, the fortunate boy with vacant lots and sand heaps at his disposal can dig caves and make houses and wigwams. The doctor has a word of caution here. It is at this age, from *seven* to *nine* years, that the child has a tendency to physical setbacks: he fatigues rather easily and we know that in school there are fewer promotions. The mother must see to it that her offspring does not get overfatigued. On the other hand, she must eagerly encourage play, not only as a very delightful thing in itself, but as an educative means to the end that her child may know when older how to meet an emergency.

From *nine* to *fourteen* years the boys and girls like games that combine muscular action with training of the senses, games that require attention and a definite purpose. Games of contest now need a leader and little Johnnie *must* do his best. Hare and hounds, fox and geese, leapfrog are known to every boy; foot racing, baseball, and football need hardly be mentioned. But this is by no means an age merely of athletics: it is the golden period for memorizing. The boys like stories, too, and are well entertained with collections of fairy tales such as those of Andrew Lang, and with stories of adventure like Stevenson's. They should all know King Arthur, Ulysses, Æneas, and Hiawatha. If stories pall on a rainy day, bring out jackstraws, dominos, checkers, or illustrated proverbs, or games involving history.

Up to this time girls and boys have been somewhat similar. No physical differences have made it advisable to suggest any differences in the games. From now on, however, the differences become marked. But sentimentality can be avoided to a large extent if the two sexes have enough play interest, and do not become morbid. From *thirteen* to *fifteen* years, there is a tendency to revery, to self consciousness, to dreams of greatness, and a desire to show off; there is a liabiliy to misdemeanor and incorrigibility. But interest in *team* play will help to lessen these tendencies; loyalty to a captain and companionship with others will clear almost any brain of cobwebs. If the team can have the right kind of leader all is well. "The gang" which is such a pest in a city need not exist for lawlessness. if suitable games are provided; for as someone has said, "Where games flourish, fighting ceases." Football and basketball do much to bring the boys off the street corners.

What the team does for the boy, the folk dances can do for the girl. They have a peculiar value because of their symbolism; and, in addition to the pleasure derived from this thought, they furnish splendid exercise for the girl, who at *fourteen* years is already sitting too quietly at her sewing. Many settlement workers, who have tried to stimulate the imagination of girls by games, say that folk dances rouse them better than anything else. It is easy to see the reasons. The dances that represent the sowing of the grain, the reaping of the harvest, the pursuit of the enemy are in themselves interesting, while the rhythm and the social opportunity of dancing with others are added attractions. Simple dramatics also arouse in the girl the proper kind of interest. Charades, stories, parts of plays recently seen, acted with the simplest sort of stage setting, stimulate her normal dramatic instinct. When we consider what exercise and especially dancing and the drama accomplished in the development of the Greeks, we feel that we ought to give the girl greater opportunity along these lines.

Up to this point we have dealt with games which are naturally and largely regulated by the home. Now we shall investigate some of the public institutions. What is the most popular? I am sure small boys would answer, "The Movies." So we ask, "What is it they offer? What is their effect on the child? Are they to be encouraged or tabooed?" Those who speak against them say, 1, that the child goes for excitement, that the kind he gets is unwholesome. The eagerness with which he asks for a nickel certainly suggests more or less uncontrolled desire for continuous stimulation. The opponents say also, 2, that the refusal to admit minors unless accompanied by older people shows that the discerning public realizes the need of supervision. They say again, 3, that the pictures are often of questionable nature; 4, that the ventilation is poor, that the time spent at the "movies" might better be in the open air; 5, that the eyes suffer from strain. Those who speak most convincingly for the pictures contend, 1, that they satisfy a child's normal desire for a story in drama form; 2, that the majority of the pictures are wholesome and even educational; 3, that they supply a place where the whole family can go together and are a social boon. To those parents who can provide the best of drama, I should not recommend the moving pictures as they are. For the sake of the others, we should work to create an enthusiasm for laws which shall regualte these shows. Better ventilation is possible. Authorities say that much strain on the eyes could be avoided if the rooms were lighted, and that this could be done without damaging the clearness of the picture: A mother can dissipate much of the unwholesomeness of the pictures if she or some older person she respects accompanies her children. If she will applaud too only the good pictures, the manager will soon learn how to satisfy the best instinct of his audience. The moving pictures can certainly be viewed with good intent and beneficial results, but will have to be improved before they can be an ideal means of education or entertainment.

The mother of the girl who has no adequate home for her social pleasures should know, also, what is being done to improve the dance halls. I do not mention these to advise them, but to arouse a public spirit which will appreciate the kind of halls girls go to and how they may be improved. The society which has investigated this institution—which like the movies, seems to be with us to stay—has made it illegal to sell drinks on the same floor with the dancing room and has started a few dance halls run under proper conditions. Let the mother know what kind of hall her daughter frequents and let other mothers try to foster the kind where folk dancing and dancing of the more formal type may be enjoyed because of sufficient protection.

There is one other institution which fathers and mothers who appreciate good books and pictures ought to suppress, and that is the comic page of the Sunday newspaper. Many parents would scorn to buy a book with such abominable illustrations as used in the paper, although they allow their children every Sunday morning to pore over the silly and unmoral nonsense. I say *unmoral* advisedly. Only recently, a mother told me that she was sure her boys had played a naughty and unbecoming trick on their grandfather because she had allowed them to get interested in Foxy Grandpa. The boys like jokes, but these do not need to combine bad drawing with a tendency to corrupt the moral sense. There are many comic books with good drawings. published especially for children.

Do not think that all public institutions are of questionable repute. Pleasures that the girl or boy enjoys may be found at the recreation centres under the guidance of the board of education, at the settlements, at the Y. M. C. A. and Y. W. C. A. Folk dancing is often taught there. In addition, the boys may learn various entertaining and instructive crafts, such as Venetian iron work, leather and burnt wood, chair caning, and whittling; while for the girl, there is cooking, housekeeping, nursing, dressmaking and millinery, knitting and crocheting, embroidery and basketry. Some cities have arranged civic pageants and it would be encouraging if the New York schools or other organizations would patronize this method of communistic pleasures. There should be in the city, too, an increase in the number of boys' clubs where the boy can get the proper kind of "fun and feed," which someone has said to be the real object of such clubs. The eagerness with which children flock to the wholesome recreations makes us a little more optimistic with regard to the future. In these days of piano players, when five finger exercises do not seem so worth while either to the child or the mother, we must try hard not to forget that one's own power to amuse oneself is better than continual dependence upon the ready made fun.

I hope that my suggestions for suitable amusements seem sufficiently constructive. I want the children to have a good time. I want the good time to start in the home when the child is an infant. When the home cannot satisfy all his social needs, I want the parent to provide large free places for his child to play in; I want him to select a number of the best institutions to meet the demands of that particular growing child, so that *play* may do its share in developing him physically, mentally, and morally.

352 East 200th Street.

DISEASES INFLUENCING GROWTH.*

The Conditions Which Underlie Them.

By B. Raymond Hoobler, A. M., M. D.,
New York.

Anyone closely connected with hospitals and dispensaries where children are cared for, is at once struck by the large number of deformed and underdeveloped children who are growing or attempting to grow into manhood and womanhood within the confines of this great city. Even the untrained observer must notice the many wizened and structurally deformed bodies among the children on the playgrounds. It is my purpose to consider some of the underlying conditions which bring about this tendency to abnormality and lack of development.

At the present time we are devoting much thought to the study of the mentally defective. For the sake of our future citizenship, it is equally important that we consider as well the physically defective children. Therefore, the diseases and conditions which influence growth are worthy of our deep thought, for if we wish to perpetuate the sturdy Anglo-Saxon stock we must inquire into those conditions which make for the development of brawn as well as brain. In the progeny of the animal, bird, and fish world we find but very few imperfect specimens compared with the offspring of man. Therefore, it seems obvious that conditions which make for poor or imperfect development somehow must be related to our civilization.

For purposes of this study, the period of a child's development may be divided into two periods:

1. Growth which takes place during prenatal life.
2. Growth which occurs after birth.

Any discussion relating to diseases which influence growth must resolve itself into a study of nutrition and its disturbances, since it is only through proper nutrition that growth can take place.

GROWTH DURING PRENATAL LIFE.

But little attention has been given to the importance of prenatal growth. That the nine months after birth are highly considered is demonstrated by the many agencies for the care of the infant during this period. On the other hand, we are prone to neglect the child's welfare during the nine months in which it lies hidden from gaze, unable to offer even the mute appeal which the same child may make after its birth. The public conscience seems to awaken only after it has had the vision of the helpless, pleading little thing. The appalling record of the stillborn does not stir us to the same extent that statistics of infant mortality do. Why should it not? If actual death occurs to so many during prenatal period, must there not be influences at work which will hinder development throughout the whole life? Shakespeare appreciated this condition when he put into the mouth of the Duke of Gloucester, afterward Richard III, these words of lamentation concerning his deformed self:

> Why, love forswore me in my mother's womb;
> And, for I should not deal in her soft laws,
> She did corrupt frail nature with some bribe,
> To shrink mine arms up like a wither'd shrub:
> To make an envious mountain on my back,
> Where sits deformity to mock my body;
> To shape my legs of an unequal size;
> To disproportion me in every part,
> Like to a chaos or an unlicked bear-whelp
> That carries an impression like the dam.

This was not a figment of Shakespeare's imagination, for recent scientific experimentation has shown that certain influences are always followed by certain results. Take, for example, the matter of alcohol in its effect on the child before birth. Listen to these important and far reaching statistics which Stockard has gathered:

Of 104 children at whose birth either the father or mother was intoxicated, but fourteen were without some defect in their development.

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*Read at open lecture before the Public Health Education Committee of the Medical Society of the County of New York, Academy of Medicine, January 8, 1913.

Twenty-one drunken females gave birth to 125 children, sixty-nine of whom died under two years of age.

Another instance which shows conclusively that alcohol caused the lack of development is found in the following case: A normal woman married a normal man and gave birth to three healthy children. Upon the death of her husband she married a drunkard and again gave birth to three children, two of whom were drunkards and one a dwarf. This husband died and the woman married a normal healthy man and gave birth to three children, all of whom were sound and properly developed.

Whether or not the drinking of alcoholic beverages contributes directly or indirectly to child mortality, it is nevertheless a pretty well established fact that the death rate among the children of those who drink continuously or periodically is greater than in the homes of the sober. Statistics reputed to emanate from the Galton Laboratory of Eugenics give the following figures covering the school children of Manchester, England; Edinburgh and Glasgow, Scotland:

> The death rate among children born of sober mothers, 28.4 per cent.
>
> The death rate of children born of mothers who drink continuously, 33.4 per cent.
>
> The death rate of children born of mothers who drink periodically, 36.1 per cent.

Stockard has given further conclusive evidence that alcohol in one or both parents tends to improper development. He kept a series of small animals under the influence of alcohol and carefully controlled the mating. Of forty-two matings between these alcoholic animals, which normally should have produced 100 animals, but eighteen were born alive. Of these eighteen, only seven lived beyond a few weeks, and of these seven five were dwarfs.

In another experiment in which both animals were kept under alcoholic influence for a long period, only one living litter was born from fourteen matings, this litter consisting of but one animal, which died in convulsions on the sixth day.

Furthermore, this investigator has shown that not only alcohol but many other substances tend to influence growth of the germ cells. In the case of certain species of fish he found that by putting the eggs in a solution of a very common drug certain deformities could always be produced. In one experiment, by using a mild solution of the drug he could produce one eyed fish from ninety per cent. of the eggs, whereas without the drug 100 per cent. would have been born with two eyes. The drug used was the same one employed by many women during their pregnancy.

Many diseases caused by occupation, such as lead, zinc, and brass poisoning in one or both of the parents, are disastrous to their offspring. Of thirty-seven living births from parents one or both of whom were suffering from lead poisoning, twenty-two of these thirty-seven children died under three years of age.

Further statistics are not needed to prove that in many instances defects which are charged to heredity are not passed on down from ancestors, but on the contrary are due to the deleterious influence of drugs which may be taken by either parent before or at the time of conception or by the mother during her pregnancy.

Another source of defective development of the child during the unborn period is the type of nourishment furnished it by the mother. We are so much concerned, and rightly so, in having the mother feed the child properly the first nine months after birth that we are unloading the responsibility for proper feeding upon our boards of health and many allied organizations. We should, however, be just as anxious that the mother properly feed her child during its unborn period. It is well known how capricious is the appetite of a mother during such a period. For this very reason, there should be a widespread knowledge of the kinds of food needful for the mother that may furnish her child with the proper ingredients to foster a normal growth. The unborn period is the time when the infant grows the fastest, and hence is in the most imminent peril if certain types of nourishment are withheld.

Dr. J. R. Murlin has recently made a study of the food energy required by a mother before giving birth to her child, and also the combined energy required by the mother and child after birth. From his findings one may conclude that if the mother is properly to feed her child after birth, she must have her diet carefully supervised previous to the birth of the child, in order that it may contain proper portions of protein, fat, carbohydrate, and salts. Generally speaking, these elements are drawn on even at the expense of the mother's body, so that the child's development may not be hindered. However, even this benign plan of Nature fails under the continued influence of an inadequate or improper diet, particularly when accompanied by the deleterious influences of alcohol and drugs. Since any alcohol or drug which may be taken finds its way into the body of the unborn, a mother who would scorn to give a single drop of alcohol to her child after birth will unwittingly saturate its tissues with destructive poison before birth.

THE INFANT AFTER BIRTH.

I have just spoken of the necessary food requirements for growth before birth. The same types of food needed to develop a human being from a mere microscopical speck to the seven or eight pounds of robust, healthy boy or girl at birth are still required for the proper development of the child during its periods of infancy and childhood. The same food elements are requisite, but in varying proportions of protein, fat, carbohydrates, and salts in accord with the increasing age of the child.

Were our problem as simple as this illustration seems to indicate, there would be no need for the various organizations for reducing infant mortality. But just so surely as there are pitfalls in the path of the child during its nine months of unborn existence, so are there obstacles in its infancy and childhood periods.

The greatest of these pitfalls occurs when we deprive the infant of its natural heritage, viz., its inalienable right to be suckled at its mother's breast. Man's ingenuity has been exhausted, and still he has not been able to find a better way than that provided by Nature. In all the long list of the animal kingdom which nurses its young, none has so grown away from Nature's methods as man. This is the product of our boasted civilization. How important for the unborn millions of the human race if only the old cry of "Back to Nature" could be realized in the feeding of our offspring.

There is no question of the inability of the great mass of mothers, not excluding the more intelligent ones, to feed their children in a proper manner. when either through sickness or by force of economic conditions or by willful desire the springs of maternal food are dried up before the child's digestive system is sufficiently organized to use the food elements which an overzealous but well meaning mother may thrust upon it. The greatest propoganda in the interests of the proper growth and development of the child is that which concerns itself with the education of the mother who from economic or purely selfish reasons permits the maternal milk supply to fail. Lacking this natural food, there is often developed in the infant a train of nutritional disturbances, the marks of which are practically never effaced throughout the entire lifetime.

If the nation desires large, well formed citizens, it must begin by guaranteeing that its infants shall be cared for by mothers who nurse their children or who know how to feed mixtures of cow's milk suitable in kind and quantity. No greater step in producing healthy and well developed citizenship has been taken than that of the New York board of health when it opened its Child Hygiene Department and still more recently added to its service the infant milk stations.

It is impracticable at this time to attempt an enumeration of the specific diseases which influence growth and development. These are for the medical profession to wrestle with. I do, however, feel my responsibility in outlining conditions which breed diseases which in turn work against true growth and development of the child.

I have already indicated what I believe to be the main underlying conditions causing diseases which influence growth. These conditions express themselves in many and varied forms of disease. Certain of the food elements which are usually well borne normally act as violent poisons under other circumstances; for example, certain sugars in the dietary of the infant. At times the child may be supplied with a perfect food for its age and weight, but it is unable to make use of such food for body building, and instead of growing, will continue to lose weight, producing the typical case of marasmus. In other instances the child becomes greatly emaciated because it cannot keep sufficient water in its body, even though it be given twice as much water as it should normally have. In other cases the bones become brittle and easily deformed owing to its inability to retain the mineral salts necessary to build bone, and there results the typical case of "rickets." The child's nervous equilibrium may become very unstable, due to the failure to utilize certain minerals necessary in the nervous structure of the body. Thus it will be seen that there are many expressions of disease due to a failure properly to make use of the food which under normal circumstances would foster growth and development.

There is also that great group of disturbances arising from infections to which the child is particularly susceptible. Following in the train of many of these infections, such as tuberculosis, pneumonia, infantile paralysis, and others, there are often a series of digestive disturbances which profoundly influence the nutrition. And thus is the vicious circle ever being circumscribed.

In order, therefore, that growth and development may properly take place, it is important that all nutritional disturbances of the infant and child be obviated. This can best be done through the following measures:

I. The modern child must be protected from the influences of deleterious drugs.

II. The prospective mother must be given sufficient care and freedom from economic stress so as to enable her to furnish her offspring with the proper food elements to build healthy tissue.

III. The mother must be encouraged to nurse her children as the best means of warding off nutritional disturbances.

IV. If the maternal milk supply fails, then the mother must be taught how to make up proper feedings of cow's milk mixtures.

If there can be guaranteed to the growing child suitable nourishment with abundance of open air and sunshine, then we may confidently expect to raise up a generation of healthy, well developed men and women.

131 East Sixty-seventh Street.

ACUTE ANTERIOR POLIOMYELITIS

Following Bite of Dog Infected with Rabies.

By Hubert B. Haywood, Jr., M. D.,
Raleigh, N. C.

Case. C. R., male, aged fourteen years. Mother living and well, father died of paralysis during middle life. As far as could be learned from the mother the cause of the paralysis was apoplexy. The family history was negative otherwise. The patient's previous medical history had been good. There had been no other sicknesses beyond those usual to infancy and childhood. He had always been healthy and well.

Two weeks previously he was bitten on the lip by a dog. The wound was two and a half inches long and extended down to the mucous membrane of the cheek. It received medical attention and healed up with very little difficulty and little pus formation. The dog was killed and the head sent to the Pasteur Institute in Raleigh for examination. It revealed the presence of the Negri bodies, and a diagnosis of rabies was made.

The patient came from his town to Raleigh for treatment promptly. He was put on treatment immediately on arrival and in all had received fifteen injections of the rabies serum up to the time of the development of acute symptoms of sickness. On the night of April 30, 1912, he was taken acutely sick with severe headache, pain in the neck, chill, and high fever. These symptoms came on following a cold bath.

On the next afternoon, in compliance with the request of Doctor Shore, director of the State laboratory, I called on the boy and found him suffering with severe headache. stiffness, pain in the neck, and inability to void his urine. He also had general muscular soreness. I catheterized him immediately and withdrew about twenty ounces of dark, highly colored urine. The urine showed a trace of albumin.

Physical examination was negative with the exception of the presence of bronchovesicular breathing at the base of the right lung posteriorly. No râles and no impairment of note were found, however. His pupils were semidilated, equal, and responded to light and accommodation. The knee jerks were absent on both sides. A partial Kernig's sign was present. There was no Babinski sign and no ankle clonus. The abdominal muscles were rigid, and the respirations were rather of the diaphragmatic type and jerky in character.

A leucocyte count showed the presence of 18,000 white blood corpuscles. There were seventy-five per cent. of polymorphonuclear cells. The patient was removed to Rex Hospital on the same day.

On admission his temperature was 100° F., pulse 100, respiration 20. A culture was taken from the patient's nasal mucous membrane and an almost pure culture of diplococci obtained.

By the next morning there was an almost entire paralysis of both arms and hands. By the afternoon there was a beginning paralysis in both legs. This was complete by the next morning. There was a complete absence of the patellar reflex on both sides. He had a marked Kernig's sign on both sides and a *tâche cérébrale*. His pupillary reflexes remained normal. The patient suffered such severe pains in the head and neck that they could be controlled only by the hypodermic administration of morphine. A diagnosis of acute anterior poliomyelitis was now made. A lumbar puncture between the fourth and fifth lumbar vertebra was done and about ten c. c. of clear cerebrospinal fluid withdrawn. It was cultured on blood serum agar and found to be free from microorganisms.

Within a few hours' time the patient had great relief from pain and by the next morning there was slight recovery in the use of the right arm and hand. From this point on recovery was marked. He first regained use of the right arm and hand and then of the left. Next the right leg showed some signs of recovery and then the left which was slower. The peroneal groups of muscles in both legs were much slower to regain tone than any of the others. About the sixth day of his illness a well marked Babinski sign developed. About the tenth day he showed a slight patellar reflex in the right leg. It appeared a couple of days later in the left.

At this stage of his disease, while apparently making a perfect convalescence, a most severe pain in the lower left quadrant of his abdomen developed. His temperature went up to 103° F. from normal, and he seemed quite sick. On the next day the whole limb was quite swollen, and he had all the evidences of a well marked phlebitis extending into the left external iliac vein.

The supposition that the patient's limb or side had been subject to traumatism and the walls of the vein injured during the course of a hot tub bath which he had been receiving daily was probably correct. Baths were now discontinued. Under complete rest, elevation, and the application of an ice bag to the side, the swelling and inflammation subsided in ten days.

During the course of his sickness he received seven and one half grains of hexamethylene tetramine every four hours and hot tub baths every four hours. After the first few days he was on a soft diet. He regained control over his bladder on about the twelfth day of his sickness. Up to that time he had to be catheterized. He had partial incontinence of his bowels on leaving the hospital.

He had learned how to walk and had entire control of his arms. His grip was strong in both hands. The patient was discharged from the hospital on June 1, 1912.

A letter from his mother, August 19, 1912, states that he is able to walk around the house. He has not regained his strength entirely. Sometimes he will fall as if he has been shot. She does not state whether he is unconscious or not. His left limb is still swollen somewhat. Nothing has been heard from him since this letter.

The case is presented on account of the fact that the history was interesting in that the attack came on following a bad bite by a dog infected with rabies and during the course of the Pasteur treatment.

218 New Bern Avenue.

THE INJECTION OF SALVARSAN.

Advantages of the Use of a Blunt Needle.

By Robert Ormsby, M. D.,
New York.

A great deal has been written about the injection of salvarsan and neosalvarsan, a great deal of "flubdub" has been uttered in regard to it, and explanations that did not explain have been written in periodicals and textbooks about the technic required. The fact of the matter is that all that is necessary is to see, in the first place, that no acid preparation is injected, and, in the second place, to be perfectly sure that a counteropening is not made in the distal side of the vein operated upon.

Professor Ehrlich himself has provided a perfectly safe remedy against the first mentioned danger, i. e., neosalvarsan, which is alkaline and does away with any fuss about rendering the acid preparation, salvarsan, neutral or alkaline before it is injected. I invariably use neosalvarsan either intramuscularly or intravenously, as it is without doubt the safer remedy.

In regard to the second danger, i. e., causing a counteropening in the vein or even wounding the vein, this is easily eliminated by using a blunt pointed needle for injection. Any ordinary needle that can be used for intramuscular injections of mercury may be used for the purpose by simply breaking off the point and grinding down the remaining portion till it is polished and smooth.

You ligate the arm, and when a vein is sufficiently distended, take a sharp pointed bistoury and nick it across. When you have divided the vein, insert your blunt pointed needle, which you have completely filled with warm saline solution, remove your ligature above the elbow, and open the clamp on the tube leading to the vessel containing the saline solution.

The use of a blunt needle eliminates the second danger in the operation, and also enables the surgeon to perform the operation without any assistance, as the patient cannot injure himself by any motion he may make, and the surgeon is perfectly secure because he knows that, no matter what direction the needle takes, it cannot injure the vein.

All other particulars in the operation are just the same as usual, but I contend it is a wise proceeding to eliminate any and all dangers which might attend the administration of this great blessing to mankind, Ehrlich's remedy.

368 Lexington Avenue.

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Therapeutic Notes.

Treatment of Appendicitis in Children.—Green, in the *Practitioner* for October, 1912, discussing the operative treatment of these cases, asserts that in acute cases seen within the first forty-eight hours an operation should be performed at once, if possible. In cases seen later than forty-eight hours, the same course should be adopted if the patient is getting worse, the pulse rate rising, the area of pain and tenderness increasing, and the tongue becoming dry, foul, and furred, or if perforation takes place and there are signs of developing general peritonitis. If, on the other hand, the disease is abating, surgical treatment may be delayed until all signs of active inflammation have disappeared, i. e., until about two or three weeks after subsidence of the pulse and temperature. Careful watching is meanwhile necessary, to permit of operating immediately in case acute symptoms return. The use of purgatives by the mouth should be strictly forbidden, the patient kept quiet in bed with his shoulders raised, and no food given by the mouth except albumin water and water in small quantities. Nourishment should be given by enemata and saline injections; Ochsner's starvation treatment cannot very well be applied in children, as they become restless. In cases of appendicitis in which an abscess has been found to exist, the latter should be evacuated as soon as possible.

Treatment of Constipation in Chlorosis.—Abel Gy, in *Quinzaine thérapeutique* for November 10, 1912, states that before treating constipation in chlorotics, it is necessary first to ascertain precisely the relationship existing between the chlorosis and the digestive disorder. Either of these may be primary.

Where the chlorosis is the ultimate cause, it should receive the greater share of attention. The following combination, originally advised by Robin, should be prescribed for laxative purposes in these cases:

℞ Ferri et potassii tartratis }
Rhei pulveris, ... } āā gr. ¾ (0.05 gramme);
Cinchonæ pulveris, ...gr. iss (0.10 gramme).
M. ft. in pilulam No. I. Sig.: Two or three pills to be taken before the midday or the evening meal.

Where the digestive disorder is primary, iron is worse than useless. The condition may be associated with either hyperchlorhydria or hypochlorhydria, but fermentative processes are always present and demand appropriate drug medication. Senna and jalap should also be used as required, and in order to improve the general condition, a mixture of glycerophosphates with tincture of nux vomica and pepsin, as advised by Robin, may be administered. It is to be borne in mind, however, that excessive medication with iron containing preparations intended to "build up" the patient may exert an effect the opposite of that desired, constipation even more marked being the result.

Cases of "pseudochlorosis" or anemia in children also occur in association with constipation. In these little patients, excess of meat in the diet accentuates the trouble, and measures such as the administration of cinchona, meat juices, or raw meat do positive harm. Frequently the disorder will completely subside when mild laxatives have been given and the proteins in the diet greatly reduced.

Treatment of Leucorrhea.—Plique, in *Bulletin médical* for August 3, 1912, states that in some cases of leucorrhea in young girls bathing in tepid alkaline water containing, e. g., one half pound (250 grammes) of sodium carbonate, or local washings with a one per cent. borax solution, or, if the inflammation is severe, with a two per cent. decoction of althea root, may suffice to give relief. In women in whom these measures are not promptly effective, douching should be advised, either with normal saline solution, if there is no inflammatory process locally, or with the borax solution above mentioned, or a one per cent. decoction of saponaria root. Where greater astringency is necessary, injections of oak bark (five per cent.), krameria (three per cent.), or eucalyptus (one per cent.), with sodium borate added, may be used. For very obstinate cases a 0.5 per cent. solution of copper sulphate, one per cent. solution of lead acetate, or the following combination, recommended by Pringle, may be used:

℞ Zinci sulphatis, ... }
Aluminis exsiccati, } .... .āā ʒiiss (10 grammes);
Aquæ, ...Oi (500 grammes).
Fiat solutio.

Where more or less odor attends the leucorrheal discharge some preparation containing sodium hypochlorite should be used.

For tampons some such solution as the following should be used:

℞ Acidi tannici, ...ʒiiss-v (10 to 20 grammes);
Glycerini, ... }
Aquæ destillatæ, .. } ....āā ℥iss (50 grammes).
Fiat solutio.

In the presence of herpes or irritation, powders containing zinc oxide, bismuth subnitrate or subsalicylate, or calomel, are often more effectual than moist dressings. Thus the following powder may be used upon a clean cloth, to be placed between the labia:

℞ Talci pulveris, ...℥iiss (80 grammes);
Bismuthi subnitratis, ...ʒv (20 grammes);
Acidi tannici, ...gr. lxxv-cl (5 to 10 grammes).
M. fiat pulvis.

If the powder fails to subdue the irritation, an ointment may be employed:

℞ Acidi tannici, ...ʒiiss (10 grammes);
Amyli, ... }
Petrolati, .. } ....āā ℥i (30 grammes).
M. fiat unguentum.

In each case of leucorrhea a search should be made for some local or general causative condition, such as hemorrhoids or constipation, pin worms, an unclean or rough pessary, in young girls especially chlorosis or scrofulous chloroanemia, and in older patients more particularly diabetes and uterine cancer. The removal of the cause is obviously indicated, if it is found.

Treatment of Typhoid Fever in Children.—Deléarde, in *L'Echo médical du Nord* for August 18, 1912, states that where, as is very often the case in children, constipation is present in typhoid fever, it is advisable to administer a mild laxative, such as castor oil in teaspoonful doses every other day, or a little magnesia, or again, an infusion of from five to eight senna leaflets in very weak tea, sweetened or flavored with orange flower water.

Diarrhea should not be interfered with unless the number of stools exceed five or six in a day, when the following combination may be given:

℞ Phenylis salicylatis, ...gr. iii (0.2 gramme);
Sodii boratis, ...gr. iss (0.1 gramme).
Pone tales cachetas No. x.
Sig.: Three cachets daily.

Where the child cannot swallow cachets, four grains (0.25 gramme) each of benzonaphthol and sodium bicarbonate should be taken as a powder in a little sweetened water, four times daily.

To combat high fever the author advises the careful practice of cold colonic irrigation through a double tube.

In severe cases with pulmonary or cardiac complications, two classes of measures are especially indicated: 1. Counterirritation over the thorax. This should be instituted by mixing some mustard flour with water, spreading the resulting pasty mass over a piece of muslin, and applying the latter over the entire thorax. Employed daily for ten or fifteen minutes, this measure will bring about pronounced rubefaction if the mustard flour is of good quality, without excoriating the surface, and will lower the temperature slightly.

2. Remedies to support the heart are also of importance, as the condition of this organ may be a source of danger even where the complications are essentially pulmonary. The drugs to be employed to tone up the heart muscle in children are, in the order of their power, camphorated oil, sparteine, strychnine, and finally epinephrine. The first may be injected in doses of one c. c., four times a day, in children five years of age or upward. Sparteine may be combined with strychnine:

℞ Sparteinæ sulphatis, ...gr. viiss (0.5 gramme);
Strychninæ sulphatis, ...gr. 1/12 (0.005 gramme);
Aquæ destillatæ et sterilisatæ, ...ʒiiss (10 c. c.).
M. ft. solutio.

Of this solution 15 minims (one c. c.) should be injected daily. Strychnine is to be avoided, however, in children less than five years of age. Where the vascular tension is low and the pulse rate reaches 160 to 180, epinephrine should be given. One to two c. c. of a one to 10,000 solution should be injected once daily; or twice in grave cases.

Treatment of Acne.—Gaucher, in *Paris médical* for October 12, 1912, is credited with the following lotion for acne:

℞ Sulphuris præcipitati, ...gr. lxxv (5 gramems);
Talci pulveris, ...gr. xxx (2 grammes);
Glycerini, ...℥ii (60 grammes);
Aquæ rosæ, ...℥iv (120 grammes);
Tincturæ quillajæ, ...ʒiiss (10 grammes).
M. ft. lotio.

Treatment of Constipation in Presence of Hemorrhoids.—*Paris médical* for August 10, 1912, advises that a mixture of washed sulphur, two parts, and honey, one part, be prescribed for use every morning in the dose of one teaspoonful. This may be given for a few consecutive days, then intermitted, and later begun again as required. Sée is credited with a mixture of equal parts of washed sulphur, potassium bitartrate, and magnesium oxide, to be taken in the evening, before retiring, in doses of one teaspoonful in a little water.

Treatment of Chancroidal Lymphadenitis.—A. F. Henken, in *Semaine médicale* for January 1, 1913, is stated to have found the following method promptly effective in the inguinal glandular enlargements accompanying chancroid: After appropriate general toilet and disinfection of the affected area, an incision, from one to 1.5 centimetre long, is made at the point of greatest fluctuation. A Bier cup is then applied, and allowed to remain ten or fifteen minutes. Next a twenty per cent. iodoform emulsion in glycerin, well stirred, is introduced into the abscess cavity in sufficient amount to fill it. Finally, the incision is occluded for five minutes by means of cotton dipped in mercury bichloride solution, in order that the emulsion may penetrate to the farthest recesses of the cavity, and a wet, nonocclusive dressing is then applied. This procedure is carried out three times, on successive days. On and after the fourth day, when the discharge is already greatly reduced in amount and is losing its purulent character, the treatment is limited to the application of the Bier cup and the insertion of a gauze wick. The cupping is continued until the seventh or eighth day, even if there is no discharge. On the ninth day, recovery is complete.

The only disadvantage of the method is that fever and local pain occur three or four hours after the first iodoform injection. By the next morning, however, this has all subsided, and the total amount of inconvenience is far less than in cases treated by wide incision and packing with gauze, in which, moreover, according to the author, the average period required for a cure is forty-one days.

Treatment of Chilblains.—The following solution is recommended in *Paris médical,* November 23, 1912, for application to chilblaims:

℞ Tincturæ iodi, .. }
Tincturæ opii, . } ....āā ♏xv (1 gramme);
Glycerini, ...℥i (30 grammes).
Misce.

Ointments such as these may also be used:

℞ Ichthyolis, ...gr. xv (1 gramme);
Adipis lanæ hydrosi, ...ʒiiss (10 grammes).
Ft. unguentum.

Or,

℞ Linimenti camphoræ, ...gr. xv (1 gramme);
Adipis lanæ hydrosi, ...ʒiiss (10 grammes).
Ft. unguentum.

In the presence of ulceration, silver nitrate, balsam of Peru, or tannic acid, may be applied, and a thick layer of cotton placed over the affected area.

Treatment of Hepatic Colic.—A. Robin, in *Paris médical* for November 16, 1912, is credited with the following combination for use in hepatic colic in cases without vomiting:

℞ Potassii bromidi, ...ʒiss (6 grammes);
Morphinæ hydrochloridi }
Extracti belladonnæ foliorum, ... } .āā gr. ¾ (0.05 gramme);
Ætheris, ...♏xii (0.6 gramme);
Syrupi, ... }
Aquæ, ... } ....āā ʒv (20 grammes);
Aquæ laurocerasi, ...ʒiiss (10 grammes).
M. Sig.: One tablespoonful halfhourly, up to three or four doses.

Gilbert in the same condition administers enemas consisting of antipyrine, 7.5 grains (0.5 gramme). dissolved in 5 ounces (150 grammes) of water, with 30 to 40 drops of laudanum added. If the pain is not quieted by the first enema a second is given two hours later.

Pouchet advises:

℞ Chlorali hydrati, ...gr. xxii (1.5 grammes);
Glycerini, ... }
Syrupi, ... } ....āā ℥i (30 grammes);
Aquæ chloroformi, }
Aquæ destillatæ, .. } ......āā ʒxiii (50 grammes).
M. ft. solutio.

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CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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A NEW CONCEPT OF LIFE.

In admiring the work of Carrel, his fineness of technic, and ability to overcome operative obstacles, one is very likely to overlook its important bearing on our concept of life. We formerly were taught that life rested on a tripod, the legs being the respiratory, the circulatory, and the nervous systems. It was through the intimate correlation of these three that life, not only in the aggregate, but in the cell unit, was able to continue and perform its function. If any one of these supports was removed there occurred death, by asphyxia, syncope, or coma, according to which no longer functioned. The signs of death were considered to be well marked, although it was freely admitted that all tissues did not cease their activity immediately when cessation of somatic life took place. The more highly specialized the cell, the less able was it to lead an independent existence. As it became more and more developed along certain lines, the less became its purely vegetative ability.

Associated with this idea of life was the feeling that the controlling influence in the carrying on of the cell duties was an intangible something, called vital force or dynamic agent. That this element was not essential became evident when the investigator first was able to cultivate living tissue outside of its normal environment. At the start the tissues were transplanted to a living animal of a similar type. That method was obviously open to many objections, but what could be said when such living cells were grown in the test tube away from all three elements of the vital tripod? Take into consideration the work of recent investigators, of whom Carrel is the chief. A portion of connective tissue is removed from a living body, it is placed in very abnormal surroundings, moisture and heat are supplied in proper amount, as well as food, and what happens? These cells multiply and tend to increase greatly. Ebeling has shown that they may grow actively outside of the living organism for more than eleven months. The mass may increase considerably, and the power of proliferation, after such a long period, is more active than at the beginning of its life *in vitro*. Even such highly organized structures as nerve cells will not only live, but, if supplied with a supporting framework, will form axis cylinders. But portions even of a complex organ such as the heart can carry on an extracorporeal existence. Carrel has succeeded in preserving cardiac muscle from the chick embryo for as long as one hundred days, at the end of which time the cells were carrying on their rhythmic contraction.

With this evidence before us, it becomes necessary for us to modify our views. If a tissue can grow and carry on its function, to limited extent at least, when the entire tripod has been removed, what then is the energy that activates it? Is it merely the result of an original impulse that supplies an indefinite energy, or is the higher animal actually but little more than a congeries of practically independent entities associated for mutual welfare? It is evident that the central nervous system is not an absolute essential as formerly thought. When Carrel removed the viscera from one of the lower animals and, with the assistance of artificial respiration, kept those organs living and functioning for many hours, he upset many preconceived ideas. If a few cells can be kept living for months and the entire viscera for hours, where is the limit to be drawn? Even if as yet we cannot artificially produce life, are we going to reach the point where life may be maintained indefinitely?

BUTTER VERSUS OLEOMARGARINE.

A comparison of the food values of butter and oleomargarine shows them to be for practical purposes the same. Aside from the chemical differences in the component fats, the essential difference between the two lies in the fact that butter represents milk fat, while oleomargarine is a mixture of meat and vegetable fats, the oil being expressed from the fat capsules, emulsified, and pressed. Oleomargarine at present therefore offers a food very similar to butter and at about one half the retail price of the latter. Here is a strong economic argument for its use in families where the excessive cost of butter prevents its being used to the extent that it should be as an article of nutrition. But this does not tell the whole story.

In the sixteenth annual report of the Department of Agriculture (for the fiscal year 1912), Secretary Wilson points out some striking results of an investigation of buttermaking and creameries conducted by his department. Reports were received during the year from 1,500 creameries, and a large percentage of the cream received by them was found to be very inferior and much of this entirely unfit for food. Of 5,154 lots of cream examined through the year, sixty-one per cent. were found to be dirty, decomposed, or sour; 94.5 per cent. of the creameries investigated were more or less insanitary, and only twenty-seven per cent. of them practised Pasteurization. The report recommends a complete system of inspection of dairy products and a systematic grading of cream and milk. It is evident that while great attention has been paid to the production of a clean milk supply, especially for cities, this closely related field has been sadly neglected. Butter made from cream which is impure, decomposed, or infected with pathogenic germs, is a dangerous menace to health, and while the infant population is not so much affected, it has great possibilities for damage in older persons. Here again, oleomargarine has an advantage in that the process of manufacture is almost certain to sterilize the product, which is not the case with butter.

The report of Secretary Wilson gives the results of work undertaken by the dairy research laboratories of the department on the manufacture of butter for storage. These results show conclusively that butter made from sweet Pasteurized cream has far better keeping qualities than butter made in the usual way. Pathogenic germs may exist for a long period in butter made from nonPasteurized cream. Pasteurization has thus an evident value in safeguarding the health of the consumer in addition to its economic advantage of greatly improving the keeping qualities of the butter. Butter made without the use of a "starter," from Pasteurized sweet cream, and sealed in tin cans, will show very slight deterioration and practically no objectionable flavor after storage from eight to ten months. This conclusion was based on the observation of the manufacture of 2,000,000 pounds of butter during the last three years.

It is surprising to find that less than ten per cent. of the butter made in this country is of first quality. The Department of Agriculture, through its trained creamery experts, is making a thorough investigation to determine the causes for this condition. It is of interest to note that a large amount of butter which becomes rancid is sent to renovating factories and again placed on the market. If made under sanitary conditions, this "process" butter is wholesome, though not up to the mark of the best creamery butter. The law requires it to be labelled true to name.

The quality and conditions of manufacture of oleomargarine are specified by law. In view of the conditions here described, butter should receive similar attention.

SURGICAL TUBERCULOSIS AND ITS TREATMENT BY TRYPSIN INJECTIONS.

One of the most satisfactory features of the treatment of tuberculosis developed in recent years, has been the steady relegation of the knife to the background in the management of the localized forms of the disease. To Bier in Germany, Garré and Calot in France, and others, we owe this marked advance—a forecast perhaps of what the future holds in reserve in most disorders now treated by extirpation of an organ through our ignorance of suitable medicinal measures to prevent the sacrifice. Of fundamental importance in this connection has been the emphasis laid by Bier upon the curative efficiency of antibodies in local disorders, the *deus ex machina,* in fact, of his treatment by surgical hyperemia. This might now be said also of the view first advanced in this country ten years ago, that trypsin had to do with systemic bactericidal and antitoxic processes, not only as the proteolytic agent of the digestive vacuole of phagocytes, Metchnikoff's cytase or "trypsinlike ferment," but also as a constituent of the plasma when a bactericidal process is active therein. Beard's advocacy of trypsin in cancer met with signal failure, as is well known; yet the widespread use of this ferment, in the form of the *injectio trypsini* at least, demonstrated that it could be injected without danger of ill effects.

Bier's clinic has recently contributed another promising step in the treatment of localized surgical disorders. Wilhelm Baetzner found (*Practitioner,* January, 1913) that injections of trypsin gave better results than the methods in vogue, while being devoid of danger to such a degree that outpatients could be treated with it, the American *injectio trypsini* referred to above having given the best results among the various preparations tried. Containing as it does sixty per cent. of glycerin, however, it had to be diluted with sterile saline solution in the proportion of five parts of the latter to one of the former. One ampoule containing one cubic centimetre (fifteen minims) of the solution was injected subcutaneously under strict aseptic conditions into the diseased area, from one to three times a week, according to the needs of the case and until a definite change for the better was observed. Where tuberculous abscesses were present, the site of injection was anesthetized with ethyl chloride and the trocar driven into the abscess obliquely, avoiding reddened patches. Where sinuses existed the injections were made into the surrounding parenchyma and the sinus itself. In tuberculosis of the joints, from one to two cubic centimetres were injected partly into the joint and partly into the surrounding tissues at intervals of from six to eight days, or oftener if the case permitted. Here, however, the *injectio trypsini* was introduced pure, the local fluids being depended upon to dilute it. Even where local changes had not yet occurred, though threatening, the pain was lessened or arrested; where discharge and night sweats were present, they were also decreased. A marked improvement of the appetite occurred, which contributed materially to the progress of the case.

The treatment was found to be indicated in cases in which iodoform glycerin is usually recommended. Trypsin diffuses slowly through the tuberculous tissues and seems to possess a definite curative action. It is selective for fungoid purulent masses and favors the production of healthy granulations, causing disappearance of the tubercle bacilli.

PRESCRIPTIONS BY TELEPHONE.

In view of the lack of written evidence, it is difficult to fix positively responsibilities for errors in prescriptions which have been telephoned by the physician to the pharmacist. The use of the telephone offers so many advantages that it seems impracticable to interdict it; but when communicating prescriptions to pharmacists by telephone the physician should take unusual precautions to insure his patient against possible misunderstanding. The medical and pharmaceutical associations of Copenhagen have jointly proposed to the board of health that the use of the telephone in transmitting prescriptions should be permitted only for short distances and in exceptional cases, and have suggested that the following procedure should be observed: The doctor must write out his prescription and then telephone it in Latin. No one except a qualified pharmacist shall be permitted to take down the telephoned prescription. On receiving such a prescription, the pharmacist must write out the entire prescription, including the name and address both of the doctor and of the patient. He must then read it out to the doctor over the telephone. All telephoned prescriptions must be copied in a special book by the pharmacist. Immediately after telephoning the prescription, the doctor must send a written prescription to the pharmacy. This written prescription must be kept in the book, together with the copy taken down from the telephone by the pharmacist. In the case of a simple solution of morphine, of cocaine, or of tincture of opium, not more than double the daily dose may be dispensed on the telephoned prescription. These suggestions, being drawn up jointly by the associations of physicians and pharmacists, deserve careful consideration. Indeed, they seem adequately to safeguard the use of the telephone for the transmission of prescriptions; but even with such safeguards there is always a possibility of an error. We should add, as a further precaution, the requirement that the age of the patient, except in cases of adults, and the directions for taking must be given in full. Some such method of procedure should be adopted voluntarily by physicians out of regard for the safety of their patients. If not adopted voluntarily, it seems quite probable that safeguards in this direction will be imposed by the legal authorities in view of the increasing use of the telephone in conveying prescriptions to the pharmacists.

FAILURE OF ANTITETANIC SERUM.

Potherat, at the meeting of the Paris Société de chirurgie on March 19th, told of a patient, aged fifty-eight years, who suffered from a compound fracture of the leg. The wound was carefully cleansed and set in an apparatus permitting of daily dressing. It was only on the day following that the man received an injection of ten c. c. of antitetanic serum. For several days the temperature remained at 102.5° F., although there was no suppuration. Sloughing ensued, however, and demanded enlargement of the wound with removal of splinters of bone. On the evening of the fifth day the patient had convulsions, and died, on the sixth day, of tetanus. Therefore, remarked Potherat, according to *Semaine médicale* for March 26, 1913, the serum had no effect; was this on account of the delay in injecting it? Proper disinfection of the wound was also delayed.

Thierry, in commenting on this case, remarked that tetanus, if infection had taken place, was inevitable, serum or no serum, and he added that in his service none was ever administered. Wounds were carefully disinfected with zinc chloride, and this treatment he had found perfectly satisfactory. This conclusion differs from that published in our issue for April 5th, page 715.

DANGEROUS SIMILARITY IN NAMES.

Manufacturers of medicinal preparations are coming to depend more and more on the trademarking of coined names as a means of protecting their proprietary rights. Since trademark rights cannot be established for descriptive names, the manufacturers are compelled to exercise much ingenuity in inventing names which, while not descriptive, are suggestive and at the same time easily remembered. Owing to the rapid increase in the number of such names there is great danger of confusion. This was pointed out at the meeting of the American Pharmaceutical Association, two years ago, and was referred to recently in an address by Dr. Hans Arzberger, director of the pharmacy in the Vienna general hospital. He gives a list of preparations which have the same or very similar names, though differing entirely in composition, uses, and in some cases dose. As one means of guarding against errors due to this similarity, as well as errors arising from faulty abbreviations or poor chirography, Doctor Arzberger protests against the use of the words "as directed," urging physicians to write out the directions for taking, not only for the information of the patient, but as a guide to the dispenser.

THE BULLETIN OF THE WOMAN'S HOSPITAL.

The second issue of the *Bulletin of the Woman's Hospital,* dated January, 1913, was published very recently. This *Bulletin* is furnished for free distribution and will appear at irregular intervals. The scientific articles are written by members of the surgical staff and are based upon observations made on the work in the hospital.

News Items.

Harvey Society.—The annual meeting of this society will be held at the College of Physicians and Surgeons, 437 West Fifty-ninth Street, New York, on Friday evening, April 18th.

Dr. Tait Mackenzie Honored.—*Paris médical* for March 15th reproduces a photograph of Tait Mackenzie's magnificent statue, the Boxer, which was on exhibition at the International Congress of Physical Education in Paris, March 17th to 22d.

A Merger of Medical Colleges.—The union of the University of Maryland medical department and the Baltimore Medical College is assured, the faculties having agreed on the terms. Members of the faculty of the latter institution will retain their positions in the new school and three of them will become members of the university board of regents.

Supreme Court Decision in X Ray Suit.—The Supreme Court of the United States in the first decision ever rendered concerning x rays decided on April 8th that in suits to recover damages from x ray burnings the plaintiff must prove negligence on the part of the physician or operator, who is not compelled to prove that he was not negligent.

Bills of Medical Interest before the Pennsylvania Legislature.—In addition to the Smith bill to reform hospital charity abuse and the Alter bill against medical frauds, the physicians of Pennsylvania are asked to interview representatives and senators to obtain their active support of the Richards bill restricting the sale and dispensing of narcotics, the Steel bill forbidding the marriage of the unfit, and the Steel bill amending the law for reporting infectious diseases by including syphilis and gonorrhea, with the initials of those infected.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Tuesday, April 15th, North and West Branches of the County Medical Society, Stomach Hospital Gastroenterological Society, and the Philadelphia Laryngological Society; Wednesday, April 16th, Quarterly Business Meeting of the County Medical Society, and the Section in Otology and Laryngology of the College of Physicians; Thursday, April 17th, Northeast Branch of the County Society, and the Section in Ophthalmology of the College of Physicians; Friday, April 18th, Southeast Branch of the County Society and the Jefferson Hospital Clinical Society.

Walker Cocaine Bill Passes Assembly.—The Walker cocaine bill, drafted by the assistant district attorney of the city of New York, and modified after a conference with the Medical Society of the County of New York, passed the Assembly on April 8th by a vote of 106 to 18. Doctor Brush and Doctor Volk, both members of the Assembly, voted against the measure. Mr. Walker made an earnest plea for the passage of the bill, saying that it would not really hamper physicians in the honest practice of medicine, and he felt that such a measure was necessary in order to prevent the distribution of the drug for illegitimate purposes. The bill has not yet passed the Senate.

To Test Endurance of Automobile Ambulances.—Arrangements have been made to conduct an endurance test on May 5th of the automobile ambulances at the Walter Reed General Hospital, Washington, D. C., under the direction of Major Paul S. Halloran, of the Medical Corps of the United States Army. It has been proposed that each ambulance company be equipped with four motor ambulances and four horse drawn ambulances, until it shall be demonstrated which type of vehicle is best suited to the service. The endurance test is a part of the plan of the surgeon general of the army to ascertain the value of automobiles in relation to medical department transportation.

Physicians Organize to Aid Colleagues in the Flood District.—At a meeting held in the City Hospital of Cincinnati, March 28th, a committee was appointed for the purpose of soliciting contributions to assist members of the medical profession who were victims of the recent disaster. Physicians everywhere gave their services willingly to the sufferers, and now many of them are practically penniless, having lost, not only their homes but their office equipment. The committee is composed of Dr. Joseph Ransohoff, Dr. John C. Oliver, and Dr. Charles E. Caldwell. Doctor Caldwell has been appointed treasurer, and all contributions should be sent to him, at the office of the *Lancet-Clinic*, 648 Main Street, Cincinnati.

Personal.—Dr. H. H. Crum, health officer of Ithaca, N. Y., has been appointed one of the lecturers in the State health educational campaign.

Dr. Lunsford D. Fricks, of the United States Public Health Service, has gone to Montana to carry on the fight against Rocky Mountain spotted fever, which recently caused the death of Dr. T. B. McClintic.

Dr. Flavel B. Tiffany, of Kansas City, Mo., is making a tour of the world, visiting the eye and ear clinics of the principal hospitals and colleges. While in India he made a special study of the Indian operation for cataract, with the originator, Colonel Smith, of Bombay.

Measles in Pittsburgh. — Surgeon Stoner, of the United States Public Health Service, has stated regarding the outbreak of measles in Pittsburgh that during the week ending March 29th there were 358 cases and 5 deaths reported; during the week ending March 22d, there were 359 cases, with 5 deaths. From November 1, 1912, when the epidemic began, to March 29, 1913, there have been reported a total of 7,747 cases, with 112 deaths.

Defining Unprofessional Conduct.—A bill introduced into the Senate of the State of New York by Doctor Seeley, known as No. 793, defines unprofessional conduct and gives considerable discretion to the board of regents in relation to the revocation or suspension of license to practise of any physician found guilty of unprofessional conduct, which is defined as including the following: Advertising to cure chronic and incurable diseases, the employment of solicitors to obtain patients, offering services free unless a cure is effected in incurable diseases; wilful betrayal of professional secrets, habitual drunkenness or addiction to drugs, dividing or promising to divide a fee without the knowledge of the patient or person paying the fee, or any action detrimental to health and morals. The bill has been amended since its first introduction, and a clause permitting wide discretion in the revocation or suspension of licenses has been eliminated.

Alabama Medical Society.—The annual meeting of this organization will be held in Mobile on April 15th, 16th, and 17th, under the presidency of Dr. H. T. Inge, of Mobile. The address of welcome will be delivered by Dr. Rudolph H. von Ezdorf, president of the County Medical Society. The annual address of the president will be delivered at the first session, and will be followed by reports from Dr. Martin L. Malloy, of Eutaw, first vice-president, Dr. H. W. Blair, of Sheffield, second vice-president, Dr. J. Norman Baker, of Montgomery, secretary, and Dr. Henry G. Perry, of Montgomery, treasurer. The aftenoon session of the opening day will be devoted to clinics.

Malarial Fevers in Alabama.—Passed Assistant Surgeon R. H. von Ezdorf, United States Public Health Service, has presented in a recent issue of the Public Health. Reports a comprehensive study of the prevalence and geographic distribution of malaria throughout Alabama during the year 1912. Circular postal cards were mailed to 2,099 physicians in the State on December 1, 1912, calling for certain information regarding cases of malarial fevers occurring in their practices during the month of November, and 431 replies were received. A summary of these reports showed a total of 3,319 cases reported, or an average of 7.7 cases for each physician reporting. The total number of deaths from malaria in the State for the whole year was 546, 313 colored and 233 white. The seasonal prevalence was the same as for the two preceding years, the number of deaths being smallest in the months of January, February, and March, the largest being in August, September, and October. The reports showed that 43 per cent. of the total deaths from malarial fever occurred during the first two decades of life. Seven counties gave a report of no death from malarial fever during the year, and of these, two, namely Clay and Winston, gave no report of death from malaria during the years 1910, 1911, and 1912.

In Memory of John Shaw Billings, M. D., LL. D.—Dr. A. Jacobi read the following resolutions at the New York Academy of Medicine, April 3, 1913: The death of Dr. John Shaw Billings has robbed America of one of its greatest men. This New York Academy of Medicine, of which he was an honorary member, the representative and headcentre of medical endeavors in New York, is anxious and eager to honor itself by extolling a man who was so prominent in many fields of knowledge, research, and activities, that each of them would have secured his immortality both in medical and general history. Indeed it is mostly to mere specialistic learning and labor that many of our famous men owe their deserved renown.

Doctor Billings began his life as a demonstrator of anatomy in a Western college. In the Civil War he served the country as a surgeon, and finally as a medical inspector of the Army of the Potomac. He then set out to develop the scanty library of the surgeon general's office established by William A. Hammond. A few years of hard work on the part of Billings and the liberality of Congress made the library grow, so that in 1876 the plan of publishing the *Index Catalogue* was matured, and in 1880 the first volume was printed. Of this monumental work which amazed the world, there are now thirty-three volumes. The same fertile genius created the *Index Medicus* which was continued by Fletcher.

His military labors developed in him an inexhaustible interest in public health and in hospital organization. He was the adviser and builder of Johns Hopkins and other hospitals. He delivered courses on the history of medicine in Johns Hopkins University, was professor of hygiene in the University of Pennsylvania and director of its new laboratory of hygiene. In 1896, he became director of the New York Public Library. Some weeks ago he left behind him two millions of books and fifty branch libraries. For two editions of the United States Census he was the statistician, of the Carnegie Institution of Washington he was the chairman.

His erudition was stupendous, not only in medicine, but in history and the literatures of the world. His vast reading and retentive memory carried him into all continents and zones, into sciences and trades, into chemistry, physics, and meteorology.

Such was the commanding genius with the measured tones, the pleasant voice, the humorous remarks, the interest in all that was human, in social problems, and economic and political questions. Withal, he was governed by unfailing modesty and a cheerful readiness for self extinction. In his disinterestedness he did not so much as think of complaining, when the inauguration, two years ago, of his own creation, the library, was not even to be graced by his ever thoughtful and forceful eloquence.

The multiplicity of his virtues, aims, and results cannot be expressed in a few sentences. We trust, however, that it is not probable that the lightheartedness and forgetfulness of an ungrateful republic will deal with his memory as with that of lesser men. It is in him that the combination of American idealism and creative constructiveness is best represented, an example to be imitated by all men both great and small in all countries. Though Billings was rarely active in this hall, his perfections are known to us and will be appreciated forever. His very life, ever vigorous, ever modest, ever bountiful, is his eulogy. There is nobody here who is not impoverished by the loss of his efficiency and influence. To those who were personally near to him to the members of his immediate family, it is for us a sad and an honorable duty to express our mournful sympathy.

Civil Service Examinations.—The Civil Service Commission of New York State announces that a number of open competitive examinations for the State service will be held in various cities throughout the State on May 3, 1913. These examinations cover positions in the classified service in the State departments and institutions. Intending competitors must execute application blanks and file them in the office of the commission on or before April 25, 1913. Candidates must be full citizens of the United States, residents of New York State for at least three months before the date of the examination, and at least twenty-one years of age. Among the positions for which examinations will be held are:

67. Assistant medical officer, health officer's department, Port of New York. $1,500. This position is in the detention and hospital service at the quarantine station, Staten Island, N. Y., and requires a knowledge of cholera, plague, yellow fever, smallpox, and epidemic cerebrospinal meningitis. This examination is open only to licensed medical practitioners of the State of New York. Candidates will not be required to appear at any place for written examination, but will be rated on their age, education, experience (particularly with the quarantinable diseases), and personal qualifications as shown by their sworn statements and by answers to such inquiry as the commission may direct to proper sources of information among persons acquainted with their experience and qualifications.

69. Medical superintendent, Oneida County Hospital at Rome, N. Y., established pursuant to the provisions of Chapter 218 of the Laws of 1912. Salary $2,500 and maintenance for the superintendent and his family. Candidates must be well educated physicians, graduates of legally chartered medical colleges, with an experience of at least six years in the actual practice of medicine, including at least one year's actual experience in a hospital. Subjects of examination and relative weights: Questions relating to hospital management, including the purchase of supplies, 3; questions on general medicine, surgery, and hygiene, and the treatment of tuberculosis, 3; education and experience, 4. In connection with the rating of the last subject, candidates may be summoned to Rome, N. Y., for an interview with the examiners. Special credit will be given for actual experience as executive head of a hospital. Open to all citizens of the United States, preference in certification being given to residents of the State of New York.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

February 4, 1913.

Thyrosis and Tuberculosis.—L. Saathoff says that tuberculosis has an important causal relation to the origin of thyrosis, including Basedow's disease. In most cases, there is an incipient form of tuberculosis with favorable prognosis; progressive forms lead less frequently to thyrotoxic symptoms. In otherwise uncomplicated cases of thyrosis a rise of temperature is almost always due to a concomitant tuberculosis. The existence of a true Basedow's fever is questionable.

Diphtheria Bacilli in the Urine.—W. Bayer examined the urine of nineteen patients in the convalescent stage of diphtheria for the presence of the bacilli. In all the cases the findings were positive. In four of the cases the diphtheritic attack had occurred from eight to ten weeks previously. In two of the cases the urine contained albumin at times. From experiments on animals it has been shown that these bacilli are still capable of making toxines energetically. Urotropin medication was ineffectual in making the bacilli disappear. These results show that it can no longer be denied that diphtheria, like every other infectious disease, is accompanied by a bacteriemia, and the excretion of the bacilli through the urine furnishes a new source of infection not hitherto recognized.

Neobornyval.—Rigler recommends the use of the almost odorless and tasteless neobornyval in various nervous conditions. The results in a case of cardiac neurosis were particularly gratifying. The maximum dose is eight gelatin pearls in one day. The drug is to be withdrawn slowly and the administration withheld for a more or less extended period of time.

Lithotripsy or Lithotomy?—Feiber decides this question in favor of lithotripsy on the basis of his many years' experience. In only four out of 900 cases the operation could not be carried out without the loss of blood; general anesthesia was necessary only six times; out of eight deaths only four could be directly traced to the operation. The majority of the patients had passed their sixtieth year, the oldest being eighty-five years old.

February 11, 1913.

Action of Serum Ferment in Pregnancy and Presence of Tumors.—P. Lindig found that the serum of pregnant women and of those having tumors in the course of the genital tract, and perhaps also the serum in inflammatory conditions, contains a proteolytic ferment which is capable of splitting the proteid of placenta, uterus, ovary, and tumors of the genital tract and, to a lesser extent, the proteid of muscle.

Colopyemia; Significance of the Bacterial Anaphylatoxines.—A. Hamm relates an interesting case of colopyemia following a curettage after abortion. The patient had chills, accompanied for a time by severe dyspnea, from which, however, she rallied quickly. The last attack was particularly stormy; for hours the woman had a distressing, choking sensation, with convulsive movements of the body. The autopsy revealed no findings which could explain these subjective symptoms; at least, no large embolus was found. There were extensive thrombi of all the veins of the pelvis. Colon bacilli were procured in pure cultures from the thrombi and spleen. The blood during life had been negative for cultures of this bacilli. It is probable that the bacteria suddenly thrown into the blood were rapidly destroyed, causing the organism to be flooded with endotoxines; the peculiar dyspnea was no doubt the expression of a bacterial anaphylactic poison.

Electrolysis for Neuralgias of the Trigeminus.—A. Réthi has obtained good results with the electrolytic method in cases of trigeminal neuralgia. The treatment is without effect cosmetically. The action is surer than with injections of alcohol. After sufficient anesthesia of the neural canal, the stream, increasing from twenty to thirty milliampères, is permitted to act for fifteen minutes.

Indications for the Action of Homburg Mud.—Von Noorden has employed the mud of Homburg springs for years with excellent results in all kinds of cases of rheumatic, gouty, neuralgic, and inflammatory infections. This mud is a decidedly radioactive sediment of the Homburg waters.

Painless Labors.—A. Voel lessens the pains of labor by large doses of morphine and by making the perineum insensible to the passage of the head by the subcutaneous injection of cocaine adrenalin.

February 18, 1913.

Appearance of Virulent Tubercle Bacilli in the Blood after Diagnostic Tuberculin Injections.—Bacmeister, in thirty animal experiments, found virulent tubercle bacilli in the blood of four human beings suffering from affected lungs. In every case the blood was taken during the reactionary period after the tuberculin injection. In these four patients the animal experiments were negative before the tuberculin injection was given. Even though harmful results were not observed in these four cases, the fact that the subcutaneous tuberculin injections act provocatively upon the hematogenous distribution of the virulent tubercle bacilli should urge one to the utmost care in the application of the tuberculin injections for diagnostic purposes.

Neosalvarsan Poisoning.—P. Wahle reports two cases of fresh secondary syphilis in which, following the intravenous injection of 0.9 gramme neosalvarsan a severe nephritis ensued. In one of the cases a pneumonia developed, following the nephritis, which proved almost fatal. The possibility of errors in the preparation of neosalvarsan at the clinic are practically nil. In these cases the severe toxic side action of the neosalvarsan must be assumed to be due to the neosalvarsan itself, and these actions have not been observed with the older salvarsan. The seriousness of their appearance is enhanced by the impossibility of foretelling their occurrence.

Tubercle Bacilli in the Circulation.—E. Rosenberg had occasion to examine the blood of many patients suffering from pulmonary and surgical tuberculosis and found in every case acidfast bacilli of the character of the tubercle bacilli, while from the blood of normal persons these were absent.

February 25, 1913.

Water as a Source of Goitre and Cretinism.—A. Kutschera, for the following reasons, disapproves of the theory that water bears an etiological relation to goitre and cretinism: 1. Epidemics have been observed in habitation communities but not water communities. 2. Animal experimentation shows that goitre and cretinism may arise without the presence of water. 3. Epidemiological studies prove that their appearance and disappearance in families and houses show that the cause of the disturbances must be sought in the house itself and in the apartments in the immediate neighborhood of the stricken persons. The transference of the disease by an intermediate host is probable.

Treatment of Wounds with Sugar.—G. Magnus has had favorable results with this treatment, and believes it deserves further investigation. Sugar has a disinfecting and anteputrefactive action. causes the liberation of fibrin, stimulates the secretion by drastic osmotic procedures, like a serum flush of the wound from within outward; all these furnish favorable conditions for healing, which manifests itself by rapid cleansing, deodorizing, the formation of healthy granulation tissue, and the rapid growth of new skin. The sugar is harmless, cheap, and to all intents and purposes a sterile medication.

ZENTRALBLATT FÜR CHIRURGIE.

March 1, 1913.

Treatment of Beginning Gangrene.—M. Borchardt reports the case of a man, fifty-four years old, in whom severe arteriosclerosis produced gangrene of the toes that required their exarticulation and later amputation of the thigh. The femoral artery was found to be almost occluded at the place of amputation. Convalescence was retarded by thrombosis and gastrointestinal hemorrhages. Then symptoms appeared in the other foot in the same sequence, pains in the toes, heaviness in the limb, and blue discoloration, so that the patient himself recognized the danger of gangrene. As the usual measures, raising the limb, heat, etc., gave no relief, alternate hot and cold baths were applied to the knee. Two high pails were filled with water, the temperature of that in one being 35° C., that in the other the ordinary temperature of hydrant water. The leg was placed in one pail for a few seconds, then in the other pail, the water reaching to the knee, and the procedure repeated from thirty to fifty times a sitting. Gradually the temperature of the warm water was raised to 55° C., while the other was kept cool by the addition of fresh water. These baths were taken morning and evening for weeks. The result was notable; the pains promptly disappeared. During the bath the leg always looked red and warm, and the hyperemia was much greater than in a hot bath alone. The patient has maintained these baths for a year and a quarter, gangrene has not developed, and the circulation is constantly growing better. In other cases in which the gangrene was too far advanced to be arrested, the pain was greatly relieved. These alternating baths seem to be indicated in the early stages of gangrene; they favor the development of a collateral circulation and improve the blood supply. Repeated observations of the hyperemia during the bath furnish information concerning the nutrition of the limb, and the best place to amputate when that operation is necessary.

LYON MEDICAL.

March 2, 1913.

Chronic Jaundice as a Sequel to Tuberculous Peritonitis.—F. Mouisset and J. Gaté report a case of chronic jaundice in which symptoms suggestive of both cancer and cholelithiasis were present, but no evidence of either could be found at operation. The bile ducts could not be dissected out at the autopsy owing to their obliteration by dense adhesions, of which a latent tuberculous peritonitis of the adhesive form during the patient's childhood or adolescence is believed to have been the cause.

Results of Franke's Operation.—Mouriquand and Cotte report that in four cases in which they avulsed some of the intercostal nerves to relieve tabetic gastric crises. good results were uniformly obtained. They consider the operation a safe one. When a nerve is avulsed the corresponding spinal ganglion not infrequently comes with it. The resulting tear in the dura heals without difficulty.

PRESSE MÉDICALE.

March 8, 1913.

Uses of Blood Serum in Surgery.—H. Nolhia states that, as shown by Raymond Petit, blood serum need not have been freshly obtained when its curative effects in local inflammations are sought. The serum may be kept in aseptic ampoules or as a dry powder, the latter being diluted with ten parts of sterile saline solution for use. Petit advises the use of horse serum that has been heated to 56° C., certain noxious properties being removed by this process. In burns, after careful cleansing of the adjacent skin, the blebs should be aseptically opened. without removal of the epidermis, and the entire area washed with hydrogen dioxide solution, then with boiled saline solution. Sterile gauze, dipped in the heated horse serum, should then be applied, and the whole covered with a compress moistened with saline solution, an impervious dressing and cotton wool, rather loosely applied. The dressing should be renewed at first daily, then on alternate days. If the surface becomes macerated, the impervious covering should be left off, the surrounding skin anointed with a little sterile petrolatum, and dried serum used instead of the wet dressing. Rapid healing occurs under this treatment. In abdominal operations, especially in septic cases, from twenty to thirty c. c. of serum may be poured into the peritoneal cavity, before draining, with advantage. In puerperal infection, after the uterine cavity has been evacuated, washed, and dried, a piece of sterile gauze, the end of which has been folded around one gramme of dried serum, and the whole then dipped in the fluid serum, may be inserted into the uterus.

SEMAINE MEDICALE.

March 12, 1913.

Treatment of Fracture of Patella.—Lejars asserts that the possible harmful effects of circling the patella with wire have been grossly exaggerated and advises that, where operative treatment is indicated, metallic sutures should be used in preference to catgut or any other resorbable material. The chief function of wiring is to permit of early, energetic mobilization; if catgut is used, the sutures will soon become weakened, and mobilization will involve the risk of breaking the fragments apart. Lejars wired fifty-one cases with complete success in all but one, in which infection took place, followed by ankylosis.

ARCHIVES INTERNATIONALES DE PHARMACODYNAMIE ET DE THÉRAPIE.

Volume XXII, Nos. 1 and 2.

Influence of Antipyrine, Acetphenetidin, and Acetanilide upon the Gases in the Blood.—Guido M. Piccinini showed experimentally that these agents lower the total amount of oxygen in the circulating arterial blood. The diminution is slight with antipyrine, which, in fact, in large and medium sized doses causes at first an increase. With the other two agents the decrease is both pronounced and constant. The variations in the amount of carbon dioxide in the blood are not parallel with those in the oxygen. The respiratory functional capacity of the blood and the respiratory interchanges are diminished by these drugs.

Behavior of Digitalis Substances in the Organism.—C. Lhoták von Lhota found it possible so to habituate rabbits to digitalis administered orally that as much as thirty grammes could be given daily without causing death. Symptoms such as paresis and diminished cardiac rate, appearing early in the experiments, would later disappear, notwithstanding an increase in dose. Neither in acute intoxication nor in the habituated animals could digitalis substances be detected anywhere but in the stomach; it was concluded that the activity of the drug was destroyed in this organ and in the duodenum. Even in the normal rabbit this destruction of the drug occurs to a marked degree, but in those habituated it is further increased. The heart and voluntary muscles themselves become less susceptible to the effects of digitalis in the habituated animals.

Nos. 3 and 4.

Antitetanic Action of Calcium Salts.—S. Yagi found that upon injecting calcium chloride into frogs, the administration, two or three hours later, of a dose of strychnine more than the double of that ordinarily required to induce convulsions, failed to bring on true tetanus. Similar results were obtained upon substituting caffeine or guanidin for the strychnine, but not when picrotoxin or phenol was used. The effects are ascribed to a diminution in the irritability of the muscles themselves under the influence of calcium.

Magnesium Sulphate in Arsenical Poisoning.—D. Sieber was able to save animals to which a lethal dose of Fowler's solution had been given by mouth or subcutaneously, by injecting full doses of magnesium sulphate under the skin. Animals poisoned intravenously, however, could not thus be saved. The magnesium acts, therefore, only before the arsenic has entered the blood and combined with the tissue cells. Its effect is probably produced through retardation of the absorption of the arsenic owing to the formation of magnesium arsenic compounds that are only slightly soluble. Subcutaneous injections of magnesium sulphate should be used in cases of arsenic poisoning, provided they can be given soon after the introduction of the poison.

Effect of Sodium Bromide on the Metabolism of Purins.—A. Jappelli found that the elimination of uric acid is diminished, while that of the alloxuric bases is notably increased by the administration of sodium bromide in full doses to dogs. It seems probable that this result is due to an inhibitory effect of the bromide ion upon the diastatic ferment that normally converts the purin bases into uric acid.

BRITISH MEDICAL JOURNAL.

March 22, 1913.

Action of Salicylic Acid and Chemically Allied Bodies in Rheumatic Fever.—Ralph Stockman bases his paper on clinical observations supplemented by laboratory experiments. When benzoic acid, or sodium benzoate, is given in doses of from fifteen to twenty grains, hourly or every two hours, the antirrheumatic action is unmistakable, but very much weaker than that of sodium salicylate. Salicylic acid itself is in no way superior to sodium salicylate as an antirrheumatic. The salicylates act very quickly and efficiently when the rheumatic infection is recent and confined to the joints, but when the fibrous tissues of the heart valves or of the muscles or body generally are deeply implicated, they are far less energetic and effective in action. In an uncomplicated case about one ounce of sodium salicylate spread over two to four days is usually sufficient to abolish symptoms, but it is not curative, hence relapses are apt to occur unless its administration is kept up in suitable doses for about three weeks longer. The intravenous use of the drug is effective in promptly relieving pain, but the doses are too small to be of curative value. Extremely large doses of sodium salicylate have been recommended, but it is doubtful if the body can be sterilized thus, and it is not agreed that they are practically more efficient than smaller ones. Acetyl salicylic acid is a more powerful analgesic than sodium salicylate, but it is doubtful whether all of it undergoes decomposition with the liberation of salicylic acid. There is no reason to suppose that its antirrheumatic action is other than that of the liberated salicylic acid. None of the salicylates upon the market, either the pharmacopeial or proprietary preparations, is superior in antirrheumatic action to sodium salicylate. A great number of chemically allied substances have been found to be wholly without action in rheumatism, and free from analgesic action, though their chemical constitution would suggest antirrheumatic powers.

Death by Electric Currents and by Lightning (*Lecture III*).—A. J. Jex-Blake says that it seems as though death by lightning might occur in one of three different ways—by failure of the heart (ventricular fibrillation), by failure of the respiration, or by the failure of both together. In the vast majority of cases consciousness is lost at once, and death takes place very rapidly, if at all. The prognosis for recovery is very good in those cases where death is not sudden. Many of the deaths could be avoided if proper treatment had been instituted at once and maintained sufficiently long. The only available treatment at present seems to be efficient artificial respiration, and is applicable to the second mode of death alone. On the subject of prophylaxis several admonitions can be given. It is certainly safer in the house than out of doors, and large houses are much safer than shanties. Closure of the windows and doors is a valuable precaution, and one should keep away from the walls. It is very dangerous to stand under an isolated tree; the oak is the most dangerous, while the beech is the least. It is more dangerous to be in a crowd of people, or among a herd of cattle, than to be alone, for lightning seems to be attracted by such groups.

Cases Treated by Radium in the Royal Infirmary, Edinburgh, during 1912.—Dawson Turner relates his experiences with forty-one cases representing different conditions, and shows that, in his hands at least, the classes of cases most benefited were those of nevus or of rodent ulcer. One or two striking results were obtained in cases of far advanced carcinoma, but this was exceptional.

LANCET.

March 22, 1913.

Genital Functions of the Ductless Glands in the Female *(Lecture I)*.—W. Blair Bell finds that in cats oophorectomy causes a reduction in the calcium excretion by about one half, and that the phosphorus excretion is greatly increased. This suggests that the ovaries are concerned in calcium excretion and the suggestion finds confirmation in the fact that the functions of these organs are in abeyance during pregnancy and lactation in the woman, and at these times the fetus and the milk require all of the excess calcium of the mother. Oophorectomy or ovarian insufficiency in the human being leads to changes in the thyroid, which may either resemble those seen in experimental animals, that is, colloid accumulation, or, more rarely, the condition seen in exophthalmic goitre. It has been stated that oophorectomy diminishes the output of calcium, and it is known that the output is much increased in Graves's disease, so that this condition may represent a countereffect to ovarian insufficiency. But little can be said of the relation between the ovarian function and the pituitary body. It is known that there is a peculiar and active state produced by pregnancy in the pars anterior and the pars intermedia, but we are not led to suppose that this is due to ovarian insufficiency.

Bastedo's Sign; a New Symptom of Chronic Appendicitis.—Arthur F. Hertz has used Bastedo's method of dilating the colon with air to elicit localized pain or tenderness in the region of a chronically inflamed appendix, and has obtained a positive result in appendicitis only. In every positive case the appendix was found diseased at the subsequent operation.

Ionic Medication in Herpes zoster.—Angus Macnab finds that the introduction of quinine sulphate into the affected region by the electric current gives excellent results in the relief of pain and anesthesia of herpes zoster. He treats the part with from one to twenty milliampères passed through an electrode saturated with a solution of sulphate of quinine. The positive pole is used and the treatment varies from three to twenty minutes in duration. The method has been applied to the eye in some cases in which the herpes involved this organ, and the results have been very good.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 27, 1913.

Present Position of Abdominal Cæsarean Section in Eclampsia.—John T. Williams has compiled the results obtained by abdominal and vaginal Cæsarean section and by manual or instrumental dilatation of the cervix for the purpose of rapid delivery, and find that abdominal Cæsarean section in eclampsia has a maternal mortality of 48.2 per cent., vaginal Cæsarean section a mortality ranging from three to eighteen per cent., and dilatation of the cervix one ranging from seven to twenty-six per cent. Therefore, he concludes, abdominal Cæsarean section in eclampsia should be restricted to those cases in which there is a pelvic contraction sufficient in itself to demand it, and possibly also early cases of threatened eclampsia at or near term, where the shock of a vaginal delivery seems to offer much greater danger than the added strain imposed upon the excretory organs by Cæsarean section.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 29, 1913.

Study of the Toxicity of Salicylates Based on Clinical Statistics.—Paul J. Hanzlik concludes from this study that the mean toxic doses of the different salicylates for adult males and females, respectively, are 180 and 140 grains of the synthetic sodium salicylate; 200 and 135 grains of the natural sodium salicylate; 120 minims of the oil of ganethesia (methyl salicylate); 165 and 120 grains of acetylsalicylic acid (aspirin); and 100 and 83 grains of salicylosalicylic acid (diplosal). For females the toxic dose of the salicylates is apparently eighty per cent. of that for males. The toxic dose of salicylosalicylic acid is about fifty per cent.; that of methyl salicylate and acetylsalicylic acid about sixty per cent. of that of sodium salicylate. The toxic dose of the synthetic sodium salicylate for the majority, or about sixty-eight per cent., of individuals of both sexes lies between 100 and 200 grains. Practically the same is true of the methyl salicylate. Between sixteen and seventy-five years the toxic dose is not influenced by age. In white and colored races the toxic dose of the synthetic salicylate is the same. In various diseased conditions the toxic dose of different salicylates is practically the same. The toxic dose of the synthetic salicylate is not modified by the therapeutic response in various diseased conditions. The therapeutic efficiency of synthetic sodium salicylate is greatest in rheumatic fever and, not infrequently, partial and even complete relief is obtained in other conditions. There is no relation, presumably, between the occurrence of albuminuria in febrile and afebrile conditions and toxic doses of the synthetic salicylate. Though individuals show idiosyncrasy toward toxic doses of the synthetic salicylate, no connection between these idiosyncrasies and the factors of age, sex, race, or diseased condition was found. The idiosyncrasy varies in the same individual and is not influenced by previous salicylic medication.

Autoserotherapy in Serofibrinous Pleurisy.—Maurice Fishberg concludes that autoserotherapy appears to be worthy of more extended trial. No untoward symptoms have been noticed. It may be done with the case of an ordinary exploratory puncture. It should be tried in every case of pleural effusion in which the fluid is not purulent. When, in a case of pleurisy showing signs of effusion, an exploratory puncture is made to determine the character of the fluid in the pleural cavity, if the fluid is found to be serous, the needle should not be wholly withdrawn; but when the point is brought to the subcutaneous tissue it should be injected then and there. The quantity to be injected need not be large (two to five c. c. suffices). In favorable cases the subjective symptoms (pain, dyspnea, prostration, etc.) will improve or entirely disappear, while examination of the chest will show less effusion than before. In about eighty per cent. of cases the fluid disappears in from seven to ten days. It may be necessary to repeat the treatment several times at intervals of two or three days before improvement is manifested. Failure occurs in about ten to fifteen per cent. of cases, but even in these the treatment occasions no harm to the patient.

Pneumococcus Meningitis with Normal Cerebrospinal Fluid.—Jules M. Brady concludes that the positive diagnosis of pneumococcus meningitis may be impossible during life, as a normal cerebrospinal fluid may be obtained throughout the course of the disease. The writer believes that anatomical changes (encephalitis, meningitis) occur oftener than is usually believed and are the explanation of symptoms from the side of the nervous system which we formerly regarded as functional (meningismus).

Grafting Preserved Amniotic Membrane to Burned and Ulcerated Surfaces, Substituting Skin Grafts.—Maximilian Stern has used preserved amniotic membrane as a substitute for skin in grafting the surfaces of ulcers, burns, scalds, and traumatic denudation. It has not been tried on electric, x ray, or extensive burns. The writer's success in the former class of cases leads him to the conclusion that if the amniotic graft should do as well or nearly as well as true skin, it must commend itself for general use, as it abolishes the necessity of anesthesia and the production of a secondary wound.

Hydrophobia.—Alfred Hand, Jr., Courtland Y. White, and John Reichel aver that with the history of a disease extending through centuries, with sporadic cases as well as epidemics following the path of a rabid dog, with a typical and characteristic symptom complex following within a limited period of incubation, with an invariably fatal termination following untreated cases, with a prophylactic treatment insuring favorable prognosis, with a negative pathological picture in the cases, and finally with constant microscopic lesions, we must conclude that these cases are caused by some specific agent which is infectious and transmissable.

MEDICAL RECORD

March 29, 1913.

Occurrence of Dextrorotary Albumins in Organic Nature.—John Beard's experiments confirm the truth of the biological and embryological conclusions that the cycle of animal life, even that of the protozoa, is an antithetic alternation of asexual and sexual generations, of such nature that the albumins of the asexual generation (dextrorotary) are the stereochemical antitheses of those of the sexual generation (levorotary). All such asexual generations of animals, including all malignant tumors, are killed or pulled down in the living state by the action of active solutions of the pancreatic ferments, trypsin and amylopsin. As long ago as 1907 Beard stated that the pancreatic ferments, trypsin and amylopsin, were the natural means for curing tuberculosis. This was confirmed in a case of tuberculosis of the bowel by Margaret A. Cleaves, and in various forms of surgical tuberculosis by Bätzner, who showed that solutions of trypsin do not inhibit the growth of tubercle bacilli, thus proving that the favorable result was due to the use made by the leucocytes of the ferments, trypsin and amylopsin, as weapons of attack. Since the organisms causing the chief tropical diseases (malignant malaria, trypanosomiasis, sleeping sickness, yellow fever, relapsing fever, kalaazar, etc.) are, so far as these attack human beings, asexual generations, it follows that the natural means of destroying the organisms of such tropical diseases and of curing the patients, are the use *in combination* of the powerful pancreatic ferments, trypsin and amylopsin. By a parity of reasoning, all infectious diseases due to parasitic organisms of an asexual nature, all of which possess dextrorotary albumins, such as pyemia, smallpox, scarlet fever, pneumonia, leprosy, Asiatic cholera, and others of a similar nature, must be, and are curable naturally by trypsin and amylopsin, in combination. The writer promulgates the general principle that the microorganisms, bacilli, etc., of disease are, of necessity, composed of compounds which are stereochemical antitheses of those making up the human body, and when compared similarly with the pancreatic ferments, the like is true of the ferments by means of which they effect their end. It follows that the pancreatic ferments, trypsin and amylopsin, in combination, are the most powerful agents in the whole range of organic nature.

Action and Administration of Crotalin in Pulmonary Consumption and in Epilepsy.—Thomas J. Mays states that the therapeutic efficacy of crotalin in pulmonary diseases lies primarily in its power of influencing the respiratory centre and its efferent pulmonary nerve fibres, and, secondarily, by its general action on the nervous system, in minimum and medium doses. The remedy may be used by the arm method, the neck, the intravenous, or the nebulization methods. The solution is made by dissolving one grain of crotalin in 100 minims of glycerin and 400 minims of distilled water. Five minims of this solution represent 1/100 grain crotalin, an average dose. For the nebulization method, four grains of crotalin are dissolved in 400 minims of liquid petrolatum.

Differential Diagnosis between Pneumonia and Appendicitis.—Gustav F. Boehme, Jr., emphasizes the fact that the differential diagnosis is often not easy, as the points of differentiation are few until definite signs of lobar pneumonia develop. The writer points out the aids for differentiation, considering pneumonia simulating appendicitis, appendicitis simulating pneumonia, coexistence of the two processes, and finally postoperative or ether pneumonia. He concludes that it is probably better to remove a normal appendix with an existing pneumonia unrecognized than to allow a pus appendix to remain, to awaken too late to save the patient from general peritonitis.

Treatment of Erysipelas in Infants by Means of Vaccines.—E. Mather Sill, having previously reported two cases of erysipelas in infants which were cured by injections of streptococcus vaccine, now adds eight more cases treated by vaccines. Of these ten cases, seven were treated with streptococcus vaccine alone, one case with combined vaccine (streptococci 50 millions, stophylococci 500 millions, colon bacilli 200 millions), and two cases with Schaefer's mixed infection phylacogen. As only one case treated with the streptococcus vaccine was fatal (a mortality of ten per cent.), although some cases were in very young babies and others were rhachitic or badly nourished infants, with poor resisting power against infection, the writer believes that the use of streptococcus vaccine in infantile erysipelas is the most efficacious treatment at command; but he insists that it should be used in large doses at twenty-four hour intervals, together with the use of approved local measures.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

March, 1913.

Symptomatic Differentiation between Disorders of the Two Lobes of the Pituitary Body; Syndrome Accredited to Hyperplasia of the Anterior and Secretory Stasis or Insufficiency of the Posterior Lobe.—Harvey Cushing advances the view that skeletal overgrowth, possibly combined with certain cutaneous changes and hypertrichosis, indicates a hyperplasia of the anterior pituitary lobe. Certain types of adiposity, on the other hand, associated with an increased assimilation limit for carbohydrates, frequently a dry skin, subnormal temperature and pulse, characterize the metabolic disturbances from posterior lobe insufficiencies. Hypertrichosis and sexual dystrophy commonly accompany this symptom complex. If the combination of these factors is assumed, we can explain certain not unfamiliar clinical syndromes, in which overgrowth is associated with adiposogenital dystrophy, differing from the familiar syndrome of Fröhlich, not only in the absence of an hypophyseal tumor with sella turcica enlargement, but also in their opposed skeletal features. These physical states indicate an anterior lobe hyperplasia associated either with hypoplasia of the posterior lobe or with what is practically the same thing, stasis of posterior lobe secretion.

Gastric Disturbances in Tabes dorsalis.—William F. Cheney has observed during the past year five patients who sought advice for gastric disturbance, in whom this ultimately proved to be one of the manifestations of tabes dorsalis. All had suffered for years without being aware of the true nature of their disease. Two had been operated on for supposed gastric ulcer, without relief of their symptoms; a third was also subjected to surgery by the advice of the writer before it was discovered that organic gastric disease was absent and the true nature of the disease was disclosed. It is apparent from these facts that the gastric manifestations of tabes are not always recognized as early as they might be, and that perhaps more cases of "stomach trouble" are really spinal in origin than has been suspected. If one is alert, the recognition that certain gastric disturbances are really due to tabes is never difficult. Their diagnosis is not facilitated by any fixedness in the nature of these disturbances or in the frequency of their recurrence. They are unaccompanied by the evidences of organic stomach disease that one might expect; they recur in spite of treatment specially directed to the stomach, even in spite of laparotomy; as a rule they appear abruptly, without reason, and cease suddenly without relation to treatment, leaving the patient perfectly well in the intervals, so far as gastric disturbance is concerned. Moreover, these gastric disturbances may be present for years before the symptoms of "locomotor ataxia" appear, or any symptom referable to spinal disease. We must prove the connection between the two by discovering signs of tabes unknown to the patient, such as faulty reflexes and cutaneous sensibility, and changes in the spinal fluid obtained by lumbar puncture; the last link in the chain is the demonstration that active syphilis exists, by the Wassermann reaction in the blood and spinal fluid or even in the latter alone.

The Lymphocytosis of Infection.—Richard C. Cabot observes that the great majority of diseases are accompanied, during their acute stage, by an increase in the polynuclear leucocytes. Typhoid and malaria, among a few, show no marked change. Occasionally we have an increase of lymphocytes, in infections usually associated with polynuclear leucocytosis, and observed very commonly in pertussis. The writer reports four cases which would ordinarily be associated with polynuclear leucocytosis, connected apparently with a streptococcic infection, and interesting clinically on account of the liability of confounding them with lymphatic leuchemia and thus causing unnecessary alarm as to prognosis. From a study of these cases the writer concludes that wound sepsis, boils, and widespread streptococcic adenitis of tonsillar origin may be marked by a lymphocytosis so pronounced as to suggest lymphoid leuchemia. No explanation can be given for this substitution of lymphocytosis for the usual polynuclear leucocytosis of infection. Finally the differentiation between such a lymphocytosis (accompanying a widespread adenitis) and leuchemia rests upon the recognition of an infectious origin for the adenitis, upon the lesser degree of lymphocytosis in the infectious type, and upon the course of the disease.

Gastric Ulcer without Food Retention; a Clinical Analysis of One Hundred and Forty Operatively Demonstrated Cases.—Frank Smithies, from a clinical analysis of 140 cases of operatively demonstrated surgical gastric ulcer without food retention, concludes that in more than one third of operatively demonstrated gastric ulcers the stomach maintains its emptying power. Ninety-two per cent. of this group occur between the ages of thirty and sixty years, males being affected three times as frequently as females. The American born farmer furnishes a large number of gastric ulcers. A frequent concomitant of gastric ulcer is an irregularity of food ingestion with the use of alcoholic stimulants. A history of previous infectious disease is rather frequent, typhoid fever having been present in 18.9 per cent. of the cases reported by the writer. In the average gastric ulcer a mild grade of secondary anemia is present. An average of more than twenty pounds of weight loss without cachexia was shown in the series; this loss may be so rapid as to suggest malignant disease; as an exception some gain weight. In nearly three fourths of the cases the appetite is either lost or is capricious, and more than sixty-five per cent. are constipated. Nearly three fourths of the cases have spells or attacks of discomfort resembling "biliousness" or "dyspepsia," with normal health between such, lasting over a period of thirty or more years, and after showing a peculiar seasonal relation, while in thirty-six per cent. the disability is continuous, with or without disturbance of nutrition. Abdominal pain or distress is a constant symptom, and vomiting is present in nearly three fourths of these cases. Hematemesis or melena occurred in 40.7 per cent., one fourth had the former alone, one third hematemesis with or without melena, while 7.1 per cent. had melena alone. More than two fifths of the ulcers were at the pylorus. Prompt relief of symptoms with a comfortable convalescence, as a rule, follows operative treatment of retention free ulcer cases.

Dissemination and Prevention of Yellow Fever.—Joseph H. White concludes, from a study of the 1905 epidemic in New Orleans, that the mosquito is the only disseminator of yellow fever, and the female stegomyia the only genus and species proved to be the carrier. During the first three days only is yellow fever infective, and the mosquito which bites a patient after that time receives no infection. At least ten days must elapse after the ingestion of the yellow fever blood before the stegomyia itself can convey the infection to another human subject. Immunity usually follows an attack of yellow fever, but not always. Feeble susceptibility in the negro is sometimes mistaken for immunity, and mild cases are the rule with that race, causing many cases to be overlooked. In dealing with endemic foci all breeding places for all varieties of mosquitoes, especially stegomyiæ, anophelines, and culicidæ, must be destroyed. Rapid antiepidemic work, confined to the destruction of infected stegomyiæ, is short sighted.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

March, 1913.

Chorionic Villi in the Uterine Wall Eighteen Years after the Last Pregnancy.—Ries reports a very interesting case in which the foregoing findings were present in a colored woman of forty-five years. The last pregnancy ended an abortion which terminated naturally and was not followed by any signs of infection. Examination of the uterus showed degenerated villi in the veins and in the walls of a fibroid. No chorionic epithelium was found on these villi, but there is no way of telling as to when the epithelium was replaced by vascular endothelium. It may be that the absence of the chorionic epithelium is one of the reasons why no chorioepithelioma was found. Such a case as this, however, tends to clear up the pathogenesis of those cases of chorioepithelioma in which the tumor does not arise till many years after the last pregnancy.

Difficulty of Producing Sterility by Operations on the Fallopian Tubes.—Leonard reviews the various methods that have been employed in attempts to produce sterility by operating upon the Fallopian tube. None of the operations, from simple ligation to removal of the tubes, has been entirely satisfactory. It appears that Neumann's method, extirpation of the tubes together with excision of a wedge of uterine cornu, had best be adopted as the only simple procedure offering reasonable assurance of preventing subsequent conception.

Advantages of the Suprasymphyseal Extraperitoneal Cæsarean Section in Clean as well as in Presumably Infected Cases.—B. C. Hirst, for the following reasons, asserts this method to be more advantageous than that of the classical Cæsarean section: 1. The mortality of an extraperitoneal section should be the minimum in both clean and infected cases. 2. The uterine wound is in such a position that even if it should leak or become infected, the result is not necessarily disastrous. 3. There can be no intraperitoneal adhesions afterward with an abnormally high position of the uterus, as the least disagreeable consequence. 4. The convalescence of the patient is much more comfortable in every way. 5. The abdominal wound is stronger, less disfiguring, less likely to exhibit a hernia. 6. If the uterine wound should burst in a subsequent pregnancy or labor the accident is not so dangerous as if the wound was intraperitoneal.

Cæsarean Section for Central Placenta prævia.—Foulkrod considers operative delivery the more favorable method in these cases, as the hemorrhage is much less than by any method of vaginal delivery, the placental site being undisturbed. The shock of operation is no greater, especially in primiparæ with no attempt at labor. The child is given every chance to live and the mother, if she recovers, is left in much better physical condition. Also the danger of infection in unhandled cases is certainly much less by section and free drainage.

The Treatment of Puerperal Sepsis at the Sloane Hospital for Women.—Ward recommends conservatism in the treatment of puerperal sepsis. His method is divided into the prophylactic and the active treatment. Under the former he advises extreme care as to surgical asepsis, limiting as far as possible all ante partum, intra partum, and post partum examinations, interference and instrumentation, resorting to them only when clearly indicated. Under the latter is advised adequate uterine drainage, first, by simple vaginal and intrauterine saline douches. If this proves insufficient to control the process, explore the uterus at once, and once only, to make sure that it is empty of foreign products, using the finger for exploration, and with a minimum of trauma to the uterine tissues. Treat expectantly secondary foci as they arise and support the general condition of the patient.

Why Incidental Removal of the Vermiform Appendix, when Reasonably Possible, Should Be the Rule.—Goldspohn discusses at some length the reasons why the appendix should be removed. He considers it a vestigial structure not to be regarded as an organ in any sense essential to the body. It is also the locus minoris resistentiæ of the entire intestinal tract, if not of the entire alimentary canal. This structure, as a result of diseased conditions, very frequently disturbs the functions of the stomach, duodenum, and the gallbladder. Then, too, the appendix may appear normal when really pathological. Out of 354 appendices removed incidentally, 237 were macroscopically diseased or abnormal.

AMERICAN JOURNAL OF SURGERY.

February, 1913.

Preserving the Sphincter in the Treatment of Fissure and Fistula in Ano.—G. A. Humphreys avers that drainage is the all important factor in the treatment of fissures. In men fissures are usually in the posterior commissure, and anteriorly in women if the perineum has been lacerated. In patients refusing operation for fissure, the writer inserts a straight piece of rubber tubing, about a half inch in diameter and five inches long, with a piece of gauze fastened to the upper end and extending down behind the tube. A large safety pin is now put through the tube and gauze and strapped to the buttocks with adhesive plaster. His patients are cured in from six to eight days. If, however, they submit to operation, the edge of the ulcer is trimmed off, the sentinel pile or any polypoid growth from above is removed, and, wherever the fissure is situated, a long, shallow incision is made in the posterior commissure without injury to the important fibres of the sphincters. In the treatment of fistula the patient has a thorough cleaning out with castor oil and calomel before the operation. A slightly curved incision, from two and a half to three and a half inches long, is made parallel to the fibres of the external sphincter with the external fistulous opening at the middle of the incision. A probe is passed from within outward, and with gentle traction on the probe the incision is deepened. following the fistulous tract to the rectal wall. When the tract is thus completely dissected out on the probe, the latter is withdrawn and the outer end of the fistulous tract cauterized and ligated. A second incision is now made around the anus and the mucous membrane dissected up, just as in the Whitehead operation, until the inner end of the fistulous tract is encountered. The fistulous tract is then drawn through and excised at the rectal margin and the incision at the edge of the anus sutured, while the first incision is drained with a strip of rubber tissue without suturing. A few strips of iodoform gauze and a large rubber tube are inserted into the rectum and the bowels are confined for a week or ten days.

New Method for Diagnosticating Renal Tuberculosis.—Leo Buerger excises the mucous membrane of the ureteral orifice in doubtful cases of renal tuberculosis. He says that miliary tubercles may be present in such tissue, although the only visible alterations of the mucous membrane are those which appear as "edema" even to the trained eye. Such miliary tubercles may be found in the ureteric ostium even though the rest of the ureter is almost free from tuberculous change and when the pelvis of the kidney, too, is but slightly affected. Such excised pieces make a positive diagnosis possible when the ureteral catheter fails us, when the guineapig inoculations are negative, when the urine is perfectly clear, and when the patient is presenting practically no symptoms.

Acute Osteomyelitis and Its Complications.—L. W. Allen points out that the diagnosis of a typical case of acute osteomyelitis characterized by a chill, an early and profound change in the condition of the patient, dry tongue, foul breath, intense gastric disturbance, rapid pulse, high temperature, early delirium, high leucocytosis, initial agonizing pain, swelling of the soft parts, and tenderness on deep pressure, is comparatively simple, but in early cases, particularly in infants, who cannot tell where the pain is, or in profoundly intoxicated cases, the diagnosis is difficult. In the differential diagnosis, arthritis, gonorrheal, tuberculous, or rheumatic, typhoid fever and tuberculous invasion of the epiphysis must be considered. Myelogenous or periosteal sarcoma, bone cyst, acute hematogenous osteomyelitis, and syphilitic osteitis must also be excluded.

ANNALS OF SURGERY

February, 1913.

Approach to the Hypophysis through the Anterior Fossa.—C. H. Frazier, in view of the high mortality of the transphenoidal method and the broader avenue of approach by the endocranial method, adopts the suggestion of Krause and successfully approached the hypophysis by way of the anterior cranial fossa in two cases. An incision is made down the middle of the forehead from just above the hairline to the root of the nose. Two incisions are now made at each end, one through the eyebrow and the other at right angles above the hairline. An osteoplastic flap is reflected from the right frontal region, the supraorbital ridge removed *en bloc* with a portion of the roof of the orbit, later to be replaced, and the roof of the orbit rongeured down to the optic foramen. With the elevation of the frontal lobe and the depression of the orbital contents, a free and adequate exposure is secured, and there remains only to make a short incision in the dura to lay bare the cavity of the sella turcica.

Postoperative Thrombophlebitis.—C. Burnham reviews the literature on the subject and draws the following conclusions from a study of ninety-eight cases occurring at the Presbyterian Hospital, New York: 1. Postoperative thrombophlebitis is an infectious disease, a definite entity in some way connected with the absorption of material from the wound. 2. It is preceded by a slowing of the blood stream and by local and general disease of the vessel walls. 3. It occurs at an earlier in "clean" cases than in drainage cases. 4. Rest in bed and ichthyol seem to be the only therapeutic measures capable of exerting any marked influence on the severity and course of the disease.

Multiple Myelomata, with Numerous Spontaneous Fractures and Albumosuria.—E. W. Hey Groves reports an unusual case of multiple myelomata with numerous spontaneous fractures and albumosuria. The history begins twelve years ago with a severe attack of gastritis, followed by loss of weight, prostration, and diffuse rheumatic pains. This continued for a period of about a year. Then for six years he had a long succession of bone breakings, seven times fracturing one or other of the long bones, in addition to acquiring tumors of the jaw, metacarpus, and tarsus. But for the past five years he has had no further developments, either of fractures or tumors. Blood is normal, but albumosuria well marked.

Angulation of the Junction of the Hepatic and Common Ducts after Cholecystostomy, Simulating Common Duct Obstruction.—De Witt Stetten reports an instructive case of angulation of the common duct giving symptoms of obstruction. After a simple cholecystostomy done in the most approved fashion on a comparatively normal gallbladder, which was not in the least retracted and which was fixed to the peritoneum of the abdominal wall without the slightest tension, a symptom complex develops which most strongly suggests the presence of a stone in the common duct. On relaparotomy, no stone is found; but it is seen that an angulation has developed at the junction of the hepaticus and the choledochus. At the angulation a valve has formed so that the flow of bile into the intestine is almost impossible. Hence there were pain and jaundice when the biliary fistula was closed and a tendency toward persistence of the fistula after it was reopened. Though there was no tension originally when the gallbladder was fixed to the abdominal wall, yet angulation resulted. The condition was promptly cured by cholecystectomy. The writer says the less frequently one performs cholecystostomy, the less frequently will one have to deal with biliary fistulæ.

Strangulated Inguinal Hernia in Early Infancy.—Arthur N. Collins reports a case of strangulated hernia in an infant, eighteen days old. He points out that hernia strangulation under one year is more common than later and that the greatest frequency is in the first three months of life. The cardinal symptoms peculiar to infants are violent and uncontrollable screaming, recurrent vomiting (often fecal), drawn facies, tendency to both retention of urine and rapid collapse. In the diagnosis one must be on the lookout for the possibility of acute hydrocele and acutely inflamed ectopic testicle. Most of the fatalities are due to waiting, and in prompt operations the mortality ought to be ten per cent. or less. Taxis is dangerous and usually fails. The Bassini operation is favored by many surgeons.

LONG ISLAND MEDICAL JOURNAL.

March, 1913.

Venereal Prophylaxis in the Navy.—T. A. Berryhill states that early in the use of prophylaxis there were, in a given period, 1,134 exposures to infection, all of the exposed men taking the prophylactic treatment. Of this entire number in none developed chancroid or syphilis, and in only two gonorrhea developed. The prophylaxis consists in washing of the parts with a one to 2,000 solution of bichloride of mercury, then washing in pure water and the taking of an injection of about two drachms of ten per cent. argyrol or two per cent. protargol, which is to be retained for three minutes by the clock. The penis is then to be smeared with an ointment of fifty per cent. calomel in lanolin. The ointment is to be thoroughly rubbed into all folds of skin around the prepuce and glans and is to be left on. It is believed, on the evidence of results, that the prophylaxis is more effective against syphilis, when given late, than against either gonorrhea or chancroid.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

February, 1913.

Albee's Operation in the Treatment of Pott's Disease.—J. T. Rugh gives a historical review of the operative treatment of Pott's disease and refers to the results obtained by him in eight cases operated in by Albee's method. The procedure consists in grafting a piece of tibia to the spinous processes in the diseased area in order to secure bony fixation of the vertebral arches and relieve the bodies of the vertebræ from pressure. Plaster casts were kept on the patients for five months after the operation and a Taylor brace was then applied. The results were uniformly successful. The first patient is wearing a light brace and is ready to take up light work. In one case the condition present was found at operation, instead of Pott's disease, to be one of osteitis deformans, with some osteoporosis. The operation was completed, however, and the results proved as satisfactory as in the other cases. The procedure is not curative in itself, but places a brace along the spine as no cast or jacket can possibly do, Nature then healing the diseased area. It has not as yet been rendered applicable to cases with a pronounced spinal loss.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

February, 1913.

Acute Nephritis, with Uremia, Following Salvarsan.—P. Jorda Kahle reports a case of serious renal disturbances following the intravenous injection of salvarsan. There were several points of interest. The Wassermann reaction (Tschernogubоff modification) was positive, five days after the initial lesion. This shows the value of the reaction in clearing the diagnosis in early primary lesions in which the spirochetes cannot be found because the lesions have been subjected to treatment. Great care should be exercised in the administration of salvarsan, as injury to sound kidneys, or, in case of incipient or latent nephritis, an acute condition may follow the use of the drug. In examining the urine before and after giving salvarsan, the presence of albumin alone should not be taken as the measure or extent of the renal lesion, as both hyaline and granular casts may be present and albumin absent or present only as a trace. A diminished secretion of urine should warn us, especially if vertigo and headache are also present. Salvarsan may produce a rash, erythematous or urticarial, as it is being eliminated by the skin. It is comforting to know that though the kidneys have been damaged rather severely, still all symptoms may disappear completely within a few days, as happened in the case reported by the writer.

Interstitial Gestation.—William Kohlmann reports four cases of this interesting condition. Anent the treatment of interstitial tubal gestation, the writer advises that in case of rupture the general line of treatment applicable to extrauterine gestation be followed. Internal bleeding in a ruptured interstitial gestation sac may, however, be so severe that death occurs quickly, without possibility of surgical interference. The seat of the ovum is usually quite an extensive, lacerated wound of considerable depth on the lateral and posterior surfaces of the uterus. In many cases suture of the bleeding surfaces is sufficient, but excision of the affected portion with subsequent suture, is preferred as primary union is assured. After three months (as shown in cases reported) supravaginal amputation suggests itself as the quickest and least bloody procedure. In the first two months the writer advises excision of the comparatively small laceration with following suture; after the third month partial supravaginal amputation—wedge shape incision—which saves the annexa of the unaffected side, if they are normal.

Surgical Treatment of Puerperal Infection.—C. Jeff Miller has found that septic thrombophlebitis occurs more often than formerly supposed, and has a mortality of between eighty and 100 per cent. when treated expectantly. Ligation of the involved veins has arrested the process in several cases. A fair degree of certainty is reached in the diagnosis of chronic cases. Pyemic cases stand operations well. The surgical treatment of *pure* septic thrombophlebitis has shown a satisfactory reduction in mortality. In acute pyemia the mortality has been uninfluenced by operation, but in chronic cases, hopeful results may be looked for.

OPHTHALMIC RECORD.

February, 1913.

Protection of the Eyes of School Children.—Nelson M. Black and F. A. Vaughn present a compilation of the views held by various writers on the questions of light, paper, print, etc., and their effects on the eyes of school children, which is prompted by the feeling that, by proper cooperation between educators, ophthalmologists, illuminating engineers, publishers, and others, reading matter in the form of school books, and the illumination of the school rooms by daylight and by artificial light can both be improved to such an extent as materially to protect and preserve the eyesight of school children. The subjects treated are of general interest and have received some attention in the past. In order to obtain the viewpoint of the general reading public the article is printed on unglazed papers of different tints and qualities. The authors have published other addresses and discussions on different sample papers, the illustrations of which are made by the offset and other processes. Copies of these will be sent gratis to those interested. Comments, criticisms, and suggestions are solicited.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

February, 1913.

Subcutaneous Rupture of the Diaphragm and Positive Pressure (Meltzer).—E. C. Riebel groups as follows the so called classical symptoms: 1. Those due to insufficient air supply, excessive dyspnea, orthopnea, rapid, irregular, weak pulse, and anxious facial expression. 2. Those connected with displaced organs, vomiting, muscular rigidity, distention of epigastrium, widening of chest, and signs of pneumothorax. 3. Symptoms referable to injury of the diaphragm, jerky respiration, pain on forced respiration or coughing. 4. Referred symptoms, pain in the shoulder, due to irritation of the branches of the phrenic nerve. 5. Shock or symptoms of associated visceral lesions. The writer summarizes his observations as follows: The diaphragm in man has an important influence upon the heart's action, by its anatomical relation to the heart and pericardium. It is an important factor in the circulation by aiding venous return, especially from the abdominal cavity. It plays an important part in maintaining the equilibrium in the thoracic cavity. Rupture of the diaphragm must needs be followed by serious disturbances in internal respiration and in the equilibrium within the thoracic cavity. The inevitable prolapse of abdominal organs following subcutaneous rupture still increases this condition, frequently producing a state of positive pressure in the thoracic cavity. The use of differential pressure is absolutely necessary to overcome these factors. It will insure better results, in these cases, permitting furthermore the choice of abdominal or transpleural route or both as occasion requires. The character of pressure, whether positive or negative, is of little consequence, but the method of Meltzer is simple and can be used anywhere. In cases of suspected subcutaneous rupture of the diaphragm, insufflation should be employed with low pressure (from ten to fifteen mm.) before operation, to overcome the deleterious effects of disturbed endothoracic equilibrium.

Do the Parathyroids Function in Intrauterine Life?—A. Werelius makes the following conclusions: Thyroparathyroidectomized, pregnant dogs (in later stages) seemingly go into convulsions earlier and die sooner than nonpregnant dogs. In thyroparathyroidectomized, pregnant dogs, fetal parathyroids probably do not then compensate for the mothers' glands. Possibly some glands of internal secretion do not function in intrauterine life. Undoubtedly, the earlier in pregnancy thyroparathyroidectomy is performed, the longer the postoperative life. Results in this work may in a sense support the parathyroid theory in eclampsia. Direct evidence of heredity, an etiological factor in goitre, is shown in this series. In fetal pups, the left thyroid gland is almost always the larger.

Typhotuberculous Tuboovarian Abscess.—W. D. Fullerton's studies show that in posttyphoid pelvic abscesses, *Bacillus typhosus* probably plays a more important rôle than is suspected, and careful inquiry into the past history for typhoid infections, together with careful examination of all pus from pelvic abscesses, will bring interesting results. Puerperal infections coincident with, or shortly following a typhoid infection, may often have the typhoid organism as the causative agent, and the simplest and most plausible mode of infection is by way of the blood stream. Hexamethylenamine, which has proved so useful in preventing posttyphoid cystitis, cholecystitis, etc., though its excretion by the uterine and tubal epithelium has not yet been proved, may be found useful, at least in the prevention of such a posttyphoid complication.

Simplifying and Making More Accurate the Closure of the Posterior Edges of the Wound Margin after Excision of Saddle Ulcer of the Stomach.—Williams employs a method of closing a gastric ulcer excision which he believes to be original with him. The usual method of closure is used throughout, except that on the posterior surface the peritoneal apposing suture passes through all the coats of the stomach, being passed from the inner side, which greatly simplifies the placing of this layer. It has been shown by numerous observers that, while theoretically such a suture is contaminated by the contents of the viscus, practically and clinically such contamination may be disregarded, especially when dealing with the stomach.

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Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held in Brooklyn, December 2, 1912.

Dr. ROBERT E. COUGHLIN, Chairman for the Borough of Brooklyn, in the Chair.

Abdominal Pain.—Dr. JOHN MCQUILLIN said that the question of pain and its relief was ever before us for our solution, and upon a correct diagnosis and the appropriate treatment depended the comfort, and perhaps the lives, of our patients. In considering abdominal pain he would, for lack of time, confine himself to a few of the more common causes. 1. In acute invagination, the pain gradually increased until it became intense and unbearable. Frequently it could be localized at a definite place, which generally corresponded to the point of invagination. In intussusception of the large intestine the pain and reaction phenomena were the most intense, the symptoms of incarceration increasing rapidly, while in other varieties they had a more paroxysmal character, which was apparently associated with strong peristaltic movements. The abdominal muscles were tense and cramped during the attack of pain, but became soft during the intervals. Vomiting was frequent, and began comparatively early. The vomitus at first consisted of food, and later of mucus and bile, and finally might be mixed with blood. All these symptoms might be met with in other conditions, but the discovery of a sausage shaped tumor pointed strongly to intussusception and should be treated surgically. 2. In many cases with symptoms of chronic indigestion the primary trouble was situated in some organ other than the stomach. The trouble might be due to some condition of the appendix, to pericolitis, to gallstones, or to disease of the pancreas; and where there were recurrent attacks of indigestion not responding promptly to treatment a careful examination of the abdomen should always be made. In a large majority of instances we should be rewarded by finding the seat of the trouble, and, by appropriate surgical means, might save our patients from a life of semiinvalidism and ourselves from reproach. Such cases should be operated in. 3. The speaker then mentioned a case of ulcer of the stomach simulating gallbladder disease, and, 4, one of acute cholecystitis, also to be treated surgically. These four illustrations showed the uselessness of treating such cases with drugs.

There was a group of conditions such as ulcer of the pylorus, with or without secondary stenosis, recurrent chronic cholecystitis, the gastric crises of tabes, and gastric neurasthenia, which would tax the skill of the best internist; and in many instances it would be necessary to observe the patient over a long period of time in order to arrive at a correct diagnosis. With rest in bed, the employment of blood tests, and appropriate diet, the diagnosis would usually be cleared up in time; so that the case would resolve itself into either a medical or a surgical one, and the proper treatment given would result in a cure. If this rather rambling paper had any value, he believed it was because it showed the necessity for a closer cooperation between the medical man and the surgeon in cases of abdominal trouble. It was not to our credit as physicians to treat a case of supposed indigestion for a number of years without relief and then have the patient leave us and be permanently cured when some other man took out the diseased appendix or removed some gallstones; neither would it add to the surgeon's reputation if he operated to relieve a supposedly diseased organ and found that the origin of the pain was a simple neurosis. Such mistakes would be fewer in number if we were more painstaking in our examination of the abdomen and would consent to an early interchange of ideas with our surgical confrères.

Dr. EARLE H. MAYNE said that the correct interpretation of abdominal pain was of such importance that the matter should receive the most careful consideration by the surgeon. He should be familiar not only with the pains associated with surgical diseases, but with those resulting from medical ailments as well, in order to be able to differentiate them. The subject was so large that he could call attention to only some of the more important points of interest to the surgeon. The significance of abdominal pain depended upon its location, character, and severity, when viewed in connection with the clinical picture in each case. In many of the surgical affections of the abdominal organs the accompanying pain was quite characteristic. Susceptibility to pain differed greatly, and the personal equation of each individual should be known to the surgeon if he would estimate properly its bearing upon the particular case. It was not necessary to enumerate the varieties of abdominal pain, nor to describe the various locations in which we found it. As a rule, the seat of the pain corresponded with the causative lesion, but to this there were a good many exceptions. In most of these surgical affections the pain was pretty generally diffused over the abdomen in the beginning, and later on became more or less localized. The Mayos had shown that both acute and chronic pancreatitis were much more common than had been supposed. In 4,000 cases of gallbladder disease operated in in their clinic up to February, 1911, 359 such accidents occurred. Whenever the upper abdomen was opened for gallbladder or other affections, a careful examination of the pancreas should therefore be made. The head of the pancreas was the portion usually affected, and where this was found to be the case, thorough drainage of the pancreatic ducts, through the common duct, should be carried out. The ptoses of the abdominal organs, especially of the kidneys, produced a variety of pains which often led to confusion as to the diagnosis; and a most careful investigation should be made in all those cases where the pain could not be clearly defined by the sufferer. A ruptured ectopic gestation sac was another condition which was frequently mistaken for other abdominal lesions. Within the past year Doctor Mayne had seen one such case diagnosticated as cholecystitis, and in this the upper abdomen was opened before the real condition was recognized. The abdomen had been opened a number of times where an overdistended bladder or a normally pregnant uterus was the only tumor found. These last were inexcusable errors. They showed, however, how important the correct interpretation of abdominal pain was. In one of the best clinics in this country, where the equipment was complete and the diagnostic ability of the best, the records showed that in fifteen per cent. of their cases which came to operation, the findings upon the operating table revealed that the preoperative diagnosis was wrong, in part or in whole. Abdominal pain, therefore, while of great assistance in making a diagnosis, should be considered only in connection with every other available aid at their disposal. Among these means he would place special emphasis upon the value of the blood count. In an experience of nine years with it, in hundreds of cases, he had found it of great assistance in clearing up the diagnosis.

Dr. RODERICK BYINGTON said that the subject of abdominal pain had been treated of thus far almost wholly from a surgical standpoint, but its medical aspects were no less important. It was necessary, for instance, that the physician should be able to distinguish the pain from gastric ulcer and that due to hyperchlorhydria. Pain was the most characteristic symptom of ulcer. It was usually localized at one point, from which it radiated to the back; where it was often more severe than that in the epigastric region. It was also aggravated by movement of the body. The pain from hyperchlorhydria did not thus radiate. It came on two or three hours after the ingestion of food, and could be promptly relieved by the administration of albumins and alkalies. A diagnosis should not be based simply on the location of the seat of pain. Not infrequently a diaphragmatic pleurisy, with or without pneumonia, had been mistaken for appendicitis, especially where there was muscular rigidity, one of the most common signs of the latter. In a paper read before this association last spring Dr. Kerr had stated that in looking over his records for a single year he found that in no less than sixteen cases in children the diagnosis of appendicitis was positively made where the real condition was lobar pneumonia in twelve of them, indigestion in two, distended bladder in one, and intestinal parasites in one. Another condition liable to be mistaken for appendicitis was typhoid fever, and in some cases of this the resemblance was striking. The abdominal pain was most marked in the region of the appendix, and, in addition, there was rigidity of the right rectus. Here, however, the blood count would be of essential service in making the differential diagnosis. Other conditions also closely simulated appendicitis, and to arrive at a correct diagnosis sometimes involved the use of every known method of investigation.

Doctor **White** said that wherever there was pain there was congestion at the seat of pain. The significance of abdominal pain was of great importance, and in dealing with it much assistance might be rendered by keeping in mind the classification of pain. This should be classified as follows: 1, Inflammatory. If the inflammation was superficial, the resulting pain could be readily understood, but if it was deeply seated we had to refer back to the seat of inflammation; 2, pressure pain; 3, stretching pain, such as was met with in displacement of the kidney; 4, neuralgic pain. The pain in the crises of tabes was of this character, and it might be associated with gastric inflammation; 5, wandering or indefinite pain. This was the hysterical variety, and it was frequently confusing. The classification of pain in this way enabled us to give to pain its true value.

Dr. **Ransford E. Van Gieson** said that occasionally there was met with a posttyphoid condition accompanied with much pain which occurred some months after recovery from the fever and was due to constricting bands in the small intestine. Personally, he had seen, in consultation, two cases of this kind. The pain was severe, but there was no rise of temperature. No blood count was taken, as the cases occurred before this useful aid was resorted to. He remembered, however, that Dr. Alonzo Clark had pointed out that such adhesion bands might form after typhoid. One of these cases was sent to St. Catharine's Hospital for operation, and when the abdomen was opened an intestinal stricture was found and relieved.

Doctor **McQuillin** said that three years ago, just after returning from a trip to Bermuda, he was taken with typhoid fever; but, from the pronounced pain in the right side, both his attending physician and he himself believed that he had appendicitis, until Doctor Bristow showed that this was not the case. By the recognition of the real origin of abdominal pain patients could often be spared much unnecessary suffering. Recently he was called to see an old lady who had gallstones; and he found that she had suffered from this condition for thirty years. In another case, where the patient was suffering from renal colic, one physician had told her that the trouble was pleurisy, and another, indigestion. The lesson was, therefore, that they should examine every case with the greatest care.

How the Present Hospital Situation Affects the General Practitioner.—Dr. **Thomas Dixon** first gave an interesting sketch of the history of hospitals and then proceeded to say that the present executive management of hospitals in general was just the same as that which was in vogue more than fifty years ago. Exceptions, however, should be made as to those under ecclesiastical control, which reported directly to the church or religious society to which they belonged. Owing to the zeal of charitably disposed people, there was now in Brooklyn an oversupply of hospitals; so that they found themselves in the amazing situation of having a competition among these institutions to get, not only pay patients, but charity ones. This condition of affairs was an amusing one to the public, as the pauper was welcomed by the superintendent and registrar; for the more patients shown in their annual reports, the less likely they were to lose their positions. No one in the community needed to pay for medical or surgical attendance unless he so desired. There was no adequate investigation of applicants to hospitals or dispensaries as to their ability to pay; yet what would be thought of a merchant who gave a line of credit to a prospective customer without first consulting Bradstreet's? This was certainly a starving proposition to the general practitioner, and even in the case of those physicians holding hospital positions their private practice was being ruined by such a system. The public could not be blamed for taking advantage of this situation, for it was human nature to refuse to pay for something which one saw others receiving for nothing. Another cause of complaint was the matter of consultations, and in this connection the speaker gave a suppositious illustrative case, in which the influence of a family physician became completely undermined (so that he was no longer employed by the family), through having to call in a surgeon and send his patient to a hospital to be operated upon; he himself being obliged to be only a spectator at the operation, and not permitted to have anything to do with the aftermanagement of the case. Troubles in the profession, he went on to say, were not entirely confined to the general practitioner. It was the constant complaint of those on hospital staffs that the chief surgeon did all the operating. To be sure, he was responsible for the work of his staff, and he might have some men on this who were constitutionally unfit to operate; still, where there was such general complaint of this kind, there must be some reason for it. How could one operate if the opportunity to do so were never offered him? There were men who had been on our hospital staffs for years, and yet had never had a chance to perform any but the most trivial operations.

The remedies for present conditions which were proposed in the paper were: 1. There should be a State board of surgeons, appointed by the Governor, before whom the general practitioner could go and pass a clinical examination; receiving from such board a certificate entitling him to free material for operative work in any charity hospital in the State. 2. There be no combination hospitals—that is, they must be either pay or free hospitals. 3. All applicants for medical or surgical positions in hospitals, and all applicants for promotion therein, should pass an examination before a State board of surgeons. 4. The superintendents and registrars of hospitals should be compelled to take a civil service examination. 5. All applicants for free treatment at hospitals should be adequately investigated as to their financial condition, and this investigation should be in the hands of those not interested in the hospital management.

In concluding, the speaker said he would be extremely regretful if any of those present should think the purport of his paper was to condemn hospitals *per se,* for we might well be proud of them and of the skillful men composing their staffs, who were constantly making great sacrifices for the welfare of the public. The medical and surgical part of our hospitals left nothing to be desired, but the business end of these institutions could not be too strongly condemned. Any system of management which could permit favoritism and selfishness to be controlling features must fail. In the past fifty years great changes had come in every line of human endeavor; yet hospital management was just the same as it had been half a century ago. The medical profession was the laughing stock of the business world and the public press on account of their business methods. Altruism had been overdone in the profession. They not only did harm to themselves by the giving of indiscriminate charity, but they did harm to the people at large by sapping their independence. For the great services they rendered the community they were entitled to a dignified position therein.

Dr. **John C. MacEvitt** said that the subject of Doctor Dixon's paper was particularly apropos of the agitation now existing regarding the economics of the medical profession. He desired to state in advance, however, that he was not wholly in accord with the prevailing pessimistic sentiment as to the material status of the profession;

though it was possible that his views might be influenced by two factors which blinded him to the real hardships of the general practitioner. In the first place, his work was chiefly along general lines, and, second, he was among those favored with hospital appointments. Therefore, he was compelled to judge from exterior appearances. The general practitioners he met at the medical societies, clinics, clubs, and throughout the city, bore evidence in their dress and manner of prosperity. It was seldom that one would see a doctor's sign on other than a comfortable residence, and it was a constant and pleasing surprise to him to see the great number of young practitioners driving autocars. It might be answered that it was necessary to affect the appearance of prosperity to obtain a clientèle. He would acknowledge that this had a secondary effect, but patients were more impressed by skill than by outward show. The speaker here referred to the discouraging replies he had received from those to whom he presented letters of introduction, on coming from the west thirty years before, when he consulted them as to the advisability of settling in Brooklyn. The reception which he met showed that the same complaint existed then. There was no doubt, however, that there were abuses which prevented a proper ratio between the present incomes of physicians and the cost of living. They were so complex in character that their correction would be by slow degrees, and must be initiated by themselves, and at once, if they hoped to live to see them abolished, or at least modified. The trouble with them was that they met and talked and talked, but did nothing. As to the lodge practice, he did not believe that anything could be effected. Its connection rested entirely with the profession, but it was such a cancerous growth, with roots so firmly implanted and so universal in its spread of surface, that to his mind its removal was impossible. The ten cent doctor they could charitably forgive, for only compelling want could induce anyone to engage in such work. The various cults and pathies were but fungous growths which would disappear beneath the sunlight of knowledge. They had left, then, the so called hospital abuses, which he was free to confess could be abolished to the advantage of not only the general practitioner, but the whole profession as well. But they must consider the difficulties they would be compelled to surmount to produce any radical change in the existing hospital conditions. They must combat the State, county, and municipality, as well as religious interests of great monetary power. As to Doctor Dixon's proposal that hospitals must be either pay or free, Doctor MacEvitt said he was not quite clear as to the doctor's meaning. The State and county hospitals were for the benefit of the very poor, and could be excluded from consideration as harmful to the interests of the practitioner if they were properly supervised. He took it for granted that the change desired applied to the sectarian and endowed hospitals. These institutions were compelled, for financial reasons, to accept pay patients. But few of them were free from debt, and many had a hard struggle for existence. If they were made free hospitals they would be put into bankruptcy, and if they were made pay hospitals they would become private instiutions, and all appeals to the charitable on their behalf must cease. An ideal solution to the doctor's problem would be for each sect to levy upon its church for the maintenance of a strictly free hospital, denying its aid to none. Physicians could be paid for their attendance, as some were now paid in orphan asylums. Doctor Dixon's proposal to allow those who had obtained a certificate from its State board of surgeons to operate in hospitals in one sense negatived the other, unless he admitted the failure of the latter's accomplishment. In fact, several of the largest hospitals in the city had already opened their doors to competent operators not belonging to their staffs. If it could be made feasible, he saw no objection to the proposed plan. It would inspire many to render themselves competent to perform operations when such a demand arose, though it required long practice and experience to acquire a proper surgical technic.

Dr. Algernon T. Bristow said he could not quite agree with Doctor MacEvitt in his rosy colored view of the situation. It was indeed true that some of the members of the Kings County Medical Society looked prosperous and rode in their own automobiles, but it was also a fact that much more than half its members never attended the meetings. Of the membership of the New York State Medical Society, only from ten to fifteen per cent. went to its meetings, and to that of the American Medical Association, only about nine per cent., even when the meeting was held in such a place as Atlantic City. Furthermore, of the 105,000 physicians in the country, only 30,000 belonged to the latter association. From all this we could infer that those who had not made good in their profession were in the majority. It seemed to him a mistake to assert that chief surgeons were in the habit of monopolizing all the operations. It was not so at any of the hospitals with which he was connected, and in his own case his assistants were allowed to take all the emergency cases. If a subordinate did not get a chance to have operative work, there was probably always a good reason for this. As to the remedies proposed for hospital abuses, it might be premised that a remedy which was neither applicable nor procurable was not a remedy. The hospital systems in the United States and in Europe were different, on account of the difference in the governments. The European hospitals were originally religious institutions, because of the union between Church and State, and in London most of them had been established on the ruins of old priories. In France and Germany they had State hospitals, maintained and managed by the State, but here, with the exception of those for the insane, we had no State hospitals. Doctor Dixon's plan involved the upsetting of a system two hundred years old. All the hospitals would have to be State institutions, financed by the State, and that was a pretty big proposal. As to his proposed board of surgeons, the path to real surgery lay through the dissecting room, and the demonstrator of anatomy and every prominent surgeon had acquired his skill in this way. There was no royal road to surgery. Almost any one could do an ordinary operation, but it was only experience with cases of difficult technic that made the finished surgeon. The test of a surgeon was his ability to do something; but, in such an examination as that mentioned, the examination would be little more exacting than that through which the candidate had passed when coming up for his degree, and a purely theoretical examination was not worth anything. The admission of so many men to operate in the hospital would lead to endless confusion. Even under present conditions, with the considerable staffs of attending surgeons, it was sometimes difficult enough to get the proper service from the house staff. Again, an outsider thus coming in to operate, would be responsible only for the case or cases which he himself treated; yet every hospital was required by law to provide reasonable skill on the part of its surgeons and was held responsible for any shortcomings in this respect. Under these circumstances the hospital might be ruined, and, at all events, it would lose its function as a teaching institution. The outsider would be entirely irresponsible, while under their present system of hospital management any man who proved himself incompetent could be promptly discharged. It seemed, therefore, that the remedies proposed in the paper were worse than the disease.

Dr. C. F. Mack said that the medical department of a hospital was certainly quite as important as the surgical, and in medicine as well as in surgery there was no royal road to success. It was only by hard work that a man got his position in the profession. It was through the work accomplished in hospitals that scientific medicine had reached its present advancement, and he agreed with Doctor Bristow that Doctor Dixon's plan would ruin the hospitals as to their teaching function. Medicine was not a commercial calling, although, unfortunately, many men appeared to enter the profession with that idea, and the real student of medicine was willing to starve in order to acquire adequate knowledge. It was much more difficult, he believed, to manage a case of pneumonia or typhoid fever properly than to perform an ordinary appendectomy.

Dr. Benjamin M. Briggs said that surgery was made too prominent nowadays, and that the time had come when the medical man must assert himself. Those who took care of the health of the community were worthy of the respect and confidence of that community, and they should not rest in their efforts until the relations which formerly existed had been restored.

Doctor Dixon said that Doctor MacEvitt's optimism was always pleasant to hear, but as to the prosperity of the doctors, it was no doubt the fact that this was often simulated in order to make a favorable impression. Unquestionably there was at the present time much financial distress among the profession. It was true, as had been stated, that if his plans were to be carried out it would be bad for the private hospitals, but would it not be better that these institutions should become bankrupt than that the medical profession should? As to the examination by a board of surgeons, he believed that by means of the cadaver, etc., this could be made sufficiently practical to accomplish the desired purpose.

Dr. Reynold Webb Wilcox, the president, referring to the Pennsylvania Hospital, some account of which had been given by Doctor Dixon in his paper, said that no medical man visiting Philadelphia should fail to go to see it, as there was so much of interest to be met with at this venerable institution that one might profitably spend a whole day there. As to the problems concerning hospitals in general, there was nothing new about the present situation. He had in his possession a pamphlet printed in London, in 1786, which was written by Dr. Thomas Skeete and the title of which was: An Exact Representation of the Very Uncandid and Extraordinary Conduct of Dr. John Coakley Lettsom, as well Previous to, as on, the Day of Election for Physician to the Finsbury Dispensary; with Some Remarks on the Establishment of a New Finsbury Dispensary. Doctor Wilcox then said that he could assure Doctor Bristow that it was entirely feasible and practicable to conduct satisfactorily a hospital in which physicians and surgeons from outside were permitted, under suitable conditions, to take charge of and operate in their own cases. This had been conclusively shown at St. Mark's Hospital, with which he had been connected for the past twenty years, and where for fifteen years he had been president of the medical board. Here the plan had worked with perfect success, and he believed that it could be carried out elsewhere equally well. What was needed in such an institution was a strong man at the head of the management, who was not afraid to say No; so that undesirable physicians and undesirable cases could be excluded. It was his opinion that all medical men who were in the public service, such as police and fire department surgeons and physicians connected with the health department, should be paid an adequate salary and prohibited from engaging in private practice, as was the case with those in the United States Public Health Service.

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Letters to the Editor.

STERILIZING THERMOMETERS.

Akron, Ohio, *April 5, 1913.*

To the Editor:

The suggestion of Doctor Jameson as to sterilization of thermometers is very sensible. Instead of alcohol, why not drop one bichloride tablet into the cleansing glass of water? This has been my practice always.

A. S. McCormick, M. D.

HEALTH WORK IN ASHEVILLE.

Asheville, N. C., *April 5, 1913.*

To the Editor:

I have read with pleasure the editorial article in your issue for March 29th entitled Typhoid Eradication. I notice you refer to the splendid work done by the Health Department of Jacksonville, Florida, which is worthy of all commendation. However, our work here seems so much better that I am taking the liberty of giving you the statistics for the past three years.

	1910	1911	1912
Importations (3 weeks)	30	13	7
Contact at home (2nd in house)	12	15	2
Butterman	2	7	2
Unsanitary conditions (wells, etc.)	66	20	1
Untraced	9	5	2
Carriers	00	00	1
	119	60	15
Deaths	4	1	0

L. B. McBrayer, M. D., Health officer.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Surgical Diseases of Children. By William Francis Campbell, A. B., M. D., Professor of Anatomy, Long Island College Hospital, and Le Grand Kerr, M. D., Attending Pediatrist to the Methodist Episcopal Hospital, etc. New York and London: D. Appleton & Co., 1912. Pp. xxviii-693.

The object of the authors has been to write a book applying modern surgical principles and procedures to the child. Continued experience in surgery has brought out many striking peculiarities of children in their reaction to surgical diseases and operations. A description of these peculiarities and practical deductions for purposes of treatment give sufficient excuse for a book devoted to this subject. It has been a wise plan for a surgeon to unite with a pediatrist in the preparation of a work of this kind. Each of the two brings to the task a special knowledge and experience which, in combination, covers the border lines of medicine and surgery. The book is divided into a general and a regional part and thus conforms to the best practice of the day. One finds, however, many repetitions which unnecessarily increase the size of the book. For example, the general part contains a chapter on fractures in children, describing special ones peculiar to them, and again, in the regional portion in the chapters on the extremities, the subject of fractures is again taken up and these same fractures are described. This is true of other subjects and the result is that the book lacks conciseness. The illustrations are very numerous and with few exceptions good. There is a noticeable absence of x ray pictures, which, on account of difficulties of diagnosis, are important in children especially in the field of fractures.

Mechanical Vibration. Its Physiological Application in Therapeutics. By M L. H. Snow, M. D., Professor of Mechanical Vibration Therapy in the New York School of Physical Therapeutics, etc. New York: The Scientific Authors' Publishing Company, 1912. Pp. xvi-476. (Price, $4.50.)

Step by step, progress is being made in a knowledge of the efficiency, trustworthiness, and scientific reasonableness of mechanotherapeutic measures. This new edition of Dr. Arnold Snow's book on vibration marks a long stride forward. It is full of information available for any one interested in relieving human ailments. Chapters v, vi, and vii are practically new and contain up to date data on physiological effects of mechanical stimulation especially on diagnosis, replete with the latest observations of physiologists and specialists making for the solution of a host of clinical problems, in particular those broader ones which may be described as grouped phenomena, symptom complexes, etc. The chapter on the heart, bloodvessels, and ductless glands (No. vii) affords data with which no practitioner can afford to be unfamiliar, whatever his leanings in the way of treatment. Read aright and judiciously utilized, the information presented will go far toward elucidating many complex morbid conditions.

All real progress in medical science makes for simplification in principles of action and reaction, and improvements in securing perspective on the relative significance of symptoms and their relief by omitting no essential points. Say what one may please about the vaporings of the bone adjuster cults, one good thing they accomplish: Clinicians are compelled by their success to take broader viewpoints of somatic processes, both in functional derangement and graver disrepair; to adopt newer and better generalizations about subacute and chronic disorders. They have drawn attention to the practical value of considering the question of demand and supply of blood, local and general, and its distribution by mechanical stimulation.

Much good literature is accumulating dealing with methods of influencing stases, the ebb and flow of body fluids, reflex phenomena, effects of contraction and dilatation of vessels, hollow viscera and the like. Of all this Doctor Snow has skimmed much of the cream. Whether one is equipped with vibration apparatus or not; prefers one or another form of applying mechanical stimulation; the physiological and clinical facts set forth in this book will afford excellent reading.

The Diseases of the Skin. By Willmott Evans, M. D., B. S., F. R. C. S., Surgeon to the Royal Free Hospital. With Thirty-two Illustrations. London: Hodder & Stoughton and Henry Frowde (University of London Press); New York: Oxford University Press, 1913. Pp. xiv-375. (Price, $3.75.)

This volume differs from several recent works in the same field in the absence of unnecessarily thick paper, waste margins, heavy and superabundantly leaded type, and other evidences of padding. Its 375 pages are filled with condensed information; and while naturally such narrow limits for a field so large render it essentially a textbook for the student, the practitioner will find it valuable as a ready reference book for information. Criticism may be made of the illustrations, some of which are not at all distinct or characteristic, while others are reproductions of the time honored figures that have appeared in English textbooks since the time of Erasmus Wilson, as those of favus and lupus vulgaris. On the whole, however, it is a useful and handy volume for the practitioner who only occasionally treats skin diseases and requires his information on the subject in readily accessible form.

Heredity, Evolution, and Vitalism. By Ronald Campbell Macfie, M. A., M. B., C. M. New York: William Wood & Co., 1912. Pp. vi-302. (Price, $2.50.)

It is stated by the author that his endeavor has been to expound scientific facts, and also to indicate certain novel conclusions to which they seem to lead—conclusions which so far appear to have escaped notice, and which are nevertheless of the greatest philosophical and theological importance. He points out that recent biological discoveries have quietly undermined the foundations of Darwinism, and have suggested other evolutionary principles, which render it again possible to believe in special creation, and even in the special creation of man; and he outlines a new theory of evolution which seems to him to be in accordance with present biological knowledge. Of the various theories of heredity Weismann's is accepted as the best working hypothesis that has yet been proposed. Darwin and his theories come in for special criticism, the author stating that the desire of Darwin was to escape from the miraculous and preternatural, and to substitute for design and forethought the automatic working of a mechanical system. Darwinism itself is pronounced dead in several different ways. Woman suffrage is also attacked vigorously. The modern cry for equality, the desire of certain modern women to participate in all masculine activities, are simply signs and symptoms of organic abnormality and deficiency. What a blow to the cause! In the final chapter the question of immunity to disease is discussed. If the author showed a better understanding of many of the clinical manifestations and underlying pathological conditions his ideas might be taken more seriously. As it is they do not carry much weight. This volume is interesting and valuable in its presentation of the author's views, but it does not seem to be free from prejudice.

Minor Surgery. By Leonard A. Bidwell, F. R. C. S., Senior Surgeon to the West London Hospital. Second Edition, Revised and Enlarged. With One Hundred and Twenty-nine Illustrations. London: Hodder & Stoughton and Henry Frowde (University of London Press); New York: Oxford University Press, 1913. Pp. xvi-299. (Price, $3.75.)

Those familiar with the first edition of this short work had reason to believe that it would meet a need. The appearance in a year of a second edition has justified this belief. The author has produced an eminently practical treatise on the subject, based on wide personal experience. The language is concise and definite, and gives the reader the feeling of authority. Very few alternative methods of treatment are given, as the writer has desired to describe only that one upon which his experience has been based. One finds every page bristling with practical points, which cannot fail to be of great value to the practising physician. The new edition has, without becoming much larger, a considerable amount of new matter, as well as fresh illustrations. It is very much to be regretted that the untimely death of the author, before the publication of this edition, will prevent the appearance of further editions from his pen. It may be confidently predicted that the book, in its present revised and improved form, will find many new readers in this country as well as in England.

Diseases of the Throat, Nose, and Ear. By W. G. Porter, M. B., B. Sc., F. R. C. S., Surgeon to the Eye, Ear, and Throat Infirmary, Edinburgh. With 77 Illustrations, 44 in Colors. New York: William Wood & Co., 1912. Pp. xii-275. (Price, $2.50.)

The author has attempted merely to present a good working book for the practitioner and the senior student, and a perusal of the contents will demonstrated how successfully he has followed out the plan as outlined in the title pages. The various subjects are treated only in such detail as to permit the general practitioner to arrive at a satisfactory diagnosis and to execute any of the more simple treatments. The advanced technical discussions, therefore, are not included within these pages, thereby placing the subject matter within easy reach of the nonspecialist. The seventy-seven illustrations, forty-four of which are colored, are of material value from a diagnostic standpoint.

Pathologie und Therapie der Lungenschwindsucht. Von Prof. E. Aufrecht in Magdeburg. Zweite Auflage. Mit 11 Abbildungen und 1 Kurventafel. Wien und Leipzig: Alfred Hölder, 1913. Pp. vii-329.

Although some seven years have passed since the appearance of the first edition, Professor Aufrecht maintains his original position. In discussing the origin and the anatomical processes in tuberculosis of the lung he holds that infection takes place through the tonsils, the bacilli passing from the tonsils, cervical and mediastinal nodes to the terminal pulmonary vessels. The respiratory theory is referred to as being entirely unproved. The author next takes up the conditions giving rise to the appearance and complete development of the disease, then the diagnosis, and finally the prophylaxis and treatment. The author believes that in the human lung the bacilli first injure the vessel walls, their elements are stimulated and proliferate, and it is from here that the necrosis of the peripheral portion of the diseased vessel proceeds. Some eighty pages are devoted to the presentation of this belief in a manner that is quite convincing. The remaining portions are well done, and the publication is one that can be recommended.

Essai sur le traitement des cystites par l'enfumage iodé. Par le Docteur Gaston Farnarier, de la Faculté de Médecine de Paris. Paris: La Semaine médicale, 1912. Pp. 45.

This essay is a report of cases of cystitis treated by injections into the bladder of iodine vapor. The author has found the treatment to be of particular value in tuberculous cystitis and reports a number of cases in which, after several treatments, cystoscopy and ureteral catheterization could be performed. It includes a short bibliography.

Health and Longevity through Rational Diet. Practical Hints in Regard to Food and the Usefulness or Harmful Effects of the Various Articles of Diet. By Dr. Arnold Lorand, Carlsbad. Philadelphia: F. A. Davis Company, 1912. Pp. x-416. (Price, $2.50.)

Doctor Lorand's book is one that contains much valuable information presented in a very interesting manner. As a rule, publications dealing with diet consist largely of chemical formulæ and tables of food values as expressed in calories, important, but not easy reading. The author calls attention to the value of common sense as applied to eating; because overeating may prove harmful is no reason why one should starve. Then, too, one must take into consideration that different kinds of food must be used according to the varying kinds of work that are to be performed. This method is carefully employed when lower animals are concerned, but not with man. The most important parts of this book are those dealing with the preparation of food. Doctor Lorand includes this because, "through unintelligent and, one might almost say, brutal methods of cooking, many important nutritive substances and salts are withdrawn from our foods." It is difficult to pick out any particular chapters as being of more importance than the others; but those dealing with the influence of food upon man and the increased activity of certain functions brought about by food are especially interesting. The chapter giving hints for those obliged to take their meals in restaurants will be found both amusing and interesting. Throughout the book the author lays much stress on the relation of the thyroid gland and its secretions to eating. This publication can be highly recommended.

Lehrbuch der Augenheilkunde. Bearbeitet von Professor AXENFELD, Professor BACH, Professor BIELSCHOWSKY, Professor ELSCHING, Professor GREEFF, Professor HEINE, Professor HERTEL, Professor VON HIPPEL, Professor KRÜCKMANN, Professor OELLER, Professor PETERS, und Professor STOCK. Herausgegeben von Dr. THEODOR AXENFELD, Professor der Augenheilkunde, in Freiburg. Dritte Auflage. Mit 12 lithographischen Tafeln, 3 Farbendrucktafeln im Text und 554 zum grossen teil mehrfarbigen Textabbildungen. Jena: Gustav Fischer, 1912. Pp. xvi-761.

The first edition of this work appeared four years ago, the second and third at intervals of two years. Such a rapid succession of editions is an evidence of the demand for books of this character, while the revisions made by the various authors to keep their writings abreast of the times attest the advance continually being made in ophthalmology. A number of useful illustrations have been added to the many already present, which form a feature of great value. The general style is that of a book of reference, in that various subjects have been dealt with by different authors, yet it is well fitted to be a textbook for students, because of the conciseness and clearness with which each writer has done his part. It may seem invidious to call particular attention to one article where all are so excellent, but we should like to commend Elsching's presentation of the subject of ophthalmoscopic diagnosis, as it groups all of the diseases of the fundus in an easily comprehensible classification.

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Miscellany.

Medical Inspection of Private Schools.—Many thousands of dollars are paid out yearly by our cities for the medical inspection of the children in the public schools, and this work has grown in amount and scope till we feel that there is little danger of widespread and uncontrolled epidemics of the contagious diseases. The department of health has detected many an outbreak of measles or diphtheria or scarlatina in its incipency and crushed it out. The teachers, too, in our public schools have become accustomed to recognize symptoms both of disease and of defect, and often it is they who quarantine some suspected child before the arrival of the inspector assigned to that school.

How is it, however, with the private schools? asks Dr. Theron Wendell Kilmer, in an editorial article in the *Archives of Pediatrics* for March, 1913. Do they have medical officers, and do they watch for contagious diseases, or point out to well-to-do, but not too careful parents the mouth breathing or the crooked backs of their children? Some of them do have such officers, and the work of these men is often of the highest character, but many schools do not have the slightest protection in this regard. They seem to feel that it is not necessary for children of the well to do. In speaking to the head master of one of our largest private schools, it came out, in reply to a question whether he did not consider a school physician necessary, that inasmuch as his scholars came from the upper classes of society they were not thought to need regular medical inspection. Yet all of us can recall that private schools are closed each winter because of school epidemics, and that at the present writing there is an epidemic of German measles among the private schools, as there was one of grippelike colds earlier in the winter.

Such inspection should be a part of the regular routine of all schools, and the inspection should extend to fitness for gymnasium work and the hard, active play at recess. Many boys and girls are losing in weight and looking dragged out because they have to do too much, or are playing with comrades who are too big for their strength. Children never say "die" and it is only too common to see a thin, nervous boy with dark circles under his eyes hurrying through his meals or eating next to nothing, sleeping poorly, and giving a hemoglobin reading of fifty or sixty, who will do well when restrained, as might so nicely be done if his private school had the proper facilities for medical supervision.

Public Health Legislation.—The publication of the sanitary legislation being currently enacted by cities of the United States was begun in the issue of the *Public Health Reports* for March 24, 1911, and has been carried on continuously since that time. With the municipal ordinances there have been included sanitary rules and regulations which having been promulgated pursuant to law or ordinance have the force of law. The city ordinances and regulations adopted from January 1, 1910, to June 30, 1911, have been reprinted in a separate volume, rearranged under subjects with a table of contents and index in sufficient detail for purposes of easy reference. From time to time similar reprints will be made. The publication of the ordinances and regulations in the weekly issues of the *Public Health Reports* makes currently available to health officers and other sanitarians the sanitary measures and practices being currently adopted in municipal health work. The reprinting of them, rearranged under subjects and in volumes containing the measures adopted during a given period of time, will be of added value for reference and study. For any period the laws and regulations adopted will show the status and trend of municipal sanitary thought and practice. Beginning with the issue for November 29, 1912, State and Territorial laws and regulations pertaining to public health will also be published in the *Public Health Reports.* This will make readily available to health officers and other sanitarians current State legislation and will show the measures being adopted and the progress made by the several commonwealths. The publication of the State laws will serve the same useful purpose as that of the city ordinances, but will be of broader scope. The laws and regulations will be published as soon after enactment or promulgation as copies can be secured from the several State authorities.

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Meetings of Local Medical Societies.

MONDAY, *April 14th.*—Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Association of Alumni of St. Mary's Hospital, Brooklyn; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *April 15th.*—New York Academy of Medicine (Section in Medicine); Psychiatric Society of Ward's Island; Tri-Professional Medical Society of New York; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital.

WEDNESDAY, *April 16th.*—New York Academy of Medicine (Section in Genitourinary Surgery); Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society, New York; Buffalo Medical Club; Northwestern Medical and Surgical Society, New York; New Haven, Conn., Medical Association; New Jersey Academy of Medicine.

THURSDAY, *April 17th.*—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Aesculapian Club, Buffalo, N. Y.

FRIDAY, *April 18th.*—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Alumni Association of Roosevelt Hospital; Saratoga Springs Medical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 5, 1913:

Baker, C. R., First Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Jay, N. Y., for temporary duty. **Bosley,** J. R., Captain, Medical Corps. Left Fort H. G. Wright, N. Y., on March 27th, for Columbus Barracks, Ohio, for duty in connection with flood relief work. **Clark,** J. A., Captain, Medical Corps. Left Plattsburg Barracks, N. Y., on March 27th, for Columbus Barracks, Ohio, for duty in connection with flood relief work. **Dickenson,** D. F., First Lieutenant, Medical Reserve Corps. Reports sick in Letterman General Hospital since March 15th, en route to Philippine Islands. **Etter,** H. B., Lieutenant, Medical Corps. Paragraph 30, Special Orders No. 55, March 8, 1913, revoked; resignation accepted to take effect March 29, 1913. **Hutton,** P. C., Major, Medical Corps. Arrived at Columbus, Ohio, on March 28th for duty pertaining to relief work. **Lyster,** W. J. L., Major, Medical Corps. Will proceed to Louisville, Ky., for duty pertaining to relief work. **Reddy,** J. J., Lieutenant, Medical Corps. Granted leave of absence for one month before sailing to the Philippine Islands on May 5, 1913. **Rhoads,** T. L., Major, Medical Corps. Reported at Dayton, Ohio, March 29, 1913, as chief sanitary officer of flood relief work. **Russell,** F. F., Major, Medical Corps. Will proceed to Front Royal, Va., to make sanitary inspection of remount depot. **Stayer,** M. C., Captain, Medical Corps. Left Madison Barracks, Ohio, for duty pertaining to flood relief work. **Wadhams,** S. H., Major, Medical Corps. Left Fort Porter, N. Y., March 27th, for Columbus Barracks, Ohio, for duty pertaining to flood relief work. **Wyaley,** A. M., Captain, Medical Corps. Returned to Fort Monroe, Va., March 27th, and left the same day for Columbus Barracks, Ohio, for duty pertaining to flood relief work.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy, for the two weeks ending April 5, 1913:

Allen, D. G., Assistant Surgeon. Detached from the Naval Recruiting Station, Richmond, Va., and ordered to continue treatment at the Naval Hospital, Washington, D. C. **Biello,** J. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the U. S. S. *Delaware.* **Buckley,** John, Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal. **Charlton,** C. F., Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the U. S. S. *Panther.* **Connor,** W. H., Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to Washington, D. C., for examination for promotion. **Davidson,** A. B., Assistant Surgeon. Detached from the U. S. S. *Glacier* and ordered home to await orders. **Dragoo,** C. H., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Petrel.* **Findeisen,** W. E., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Wheeling.* **French,** G. R. W., Assistant Surgeon. Detached from the U. S. S. *Panther* and ordered home to await orders. **Jenkins,** H. E., Assistant Surgeon. Detached from the U. S. S. *Nashville* and ordered to the Marine Expeditionary Force. **Lynch,** C. P., Assistant Surgeon. Ordered to the Naval Hospital, Las Animas, Colo. **Lyon,** W. C., Assistant Surgeon, Medical Reserve Corps. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Recruiting Station, Richmond, Va. **Minter,** J. M., Passed Assistant Surgeon. Detached from the Receiving Ship, Boston, and ordered to the Naval Hospital, Newport, R. I. **Murphy,** J. A., Surgeon. Detached from the Naval Training Station, Great Lakes, Ill., on April 15th, and ordered to the Navy Yard, Norfolk, Va. **Norton,** O. D., Medical Director. Detached from the Naval Recruiting Station, San Francisco, and ordered to the Naval Recruiting Station, Denver, Colo. **Osterhaus,** Karl, Acting Assistant Surgeon. Ordered to the Naval Recruiting Station, St. Louis, Mo. **Peck,** A. E., Surgeon. Ordered to the Naval Recruiting Station, San Francisco, Cal. **Post,** D. C., Assistant Surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to the U. S. S. *Glacier.* **Riddick,** W. J., Assistant Surgeon. Detached from the U. S. S. *Wheeling* and ordered to the Marine Expeditionary Force. **Robertson,** G. E., Assistant Surgeon. Detached from the U. S. S. *Petrel,* and ordered to the Marine Expeditionary Force. **Stalnaker,** P. R., Assistant Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to the Navy Yard, New York, N. Y. **Wood,** C. C., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Nashville.*

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Births, Marriages, and Deaths.

Married.

Adcock—Russell.—In Warrensburg, Mo., on Saturday, March 29th, Dr. James Alfred B. Adcock and Mrs. Mary Sanborn Russell. **Chatard—Whelen.**—In Baltimore, Md., on Wednesday, March 26th, Dr. Joseph Albert Chatard and Miss Alice Marie Whelen. **Derby—Roosevelt.**—In Oyster Bay, N. Y., on Friday, April 4th, Dr. Richard Derby, of New York, and Miss Ethel Roosevelt. **Filipello—de Saisset.**—In San Jose, Cal., on Wednesday, March 26th, Dr. Eugene Avventino Filipello and Miss Henrietta de Saisset. **High—Miller.**—In Lebanon, Pa., on Monday, March 24th, Dr. Isaac B. High and Miss Mary J. Miller. **Peterson—Fletcher.**—In New York, on Wednesday, April 2d, Dr. Edward Wadsworth Peterson and Miss Mary Elizabeth Fletcher. **Stewart—Petrova.**—In Kansas City, Mo., on Monday, March 31st, Dr. John D. Stewart, of Indianapolis, Ind., and Miss Olga Petrova. **Talbot—Mugele.**—In Pittsburgh, Pa., on Wednesday, April 2, Dr. Robert J. Talbot, of Niagara Falls, N. Y., and Miss Margaretta Mugele.

Died.

Barnes.—In St. Louis, Mo., on Sunday, March 30th, Dr. Algernon Sidney Barnes, aged eighty-two years. **Bennett.**—In Owensboro, Ky., on Thursday, March 20th, Dr. C. E. Bennett. **Clift.**—In Kaysville, Utah, on Friday, March 28th, Dr. Frederick Clift, aged sixty-five years. **Davis.**—In Raybrook, N. Y., on Wednesday, April 2d, Dr. Joseph Davis, aged thirty years. **Delgado.**—In New York, on Monday, March 31st, Dr. Jose Manuel Delgado, of Brooklyn. **Downs.**—In Butler, Pa., on Thursday, March 27th, Dr. Edward L. Downs, aged fifty-four years. **Edwards.**—In Gloversville, N. Y., on Friday, April 4th, Dr. John Edwards, aged sixty-six years. **Egan.**—In Springfield, Ill., on Sunday, March 30th, Dr. James A. Egan, aged fifty-three years. **Folsom.**—In Fargo, N. D., on Saturday, March 22d, Dr. Edwin Folsom, aged seventy-one years. **Hall.**—In Shawmut, Pa., on Sunday, March 30th, Dr. George B. Hall, aged forty-six years. **Hasbrouck.**—In New York, on Tuesday, March 25th, Dr. Joseph Hasbrouck, of Port Ewen, aged forty-eight years. **Ingersoll.**—In Denver, Colo., on Sunday, March 23d, Dr. Mary A. Ingersoll, aged sixty-three years. **Jameson.**—In Moscow, Idaho, on Monday, March 24th, Dr. William Kirk Jameson, aged seventy-seven years. **Knowles.**—In Grand Rapids, Mich., on Tuesday, March 25th, Dr. Weston O. Knowles. **Little.**—In Brooklyn, N. Y., on Friday, April 4th, Dr. Frank A. Little, aged fifty-seven years. **MacDonald.**—In Red Bank, N. J., on Saturday, March 29th, Dr. John M. MacDonald. **McIntyre.**—In Louisville, Ky., on Wednesday, March 26th, Dr. Charles W. McIntyre, aged forty-seven years. **Martin.**—In Montreal, Canada, on Tuesday, April 1st, Dr. George Martin, aged thirty-one years. **Mead.**—In Watertown, Mass., on Sunday, March 30th, Dr. Julian Augustus Mead, aged fifty-seven years. **O'Brien.**—In Roxbury, Mass., on Sunday, March 30th, Dr. Denis A. O'Brien, aged forty-five years. **Potter.**—In Bethlehem, Pa., on Tuesday, April 1st, Dr. Zibah Hazard Potter, aged seventy-six years. **Richmond.**—In Passaic, N. J., on Monday, March 31st, Dr. Samuel Richmond, aged twenty-four years. **Vastine.**—In Catawissa, Pa., on Sunday, March 30th, Dr. George H. Vastine, aged forty years. **Zoller.**—In Fort Plain, N. Y., on Wednesday, April 2d, Dr. William Zoller, aged sixty-six years.

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Communications.

VAGINAL SURGERY.

A Contribution to the Science, with Report of Several Illustrative Cases.

By Samuel W. Bandler, M. D.,

New York,

Adjunct Professor of Diseases of Women, Postgraduate Medical School.

When in the hands of Dührssen, vaginal celiotomy first developed as a step in the correction of retroversion and retroflexion, the surgeon made use of the transverse incision below the lower border of the bladder in the anterior fornix, to which he afterward added a short longitudinal incision which, as the indications for the vaginal route broadened, gradually became longer, until now it is extended by me in most cases to within an inch of the external opening of the urethra. With this combined incision the bladder is thoroughly separated from contact with the anterior wall of the cervix and from its intimate relation to the anterior vaginal wall throughout a very wide extent, so that the bladder is practically free, except at its attachment to ureters and the urethra.

The early fixations of the uterus to the anterior vaginal wall brought the fundus in contact with the upper margin of the transverse incision, producing an extreme anteflexion in the uterus. As the longitudinal incision was introduced and was made longer and longer, the fundus became fixed higher and higher on the vaginal wall, in reality, however, extending lower and lower; that is, nearer the urethra. With the complete and thorough separation of the bladder from the anterior vaginal wall, the uterus, which has its fundus fixed close to the urethra, displaces the bladder so that it lies and rests on the posterior surface of the uterus.

THE DUEHRSSEN-BANDLER OPERATION.

To this fixation operation, the credit for originating which must, after all, be given in great measure to Dührssen, various important steps have to be added in order to make this procedure of any permanent value in correcting the varying degrees of descensus and prolapsus uteri. In these cases we have not only a retroverted uterus, but very often an enlarged and elongated uterus, a marked hernia in the anterior fornix, enterocele in the cul-de-sac of Douglas, proctocele, and total absence, in many cases, of any sort of support by the levator ani muscles.

In addition to fixing the anterior wall and fundus of the uterus to the anterior vaginal wall, the cervix must be removed in most cases in order to allow that end of the uterus to pass upward toward the hollow of the sacrum. A certain area of the anterior vaginal flaps must be resected, after the vaginal edges and the separated connective tissue have been united about the new external os in such a manner as to diminish the extent of the posterior fornix, previous to which, if necessary, varying areas of the peritoneal cul-de-sac of Douglas have been exsected. Our whole purpose here is to diminish the extent of the fornices of the vagina in the attempt to keep that end of the uterus in a position approaching that considered normal. Simple fixation of the fundus forward is positively insufficient in most instances to accomplish this purpose. When the uterus is in the vagina, delivered through the inverted T incision, it is possible to attach the lower areas of the posterior wall at the cervicouterine junction to either the upper part of the broad ligament or to the infundibulopelvic ligament or to the broad ligament. Peritoneal plication in the region of the uterosacral ligaments only furnishes peritoneal support, and is a procedure which could not be of great help.

A high colpoperineorraphy, *associated with a resection of most or all of the posterior vaginal wall,* serves to narrow the lumen of the entire vagina, especially the upper half, and fixes the upper part of the new posterior vaginal wall to the upper border of the newly united levator ani muscles. Thus there is erected in the middle of the posterior vaginal wall a transverse fascial and muscular wall. Over or beyond this and the newly fixed posterior vaginal wall, the newly formed external os can scarcely pass. In other words, these procedures, together with the fixation of the anterior uterine wall, aid in keeping the cervix up where it belongs, which, after all, is one of the main essentials to a permanent cure of prolapse, no matter what method is tried. One of the essential points in the perineorrhaphy is the union of the levator ani or the fascial covered muscle on either side by three chromic catgut sutures and the union of the still remaining raw surfaces of the two halves by a figure of 8 suture and the superficial application of several interrupted chromic sutures, which unite in the median line the edges of the generous triangular shaped vaginoperineal denudation, forming in the median line a union of the lower half of the posterior vaginal wall and the whole external skin surface of the perineum.

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DUEHRSSEN-BANDLER OPERATION FOR MARKED DESCENSUS OF UTERUS.

CASE I. Mrs. X., forty-seven years of age, with descensus of the uterus, that organ protruding beyond the vulva on pressure, associated with a very large cystocele, a decided enterocele, and proctocele, with complete absence of any perineal body. This patient was operated upon before the surgical congress, by the Dührssen-Bandler method. In addition to a vaginal fixation of the fundus of the uterus to the anterior vaginal wall, made with the aid of an inverted T shaped incision, there was a very high amputation of the cervix, a sewing of the posterior fornix and the pelvic connective tissue around the new external os, in such a way as to diminish the diameter of the anterior and posterior fornix. As a result of this, a considerable area of the anterior vaginal flaps was removed. The next step consisted of a resection of the posterior vaginal wall in its entire length and this was followed by the Bandler form of perineorrhaphy, which included three buried chromic sutures, to unite the levator ani muscles fascia and of the two sides in front of the proctocele, and an anchoring of the posterior vaginal wall at this point. The perineorrhaphy was completed by a figure of 8 stitch which served to bring the raw surfaces together in the middle line. The result was a perfect one.

THE VAGINAL ATTACK ON ECTOPIC GESTATION.

Within the last year I called attention to the value of the anterior vaginal incision in diagnosticating or excluding the existence of ectopic gestation. I was particularly interested in the anterior vaginal route, making use of the inverted T shaped incision. By this means the vesicouterine fold of peritoneum is very distinctly brought into view. Normally it has a yellowish pink color, especially so if intestines or omentum bulge into it. In all cases of ectopic gestation in which this path has been used for diagnostic purposes, exposure of this peritoneal fold divulged the typical bluish shimmer so often seen when the peritoneum is reached in an abdominal operation for ectopic gestation when there is free blood in the peritoneal cavity. As soon as the peritoneum was picked up and incised with the scissors, dark brown fluid, with or without clots, made its appearance. When the anterior speculum is introduced into the peritoneal cavity, clotted blood is seen or the introduced fingers enter an hematocele, or ovarian forceps, with or without the aid of sponges or the fingers, deliver the tube which contains the ectopic product into the vagina. This method has been tried successfully in nine cases, in all of which completion of the operation was, or could have been carried out at the same time. A sponge lost through opening a sponge holder made it necessary on one occasion to open the abdomen and complete the operation by that channel. I should say that, as a general proposition, any case of ectopic gestation in which there is no active bleeding, or in which no active bleeding has taken place very recently, may well be operated in by the vaginal route. In only one of the cases was the blood fresh, that being a case where the patient had the symptoms of internal hemorrhage, and a small vaginal incision was made for diagnostic purposes solely, without the faintest thought of completing the operation through the same incision.

OPERATED IN BEFORE THE SURGICAL CONGRESS. ECTOPIC GESTATION WITH ONLY SLIGHT HEMATOCELE.

CASE II. Patient had a mass on the right side of the uterus about the size of a fist. The diagnosis of this mass, taken together with the history, was tuboovarian inflammation, probably cystic. When examined under anesthesia the mass seemed to be harder, and as the fingers applied over the abdomen pressed down in the steps of the examination, they passed between this mass and the uterus, and the separation of little tiny fine bands which yielded to this pressure was distinctly felt. (I consider this to speak decidedly in favor of an ectopic mass.) A possible diagnosis of dermoid was made, and the operation was done vaginally. Although there was little free blood and not many clots in the peritoneal cavity, the typical bluish shimmer was present as soon as the vesicouterine fold of peritoneum was reached, with the aid of the T shaped incision. Even then ectopic gestation was referred to rather in a doubtful way. On entering the peritoneal cavity a few little black clots were seen. The tube was taken hold of at the uterine end by a sponge holder, and as it was drawn out into the vagina, the outer end, with its enlarged ovary, forming a continuous mass, impinged against the anterior speculum, and it was impossible to bring the large tumor more distinctly into view. The appearance of the mass, therefore, showed it to be a tube filled with hard clotted blood. The dressing forceps perforated this outer end of the tube to permit some of the coagulated contents to be expelled and thus diminish the size of the mass. Clamps were applied to the edges of this perforation and they gradually brought the large ectopic mass into the vagina, when its removal was a matter of ease.

ECTOPIC GESTATION WITH HEMATOCELE.

CASE III. Dora, aged twenty-two years, para I, three years ago. Two and a half years before admission, patient began to complain of cramplike attacks in right iliac region, occurring once in three or four months, lasting from two to three hours, more frequent and severe in the last year. Last one, three days before admission, was more marked than usual. Last menstruation a little more than four weeks before admission. Colostrum present, no masses felt in abdomen. Cervix small and soft. Uterus fundus indistinctly felt forward. In the right fornix a smaller and a larger tubular mass, very tender, the upper boundary of which was not felt distinctly. Patient very obese and abdomen held very rigid. Definite diagnosis made under anesthesia. Operation December 10th. Twelve days later temperature rose to 103° F. Vaginal examination showed a hard infiltration in the cul-de-sac of Douglas (hematocele). Mass gradually grew smaller, less tender temperature lower, became normal December 29th. Four days later temperature rose to 105° F., vaginal examination negative, no abdominal signs, temperature dropped to 100° F. and rose again to 104° F., malaria being looked for. Next day redness over the face gradually spread, and a well defined case of erysipelas was recognized.

In this case the plica showed a typical blue shimmer, which is so important a diagnostic step in ectopic gestation. Incision of the plica verified the diagnosis, as dark big clots and some dark fluid blood poured out. As much as possible was removed with sponges, the uterus was turned so that the right horn was in the median line, and the fingers of the right hand enucleated the enlarged tube from the hematocele. The tube was brought into view by an application of clamps to the uterine end of the tube and to the ovarian ligament, after which a clamp was applied to the ligamentum infundibulopelvicum. Then three ligatures were applied about this ligament. The tube was removed, but the ovary was left behind.

CASE IV. Hinda, aged twenty-two years, para I., three and a half years ago. Menstruation expected November 18th. Two days following the expected date she was seized with sharp cramps in the lower part of the abdomen which lasted a day, and was followed by bleeding. Since then had had more or less pain all the time and had bled some. Two days before admission vomited for the first time, felt faint but did not faint. Patient did not look pale. No colostrum. Tenderness in right iliac fossa, cervix hard, large, fairly movable, uterus enlarged, slightly movable. A cystic mass was felt per vaginam about the size of a lemon, continuous with a similar mass which filled the cul-de-sac of Douglas and extended to the left side. Sensation of a large hematocele surrounding a firm tube was clearly noted on examination under anesthesia before operation. White blood cells, 12,000, polynuclears, eighty per cent. Operated upon on December 10th. Posterior vaginal drain. Varying temperature for four weeks owing to the disagreeable nature of the discharge. Patient felt perfectly well, however; no sign of peritonitis.

As soon as the peritoneum was exposed there was a typical blue shimmer, which I had so far observed in every case of ectopic gestation operated through the vagina. On incising the peritoneum there was a flow of dark thick, clotted blood. After introduction of the anterior speculum, the tube was grasped near the right uterine horn by a pair of ovarian forceps, and by a succession of these and by manipulation of the fingers of the right hand, the tube, which was no larger than the thumb, was brought into the field, and three chromic catgut sutures were firmly applied about the ligamentum infundibulopelvicum. The first one which was applied served to pull more of the ligament into view and aided in the application of the other ligatures. The tube was then ligated along its mesosalpinx and the ovary was not disturbed. The hematocele was as large as a child's head, and posterior vaginal incision was made on completion of the operation for drainage.

VAGINAL HYSTERECTOMY.

A fair variety of vaginal operations, designed to enter the peritoneal cavity by the anterior vaginal route, may be readily carried out with the aid of a transverse incision made below the lower border of the bladder in the anterior fornix. This incision suffices, for instance, to expose the vesicouterine plica of peritoneum when looking for the blue shimmer so typical of the majority of cases of ectopic gestation, which shimmer was present in the three cases which I report. Through this transverse incision, especially in a multipara, the peritoneal cavity may be readily entered for exploration, and in many cases the transverse incision suffices to carry out the desired operation. In fact, it was made use of in one of the three cases of ectopic gestation which I report. A larger exposure is often essential. In many of the operations complete separation of the bladder is certainly desired. In performing vaginal hysterectomy I believe complete separation of the bladder should always be practised. In vaginal operations planned to correct cystocele or to correct a malposition of the uterus, this is an absolute essential, and for these reasons I use in practically all vaginal cases the inverted T shaped incision, which was the mode of approach in all the cases reported with one exception. It gives abundant room, enables us to hold the bladder out of the way, exposes the peritoneum so that it is cut through with the aid of sight, and allows that important landmark, the anterior wall of the uterus, to be readily seen at all times.

A uterus of even fairly good size may be readily delivered into the vagina. The shorter the uterus the more readily may it be delivered. The uterus with a long cervix furnishes some difficulty in delivery if retracted broad ligaments hold the uterus tightly in the region of the ureters and the uterine arteries. A fundus so large or so long that it cannot be delivered in its entirety may be brought out into the vagina by having its anterior wall slit up to any desired extent, and pieces may be removed from either side of this anterior cut, and in this way, with or without the removal of fibroids, the body of the uterus may be so diminished in size that it may be finally delivered into the vagina and completely split in halves. When dealing with a uterus associated with unilateral or bilateral tuboovarian masses with adhesions, it is a very difficult thing, after separating uterine adhesions and delivering the uterus, to have sufficient room or the right sort of approach necessary to successfully enucleate these annex tumors. Hence, it is a more simple procedure to split the uterus entirely in two and then, by pushing one half back into the pelvis and pulling the other half well out beyond the vagina, to pass the fingers along the posterior wall of the broad ligament and separate the tuboovarian tumors from their adhesions and deliver them into the vagina. If more room is desired, the uterine halves may be removed and then the annexa are attacked.

CLAMP METHOD.

Wherever haste is desired or wherever the uterus is very long and the broad ligaments are retracted, wherever the broad ligaments are infiltrated or brittle, and wherever, after morcellement, irregular areas of uterine tissue are left attached to the broad ligament. In those cases where the infundibulopelvic ligaments are short and in fact, whenever the application of sutures cannot be done simply, quickly, and with ease, clamps are of wonderful value. They are applied usually one on either side from below upward, thus taking care of the lateral walls of the cervix and lower part of the uterus, and including the uterine arteries; the others are applied from above downward with or without previous splitting of the uterus, one, two, or three being used on either side, as occasion demands. The clamps are allowed to hang down, out through the vagina in a horizontal direction. Each vaginal flap is later fixed to the upper part of the broad ligament, the opening in the vaginal wound is narrowed as much as possible by interrupted sutures, and then two or three strips of wide iodoform gauze are introduced into the peritoneal cavity, filling the space between the broad ligaments snugly and lifting the bladder up away from the cul-de-sac. This gauze is removed gradually, beginning with fifth or sixth day. I use this gauze practically in all cases, whether the suture method or the clamp method has been practised. In the suture cases each flap is fixed thoroughly around and to each broad ligament, it having been found that by these means the occurrence of a subsequent cystocele rarely takes place. Clamps are removed at the end of thirty-six or forty-eight hours without disturbing the patient from her bed or displacing the intraperitoneal or vaginal gauze.

If, in the performance of hysterectomy, the uterus is not split or divided in two, one side may be separated from the broad ligament with ligatures or clamps. This, then, brings the uterus well out beyond the vagina, and makes the ligation or clamping of the other side, or delivery of the annexa of the other side more simple, and gives a very much greater space for approach.

The application of clamps is rendered more easy by complete division of the uterus, for then each half of the uterus is drawn out beyond the vulva, the broad ligament is made tense, and the clamps are applied from above downward as a rule, in an almost vertical direction. Every area which is clamped is distinctly visible, the intestines may be easily kept out of the way by gauze, and the bladder is protected by a narrow anterior speculum. It is frequently a measure of protection early in the operation to put one clamp on either side from below upward to grasp the uterine artery. If this is done, however, before the fundus is delivered, or before the uterus is divided in two, it may interfere with the ready delivery of the uterus, and by pressing against the vulva, perineum, and vagina, it diminishes the space through which we are working, and interferes with the ready handling of the uterus after it has been bisected.

After the peritoneum has been walled off with gauze, and after the vagina is packed with gauze applied in such a way as to surround the clamps and prevent them from pressing against the vaginal walls and the perineum, two wide strips of adhesive plaster are passed under the handles of the clamps and over each thigh, after the legs have been extended and brought close together. This supports the clamps and prevents them from pressing by their weight on the external genitalia.

The patients are catheterized every eight hours, a narrow metal catheter often being necessary.

CLAMP METHOD, VAGINAL HYSTERECTOMY WITH AMPUTATION OF UTERUS AT THE INTERNAL OS DURING OPERATION.

Case V. Mrs. S. Continued menorrhagia for several years, due to several interstitial fibroids situated in the fundus of the uterus. Very little hope was held out of the probable favorable conclusion of any attempt to be satisfied with a conservative myomectomy. This possibility was, however, borne in mind. With the aid of an inverted T shaped incision, the bladder was separated from its contact with the cervix and uterus, and from its relation to the anterior vaginal wall; the longitudinal incision extending up to the urethral prominence. A posterior vaginal incision was made, and the cul-de-sac was entered, two clamps being applied to unite the peritoneum with the edge of the vaginal incision. An anterior speculum was then introduced, and the vesicouterine plica was incised widely. The anterior retractor was then introduced into the peritoneal cavity, and with the aid of successively applied volsella, the uterus was brought into the vagina. Before the uterus was delivered, however, two clamps had been applied to the lower part of the broad ligament. The application of these clamps made it difficult to bring the fundus down as far as is possible when the cervix is free of the clamps, so that there was little room anterior to the uterus. Two broad ligament clamps were applied on the left side, and with the aid of scissors, the uterus was separated almost to the level of the internal os. This area owing to the angulation of the cervix, produced by the first clamps that were applied from below, was a little removed from a clear view and, in addition, at this point a small fibroid was present, so that *a transverve incision was made at the level of the internal os completely separating or amputating the fundus from the cervix.* Then the right side was clamped and separated down to this transverse cut, leaving the cervix still within the grasp of the two clamps first applied. It was then easy to see that only a small area of tissue still needed to be separated, and the little fibroid on the left side was enucleated without any damage. The connecting bands of tissue were cut through and the cervix was removed. A few interrupted sutures diminished the size of the vaginal opening anteriorly and posteriorly. A chromic catgut suture fastened each flap to the upper border of the broad ligament of its corresponding side. Two wide strips of iodoform gauze were introduced into the peritoneum, and other strips in the vagina so as to protect the lateral wall from the pressure of the clamps, and the clamps were surrounded with gauze and supported by a strip of plaster. The clamps were removed at the end of forty-eight hours, the vaginal gauze in five days, the intraperitoneal strips a few inches each day, so that by the tenth day douches could be begun. The patient made a very safe recovery.

CLAMP METHOD, VAGINAL HYSTERECTOMY, INCLUDING LEFT SALPINGOOOPHORECTOMY FOR TUBOOVARIAN ABSCESS; BISECTION OF UTERUS.

Case VI. Mrs. G., aged forty-four years, para IV. Last child twelve years before. One abortion ten years before. Marked menorrhagia for the last six months. For the last three months menorrhagia and metrorrhagia with weakness, pain in pelvis, loss of weight. Patient looked pale and poorly nourished. Uterus larger than normal. With the use of the T shaped incision the uterus was found adherent to the posterior pelvic wall and was pretty well surrounded by adhesions over the fundus. These were separated by finger and gauze blunt dissection. In the anterior wall of the uterus was a fibroid somewhat larger than a walnut. Uterus was divided in the median line without the loss of any blood. The right half of the uterus was pushed up into the peritoneal cavity and the first two fingers of the left hand were used to separate from adhesions and to enucleate the left annexa, consisting of a large tuboovarian mass surrounded by many adhesions. The mass was punctured to allow some of the contents (purulent) to escape. Clamps were applied on the left side to include this tuboovarian mass. On the right side only the uterus was removed, there being no marked change in the annexa. Operated upon November 26th, clamps removed, November 28th. Last gauze removed December 12th.

CLAMP METHOD, VAGINAL HYSTERECTOMY, MORCELLEMENT FOR MULTIPLE FIBROIDS, BISECTION OF UTERUS.

Case VII. Mrs. C., fifty-five years of age, had been under my care for three years for pronounced menorrhagia associated with pain on the right side. Patient was extremely obese, and it was impossible to make out the exact contour of the uterus, but the sound showed it to be two and one half times the normal length. Bimanual examination showed on the right side, on a level with the cervical internal os, an intraligamentous fibroid the size of a tangerine: one nearly as large, just above the cul-de-sac of Douglas: another one anteriorly and one or two others higher up. Various measures used locally, together with internal medication, served at times to diminish the annoyances, but gradually the patient's bleedings became so marked that they would last in profuse amounts for two weeks, in spite of packings, hot douches, and internal medication. The patient was anxious to be relieved of her annoyance and the choice existed between a curettage and a hysterectomy. An abdominal hysterectomy was excluded by me because, with such an obese patient, the intraligamentous fibroid, particularly the fibroid in the cul-de-sac, would have made the latter part of this operation of complete hysterectomy extremely difficult and dangerous. The patient had a decided proctocele and the vault of the vagina was not very wide, nor could the cervix be drawn down far. Simple curettage, as subsequent operation showed, would have been of no value, and I elected to do the vaginal operation. Anteriorly an inverted T shaped incision was made. Separation of the bladder showed in the anterior wall a fibroid the size of a crabapple. A transverse incision was made posteriorly and the posterior vaginal wall was dissected away up to the cul-de-sac where the fibroid lay fixed between uterus and rectum, making it impossible to enter the peritoneal cavity at this point. It was this fibroid and the firmness of the ligamenta cardinalia, together with the intraligamentous fibroid of the right side which made it impossible to bring the uterus well down. The cervix was then grasped by two Jacobson forceps on either side and the cervix was split in two anteriorly and posteriorly, up to the respective fibroids. The bladder was held out of the way by an anterior speculum and the splitting was continued anteriorly, the inner border of the two halves of the cervix being likewise grasped by Jacobson forceps. With the blunt scissors and the finger, the anterior fibroid, having been first grasped by a volsellum was enucleated. It was impossible to bring more than a slight area of the anterior body of the uterus into the field of operation, because the fibroids, intramural and subperitoneal, made it too large and because they impinged upon the speculum. The splitting of the posterior wall of the cervix was continued and a volsellum grasped the cul-de-sac fibroid. Then, with the aid of blunt dissection by the finger, that too was enucleated. Then the anterior wall was attacked, the splitting being continued up a little further, the two halves of the uterus being grasped, and successive fibroids were enucleated. The intraligamentous fibroid on the right side was so close to the situation of the ureter and uterine vessels, that it was attacked in the following manner:

A transverse cut was made through the anterior wall of the right half of the uterus from the median area close up to its outer border, and then the finger bored its way to the intraligamentous fibroid which was grasped with a volsellum. A blunt ended pair of scissors dissected this mass gradually from its surroundings; the more it was separated, the deeper was the area which was grasped, and the more clearly did it come into the field of operation. The index finger aided in this blunt separation and in this way the most deeply buried part of the circumference was finally brought into view, and every stage of the early and final steps of the enucleation had been accomplished practically with the aid of the eye. Then by morcellement the lateral walls of the uterus were resected, so that gradually the fundus came into view, and more fibroids were enucleated. The splitting was continued in this wise over the posterior wall until the cutting ended in the longitudinal slit that had been made in the posterior wall of the cervix. The peritoneum of the cul-de-sac was still intact, showing that the posterior fibroid had been retroperitoneal. Two broad ligament clamps had been applied to the lower area of the uterus along the cervix, and with the aid of scissors, the two halves of the cervix had been separated up to the area just above the uterine arteries. Two clamps were applied to the upper part of the broad ligament median to the ovary, and this part of the fundus was removed on either side. The middle area of the right half of the uterus through which the intraligamentous fibroid was removed had, attached to it, several clamps which had been applied while the morcellement of the uterus was taking place: These were left *in situ*. The same condition was encountered on the left side, where likewise in the median area several clamps and volsella had been applied. As much as possible of the uterine tissue along the lateral border was trimmed away. The peritoneal opening was packed with three strips of iodoform gauze; the vagina was packed with iodoform gauze. The clamps were removed at the end of thirty-six hours, without disturbing the patient. The vaginal gauze was removed at the end of five days and from then on the intraperitoneal packing was drawn out a few inches each day until it was all removed. Vaginal douches were then begun, which brought away for several days various sloughs of necrotic tissue, namely that portion of the lateral uterine wall embraced by the various clamps.

The patient made a smooth recovery with only slight symptoms of peritoneal irritation. One of the most annoying factors in the course of the operation was the very extensive protocele, which persisted in intruding itself into the field of operation beyond the end of the posterior speculum, and was a constant source of annoyance. The use of clamps precluded the possibility of doing a perineorrhaphy at the same time.

SUTURE METHOD, SIMPLE VAGINAL HYSTERECTOMY WITH THE AUTHOR'S METHOD OF PREVENTING THE SUBSEQUENT OCCURRENCE OF CYSTOCELE.

CASE VIII. Sarah S., aged thirty-eight years, para VI, last child six years before. A year before admission menstruation began to come on every two or three weeks, six to seven days in duration, profuse in amount, dull aching pain in the pelvis accompanying it. Frequent urination. Uterus moderately enlarged, ovaries more than twice the normal size, with the appearance of hypersecretion. Ligature method, uterus removed, tubes and ovaries left in place. Stumps of broad ligament were anchored to the corresponding vaginal flap of vaginal mucous membrane to prevent future cystocele. Operated upon December 17th, vaginal gauze removed December 27th. Pathologist reported fibrosis uteri. After the peritoneum had been entered anteriorly by the T shaped incision, and after the posterior fornix had been transversely incised to enter the cul-de-sac, the lateral walls of the cervix were exposed by pushing the vaginal mucosa upward, and two chromic ligatures were passed with the ligature carrier, one on either side, including the lower part of the broad ligament and the uterine arteries. The scissors cut betwee. these two ligatures and the cervix until the uterine arteries were exposed when each was tied off separately. Then the fundus of the uterus was delivered and the broad ligament was ligated downward by three chronic ligatures applied median to the ovary, no attention being paid to the tube and ovary whatsoever unless diseased. The scissors then cut away the fundus from the broad ligaments down to the previously cut uterine arteries. The ligatures which thus included the entire broad ligament were then drawn out so that the broad ligament stumps were in the vagina. Gauze was packed between them to keep intestine and omentum out of the way and anterior retractor kept the bladder out of the way and then a *heavy chromic suture was passed which united the vaginal flap of either side, the vaginal mucosa which had been removed from the lateral wall of the cervix and part of the vaginal mucosa of the posterior fornix, to the entire broad ligament of that side*, the suture passing through the ligamentum ovarii of the upper part of the broad ligament, and the peritoneum of the posterior wall of the broad ligament, and the peritoneum of the cul-de-sac. When this was tied on either side, *each broad ligament was completely enveloped by vaginal mucosa, and the opening between the two sides had been narrowed.* This opening was further narrowed by interrupted sutures applied along the posterior margin of the incision, and then the peritoneal cavity was packed with gauze, removal of which was begun on the fifth or sixth day and completed on the tenth or twelfth. The vagina was likewise packed with gauze. For two days there was considerable serosanguineous oozing.

134 WEST EIGHTY-SEVENTH STREET.

AMERICAN ASSASSINS.

Their Prospective Prevention.

By WILLIAM BROWNING, Ph. B., M. D.,
New York,
Professor of Nervous and Mental Diseases, Long Island College Hospital, Brooklyn.

The stalking murderer is a pest under whatever guise he appears. And whenever humanity is shocked by an attack on the life of one of its illustrious representatives, there is a loud cry for some method of prevention, cure, and relief.

How shall the need be met, the state psychically cleared? For a brief space the public ear is turned in our direction for any word of guidance. Medical men ought to know best how to meet this condition. The numerous sociological and educational societies can hardly approach the subject in as understanding a way or speak in as authoritative a manner. This matter can come up very naturally as one phase in the campaign of mental hygiene now under way in this country.

What with anarchists on the one hand and the insane and the criminal on the other, the path of life of our distinguished men appears increasingly beset with sudden dangers. It is not always possible to determine to which one or more of the three classes the offender belongs; hence for present purposes they can be considered together.

Although regicides elsewhere have long been known, the fact that the three assassinations of our Presidents have all occurred within the memory of many of us seems to show that in our country this species of infernalism is strictly modern. True, there is some account of an assault on at least one earlier President; moreover, the somewhat mysterious deaths of two others in times of great public stress aroused a profound suspicion, never entirely removed, that artificial agencies hastened their untimely end. But any such forerunners belonged to an earlier period and were different in character and certainty.

As, with the possible exception of the first case, no idea of conspiracy has been established, these acts are to be regarded as those of individuals. That fact, however, does not decide whether the criminal act is to be classed as social or alien in character. We may not forget that there are forms of social degeneracy, more or less hereditary, that do not as yet find a place in the recognized types of mental aberration.

But with the advance in methods of diagnosis there is a tendency amongst medical men to attribute a larger and larger proportion of crime and error to organic and mental defects as compared to purely social causes; and much painstaking study has been given to the cases in hand by able men to make out that each was insane. At most it is a *post hoc* conclusion. We can safely say, however, without any study, that such persons must have been mentally unbalanced at the time of their acts.

It is commonly thought that these isolated assassins and their deeds are of only individual significance; that the main thing is to determine whether there are bands or congeries of allies giving support or encouragement. On the legal or police side this may be a warrantable attitude, but from the medical standpoint the relative importance is exactly the reverse. For any person may, under the exciting influence of combination, convention, or conspiracy, do things quite beyond his ordinary inclination; in which case the misdeed by itself has less medical significance. The independent assassin, on the contrary, often represents the crest of a morbid wave including many others in the community. It is clear that, excluding conspiracies, there must be many near assassins for each one that makes the attempt. And where this exemplification recurs, as has happened here these several times in the last fifty years, we can be sure the animus in greater or less degree is widespread. And this holds whether the act is that of an insane person or otherwise.

It is known that one such attack tends to suggest and develop others. Doubtless the assassination of McKinley, the attack on Gaynor, and the murder of Rosenthal were the psychic suggestors of the latest crime; while the original one on Lincoln was in form the spectacular act of a theatrical man. The murder of the governor of Kentucky, though equally criminal, was not quite the same in method, and had some of the elements of feud.

Apparently these single culprits came from the eastern older and more densely settled portions of the country. While this may in part have been due to their greater opportunities for mischief, we may conclude that the larger centres, the crowding of population, and what may be termed the European as contrasted with the western spirit, favor the development of this class.

If shooting is the only means practicable for the solitary adventurer, the immediate warding off of such outbreaks is a problem for the police and personal guards. But, whether so or not, as it is everywhere evident that this form of protection fails of its purpose, it is time to consider what else can be done in the way of prevention.

Not many of the plans for relief call for notice. But among the proposed remedies is one that has attracted some attention. This is the proposal to establish "a clearing house for the examination of mentally defective persons," the institution to begin its work evidently with the young. From mere newspaper outlines it is impossible to judge fully. But, as it should prove useful in various ways, as it is backed by some of the better interests of the city, and as it is strongly advocated by three of our recognized alienists, it is entitled to our hearty approval for whatever of value it may possess.

To make such a plan effective for present purposes, however, it will be necessary to have the mental condition determined by some method of far greater weight here than that of scholastic averages. The Binet or similar system merely gives an intellectual grading, and has no further medical value. In fact, some of the most dangerous individuals, from a criminal point, are onesided, i. e., are so constituted with fair abilities in many directions as to give a passable intellectual rating.

The all around stupid is far less dangerous. We must, consequently, not be caught by any such fallacy as supposing that a simply intellectual "clearing house" is going to ferret out the prospective candidates for these forms of criminality. A careful medical examination on widely different grounds can alone be useful.

It must also be remembered that as yet we cannot by even medical knowledge always be sure of spotting every one of the incipient candidates for lives of error. *At best* it will be like our systems of water filtration, a means for eliding a larger or smaller percentage of harm bearing organisms.

The educated criminal bands in England, euphoniously calling themselves militant suffragists, illustrate the absolute folly of presuming that any intellectual or ordinary system of examination can invariably detect the taint of future "cussedness." And the villainous conspiracies in police and union circles emphasize this to the maximum, so far as concerns the element of combination in these offences, or even the possibility of leading persons of ability into transgression.

The "clearing house" scheme is calculated to catch the congenital and early developing forms, i. e., practically the hereditary and those only. Possibly for the long run and from the racial point of view this is the line of chief importance—though far from it as a matter of immediate practice. It is the same question, in slightly different guise, about which our biological scientists are divided into two groups, hereditarians and environmentalists.

Some of those in charge of institutions, from the combined influence of their mass of hopeless cases and of the modern teachings in heredity, are reaching views analogous to the old doctrines of fatalism, determinism, or predestination. And the next sequence is therapeutic nihilism.

The practitioner should obviously not devote himself exclusively to any side, but be able to recognize either type of etiology as predominant in a concrete case or in certain forms.

It may also be recalled that while modern studies of heredity make out a clear case against feeblemindedness and idiopathic epilepsy as constituting a distinct hereditary defect, when it comes to insanity little definite has so far been established. Logically this suggests that heredity constitutes no such large part of the etiology of insanity as in the other case. It harmonizes with the fact that while the former always appear in infancy or youth, insanity does not usually become decisive until later, i. e., until external influences have had time to play a part. The case against heredity from drunkenness is still less certain, as cases are common where persons of superior ability arise from inebriate stock, not excluding periodics.

The purport of these facts in heredity is that we cannot expect to prevent the occurrence of numerous cases of insanity by the exclusion of bad heredity alone; and there is still less chance that the incidence of assassins can be thus entirely controlled.

The conclusion of such a reactionary as the late Dr. A. Lapthorn Smith should be valid even to hereditarians. He says in The Explosion of the Theory of Heredity, NEW YORK MEDICAL JOURNAL, September 19, 1908: "If more attention were paid to training and environment, . . . there would be . . . fewer insane, fewer drunkards, and fewer murderers."

This method can consequently prove but a very slow and partial preventive, and not a timely detector of the insidiously developing crank. We need this plan, and we need more.

And let us not fail to put a fair share of the blame for this condition where it belongs; in the first instance with our legal tribunals, and then with the false sentiment and obliquity of the public. We see cases of the most dangerous sort discharged by the courts; and, knowing of this judicial practice, institutions send others of the kind away, lest they be bothered with both court proceedings and public disfavor. The gifted sufferer from the recent attack might now add a very personal grievance to his criticised criticisms of the courts!

So long as courts, with or without juries, continue to set the criminal insane free (except on the request and advice of the medical authorities entrusted with their care[1]) so long as they proceed likewise in the case of all other institutions for the insane, and so long as these powers hold their opinions superior to those of accredited psychiatrists in questions of mentality, just so long should a due proportion of blame in any such matter be placed at their door.

Another and related piece of legal retardation is their old dictum or rule for determining insanity. In reality, there is no one of these malcontents, with their well laid plans and carefully carried out villainies, but knows perfectly well the nature purposes and consequences of his acts. The trouble is rather a lessened ability to resist bad impulses. In that case the question is, How can we best jack up his wavering inhibition? He differs from the ordinary malefactor only, if at all, in the object he seeks. If punishment is ever a deterrent of crime, it may be as much so in the case of these individuals as in that of the common malefactor. If either of these figures on the consequences to himself, the ordinary evil doer thinks of how he can avoid being caught, and the assassin trusts to being called insane or becoming the recipient of misplaced sentiment.

There is also much to commend in the proposal that committers of crime, when relieved of punishment on the basis of insanity, should be permanently held in restraint. If an individual's mentality or normal control has once so far given way as to permit a criminal act, there is a large chance of recurrence and the person is a menace ever after. This method should not involve harsh treatment, but such definite segregation as to constitute a warrantable protection to public and patient, and a merciful substitute for punishment. The craze for pardoning influential convicts that has lately broken out in high places, serves to emphasize the need for revision of procedure.

Here in Brooklyn we are distinctly worse off than elsewhere in controlling examples of this class who are eligible for mental care. As every one knows who has to do with commitments of the insane, the more slily dangerous the individual the more difficult is it to effect his legal control. Formerly all our judges were open to make commitments. But of late years they have arranged among themselves a rule whereby all this work is put in the hands of the two county judges; and of these but one sits for this purpose at a time and for the briefest period daily. So far this might perhaps be passed as inconvenient detail merely. But the committing judges, just among themselves and only here in Brooklyn, have gone further and laid down the rule that they will not waive personal service—a privilege which the law specifically provides in suitable cases. This is far more arbitrary than legislative enactment; for the latter is at least reviewable by the courts, while the aforesaid rule is the most absolutely unattackable arrangement that can well be imagined.

The reason which these judges are said to have assigned for their action, was to save them from risk of financial suits. It may be suggested that it is time we changed judges; even this has occurred and without relief. Just across the river, in Manhattan or elsewhere in the State, though under exactly the same laws, no such arbitrary limitation is attempted.

It is clear that the inevitable tendency of all this is to handicap the commitment chiefly of dangerous persons.

And here may be mentioned a strange step backward in the law of this State, whereby suicidal attempts are placed in the criminal category. Excluding purposive fakes, such acts are of themselves *prima facie* evidence of mental aberration. The right method with such sufferers is to have them committed for examination as to their mental state.

There are other things of far greater importance in the long run than *repressive measures*, which might be taken up more systematically by the profession than has so far been done. For no nation or people achieves its best if policing (in the wide sense) requires such large relative and absolute expenditures as is now the case with us. You can asexualize and segregate and punish and condemn as you will, and not get far in the way of remedy, no matter how necessary for the time being these makeshifts may be.

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[1] Compare Lamb: The Commitment and Discharge of the Insane Criminal, *State Hospitals Bulletin II*, p. 394, 1909, as to the sad sequels of a series of such cases.

But the racial instinct, the nervous stamina, the *morale,* the inner strength or sanity, or whatever it be that needs no threat of law, how is this to be fortified and its impetus preempted for the right? The answer may require a review of all the activities of life. At least two further general lines may be mentioned in which we can be useful: One refers to education, training, and information to develop or keep the individual in sense and sanity: the other is to point out ways more immediately to prevent impulse and forestall opportunity.

A couple of illustrations must suffice: On every street are those who, while perhaps recoiling when the crime is done, nevertheless have in advance a strong shadow of a wish that evil might come to the individual. That this is not entirely a matter of the subconscious is shown by the gloating joy experienced by many when they hear of something against the really or reputably good. Most of us have sometimes transgressed. Phases of this, like the one popularized as "muck raking" may even have quite a vogue.

Anarchistic teachings and tolerance for anarchical propagations are rife; and if these are the most stimulant mental pap thrown continually at the youthful and still impressionable, the natural aftermath is to be expected. Not all anarchists and nihilists are effete, or they would not succeed in making as much stir as they do. If our school textbooks can devote pages to the effects of alcohol, they might certainly give some emphatic teaching on such universal requisites as consideration for others, control of passion, and the inviolability of human life.

A child is naturally an egoist. It is wholly concerned with itself, its own things, and own interests. In the earlier years it has no thought of others. It also wants to figure as "the whole show." Appreciation, especially when lavished on the male of the human or other domestic species, feeds its vanity. Few things are more likely to accelerate this vain egotistical paranoid bent than the elaborate dressy graduating exercises of every school at the present day. And worst of all, this is an influence exerted on the young. These graduating pageants appear to have originally been advertising schemes for secular institutions. So long as they were confined to colleges they may have been of limited moment. That they are not vital parts of an educational system is shown by those countries or sections where the like are not seen and yet where the highest grade of intellectual development is achieved. And it may be more than a coincidence that of recent years there appear to have been fewer attempts on the life of the ruler of one such country than on those of other lands.

Another and timely illustration pertains to the lionizing custom. Our highest officials should not be expected to make a continual exhibit of themselves, "speechifying," traipsing up and down the country, opening balls, etc. And the like applies to much of the political campaigning as now conducted; from the general point of view an expensive, inadequate, and vicious way of accomplishing results. A slight improvement has been made in the way of less handshaking by the President, and the former expectation of every idiot on reaching Washington that the President would be on the corner to welcome him has been a little modified. But that the folly still persists is shown by the disgraceful conduct of our shallow citizens who continually seek presentation at courts abroad!

Infections have taught us that in such matters there is a mutual dependence between all classes of humanity. We can now see that in the present field of discussion there is a not less intimate relationship.

54 Lefferts Place, Brooklyn.

THE NEEDS OF THE EYE, EAR, NOSE, AND THROAT SURGEON IN GENERAL HOSPITALS.*

By Frank Allport, M. D.,
Chicago.

All eye, ear, nose, and throat specialists are well aware of the difficulties to be encountered in endeavoring to do their work in general hospitals.[1] We visit such institutions as the New York Eye and Ear Infirmary, the Massachusetts Eye and Ear Infirmary, etc., and we envy those surgeons who seem so easily to dispose of their work. In these institutions we find a permanent operating room, nurses and internes who serve long terms and who become familiar with their duties. We find good instruments, solutions, lights, wards, etc., all arranged for the convenience of the surgeons and for the benefit of the patients. The surgeon is thus enabled to give his entire time and attention to his work, his operations, and his service, which results in a quiet, undistracted mind, better scientific thought, and a higher percentage of good results. The work proceeds easily and comfortably, accompanied with only a minimium amount of confusion and irritation, and with all equipments and apparatus for ordinary and extraordinary occasions. To work in such institutions is a privilege and a pleasure, and it is an incontestible fact that whatever may be the cause, whether it resides in the men themselves, or in their atmosphere and surroundings, or whether it is the combined influence of both, men who work in such institutions, as a rule, stand at the head of their profession and become recognized leaders and teachers.

In sharp contrast with these almost ideal working conditions, let us picture the difficulties encountered by the eye and ear surgeon in endeavoring to perform his duties amid the bewildering surroundings of a general hospital. It is not too much to say that he works in an alien atmosphere from beginning to end, in which he is constantly compelled to fight for his own rights and for the rights of his patients. Everybody is interested in surgery, in general medicine, in obstetrics, etc., but hardly anybody is interested in ophthalmology and otology. This is true of the superintendent, of the head nurse, of the internes, and of the operating room and other nurses. A general hospital interne who takes any particular interest in ophthalmology and otology, and who intends to make this his life work, is a species of interne that seldom I see. The consequence is that this service is an undesired one, and barren of interest to the interne, who therefore gets through with it as quickly and easily as possible. Such unwilling and perfunctory assistance is entirely unsatisfactory to the surgeon, who learns to depend less and less upon it, until, through force of circumstances, he pays but little attention to the interne, and learns to do practically all his important work himself; or, if he has an assistant in his office, he avails himself of this assistance, not only in his office work, but in his hospital work as well. The assistant accompanies him in his hospital rounds, makes independent calls, dresses patients, assists at operations, etc., and in fact almost usurps the function of the interne, an improper situation which has been largely and gradually evolved by the conduct of the average hospital interne himself. Such conditions occasionally precipitate unfavorable criticism from the medical staff and from the internes themselves; the former feeling that proper discipline is not being maintained, and the latter feeling that they are being ignored and their places supplanted by interfering usurpers. The surgeon is sometimes called upon to defend himself under such conditions, and he is reminded that hospitals are training schools for doctors, and that the internes are giving their services to the hospital in exchange for experience, and that therefore it is their right to receive from each attending medical man all the instruction that the material affords. Such protests are not frequent, however, for, as a rule, the average interne is only too glad to shirk the eye and ear service; still such protests do occasionally occur, and when they occur a defense is necessary.

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*Read before the Chicago Laryngological and Otological Society, January 21, 1913.

[1] For purposes of convenience in writing, such specialists will, hereafter in this article, be usually designated as oculists and aurists or surgeons, although I include under the one title men who do all kinds of eye, ear, nose, and throat work.

I have already given some reasons why the services of the average hospital interne are unsatisfactory to the eye and ear surgeon, but, in addition, I desire to say that our specialty is quite unlike any other and requires special training, experience, adaptability, and delicacy of touch and manipulation. I have seen eyes ruined after operation by willing but untrained and clumsy internes, and a few experiences of this kind are not conducive to the fostering of ideas concerning the desirability of training green and transient internes at the expense of human eyes. An interne may be quite capable of dressing ordinary wounds and of doing ordinary hospital, surgical, and medical service, and yet be quite incapable of dressing eyes after cataract or other operations, or of dropping medicine into the eye without inflicting pain and injury, or of dressing a head after a radical mastoid operation, without defeating the purpose of the operation. . Oculists and aurists, therefore, frequently form the habit of devising methods by which they can, at least measurably, dispense with the services of the interne, either by doing the work themselves, or by deputizing it to their office assistants. Even when (as occasionally happens) an interne appears who seems to take a real interest in this department, the surgeon's general line of conduct has become so well defined that it hardly seems worth while to change it for the brief space of one interne's service in this particular department.

And this brings us to a consideration of the great undesirability of short interne services in general hospitals. It is a fact that no intelligent surgeon will dispute, that the usual short term of interne service in a given department is not conducive to good work and is irritating and unsatisfactory to all concerned, for no sooner does an interne begin to wear off the newness and become really useful, when he is transferred to another department and a new man presents himself to be initiated into the mysteries. This difficulty is overcome in some hospitals by allowing internes to serve only in a limited number of departments during their months of duty. This plan seems to be quite satisfactory where it has been tried, but I believe that some better method will be devised by those who are giving special thought to the subject. Certain it is, that until eye and ear surgeons can command the services of internes for many months of continuous service, these young doctors, however willing and earnest they may be, cannot be of any great use to this department. At the present time, and under existing conditions, hospital superintendents, internes, superintendents of nurses, and nurses seem to think that the main object of hospital work is to educate internes and nurses. My own opinion as to the use of hospitals is, that they exist for the purpose of benefiting the sick, and for the convenience of physicians, and *incidentally* for the education of internes and nurses.

And this leads naturally to the subject as to how the eye and ear department in a general hospital can best utilize the services of the general hospital nurse. When it comes to being of any real assistance to the surgeon in his hospital work, the general hospital nurse is nearly a hopeless problem. This is not an ill natured criticism, it is simply a statement of an unfortunate fact; neither is it a reflection upon the nurse, nor her intelligence nor willingness, as this statement is possible only because of circumstances and conditions over which the nurse has no control, viz., the constant changing of her place and occupation from ward to ward and from service to service. Between educating new nurses and new internes, and patiently enduring their mistakes and shortcomings, the path of the attending oculist and aurist in a general hospital is certainly not strewn with roses. I wish again to emphasize the fact that I am not blaming these young people, indeed, I am not blaming anybody—I am simply endeavoring to present my subject truthfully, for the purpose of ultimately producing better conditions.

The oculist and aurist in a general hospital has his patients scattered from ward to ward and from room to room. As he progresses from place to place he is constantly confronted with a new nurse and with new conditions. If an interne goes with him, he may carry a tray of drugs, instruments, appliances, etc., for whose reliability as to cleanliness, aseptic qualities, etc., no one can vouch, as it is no one's duty in particular to guard the dependability of these articles. He is, therefore, constantly in fear of using impure solutions, dirty droppers, infected ointments, etc. Sometimes each ward or room contains the particular articles he intends to use on the patients in that particular locality; but here again he is confronted with the same fear of contamination that is in evidence when he is using solutions, etc., from a migrating tray whose reliability is more than doubtful, and he is almost certain to want something, such as a solution, a light, a probe, an ophthalmoscope, etc., that is not at hand and that takes much time and confusion to secure. And so he proceeds from one portion of the hospital to the other, changing nurses from place to place, encountering fresh obstacles and annoyances as he continues in his calls, dressings, etc., until he emerges from the hospital tired and dissatisfied with his work and the conditions under which he is obliged to prosecute his labors. Beside this, the proper fulfilment of the surgeon's orders in the interim between his visits, in a general hospital, is a practical impossibility. The ever changing ward nurse is quite incompetent to instill drops into the eye, or to irrigate an eye, or to put ointment into the eye, or to change bandages, or to irrigate or dress an ear, etc. And as these things cannot be done properly during the surgeon's absence, he either dispenses with such necessary attentions altogether, or has them performed as infrequently as possible, in order to guard against damage occasioned by an inexperienced and therefore incompetent, not to say dangerous nurse.

The operating room conditions for the oculist and aurist in the general hospital are thoroughly unsatisfactory. The head operating room nurse is by no means a fixture in most hospitals, and her time is usually absorbed in laparotomies, amputations, etc., so that when the general ear surgeon desires to operate, one of the assistant nurses is usually assigned to him. There are several of these endeavoring to obtain operating room experience, so that it may easily happen that the surgeon may be assisted by an ever changing new nurse in his operations from day to day. He is thus irritated and annoyed, and therefore more or less incapacitated from doing his best work, by being constantly obliged to coach the nurse in her duties, and by using poor knives, scissors, sutures, etc., that are out of order owing to the lack of proper inspection. In fact, the general hospital operating room nurse has no conception of the necessities of instruments for the proper performance of ophthalmic surgery. Her ideas of surgical instruments are based upon those required to do large surgical work, and the necessities of a cataract or iridectomy knife or a pair of de Wecker scissors or a proper needle are apparently beyond her conception. She drops cataract knives into a tray, with perfect unconcern, and allows them to collide with the sides of the tray, without any conception of the delicacy of the knife, or with the fact that it should not be used at all if its point is not perfectly true. Nor does it do any good to instruct her, for she may be gone from her operative experiences to-morrow, and a new face, with all of its discouraging possibilities, may confront the surgeon. These are some of the difficulties that constantly confront the oculist and aurist who endeavors to do his work in a general hospital. I have not completely covered the ground by any means, but I have perhaps said enough to afford an insight into the subject. Again I wish to disclaim any intention of criticism upon hospitals, internes, or nurses, who are merely the natural products of misconceptions.

Eye and ear work was the first to become isolated and still is the most clearly defined of all the specialties. Almost all general physicians and surgeons refuse to do any appreciable amount of eye and ear work. They frankly admit their ignorance, and do not care to overcome it. This idea prevails amongst internes and nurses, who consequently take but little interest in this clearly defined and isolated specialty, which is therefore neglected as much as possible during their hospital service.

Having thus, at least to some degree, called attention to certain unfortunate conditions interfering with desirable eye, ear, nose, and throat work in general hospitals, let us endeavor to see if something cannot be done to remedy such conditions.

Concerning the interne situation, I have the following plan to suggest: What is needed is a long service of perhaps one year. It would not be possible dictatorially to appoint staff men to a year's service of this nature, without first gaining their consent; but if it was known that a certain hospital had a large eye, ear, nose, and throat service, to which men desiring such work could be assigned for a year or more, I am inclined to believe that the position would be kept constantly filled. It should probably best be understood that while such internes would consider their eye, ear, nose, and throat service to be of primary importance, yet they would be expected to work in other departments if their time was not fully occupied. This would probably be an additional incentive to secure the position, for most young doctors are anxious to round out their education and to secure as much general knowledge and experience as possible. Eye, ear, nose, and throat hospitals are comparatively few in number, and there are many young men desirous of special hospital training who are unable to secure an interneship in such special hospitals and who would eagerly grasp at a prolonged special service in a high grade general hospital. Such hospitals could, if thought desirable, issue a special certificate to those men who have served a year or longer in this department. I believe this plan is feasible and practicable, and could be successfully carried out in hospitals having a sufficiently large service to be a temptation to the embryo specialist.

This plan as just depicted is now being carried out in St. Luke's Hospital in this city. Some time ago Mr. Curtis, the superintendent, told us that if we desired it and he could find a suitable man, we could have our own exclusive and continuous interne. Some pessimists believed a man could not be found who would be willing to give up a year's time to what eye, ear, nose, and throat experience he could secure in a general hospital, but with remarkable promptness Mr. Curtis had about fifty applicants for the position, from whom he selected a man who is now the special eye, ear, nose, and throat interne of St. Luke's Hospital. He will always have one or two junior internes working under him, who will change their service once in two months. The chief interne will have complete charge of the indoor and outdoor eye, ear, nose, and throat service of the hospital, and at the end of his year's service he will receive a proper certificate. He will be present at all operations, and will himself do all the operating it is possible to intrust to his hands. It should be clearly understood that this interne is the eye, ear, nose, and throat interne for the entire service, and that his services are just as much at the disposal of specialists that are not on the staff as they are for staff members. There is no salary connected with the position, but the interne is supplied with his living expenses. He is at liberty to do all the pathological work in the laboratory he desires, and we hope soon to have a special paid eye, ear, nose, and throat pathologist at St. Luke's, as we all recognize that the average general pathologist is not qualified to perform satisfactory pathological work in our department.

Concerning the nurse situation, I believe we have at St. Luke's Hospital gone a long distance in solving this vexed problem. Some years ago, recognizing the necessity for better service, we secured, through the cordial cooperation of the superintendent, Mr. Curtis, and the head of the training school, a nurse who was assigned especially to our department. She was an undergraduate, and her term of service was for three months. Her first duty was to us and to our patients, but if her time was not fully occupied she could be assigned to other work. She kept the eye and ear trays stocked with fresh dependable solutions, ointments, droppers, instruments, pads, bandages, cotton, etc., and always made the round of calls with the surgeons. She dressed and treated the patients between visits, kept the operating room instruments in order, and was always present at operations to be of all possible assistance, although she did not supplant the function of the operating room nurse. Just before her term of service expired, another nurse was appointed to take her place, and for several days she instructed the new nurse in her duties, so that the break in service would be as little apparent to the surgeon and patient as possible. In this way, it will be observed, four special nurses were educated in a year, and these nurses have been most valuable to the staff, who always request the employment of these nurses, in case private nurses are desired in eye, ear, nose, and throat cases. This plan worked very well for some years, but the need of continued service was constantly apparent to all concerned. Just as the nurse became of real service and dependability, she would be exchanged for a new one, and then the educational process would begin all over again. The superintendent then still further improved our department, and enhanced the possibility of superior work by giving us an experienced graduate nurse to stay permanently on our service. She receives a regular salary, lives at the hospital, is an officer of the institution, and has immeasurably lightened our burden and relieved our responsibilities. She has four assistant undergraduate nurses a year, who are assigned to her service, and who are instructed by her. This is done for the purpose of relieving the special nurse of certain routine work, and also for the purpose of continuing the process of educating nurses concerning the duties of eye, ear, nose, and throat nursing.

The possession of our special interne and special nurse has led us to hope for still better things in the future. We hope and believe that if our present conditions work harmoniously and successfully, and if our earnestness and usefulness to the hospital are further demonstrated, that within a short time a floor of the hospital will be devoted to our service, where we shall have a superintendent, with nurses, sufficient internes, with a chief interne in charge, wards, rooms, operating rooms, dressing rooms, etc.—in short, a hospital within a hospital, where the cares of management will be lifted from our shoulders, and where the advantages of a special hospital will be at our disposal.

One of the most useful steps for the upbuilding of a successful eye, ear, nose, and throat service, in a general hospital, is the establishment of a regular day and hour for an operating clinic, where operations shall be performed, and where doctors and medical students shall be welcomed. If there is sufficient material, two or more operating days should be established, and these days should be filled with unfailing regularity and should be as interesting as possible. At St. Luke's we now have two such days. On Thursday afternoon for many years all kinds of eye, ear, nose, and throat operations have been performed, and recently Tuesday afternoon has been set aside for all kinds of nose and throat work. Before long it is believed that more days will have to be added, and we hope that soon continuous operative work in our department will be performed every day in the week. The necessity for filling up these operative days is a great inspiration in the search for proper operative material. Besides, it magnified the importance of the department, keeps the beds filled, keeps the special interne and nurse busy, and undeniably maintains and improves the technic and experience of the operator.

Every hospital supporting a live eye, ear, nose, and throat department should possess an active dispensary for the treatment of these diseases, which should be under the charge of the eye, ear, nose, and throat surgeons of the staff, aided by the chief eye, ear, nose, and throat interne and his interne assistants. Such a dispensary is desirable, not only because it affords experience in refraction and other general work in these specialties, but because it must surely become a most important source of supply to the regular operative clinic. Outside of special hospitals or infirmaries, where the daily attendance of patients is abundant, it is not an easy matter to keep one, two, or three operative clinics a week well supplied with material. Every effort should be made to bring this about, and of the several available methods a good live dispensary is one of the best.

This paper has been written with the purpose of suggesting how the eye, ear, nose, and throat work in general hospitals can be improved and made better and more convenient and useful for all parties concerned.

I have explained to you what we have done and are trying to do at St. Luke's Hospital in this city, but I do not wish to be understood as claiming a perfect service at this institution, as much remains to be done. But of one thing I am sure, viz., that the service in our department, under the present conditions, is infinitely superior to what it once was, and that the ideas carried out in this hospital might with great benefit be put in force in all general hospitals.

7 West Madison Street.

CONTRAINDICATIONS TO CURETTING.*

A Clinical Study.

By Robert T. Frank, A. M., M. D.,
New York,
Adjunct Gynecologist, Mount Sinai Hospital.

This paper is intended for the general practitioner, and throughout, his needs, his difficulties, and his viewpoint have been kept in mind. Although my own experience has been obtained in hospital, dispensary, and private practice, I have tried in what follows to adopt the point of view of the physician, who sees gynecological and obstetrical cases only in the course of his general practice, and to outline what appears to me the sanest and safest mode of procedure.

For this reason, I have used as a basis for my paper mainly 2,000 consecutive cases taken from my dispensary records, in which careful note was made of the number of curettings, and the reason for which this interference was practised. These patients were all ambulatory, although some were very ill, and, needless to say, included only the poorer classes from crowded sections of the city, whose surroundings and economic conditions were of the most unfavorable character.

In order further to limit the scope of this paper, I have purposely refrained from touching upon purely technical faults, and purpose throughout to avoid all reference to operative errors or accidents.

The topics I intend to dwell upon fall under the following headings:

1. Abortion—induced and spontaneous.
2. Postabortive hemorrhages.
3. Post partum conditions.
4. Ectopic gestation.
5. Inflammatory conditions of the parametria and annexa.
6. So called "endometritis," including leucorrhea.
7. Sterility.
8. Menorrhagia and metrorrhagia.

My statistics show that of 2,000 patients, and let me add that of these some were under the age of puberty and others unmarried, *more than one patient out of every five* had been curetted at some time!

Total number of cases	2,210	
No record of abortions or curettages	210	
Number of cases with records	2,000	
Number of cases curetted	458	or 22.5%
Number of cases of abortion	721	or 36%
Of 721 cases of abortion the number of cases curetted	330	or 45.7%
Of 721 cases of abortion the number of cases not curetted	391	or 54.3%
Of 473 cases with one abortion curetted	200	or 42%
Of 473 cases with one abortion not curetted	273	
Of 166 cases with two abortions curetted	76	or 46%
Of 166 cases with two abortions not curetted	90	
Of 82 cases with three or more abortions curetted	54	or 66%
Of 82 cases with three or more abortions not curetted	28	
Of 1279 cases who had never aborted curetted	128	or 11%
Of 1279 cases who had never aborted not curetted	1,151	
Of these, curetted post partum	20	
Of these, curetted for sterility	32	
Of these, curetted for menorrhagia or metrorrhagia	36	
Of these, curetted for leucorrhea, etc	40	

1. *Post abortum.* The records show that nearly every second patient was curetted. In this group are included patients whose pregnancy terminated before the end of the fifth month of gestation. Induced and spontaneous abortion require separate discussion, but as the *patient's statements as obtained in the dispensary are rarely to be trusted,* no attempt at numerical subdivision was made.

(a) *Induced,* especially infected induced cases, form a group by themselves. If the physician, called in to see a case of this character, is alert and elicits the true history, he will do wisely at once to send such cases into a hospital. This protects the doctor from unjust criticism, and may save him from serious legal complications, if, as not infrequently happens, unexpected and fatal symptoms of sepsis develop. At the onset the course may seem mild, but the signs of infection sometimes develop late. In one case in which I emptied the uterus in the hospital on the tenth day, when the patient was ready to go home, tetanus developed and she died. The abortionist, who later was apprehended, was in the habit of using unsterilized instruments. Everything in this case pointed to a mild course and favorable outcome.

As a routine measure it has been customary, after careful dilatation, to empty such infected uteri with some placental instrument and a lightly used blunt curette. Even with skill and care, in a certain number of these patients bacteriemia develops and they succumb.

Lately, Winter, of Königsberg (1), a man of long and varied experience, has suggested that in those cases in which streptococci can be isolated from the uterus, noninterference should be observed until the uterine culture becomes negative—usually a period of several days to a week. His suggestion has raised a veritable storm of discussion in Germany, and has divided the German gynecologists into two armed camps, between which innumerable statistical bombs are still being hurled through the medium of the professional press. Personally I incline toward Winter's standpoint in infected cases, not so much because of the bacteriological findings, but because I have so often seen harm result from active interference, and, much more rarely, noted damage which could not be repaired, follow a Fabian policy. Doctor Pollack, of Brooklyn (2), has shown the courage of his convictions by putting them into practice. In the last fifty cases of puerperal sepsis, which include both postabortive and post partum conditions, he has refrained from all local intervention, and so far his results show a marked improvement over previous series.

Needless to say bacteriological tests almost always imply hospital surroundings. If the general practitioner will or must treat induced abortions at the patient's home, let him confine his activities to a *single* careful dilatation, and if possible a manual removal of all débris from the interior of the uterus. At the very most a curette should be *lightly* and *sparingly* used. In the long run he will save more patients by noninterference than by even the lightest curetting.

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*Read before the Harlem Medical Association, February 5, 1913.

(b) *Spontaneous abortion.* In a greater number of cases abortion sets in spontaneously. These cases aside from the history, are usually easy to distinguish by the fact that the patients may bleed for days without any marked rise of temperature, *if not interfered with.* These are the common class of cases, to which the general practitioner is called at some unearthly hour, because of bleeding. If he is inexperienced he will be alarmed by the profuse hemorrhage, examine hurriedly with septic fingers, pack the uterus or vagina in haste, and convert a clean case into an infected one. No such hurry is indicated. Up to the fifth month women almost never lose a fatal or even harmful amount of blood within twelve hours. After the fifth month profuse hemorrhage is most often due to placenta prævia or premature detachment of the placenta. But abortion after the fifth month almost invariably takes the form of normal labor in miniature, *and requires no interference,* or only such measures as apply to labor at term.

If part or all of the products of conception have been expelled before the physician's arrival, hasty interference is even less indicated. A thoughtful patient will preserve the clots and débris which have been extruded, and careful examination of their character and amount will often show that the uterus is completely empty. Here familiarity with the gross appearance and size of the fetal products at the various months of development, is of invaluable assistance. Unfortunately our medical schools do not supply this knowledge, which, therefore, has to be gained by practical experience and observation. If the material has not been kept, bimanual examination will show with a fair degree of accuracy, from the size and consistence of the uterus, whether that viscus is empty or not. Should the hemorrhage prove too profuse and persistent, in spite of palliative measures, the uterine cavity may be aseptically packed with iodoform gauze, left *in situ* for twelve hours, and then emptied at leisure and with due regard for asepsis. Curetting, however, can then usually be dispensed with, as the chorion is expelled with the gauze. Personally, I have been obliged to empty the uterus in spontaneous abortions which were not infected by interference, in only the rarest instances. Almost always it was sufficient to quiet the patient with a small dose of morphine, give fair sized doses of ergot, and apply an ice bag to the abdomen and a sterile dry dressing to the vulva.

The measures just advocated, though applicable in the home, cannot, as a rule, be enforced in a crowded and active hospital service. Here, as a matter of expediency, in order to save time and beds, immediate emptying of the uterus has been practised in uninfected cases in which no contraindications existed. In hospital surroundings, with abundant assistance and full anesthesia, harm rarely results. Need I emphasize the opposite extreme—the tenement house, the patient across the tumbled bed, the doctor as anesthetist, assistant, and operator combined? This is a sad, but common occurrence. The medical man who has to contend with such difficulties has my heartfelt sympathy, but my main aim and object has been to show that interference in these cases is but rarely indicated, and almost never imperatively required by the exigencies of the case.

2. *Postabortive bleeding.* The subsequent post abortum bleeding may prove annoyingly persistent and profuse. It also, however, in the absence of infection, usually disappears under nonoperative treatment. This is forcibly illustrated every day in my dispensary service, where I see large numbers of these patients. They grow alarmed and restive, and themselves demand a curettage after waiting for a few days. I apparently consent and have them apply at the hospital. Almost invariably it is necessary to put these patients on the waiting list, as they have not really urgent cases, and by the time they can be sent for, they are cured. They then present themselves to me with their letter of admission, and tell me that they do not want to be operated on.

The idea that the decidua of the early months, which is left behind, must be removed by curettage before complete involution can take place, is fallacious. When the ovum and its membranes are expelled the decidua gradually resumes its resting character of normal uterine mucous membrane from which it developed under the stimulus of pregnancy. Unnecessary removal of the decidua converts the interior of the uterus into an unprotected and poorly drained open wound. From personal experience I now know that these patients later conceive again, and carry to term even more frequently than such women as are curetted. The cause for this difference is also clear, and I shall recur to it in the discussion of annexal inflammation.

3. *Post partum.* Of 458 women who were curetted, in twenty the operation was performed post partum. According to my view I consider that the operation was performed exactly twenty times too often! Our hospital records show a far greater proportion because in this class of cases, particularly *after* the curettage, alarming symptoms develop and they are, therefore, at once transferred to such institutions. The mortality in this group is enormous.

After a properly conducted labor curettage ought never come into question. After expulsion of the child, the placenta should be delivered either spontaneously or by the Credé method. If through any cause the entire placenta or part of it is retained, it should be removed within a few hours—by means of the hand. Membranes remaining behind are rarely, if ever, the cause of future trouble. Those rare and terrifying instances in which violent post partum hemorrhage occurs because of complete or partial placental retention, require immediate manual removal of the afterbirth. These cases tax the aseptic preparations and personal readiness and courage to the limit. The majority of febrile cases in which the curette has been used post partum, and which we are then called to treat in the hospital or to see in consultation outside, are due to minor, slightly infected injuries of the parturient canal—tears of the vulva, vagina, cervix, and parametria—which have been extended and converted into severe general septic processes by the unwarranted and reckless use of the curette. Were the simple rule of noninterference adhered to by both physician and midwife, a case, such as the following, ought never to present itself.

Case. After normal labor a woman presented high temperature. On the second day she was curetted. Twice more within one week the curette was employed. When admitted to the hospital the uterus was found in a fair degree of involution: Death from acute streptococchemia occurred fourteen days post partum. At the autopsy the uterus was found empty and its muscular walls were exposed, except where covered by a few shreds of necrotic endometrium, all the protection left to it by these three unwarranted and harmful operations, which simply served to break down such barriers as the body could interpose against bacterial invasion.

In the hospital noninterference is not always possible, for quite often we are in complete ignorance as to the character of the third stage of labor in septic cases sent in from the outside. Looking over the histories of a large number of these cases, I have been impressed, however, by the fact that in most instances the uterus was found empty, and that the little tissue removed by intrauterine irrigation, the exploring finger or the curette (on the few occasions in which the instrument was employed) or demonstrated at autopsy, was nothing but normal decidual remains. Let me further emphasize a fact which is too often forgotten or not known. After labor the placental site is under normal conditions, distinctly elevated (nor depressed), and remains above the level of the uterine surface for several weeks. Hence we so frequently hear of rough, elevated areas in the puerperal uterus!

In thirty cases of post partum and post abortum sepsis which came to autopsy, placental tissue was found in only one. This single instance was that of a young woman with thrombophlebitis post abortum, in whom I tied off the pelvic veins and performed hysterectomy as a last desperate resort. The uterus contained a small amount of placental tissue at one tubal angle. It is of interest to add *that she had been curetted* before admission.

I have dealt in greater detail with the preceding important and frequent groups of cases, which represent more than seventy-five per cent. of all the curettages in my series. I now turn to a less common, but likewise, important, group, that of

4. *Ectopic gestation.* As you know, the symptoms of this disease at times closely resemble those of incomplete abortion—amenorrhea, moderate rise of temperature, followed by cramps and irregular bleeding of varying intensity, sometimes also by the expulsion of "uterine casts." The more subacute the course the greater the resemblance. Unless additional details in the history are elicited or a mass is felt lateral to the uterus in the annexal region, a serious mistake is sure to be made, and disaster precipitated by curettage. In a series of eighty cases of ectopic gestation which I have reported (3), no less than eight—ten per cent.—were curetted. One of this number was curetted in the hospital, tubal rupture resulted, and, though prompt measures were taken, the patient never rallied from the shock and loss of blood. Whenever even the slightest shadow of a doubt exists, it becomes imperative to avoid curetting, and to await further developments.

Solely for the sake of brevity I shall discuss the other group of cases in less detail, although their clinical importance warrants more extended mention.

5. *Inflammatory conditions.* Again turning to my statistics I find that of 200 patients curetted, post abortum fifty, or twenty-five per cent., showed inflammatory (parametric or tubal) lesions, while in an equal number, not curetted, only twenty-four, or twelve per cent. evinced such morbid changes. This proportion is not accidental and is fully borne out by the experience of many clinicians. It is almost of daily occurrence to have patients referred to the dispensary with recommendation for curettage, although no indications, but rather numerous contraindications, exist. It is true that these women suffer from irregular or profuse bleeding, but examination in a fair number of them shows that the hemorrhage is due to parametric inflammations, chronic gonorrheal cervicitis, pus tubes, or chronically diseased annexa with adherent retroflexions. The task of convincing these patients either that operation is not advisable, or that a more serious interference is required, is neither easy nor pleasant, particularly as it is necessary to protect the professional reputation of the confrère who has recommended that cure-all for women's ailments—curettage!

6. "*Endometritis.*" Formerly it was the fashion among gynecologists, not to mention the general practitioner, to curette for leucorrhea. To-day a saner viewpoint is gaining ground. The pathologist who shared the responsibility for this condition with the clinician is beginning occasionally to return a report labeled "normal" endometrium, instead of, as formerly, finding every uterine mucosa diseased. As, moreover, the patients are but rarely benefited, and occasionally are even worse off than before (lighting up of a latent cervical infection), we may hope that this practice will be generally abandoned. Leucorrhea in the vast majority of instances is of cervical, not of uterine origin.

7. *Sterility.* In this connection I will merely say that in those instances in which curettage appears to benefit the condition, the *dilatation,* which forms the first step of the operation, is probably the effective agent. Plastic operations on the cervix are of far greater value than curettage. Furthermore, ovarian disturbances most likely play a predominant rôle in female sterility, as I pointed out several years ago (4), and as has been emphasized clinically in an admirable paper recently published by Reynolds (5).

8. *Menorrhagia and metrorrhagia, preclimacteric and postclimacteric hemorrhages.* From the foregoing you might perhaps conclude that I was entirely averse to the use of the curette. If so you are wrong. I am opposed to its use when it is employed without discrimination, often without indication, and sometimes in the face of every contraindication that can exist, in one out of every five gynecological patients, including a not inconsiderable number of nulliparæ or even virgins. There are certain cases in which the use of the curette is not only of value but obligatory, not so much a curative, as a diagnostic agent. This is just the class of cases in which the general practitioner rarely employs the curette! And when he does use it, how often, I ask you, does he have the curettings examined?

The reply to that query has usually been that poor patients cannot afford to, and patients in better circumstances refuse to bear this extra expense. This is an evasion; the physician is at fault. With the united support of the profession I predict that in the course of two years the public could be educated to demand such examination, just as they now ask for a Wassermann test in suspected syphilis. Were the demand once established, the board of health, I feel sure, would make such examinations for the poor, just as they have in many other fields.

In menorrhagia, metrorrhagia, preclimacteric and especially postclimacteric hemorrhages,, where inflammatory lesions do not absolutely contraindicate, there the curette should be employed, sometimes even repeatedly. A certain proportion of cases will be cured or benefited; in others the failure will indicate that x ray treatment should be employed; in still others malignant tumors will be discovered at *an early stage,* so that radical and permanently operative measures can be undertaken.

I do not wish further to dilate upon this subject. I am well aware that, as the late Professor Alphons von Rosthorn, of Vienna, was wont to say, "the treatment of abortion is the bread and butter of the general practitioner," that our patients often themselves ask for the operation, and expect it to cure all their ills, that patients have left you because you refused to curette in case of bleeding. All this is true, but it rests with yourselves to change your views, and simultaneously to reeducate the public.

In conclusion. I desire to reiterate that the use of the curette is rarely necessary in abortion, practically never after labor, harmful in pelvic inflammation, and often fatal in ectopic gestation. Simple as the operation is in itself, it is a dangerous procedure unless controlled by careful limitations. The instrument is of value mainly for diagnostic purposes.

This paper was written in no carping vein, nor did any unfriendly spirit of criticism actuate its conception. The reason it was written was because we cannot expect the general practitioner to possess either the diagnostic or the operative training of the specialist. The specialist taught the practitioner the advantages of the operation; it is, therefore, his duty, likewise, to warn him of its dangers.

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983 PARK AVENUE.

GASTRIC ULCER.

Its Nonsurgical Treatment.

By EDWARD E. CORNWALL, M. D.,
New York,
Attending Physician, Williamsburgh and Norwegian Hospitals; Consulting Physician, Bethany Hospital, Brooklyn.

An ulcer is essentially a surgical condition, and its treatment naturally belongs to surgery. The reason why we entertain the idea of a nonsurgical treatment of an ulcer of the stomach is found in the anatomical conditions present. An ulcer of the stomach lies so deep in the body that it can be treated surgically only after a previous preparation, which involves opening the abdominal cavity and exposing the patient to the dangers of a capital operation. It is that fact which makes it our duty to seek for methods of treatment for this condition other than surgical, if any such can be found which are efficacious.

The situation seems to be this: There are many cases of gastric ulcer which can be cured only by a radical operation; there seem to be also many cases which terminate favorably without an operation; autopsies frequently show scars of healed gastric ulcers, and cases showing clinical symptoms of gastric ulcer which have apparently ended well under treatment by nonsurgical methods have relapsed, and the infallibility of surgical treatment has not yet been demonstrated.

To tell how to differentiate the cases of gastric ulcer which should be operated in from those which can with justice to the patient be treated by nonsurgical methods, is not within the scope of this paper, nor is it within the power of the writer. He governs his conduct in this matter by the following general rule: He assumes that practically every case of gastric ulcer should be given a chance to be cured without an operation, and treats it accordingly at least once. If marked improvement, to say nothing of apparent recovery, fails to take place, then the question of an operation is considered. If after apparent recovery a relapse occurs, then the question of an operation comes up, but not so acutely as in the former class of cases; for sometimes a second course of nonsurgical treatment is more successful than the first. But if a relapse occurs after two apparent recoveries, with no good reason, then it is in order to consider seriously the question of an operation.

The nonsurgical treatment of gastric ulcer consists essentially in keeping the ulcer as quiet as possible. This involves primarily extensive modifications of the diet, also, except in the very mild cases, rest in bed.

The dietetic problem involved in keeping the ulcer as quiet as possible is solved most simply by exclusively rectal feeding, but that cannot be kept up in most cases for a sufficient length of time, and it becomes necessary to use the stomach. The problem then presents the following conditions: 1. To reduce to a minimum the quantity of substances introduced with, or produced from the food, which are directly irritating to the ulcer. 2. To provide such articles of food as will least excite the acid gastric secretion. 3. To provide such articles of food, and so to administer them that gastric peristalsis will be kept as low as possible. 4. To keep the stomach as empty as possible by providing food which will not naturally linger in the stomach and administering it in such a way as to facilitate its rapid passage through the stomach.

For convenience of dietetic treatment cases of gastric ulcer may be divided into three groups: 1. Severe; 2, average; and, 3, mild. The severe cases are those in which obvious hemorrhage has taken place or in which a high degree of gastric irritability exists. The average cases are those which show pronounced symptoms, but in which no obvious hemorrhage has occurred, and in which gastric irritability is of moderate degree. The mild cases are those in which the symptoms are less pronounced and intermit for considerable periods.

TREATMENT.

1. *Severe cases.* The patient should be put to bed and kept there for at least four weeks. During the first two weeks he should lie as much as possible on his right side during the daytime, so that the food may more easily and quickly pass out of his stomach.

During the first four days, and in some cases for a longer time, the feeding should be exclusively by rectum, as follows:

Dietetic prescription i: 6:30 a. m. Give a drink enema of a pint of warm normal saline solution introduced high up in the rectum, to be retained. An ounce of lactose or dextrose may be dissolved in the enema.

8:30 a. m. give a nutritive enema consisting of five ounces of warm peptonized milk, in which has been dissolved a tablespoonful of dry peptonoids. If the enema is not well retained, two or three drops of deodorized tincture of opium may be added. Usually it will be retained.

12:30 p. m. Repeat the nutritive enema.
5 p. m. Repeat the nutritive enema.
8 p. m. Repeat the drink enema.
10:30 p. m. Repeat the nutritive enema.

Every other day a colonic irrigation with warm normal saline solution may be substituted for the first drink enema, if the rectal feeding is long continued or the rectum shows signs of irritability. A colonic irrigation or drink enema may be given in the middle of the night if the weather is warm and the patient complains of thirst.

After four days of rectal feeding, in a large proportion of cases, stomach feeding may be begun as follows:

Dietetic prescription ii: Every two hours between 7 a. m. and 9 p. m., give five ounces of a mixture of equal parts of peptonized milk and barley water. In addition, give three glasses of orangeade made with the strained juice of one orange and one ounce of milk sugar to each glass. Instead of peptonized milk, barley water and a soluble cereal food may be given.

Feed through a tube so that the patient will not move the body unnecessarily. Have everything warm, not hot, except the orangeade, which may be cool but not cold. If these amounts are not well borne, give smaller amounts, and, perhaps, two of the drink enemas, above described

If the stomach takes the foregoing prescription well, the following prescription may be substituted for it without delay of more than one day:

Dietetic prescription iii: 7 a. m. Give five ounces of a two to one mixture of scalded milk and barley water.

8 a. m. Give five ounces of buttermilk, or lactacidized milk, or peptonized milk.

9 a. m. Give seven ounces of orangeade, or similar fruit juice preparation, sweetened with one ounce of lactose or dextrose.

10 a. m. The same as at 7 a. m.
11 a. m. The same as at 8 a. m.

12 a. m. Give five ounces of grape juice, or five ounces of a one to three mixture of grape juice, pineapple juice or orange juice and milk, well mixed.

1 p. m. The same as as 7 a. m.
2 p. m. The same as at 8 a. m.
3 p. m. The same as at 9 a. m.
4 p. m. The same as at 7 a. m.
5 p. m. The same as at 8 a. m.
6 p. m. The same as at 12 m.
7 p. m. The same as at 7 a. m.
8 p. m. The same as at 8 a. m.
9 p. m. The same as at 9 a. m.
10 p. m. Give one ounce of olive oil.

The various milk combinations may be interchanged freely. During the night more of the orangeade or similar preparations may be given.

After feeding according to the foregoing prescription for six days, the following changes in the diet can usually be made:

Dietetic prescription iv: Give dietetic prescription iii modified as follows: Substitute for the feedings at 8 a. m., 3 p. m., and 8 p. m., five ounces of moist cooked cereals, preferably boiled rice, cream of wheat, or farina, served with cream of butter but no sugar, or, if they agree, give the three cereal feedings in combination with the feedings at 9 a. m., 3 p. m., and 9 p. m. in the same prescription.

By the beginning of the third week the diet can usually be changed to the following:

Dietetic prescription v: 7 a. m. Give eight ounces of milk and barley water mixture.

9 a. m. Give six ounces of cream of wheat or other acceptable cereal, with cream or butter, but no sugar.

11 a. m. Give eight ounces of buttermilk or lactacidized milk.

1 p. m. The same as at 9 a. m.
3 p. m. The same as at 7 a. m.

5 p. m. Give a plate of milk toast and a wine glassful of grape juice or pineapple juice.

7 p. m. The same as at 11 a. m.

9 p. m. Give six ounces of cooked cereal or macaroni, with cream or butter.

10:30 p. m. Give one ounce of olive oil.

Orangeade and other similar preparations may be taken freely if they agree.

Cereal foods and other similar preparations may be added to the milk and barley water mixture.

Early in the fourth week the diet may usually be still further modified, as follows:

Dietetic prescription vi: 7:30 a. m. Give from six to eight ounces of moist cooked cereal with cream or butter, two slices of toast with one or two poached eggs, or one or two ounces of cream cheese or pot cheese; and an orange or a baked apple.

10 a. m. Give eight ounces of lactacidized milk, or milk and barley water with cereal food.

1:30 p. m. Give from six to eight ounces of milk soup (viz., cream of corn, celery, potato, or carrot); six ounces of boiled macaroni or rice with butter; two slices of toast with one or two ounces of cream cheese or pot cheese; a baked potato; and a small portion of spinach if it agrees.

4 p. m. The same as at 10 a. m.

6:30 p. m. Give a plate of milk toast; a baked apple; and two slices of toast with one ounce of cream cheese.

10 p. m. Give one ounce of olive oil.

Give orangeade and the fruit preparations freely.

In the fifth week, if the symptoms have all disappeared, a return to ordinary diet may be begun, with restrictions. This return should be very gradual. The easily digestible vegetables, particularly spinach, lettuce, string beans, baked potato, carrots, *raw* cabbage, and possibly green corn, are desirable to combat the constipation which is so often present. The bland fruits also should be given as freely as possible. Beside eggs, a little meat, fish, and poultry may be added to the diet, but in general it may be said that animal food, except milk, should be very much restricted for a long time, also sweets.

The foregoing dietetic prescriptions are given as samples or standards, and admit of extensive modifications to suit special cases and conditions.

The periods during which the various prescriptions should be taken vary in length in different cases; the periods given are those which will be found satisfactory in a good proportion of cases.

Beside the regulation of the diet, which is the most important thing in the treatment, together with rest in bed, it often happens that other therapeutic procedures are necessary to meet particular symptoms and complications.

The bleeding cannot be directly treated, but gastric peristalsis can be quieted by morphine, which should be given in sufficient doses for the purpose.

For constipation, olive oil may suffice, but usually other laxatives are required. Vegetable laxatives should be preferred.

The anemia, which is usually present, calls for iron, which can be most advantageously given in the form of the peptonate.

2. *Average cases.* The treatment of the average cases differs from that of the severe cases only in the fact that the preliminary course of rectal feeding may usually be omitted, and that the changes from one dietetic prescription to that next in order can often be made more quickly. In these cases, however, it is good treatment to begin with a few days of rectal feeding.

3. *Mild cases.* Patients with mild symptoms usually refuse to stay in bed, and have to be considered as ambulant cases. Their treatment is less satisfactory than it would be if the subjects remained in bed for the regular period. These cases can usually begin with dietetic prescription v, above mentioned, or, if it is convenient for them to take it, dietetic prescription iv. If they do not do well while walking around after a short trial, the writer insists on their submitting to the rest in bed and the regimen recommended for the average cases. Many of these cases do well, especially those whose symptoms occur at intervals and are brought on by dietetic indiscretions.

Such is a brief résumé of the main features of the nonsurgical treatment of gastric ulcer employed by the writer.

As an illustration of the possibilities of nonsurgical treatment in a severe case of gastric ulcer, the following report is given:

Case. Gastric ulcer with severe hemorrhages; patient fed exclusively by the rectum for twenty-four days; recovery. The patient, a man of twenty-six years, had suffered from "indigestion" at different times during the past two years, but had had no other symptoms pointing to gastric ulcer. The pains in his stomach came on one or two hours after eating and were relieved by taking more food.

He was admitted to the writer's service in the Norwegian Hospital, April 4, 1911. Two days before admission he was taken with nausea while at work, and suddenly collapsed. About ten minutes later he vomited a small quantity of blood. Twice during the next forty-eight hours he vomited large quantities of blood, estimated at over a quart. On admission to the hospital he was very pale, his mucous membranes were blanched, and a soft, systolic murmur was audible in the pulmonary valve area. Surgeons were called in consultation, but they refused to operate on account of the extreme anemia.

He was put on dietetic prescription I, as already described, and morphine hypodermatically, sufficient to keep the respirations down to fourteen a minute, was ordered. Six days later he again vomited blood, twice, with an interval of fifteen minutes, the aggregate amount being thirty-five ounces. On the eleventh day after admission he complained of a sensation of fullness in the stomach, and a few minutes later vomited twenty ounces of blood. On the twelfth day he complained of no gastric symptoms but was absolutely blanched.

The rectal feeding and the morphine were kept up steadily for twenty-four days, during which time absolutely nothing entered the patient's mouth except a moist rag and an occasional small piece of ice. He retained the enemas well, and his respirations were kept between twelve and fifteen a minute, and his pupils were kept well contracted.

April 29, 1911, the twenty-fifth day after admission, he was first given food by mouth, in the form of a little dry peptonoids dissolved in hot water. This was retained, and the following day he was allowed peptonized milk and barley water, and subsequently the dietetic course already outlined. His improvement was continuous, and his recovery apparently complete.

CONCLUSIONS.

In conclusion the writer would like to repeat and emphasize the following points:

Practically every case of gastric ulcer is entitled to at least one chance to recover without an operation, and most of them are entitled to more than one chance.

The nonsurgical treatment of gastric ulcer consists essentially in keeping the ulcer as quiet as possible, which is best effected by rest in bed for at least four weeks, and a diet which will least irritate the ulcer and least excite gastric peristalsis.

Rectal feeding in the beginning is positively called for in all severe cases, and is desirable in the others. It may be kept up for a considerable period, especially if morphine is given in fairly large doses.

The ulcer is least irritated by articles of food which are free from spices, condiments, acids, sugar, and indigestible residue, and which do not powerfully excite the secretion of the acid gastric juice. In other words, the ulcer is least irritated by a diet of modified milk and milk products, cereals, and bland fruits.

Gastric peristalsis is least active if the food, in addition to being chemically unirritating, is fluid or semifluid, also if it is introduced in small quantities at a time.

Speedy emptying of the stomach is facilitated by the patient lying on his right side as much as possible during the time that food is in his stomach.

The return by the apparently recovered patient to ordinary diet should be very gradual; especially moderate for a long time should be his indulgence in food that is slow of digestion, of sweets, and of animal food which stimulates strongly the secretion of acid gastric juice.

Olive oil is soothing to the ulcerated stomach, is good food, and is laxative.

Drugs, as such, are of very little use in the nonsurgical treatment of gastric ulcer.

1218 Pacific Street, Brooklyn.

THE HEMATOLOGICAL EQUILIBRIUM IN PULMONARY TUBERCULOSIS.*

By Charles Rayevsky, M. D.,
Liberty, N. Y.
Visiting Physician, Workmen's Circle Sanatorium.

These studies were begun in the latter part of 1908, after the encouraging reports on the Arneth count by Klebs in this country and by various other observers in Europe. They were begun with high expectations from the Arneth count, which was thought to be a settled aid of known quality and was adopted as a routine in tuberculosis work. Great was the disappointment of the writer when the very first blood smear had shown quite a different picture in the morphology and arrangement of polynuclear cells than the one shown in Arneth's book, *Die neutrophilen weissen Blutkörperchen.* Instead of being broad, flattened, with well defined demarcation lines, they were often, rather too often, found to encroach one upon another, intertwine, and cross in such a manner that counting them was a task well nigh impossible for an inexperienced eye.

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Fifty smears were then studied for the sake of technic alone. To learn how to distinguish the number of nuclei and their relation one to another, from three to five hundred cells were studied on each smear, so that 20,000 cells were studied before counting was begun. And still, even with these preparations, the Arneth count gave contradictory results. Good counts with little or no shift to the left found in advanced cases, while bad counts observed in incipient or good cases (as judged by physical examinations and histories) were met too often to consider the Arneth count to be of service in the diagnosis or the prognosis; and after one year of work, after another twenty thousand cells had been carefully counted, more than a hundred slides have been discarded and a new study begun.

This time it was not based on the Arneth count alone, but in combination with the estimation of the other elements of the blood, the leucocyte count, the hemoglobin, differential count, the eosinophiles, etc., were taken into consideration. The following is the result of 352 such observations on the blood obtained from 181 patients.

Almost every observer has reported a different count on every kind of cell in the blood; this is probably due partly to the personal equation of the observer and partly to the climate and other environments surrounding the patients; it therefore became imperative to establish a standard for my own observations. For this purpose the blood of ten healthy persons was examined, twenty-three examinations being made in all, the result being as follows:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
90.33%	6060	26.6	3.26	3	5.33	34.74	42.1	15.5	2.33

Total nuclei (our index), 274.

Arneth's polynuclear picture is as follows:

I.	II	III.	IV.	V.
5	35	41	17	2

Total nuclei, 276.

The blood was invariably taken between the hours of 10:30 and 12 a. m., about three or four hours after breakfast, so as not to be interfered with by the leucocytosis of digestion. The blood was taken at different mornings from the same individual, so as to observe if there were no great changes in the same subject; such changes were not noticeable to such an extent as to invalidate the observations. The difference in the hemoglobin proportion and white cell count did not vary more than six per cent. on an average, never higher than eight per cent., and these variations would go parallel most of the time. The total nuclear count (our index) would show a variation of not more than four nuclei, most of them only one or two nuclei, and five times it was the same as on previous examinations.

At the earlier part of our work the Bushnell and Treuholz index for the Arneth count was used, but later we discarded it and adopted the total number of nuclei as our index, for reasons that will be explained later.

In all, from 181 patients 352 blood specimens were examined, not counting of course those that have been discarded, as mentioned above. Some patients' blood has been examined six and seven times, that of others only twice, the majority's (102 patients) only once. After examining about 100 blood smears and studying the histories of the respective cases, some more or less definite conclusions were formed, that the correlation between the various cells is a constant one, that the disturbed equilibrium in their relations is due to the success or failure of the restorative processes that are continually going on.

To save ourselves the labor of tabulating all the 352 observations, we have picked blindly fifty cases, and made up the average from them for tuberculous patients. As these averages would only be slightly changed, if changed at all, when made up from all cases, we have adopted them, so as to contrast them with our averages in healthy individuals.

Our average for tuberculous patients is:

Hmgl.	W.B.C.	Esn.	Tran.	Lymph.	I.	II.	III.	IV.	V.
77.3	10,280	2	4	23	11.34	39.42	39.84	8.00	1.40

Total nuclear count, 249.

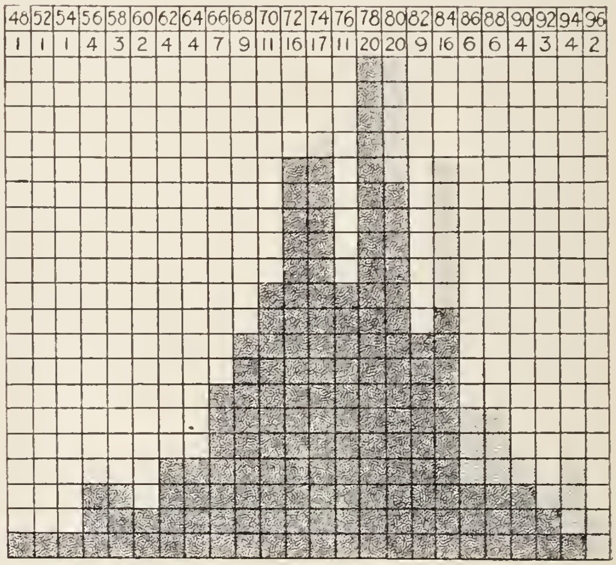

FIG. 1.—Hemoglobin chart. The figures in the upper row designate the hemoglobin percentage, those in the lower row the number of patients; the shaded squares denote doubtful cases, the black squares positively tuberculous cases.

THE HEMOGLOBIN ESTIMATE.

In making the hemoglobin chart, I have used the percentages of the hemoglobin found at the first examinations of the 181 patients, the great majority of whom were tuberculous, but some were doubtful. Those that proved to be at the second or successive examination nontuberculous are not included in this chart or any of our counts. The difference between the hemoglobin average of the healthy and the one of the tuberculous is thirteen. If I should add to this the information that twenty-six of the 181 patients had doubtful cases, that did not appear for a second examination, and that only in two of the cases the hemoglobin was below seventy-seven per cent., and in the other it was eighty per cent. and above, the difference in the percentage would seem much greater and look more important. Still, as an important factor in the diagnosis and treatment of pulmonary tuberculosis, the hemoglobin percentage can hardly serve, as among the nontuberculous we find a good many whose hemoglobin register is below the one of many tuberculous patients. With other elements in the blood chart, with the physical signs, history, etc., the hemoglobin may serve as an additional factor of information, but only as such in considering the progress or the arrest of the disease.

THE RED CELLS.

The red cells in tuberculosis have been studied much earlier than the present studies were undertaken, and no changes were found, neither in the morphology nor in the number of the erythrocytes. The usual explanation given is that while the total number of the red cells may be diminished in pulmonary tuberculosis in the human economy, their number per volume of blood remains the same, as there is a loss in the fluids of the blood as well, these losses being caused by diarrhea, night sweats, and increased expectorations. These observations, as most, if not all, were made in sanatoria or health resorts, where early incipient cases are very few, if any. If red cell changes do occur, they probably do so before night sweats, profuse expectorations, etc., appear as symptoms, i. e., in the very early cases, and such should and could be studied to better advantage in the larger cities, where material of this character is plentiful and can therefore be obtained with ease.

THE LEUCOCYTES.

The number of leucocytes in our cases we found to vary a great deal, from 4,200 to 19,000. Below six thousand we found them only in rapidly progressing cases, otherwise they would vary from seven to ten thousand in the ambulant cases, where the tuberculous process is either quiescent or only very slightly progressive; in the active progressing cases the number of the white cells would be from ten to twelve thousand and sometimes it would reach as high as fifteen thousand; while in lethal cases the number of white corpuscles would run abnormally high, from fifteen to nineteen thousand, or abnormally low—below six thousand or even five thousand. A decrease in the leucocytes, it was noticed, would often be followed by a relapse in cases that were thought to be doing well. I am not prepared to conclude that the decreased number of leucocytes was the beginning of the relapse. I am rather inclined to think that the decreased number of the white cells due to various causes, one among them diet, was not sufficient to withstand a new onslaught of the disease or some intercurrent complication. Here are a few illustrations:

Case I. B. F., Austrian, collector for an industrial insurance company, aged forty-two years, married, regular habits and mode of life; a distant relative died of pulmonary tuberculosis, felt attacks of weakness and shortness of breath coming on too often for the last year; consulted physicians, and the case was diagnosticated properly, with a recommendation to stay in the country a few months. On arrival here patient sought no medical advice, as he felt no pains and felt more comfortable than at home; but he took daily walks over the hills, on the advice of an "experienced" fellow patient, "to increase his breathing capacity." His condition grew worse, weakness and shortness of breath increased, but with very little cough and hardly any expectoration. Physical examination revealed a fibrous condition of the entire right lung with a disseminated infiltration of lower half of left. Temperature 97.5° F., pulse 124, respiration 34. Blood examination gave:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
68	5400	17	0	6	18	34	38	9	1

Total nuclei, 241.

Patient was ordered perfect rest, a richer protein diet than he usually had, and within two weeks began to improve somewhat as to weakness and shortness of breath. Blood examination showed the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
70	6200	18	0	7	16	34	39	10	1

Total nuclei, 246.

The slight improvement in the leucocyte count and the still smaller increase in the other elements of the blood were probably due to rest and better feeding. The patient got tired of rest, resumed his walks, and grew worse again; with this was a decline in the leucocyte count below 5,000. He was taken back to the city, where he died in about two months. This was probably a case where the bone marrow or the other leucocyte sources were either exhausted by the prolonged disease, or for other reasons were not able to produce white cells.

Case II. A. A. F., Irish-American, clerk, aged thirty-four years, single, alcoholic habits, family history tuberculous. A far advanced case, cavities in upper and lower right, consolidation of upper half of left, no complications, no other organs being involved. First blood examination has shown the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
70	5600	13	6	11	30	49	18	3	0

Total nuclei, 194.

The second examination a week later revealed:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
62	4200	10	4	15	54	31	14	1	0

Total nuclei, 162.

He died three weeks later.

Case III. R. S., female, aged twenty years, far advanced, had been sent away from a sanatorium to make room for a more hopeful case. On arrival at Liberty, contrary to expectations, she began to improve. Treatment at the beginning was symptomatic, and the first thorough physical examination was made four weeks after her arrival with the following result: Good sized cavity in the left upper lung and a disseminated infiltration over the rest of both lungs. Bacilli found in the urine, left kidney involved. Blood examination gave the following picture:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
68	12,000	25	2	3	10	38	41	9	2

Total nuclei, 225.

Patient was feeling well for some time, but her ear and throat became affected, and she grew worse. A blood examination revealed the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
56	15,000	14	1	3	19	49	31	1	0

Total nuclei, 214.

One month later patient, growing still worse, gave a blood picture as follows:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
Not taken	19,000	10	0	11	26	53	21	0	0

Total nuclei, 195.

Patient died two days later.

This was a case where the leucocytosis was high, the bone marrow and the other sources of white cells were very responsive, which probably explains why the patient clung to life so much.

I have seen eight more lethal cases where blood counts were made and the leucocytosis was high in them.

Arneth, in his work, mentions two cases where white cell counts were made. He leaves these counts without comment, as he is intent on the polynuclear cell; these counts are similar to those of mine. One case (68. W. K.) has 16,500 in the prelethal state, while the other (70. G. A.) shows only 6,200 white cells, what is certainly too low for an active case in pulmonary tuberculosis. I have also invariably noticed improving cases that stay improved or become arrested later on show a gradual loss in leucocytes and come down to almost 7,000. It is from these and other cases that came under observation that the impression was gained that though the leucocyte count by itself may not be of great diagnostic value, it is an important aid in treatment and prognosis. A low white cell count in any active case is a great drawback, an evidence of lack of resisting powers. A sudden rise in a quiescent case is evidence that some deleterious process has gained a foothold, and we must be on guard. A gradual rise in the white cell count with a corresponding change in the other elements in the blood, together with physical signs of improvement in an active case, is a welcome evidence of an increase in resisting powers, and that the improvement is not a momentary one.

THE EOSINOPHILES.

The eosinophile seems to be a cell of some significance in pulmonary tuberculosis. As to its frequency, there is less disagreement among observers than in reference to other cells. This is certainly partly due to the small numbers in which this cell is found, so that the disagreement cannot be great either, but principally is this on account of the striking characteristic of the eosinophile itself, its sharp contrast to other cells. In my observations on healthy subjects, it was found to be present in an average of a little above three per cent., ranging between two and five per cent., but mostly three and four per cent. In the tuberculous it was always found in a decreased percentage and, unlike the other forms of leucocytes, its increase or decrease in numbers does not depend on the severity or activity of the process, but mostly corresponds to the anatomical and histopathological changes in the lung; and it is always in the inverse proportion, the more extensive is the process; the lower is the percentage of eosinophiles present in the blood. In the far advanced cases the eosinophiles are absent. There are some exceptions. In one of my cases it reappeared to a degree of one per cent. (400 white blood cells were counted) in a progressing case, while in another case (Case ii, A. A. F., cited above) it appeared as high as six and four per cent. in the prelethal state. In several other advanced and fatal cases it was never demonstrable, while patients were under observation.

THE LYMPHOCYTES.

In counting the lymphocytes no distinction was made between the large and small ones. As a rule the large lymphocyte was found to comprise about ten to fifteen per cent. of the entire number of lymphocytes, or only about two to three per cent. of the entire leucocyte count. In a very few exceptional cases the large lymphocytes were the predominant ones. With others I am inclined to believe that both are one and the same class of cells.

As to importance, the lymphocyte seems to be the most important cell in pulmonary tuberculosis, the main support of all the blood elements in the disease. Its numerical changes would be followed by changes in the leucocyte count and also by one in the neutrophiles. A decrease in the number of lymphocytes would always indicate either a coming exacerbation of the disease or an arising complication. In my observations I found it to be the most sensitive register of the state of resistance to the disease. A fall in the lymphocyte count below or near twenty, or generally a fall in its count, was a warning to be on guard against a coming storm. In this as in the case of lowered leucocytes it seems the decrease in the number of lymphocytes has caused a decrease in the resisting powers. The lessened numbers even with an increased leucocytosis were always a danger sign that proved to be true every time.

CASE IV. Miss M. M., aged twenty-three years, moderately advanced pulmonary and laryngeal tuberculosis, doing comparatively well, regaining health, voice beginning to be less husky, pain in the throat from constant to occasional only. Blood examination showed:

W.B C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
9,400	22	1	3	8	33	46	11	2

Total nuclei, 266.

One month later patient was doing still better, pain in throat had not been felt for the past nineteen days, voice only slightly husky at times. Blood showed:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
8.000	25	1	4	4	34	43	14	2

Total nuclei, 270.

Patient got careless, dropped out of observation for three months, went to the city visiting; on return complained of tired feeling, anorexia, insomnia, but no cough nor pain, pulse rapid, 132, temperature 98.2° F. Blood gave the following picture:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
12,600	17	1	5	10	46	36	8	0

Total nuclei, 242.

The low lymphocyte, with the high leucocyte count indicated that an active process was going on, the resistance is to small for it, and that a stormy time is to be expected. Patient was put to bed, hospital rest ordered, still temperature rose within a few days, patient grew worse from day to day, had an acute exacerbation. It was a case of autoinoculation; as soon the lymphocytes notwithstanding the high leucocytosis, were decreased, the patient broke down. Later in this attack the lymphocyte count came down to fourteen. In about six weeks patient began to improve and the blood gave the following picture:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
9.600	20	1	2	10	36	45	9	0

Total nuclei, 253.

Of nine cases in 1910 whose lymphocyte count was below 20, and did not rise notwithstanding treatment, only one was known to be alive in July, 1912; five died within a few months, two died about one year later, and one could not be traced. Of twelve patients with low lymphocyte counts in 1911, four were known to be living in July, 1912, six are dead, and two could not be traced.

As in the case of leucocytes, I have cited counts from other observers, who were not bent on the leucocyte, to prove my contention, so here I shall quote others, namely Swann and Karsner, whose attention was directed to the esinophiles exclusively, and were not considering the lymphocytes.

Their case one has only one count and will not be considered. Case II (A. A. F.) shows on November 9, 1904, lymphocytes 14.8 per cent.; on November 17th 8.8 per cent., on November 23d 12.4 per cent.; five days later the patient died. Case III. November 9th lymphocytes 13.6 per cent., November

17th 5.6 per cent., November 23d 18.2 per cent., November 30th 7.6 per cent.; four days later the patient died. Case IV. November 9th lymphocytes 14.8 per cent, November 17th eight per cent., January 5th (1905) eleven per cent.; patient subsequently died. Case V was very instructive; patient had a lymphocyte count of 33.6 per cent. and was in an ambulant condition, but later on began to grow worse, got weak, and was put to bed; his lymphocyte count came down to twelve per cent.; before death his lymphocyte count increased. This prelethal increase is quite prominent in a good many of their cases, but it is not constant. I have not noticed enough of it in my observations to draw any conclusions, but this failure on my side may be due to the fact that I did not have the control of the patients in their last moments, and therefore could not make the majority of my counts as late as Swann and Karsner made theirs. Of the thirty-one cases Swann and Karsner have reported twenty-nine terminated fatally, the other two did not terminate in this manner, but these two cases had a good or a fairly good lymphocyte count.

THE TRANSITIONALS.

In healthy subjects I found transitionals to be present in the blood in the average of three per cent., in tuberculous individuals the average reached only four per cent.; at first sight the difference is not great, but the changes in progressing cases are quite noticeable. It ran up at times to fifteen per cent. in rapidly progressive and lethal cases, while in the stationary or improving cases there was rarely a change from the healthy average, always ranging between two and four per cent. If it rose above it, that would indicate some increased activity in the diseased process. The increase in the percentage of the transitionals seems to go in a parallel line with the Arneth count; the more this shifts to the left, the higher the percentage of the transitionals.

As transitionals, only such were considered whose nuclei have shown a deep indentation (at least half a diameter of the cell) and assumed a horseshoe shape or a semicircular appearance, but still occupying almost the entire cell. From their close relation to the Arneth drift leftward the conviction has grown firmer that the transitional is the parent cell of the polymorphonuclear neutrophile.

THE ARNETH OR POLYNUCLEAR COUNT.

The Arneth count has been a bone of contention for the last five years among American and European observers; there are hardly two observers that have perfectly agreed with Arneth estimate of his polynuclear picture in healthy individuals; while on the blood picture of the diseased some have asserted entirely opposite results, drifts to the *left* in cases *improving* from pulmonary tuberculosis. In my first experiences I noticed that my counts did not coincide by far with those of Arneth. I have therefore counted fifty smears, counting 300 to 500 on each, and then counted one hundred smears, counting 200 in each, so I counted about forty thousand polynuclear cells before my counts agreed with Arneth's and before my actual work began. I examined the blood of ten individuals in perfect health, making twenty-three examinations in all, and nine almost totally agreed with Arneth's. Average in my counts:

I.	II.	III.	IV.	V.	Index (total nuclei).
5.33	34.74	42.00	15.50	2.33	274

Arneth's healthy average:

I.	II.	III.	IV.	V.	Index (total nuclei).
5	35	41	17	2	276

It is worth while to note that some observers who reported three years ago discrepancies between their counts on blood from healthy subjects and those of Arneth, have reported lately much smaller discrepancies and come nearer to Arneth's normal blood picture. It seems that the confusion on the Arneth count depends, first, on the experience of the observer, and, second (a very important item for consideration), the personal equation of the observer. I am therefore of the opinion that the average given by Arneth in round figures is about the nearest to reality, and I as well as others can give up with good grace our averages expressed in rows of decimals for the round figures of Arneth.

As an index, the total number of nuclei in all five divisions was adopted. I think it more appropriate than the generally accepted index of Bushnell and Treuholz. Bushnell and Treuholz make the *sum of cells* in the first, second, and half of the third division as their index. Their contention—that as the shift is toward the left half of the table, therefore the increase in that half should and must be the index—is certainly a valid contention, but valid only to an extent. I have noticed, as probably others did, that the shift to the left is too often not uniform—that the shift is usually greater from division two to division one, and from division four to division three, while division five would be affected much less: more than this, there are at times, in advanced cases, shifts to the right during improvement or after arrest of disease; there are more cells in the division five than there are in the healthy, as the following will illustrate:

CASE V. Mr. H. S., a far advanced case, suffering for twelve years from pulmonary tuberculosis; he was in the resort all this time, took cure and saw physician only in time of exacerbations, or when he felt better after them and wanted to be freed from strict rules of discipline. On one examination during an exacerbation his Arneth count ran as follows:

I.	II.	III.	IV.	V.	Index.
15	37	37	9	2	246

This was certainly a shift to the left, but the division five held its own, while division three did not give in very much; more noteworthy is his Arneth blood picture when improved:

I.	II.	III.	IV.	V.	Index.
4	34	42	16	4	282

His index and his division five were better then in the healthy. As to our Case III, cited in reference to leucocytes, its division five contained two with a shift toward the left otherwise.

CASE VI. Mr. A. P., moderately advanced case of three years' standing, complicated with asthma, that he had been suffering from since early childhood, his Arneth count was as follows:

I.	II.	III.	IV.	V.	Index.
9	40	39	8	4	258

CASE VII. Mr. M. R., moderately advanced pulmonary and laryngeal tuberculosis, diabetes mellitus was the complication; his Arneth was as follows:

I.	II.	III.	IV.	V.	Index.
11	32	44	10	3	262

From the 352 counts thirty could be cited that were of such character. The most important about them is the fact that this peculiar count was met only in advanced cases and usually when the process was quiescent; they were never met in the incipient cases. For the explanation of this I could not think of anything but the theory of survival of the fittest, i. e., I had to construct the following hypothesis: "The higher nucleated cell that passed through a cycle of development under adverse environments is comparatively a more resistant cell than the cell with the same number of nuclei, that developed under ordinary circumstances."

The Bushnell and Treuholz index gives no clue about these more resisting cells. The resistance of cells, according to some observers, depends on the number of nuclei they contain, the nuclei being the chief factors either in the phagocytosis or in the antitoxine production. The Bushnell and Treuholz index deals with the first half of the Arneth table, with the number of the younger cells, it masks the relation between the division 1, 2, and 3, and tells nothing about the nuclei; their index therefore shows the readiness or the ability of the bone marrow or the other source to produce polynuclears, but on this point the white cell count gives about as much of information. From the Arneth count we expect more information about resisting characteristics than this. I, therefore, in view of the double shifting and the retention of their numbers by the higher nucleated cells, adopted as an index the total nuclear sum.

When the observations were complete and also the greatest part of the paper, I looked over my counts once more, those of Arneth, and of other observers that confirmed Arneth, and I was agreeably surprised by the following coincidence: In the healthy Arneth blood picture the sum of nuclei in the divisions one and two plus half the division three almost equals the sum of nuclei of half the division three plus those of four plus those of five; this points to an equilibrium in the Arneth blood picture. I decided to try this as an index: from this arrangement of cells I concluded that it takes in a healthy subject an equal amount of nuclei in the left half of the chart to produce a number of higher nucleated cells with an equal amount of nuclei; should then the number of nuclei in the right half of the chart become less than in the left half, that would signify that the cells as designated in the left half of the chart are of a lessened resisting power or they are meeting more difficult environments, and therefore, while undergoing the cycle of development, are not able to reach a degree of higher nuclearity than otherwise. The lessened resistance, whether due to a weaker cell or to more unfavorable surroundings, would be then in the same proportions as the number of nuclei of the higher nucleated cells of the right are to the number of nuclei in the cells designated in the left half of the chart. Considering the ordinary resistance to be one hundred per cent. (the number of nuclei in both halves of the chart being equal), we can figure out the resistance in percentage by the following equation: X:100=(the sum of nuclei in the right half): (the sum of nuclei in the left half). To illustrate, one of our cases had the following Arneth count:

I.	II.	III.	IV.	V.
20	43	29	7	1

The equation in this case should be constructed as follows:

$$X:100=(43.5+28+5):(43.5+86+20)=51 \text{ per cent.}$$

Those whose counts on healthy subjects do not agree with Arneth's will have to work out two equations.

I have picked out twenty cases from my records, cases in various degrees of activity and extents of the processes of the disease, and found that this index gave a good measure of their resistance, judging by their subsequent histories. It would take too long to illustrate with cases; any one can easily verify it from those cited above.

THE TECHNIC.

As to technic, the cleanliness and the sterile conditions of the slide and the noncontamination of the blood was well taken care of. The Wright's stain was used principally; of other stains the Nocht-Jenner gave quite satisfactory results, but Wright's gave the best.

The blood smears were never examined the day they were made, but when a sufficient quantity was collected, two men were engaged in the counting, one at the microscope, who called out the cells as he saw them; he did not know whose blood was being examined, nor did he know how the count was running, except from a vague idea received while calling out the cells; the other man kept the tally sheets. All cells were counted and placed in their columns in the tally sheets. Polynuclear cells, whose nuclearity could not be determined after five minutes of observation, were placed in a special column of undetermined, so as not to interfere with the count of lymphocytes and other cells. When eighty cells were counted, the one at the tally sheets kept closer watch, so when one hundred cells were counted, he had the percentages figured out and noted without telling anything to the one at the microscope; when the count of the second hundred was also complete, and if the averages of the lymphocytes in relation of the first hundred to the second was more than ten per cent., a third hundred would be counted, and if the percentage of the third hundred was not within the variations of the first two hundreds a fourth one would be counted, and the average would be made up from the four hundred. The one at the microscope took no part in these calculations.

As to the polynuclears, the total nuclear sum of the cells counted in the first hundred was compared with the total nuclear sum of the second hundred, and if the difference was not greater than *ten*, then enough nucleated cells would be counted so as to have counted two hundred nucleated cells and an average made up, but if the difference was greater, a third hundred would be counted and its nuclear sum be compared with average of the former two hundred, and if the difference was more than four per cent., a fourth hundred would be counted and an average made up. Three hundred cells I had to count in about fifteen per cent. of all the cases, but four hundred only eight or ten times in the three hundred and fifty-two counts.

From observations the impression was gained that the lymphocyte count generally runs parallel with the Arneth count. In the desire to verify this contention, and also to see the effect of tuberculin on the Arneth count and to note differences in personal equations, the staff of the Workmen's Circle Sanatorium was requested to make differential and Arneth counts on all new arriving patients, and also to make counts from the blood of patients who would react to tuberculin given for diagnostic purposes (O. T.). Of these reacting patients the blood was to be examined during and forty-eight hours after reaction. To have as little influence over the counts as possible, the object of the investigation was not told to the staff. Not being aware of the element of personal equation in the count, the results in reference to the relation of the tuberculin reaction was almost lost; one of the staff would make the count on arrival of the patient, i. e., before the reaction, another during reaction, and the one forty-eight hours after the reaction was quite often made by a third person. Still four cases of reaction were observed by one and the same person and these four cases show a diminished lymphocyte and Arneth count and a return to the previous one or above it after the reaction was over.

In reference to parallelism of the Arneth and lymphocyte counts, thirty-seven counts were made by one and the same man on newly arrived patients, and these counts bear out the contention that the higher the lymphocyte count, the higher also is the Arneth's. Accompanying chart illustrates this.

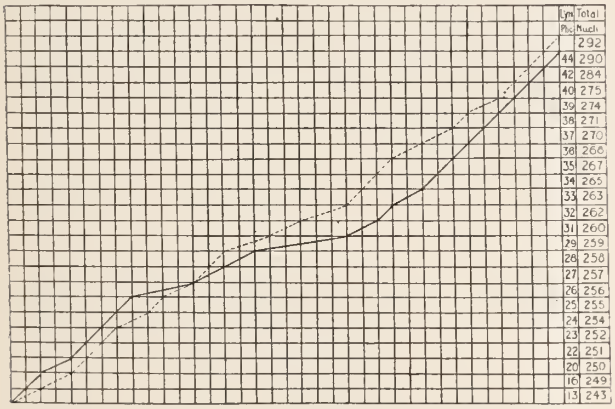

FIG. 2.—Illustrating parallelism between the lymphocyte count and the total nuclei in the Arneth count. The broken line denotes the Arneth count, the black line the lymphocyte count.

This parallelism is constant in the quiescent or slowly progressing cases, while in the others this is disturbed, and from these disturbed condition the impression was gained that it is the lymphocyte that is the pivot point in the equilibrium of the blood. It is either the more sensitive element or the one whose presence in adequate proportion is required to keep the polynuclears in their normal numerical relations. It is the lymphocytes that become first affected and are followed by changes in the polynuclears.

CASE VIII. Mrs. M. M. N., German, worked as a waitress, kitchen maid, and kept at intervals a boarding house for tuberculous people; complained of tired feeling, unusual with her, loss of appetite, an occasional cough in the morning; as to physical signs they were negative according to some and suspicious according to others who examined her. Blood gave the following picture:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
94	6,400	16	9	8	9	34	42	13	2

The total nuclear count was 265; according to my personal equation it was a good index, but the lymphocyte count in her case was poor; the patient grew worse, and in two weeks showed high temperature, cough got more persistent. Her blood examination at that time gave the following result:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
86	9,000	14	8	12	15	39	41	5	0!

The total nuclear count came down to 238. Her comparative eosinophilia was probably due to her asthmatic bronchitis that obscured the diagnosis; the patient showed positive sputum afterward.

Our Case IV, that of Miss M. M., serves also as a case illustrating that the disturbance in the lymphocyte count proceeds the one in the count of the polynuclear. I can cite several cases that would illustrate the same, but I believe the two are sufficient.

As to the leucocyte count, the following has been noticed, that it begins to diminish as soon as the lymphocyte count begins to increase; the same Case IV illustrates this.

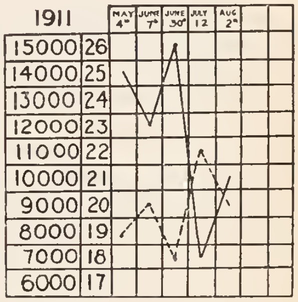

FIG. 3.—Relation of the lymphocytes to the white blood corpuscles count; the broken line denotes the percentage of the lymphocyte, the black line the number of white blood corpuscles.

Taking all in all, the blood pictures obtained by the various counts reflect a great deal the processes going on in our system during disease, and in pulmonary tuberculosis they show the negative and positive phases quite as well, and in my estimation much better than the opsonic index; they show more elements in the blood that are of importance than the opsonic index does. There is no necessity of formation of classes, nor constant new specimens of blood from healthy subjects with every examination; the counts can be made with very few appliances and one case at a time. These counts seem to be of great importance, giving a great deal of information and are such as can be done in the office of the general practitioner, who after all does and will treat the majority of the tuberculous in our communities.

In concluding this paper I desire to express my appreciation to Dr. L. Rosenthal, of the Workmen's Circle Sanatorium, for the careful and diligent way he made the blood examinations on the new arrivals to the sanatorium.

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75 Chestnut Street.

CHRONIC INTERSTITIAL NEPHRITIS.

Report of a Case with the Autopsy Findings.

By S. E. Earp, M. S., M. D.,
Indianapolis,
Professor of Clinical Medicine, Indiana University School of Medicine.

Often many of the pathological lesions in an individual are unrecognized, and if they were known it would not be considered a remarkable circumstance that he died, but rather a surprise that he lived under existing conditions. No one knows so well as the student of the autopsy table how the manifold kindness of Nature permits a person to live with a damaged organ or the absence of one and how perfect are the various means of compensation. An illustrative case to emphasize the facts was presented during my service at the Indianapolis City Hospital. Dr. H. R. Alburger was pathologist and Dr. M. A. Millington house physician.

Case. T. M. was brought to the hospital February 15, 1912, in a profound comatose condition, hence it was impossible to obtain a history. The pupils were contracted and did not respond to light. All reflexes were diminished. Heart sounds were weak and feeble but there were no perceptible murmurs. There was some hypertrophy. There was dyspnea and the chest seemed to be full of gurgling bronchial râles, but it was impossible to make out any definite pathological condition. There were no masses in the abdomen. The urine was passed involuntarily. Sclerosis of the brachial and radial arteries was pronounced and the diminished calibre gave a full and rapid pulse, which evidently would not have been so except for the cardiac hypertrophy. A diagnosis of uremia was made. It was believed that there was a chronic lesion of the kidney. The patient died three hours after admission.

The post mortem findings as I observed them were as follows: Body of white adult male; skin dry and dirty; apparent age eighty years; rigor mortis well marked and post mortem lividity was slight in dependent parts. There was a tumescent mass in the right inguinal region which was a hernia containing small intestine and omentum. An incision was made in the median line from the larynx to the symphysis pubis and then the viscera of the chest and abdomen were exposed. A fair amount of subcutaneous fat was found and the musculature was medium. Costal cartilages were well calcified. General appearance of abdominal cavity was negative. In pleural cavity adhesions were found, breaking easily from the outer aspect of the lung, but strong at the base. Section of the right lung showed marked pneumonic consolidation, but the central portion gave evidence of gray hepatization around the edges of which was red hepatization. All lobes were involved on the outer surface of the lung; the pleura showed evidence of fibrosis. The left pleural cavity presented the formation of adhesions which were firm at the apex of the lung. This lung had healed areas of tuberculosis, but otherwise was normal. The pericardium was thickened, contained ten c. c. of straw colored fluid, but no adhesions. The heart was larger than normal, both ventricles were dilated, there were arteriosclerotic spots on the mitral valve and "chicken fat and currant jelly" clots inside the heart. There were atheromatous spots noted at the arch of the aorta as well as at the abdominal aorta; this was sclerotic. Along the bodies of the dorsal vertebræ to the right were exostoses projecting one half an inch from bodies. The examination of the appendix and intestinal tract was negative. The right kidney was surrounded with a large amount of fat. The capsule stripped easily. The kidney was arteriosclerotic and there was a chronic interstitial nephritis. The ureter was not distended. The left kidney was larger than normal, and there was found a stone forming a complete mould of the pelvis and calices. The stone was dark gray in color, hard and friable, and surrounding it was a large collection of pus. The ureter was larger than normal, but not distended. Section of liver showed fatty condition. The bladder was ribbed and contained six small stones one half inch in diameter, and a larger one, one and one half inch in diameter, which had projections corresponding to the ones found on the stone which had been moulded by the kidney. These stones may have passed from the kidney, but not evidently at a recent date since the ureter did not seem sufficiently distended. The lateral lobes of the prostate were hypertrophied.

It was conclusive that a right lobar pneumonia, chronic interstitial nephritis, and uremia were sufficient and might divide the responsibility of death, while contributory factors were legion.

24½ Kentucky Avenue.

CONVALESCING CHILDREN.

A Commonly Neglected Phase in Their Treatment.

By Legrand Kerr, M. D.,
New York.

The more we study the child the more firmly convinced we become of the fact that moral defects are frequently dependent upon some slight physical fault. No one questions now the more or less marked influence that physical defect has upon the ability properly to educate the child and this is more certainly true of the child's moral education.

It is a very common experience to find that, after a protracted or serious illness, a child who previously was good natured and obedient, becomes self willed and peevish during convalescence and disobedient after it. Much of this is due to the fact that, while the physical needs of such a child may be studied and adequately provided for, there is commonly entire disregard for possible mental and moral needs at this period. Of necessity, the regular régime of the child's life is broken by his illness; but when convalescence is once established there is a gradual return to the regularities of the child's life unless he rebels too strongly.

The writer is firmly convinced that when convalescence is fully established there should be instituted some scheme of mental and moral training, in harmony with the gradual gain in mere physical strength and keeping pace with it, so that convalescence will mean not only, as it commonly does now, a return to physical well being, but also a restoration of the child's full efficiency, physical, mental, and moral. It is neither wise nor right to emphasize physical efficiency without regard to mental and moral efficiency.

To bring about a normal return to full efficiency means that there should be coupled with the measures used to restore physical efficiency, such instruction, training, and well guided amusement and play as will occupy the child's increasing mental and moral powers in a measure commensurate with its increasing strength.

In the home this can usually be accomplished by the careful parent, if he or she is properly instructed and the child is safeguarded against fatigue. The safest method is to use old toys, old books, and familiar things in both instruction and play, because the new always tends to excite the child, and, as inhibitory control is weakened by illness, no undue excitation is justified.

But it is necessary that some well defined method of directed play or instruction be instituted if there is to be symmetrical development during convalescence.

In institutions, particularly in hospitals that have any considerable number of children as patients, there should be added to the hospital force a trained kindergartner or at least some one who is sufficiently trained to stimulate and guide the increasing powers for mental and moral development. It is just as important to provide thus for the child during convalescence as it is to provide adequate and skilled nursing during acute illness.

42 Gates Avenue, Brooklyn.

THE NOSE AND THROAT.*

The Constitutional Factors Which Enter into Their Diseases.

By Ernst Danziger, M. D.,
New York.

In discussing the importance of the constitutional factors in diseases of the nose and throat, I shall limit myself to constitutional conditions which are not due to acute infections, such as the acute exanthemata, which are accompanied by local symptoms in the nose and throat: nor shall I discuss the specific lesions of tuberculosis or syphilis, but rather treat of the importance of these diseases on nose and throat conditions by their general influence on the human body.

For the sake of convenience, I shall divide the subject into three parts: 1. Abnormal development of structures; 2, circulatory conditions; 3, neurotic disturbances.

1. The most frequent cause of obstruction to nasal breathing is the overdevelopment of the normal adenoid tissue of the rhinopharynx, not only the adenoid tissue in the pharyngeal vault, but also enlarged palatine tonsils; when they are so enlarged that their upper pole, which is hidden in the soft palate, pushes the same upward and backward, as almost to produce an occlusion between the posterior wall of the pharynx and the posterior margin of the soft palate.

The ablation of the lymphoid tissues in such instance, means only the removal of the result of certain conditions, without removing the cause. In consequence, we do not find, in quite a few instances, the desired relief, and there is speedy recurrence of the removed tissues.

It is perfectly safe in the present state of our knowledge, to assume that the tonsils and the adenoid tissues in the pharynx are not only a barrier to local bacterial invasion, but also represent the outlet for drainage from the mucous membrane of the nose and oral cavity; the more vulnerable to infection the mucous membranes, the more work has to be done by the lymphatic structures of the rhinopharynx. The cause for the hypertrophy of these lymphatic structures is therefore found in the physiological attempt to overcome a pathological condition of the mucous membranes of the nose and buccal cavities.

There are two conditions which cause a congenital low resistance of these mucous membranes to infection, the taint of tuberculosis and syphilis. The type of children encumbered by such an inherited taint is known as the lymphatic or scrofulous. They are not suffering from either tuberculosis or syphilis, but suffer just from that inherited weakness of the mucous membrane.

The general treatment of these children is of more importance than the local. Remove enough of the tonsils and the adenoids, if they cause obstruction or are the cause of local infection, but give your attention to their inherited taint. Outdoor life, proper feeding combined with hydrotherapeutic measures, syrup of iodide of iron and codliver oil, are of more service than surgical means. Try to overcome the intranasal obstruction to breathing, due to congested mucous membranes, by topical applications; silver nitrate alkaline douches, antiseptics may be called for.

It is in the same type of children that you find a tendency to rheumatism, not on account of the increased lymphoid tissue, but on account of the vulnerability of their mucous membranes.

Repeated attacks of epistaxis or bleeding from other places of the nose and throat show also an abnormal state of the mucous membranes, and are often a forerunner of pulmonary hemorrhages, and all such patients should be watched carefully, especially if their family history does not give them a clean bill of health.

Examine the accessory sinus of children where there is chronic purulent nasal discharge with lymphoid hypertrophies, and do not overlook the teeth as a causative factor; both are often the cause of infection, especially in the same type of children.

One of the results of obstructive nasal breathing in early life is the formation of a high palate. When breathing with your mouth closed, you put your tongue against the hard palate and push the alveolar processes of the superior maxilla forward and sidewise, and so tend to broaden and flatten your palate. When you breathe with the mouth open, you will put your tongue against the lower teeth. The buccal muscles are put on a stretch, and the weight of the tongue helps to increase the traction. Therefore the pressure of the buccal muscles against the alveolar processes of the upper maxilla will tend to increase the height of the palate. In consequence, the space between the palate and cribriform plate of the ethmoid bone is shortened. The septum cannot develop properly and is forced to the side either one way or the other, and we have then to deal with the deviation of the septum. So it becomes at once clear how a constitutional taint can become the underlying cause of bony deformities in the nose.

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*Read before the Harlem Medical Society, February 5, 1913.

There are other constitutional causes of the formation of a high palate and septal deviation, as rickets and heredity. There is no doubt that we find in newborn infants abnormally high palates, due to rickets during fetal life, but it is asserted even now that these cases are nearly always of syphilitic origin. It might not be amiss in this connection to tell you why in cases where there is no constitutional weakness, the lymphoid tissues become hypertrophic, and why after their removal the health of the child is improved in so great a measure as we frequently see it. These are the cases when acute infection of the mucous membrane was the causative factor of adenoid hypertrophy. The acute infection subsides, but leaves the adenoid tissues enlarged, either causing mechanical obstruction to breathing or, by pathological adhesions, giving rise to retention of infectious material. In such cases, the ablation of these tissues and removal of the infected focus is all that is necessary to bring about normal conditions, and such a child is cured.

2. The second class of cases to be discussed are the acute and chronic inflammations of the mucous membranes due to metabolic conditions.

In treating frequent colds in children or adults, we shall not go very far astray if we assume that quite a number of these cases are not due to the change of the weather, but to digestive disturbances. Very often a cold attributed to chilling on leaving a hot banquet hall is not due to the sudden change of temperature, but to a gastric or intestinal autointoxication. I have seen other patients with an uncontrollable appetite and little discretion in selecting their food suffer at the slightest provocation from attacks of protracted rhinitis, pharyngitis, or laryngitis. After they reduce their weight, live the simple life, their upper air passages never cause them the slightest annoyance. It seems especially the ingestion of sugar or starches which plays an important part in the production of these conditions. In any case of rhinitis, pharyngitis, or laryngitis, we should not overlook a gastric hyperacidity which will make any attempt at local treatment unsatisfactory, until the condition is cured.

Rheumatism or gout is said to produce a coryza or angina, although I do regard a painful throat as rheumatic only when we have to deal with the rheumatic condition of the muscles of deglutition. I do not believe that rheumatism will cause an inflammation of the mucous membranes.

Rheumatism may attack the larynx and give rise to an immobilization of one of the vocal cords by an inflammation of one of the cricoarytenoid articulations.

Epistaxis is not always a local condition, but sometimes a local expression of a decompensation of the heart or due to a hemic condition accompanying general diseases, as cirrhosis of the liver, leuchemia, hemophilia, rheumatism, or arteriosclerosis.

Diabetes mellitus is an etiological factor in certain nose and throat conditions which should not be overlooked, as they are sometimes the first symptom to arouse the suspicion of the presence of this disease. In such patients you find a decided dryness of the throat, the mucous membranes look beefy and red and are covered with a thick tenacious mucus. Unless you discover the real cause, local measures will be in vain. You see also in this connection the importance of the metabolism of carbohydrates in chronic conditions of the mucous membranes of the upper air passages.

3. The neuroses of the nose are to be divided into vasomotor disturbances or anomalous sensations or paresthesias. I shall not speak of the flow of thin seromucous as we find it in bakers and furriers, due to local irritation from flour dust or chemicals, but shall discuss only conditions which have an organic basis in some other part. We find especially in women cases of watery discharge from the ethmoid region of the nose, sometimes involving the conjunctiva. Local treatments in these cases make no impression. The fact that these patients are all women ought to attract our attention to their generative organs. There is no doubt a reflex connection between the nose and sexual organs. During menstruation the mucous membrane of the nose is congested, and we may have a vicarious menstruation through the nose. Cauterization or operative procedures in the nose hasten menstruation. The same procedures ought to be avoided in pregnant women, as they may cause abortion. Streit has treated dysmenorrhea by cauterization of the lower turbinates and septum with some success.

Hay fever caused by the pollen of golden rod and other plants must have some unknown constitutional basis; attempts at local treatments so far are failures. Surgical attempts to remove adenoids or polyps have been a failure, as they remove the result and not the cause. Dietetic treatment, especially avoidance of starches and sugar, protection of the eyes by smoked glasses, cotton filters in the nostrils, epinephrine or cocaine might be of some help, but so far we are rather in the dark concerning this disagreeable affliction.

Globus hystericus is not always purely hysterical, but, according to Killian, it may be compared to a cardiospasm, the spasm being at the entrance of the gullet in the pharyngeal constrictor muscle. It might be due to some oversensitive area in the hypopharynx or to an enlarged lingual tonsil or some gastric condition.

Spasm of the pharyngeal muscles, sometimes even audible, may be caused by chorea.

There are a number of nervous complaints of such a variety that it is impossible to classify them. Many a uvula has been sacrificed to such perverted sensation. It is surprising to see how nervous patients will improve subjectively without showing the slightest change in their objective condition, demonstrating the influence of the nervous system over the nose and throat, even in organic conditions.

63 West Ninetieth Street.

WHOOPING COUGH.*

Its Treatment with a Vaccine.

By Samuel M. Wilson, M. D.,
Philadelphia.

Pertussis, or whooping cough, known also by several other names, does not appear to have been known to the old Greek and Roman physicians. Our first description is by Baillon, of Paris, who described it, in 1578, as a nervous irritation of the lungs. About a century later, Willis, of Oxford, speaks of "chin cough" as a well known epidemic disease of childhood. The mortality was gradually increasing, perhaps because "from general want of success when treated by the general practitioner this branch of practice had fallen chiefly into the hands of old women and quacks," and it has been considered, for infants less than one year old, the most fatal of the diseases to which they are subject.

For about three hundred years, little progress has been made in the successful treatment of this distressing and alarming affection. Bleeding, vomiting, purging, frightening, etc., by the earlier practitioners, charming with relics of saints, and ministrations by old women and quacks have alike been little less efficacious than the more recent use of antipyretics, expectorants, and sedatives.

The introduction of cowpox virus marked the beginning of the science of biological therapeutics, which at this time is rapidly supplanting our former rather empirical methods of treatment of many diseases, such as diphtheria, pneumonia, typhoid fever, etc.

Bordet and Gengrion began their bacteriological investigations of whooping cough in 1900, and after six years of most careful research have isolated and identified the specific organism which produces it, and I wish to report some results of treatment with a bacterin or vaccine made with these germs.

It is unnecessary for me to describe the disease, as all are well acquainted with it, and with its most prominent characteristic, the distressing effort to dislodge the tenacious mucus, and the noisy inspiration that terminates each paroxysm and gives its popular name, whooping cough, to the disease.

Drugs and devices of every nature have been used to facilitate the removal of this mucus and the consequent lessening of the suffocating "kink." Among unusual ones, it may be mentioned that not many years ago the city gas works were visited by mothers, begging permission to hold suffering children over the ammonia tanks and that ozone, generated by static machines or otherwise, is occasionally tried, as are various other fumes and vapors. Needless to say, no treatment has been thoroughly satisfactory, and parents usually depend on some proprietary expectorant, consulting a physician only if pneumonia or some other serious complication threatens life.

Early in March, 1912, the writer was asked to treat a few cases of whooping cough which had appeared in this city, in a large orphanage containing about five hundred children between four and ten years of age, and of whom at least sixty per cent. show inherited constitutional defects. It has been the established custom of this institution to treat whooping cough with a decoction of chestnut leaves, with apparently as good results as are obtained with more modern remedies. The writer, however, was better acquainted with bromoform, and antipyrin with quinine, and used them for a few days with these children.

Dr. E. E. Graham, on a previous occasion, had kindly furnished me with some pertussis bacterin, of which he was making an investigation, and the result in a few cases had been so satisfactory that I tried to procure some more, but owing to the fact that it was not on sale, and that Doctor Graham had none remaining, there was some delay. Consequently, in two cases developed extensive conjunctival ecchymoses, and in one of these nosebleed also several times daily.

These cases showed no improvement under drug treatment, and the disease developed in several more children, who were brought to a separate building on the grounds of the institution, used as an isolation ward, and in which the treatment was carried out. An attempt was made to record the number of "kinks" passed through, by having each child deposit a bean in a bottle marked with his name. This might have been successful had natural emulation for a high record not led the patients to record every little cough, and, afterward, a natural dislike of hypodermic needles led them into a modest forgetfulness. In spite of the failure of our system of recording "kinks," the improvement was easily seen.

As soon as the pertussis vaccine could be obtained, every child who was not in the beginning stage of the disease, was given forty million killed organisms. After the second injection, given forty-eight hours later, the discolorations began to fade in the two children previously mentioned, and the nosebleeding ceased as the paroxysms diminished in frequency and in severity. The characteristic whoop subsided, and the cases soon became, clinically, simple cases of bronchitis.

This was the history of twenty-four cases, excepting that in two bronchopneumonia developed, but the patients recovered. One case of phthisis florida was, at first, mistaken for whooping cough, or perhaps was excited from latency into violence by the latter. In every case seen during the early stage of the whooping, one flask of pertussin, representing twenty million killed bacteria, was administered. In those few for whom this could not at first be procured, the dose was larger, forty million, but the subsequent doses depended on the temperature range and the severity of the cough. By this, I mean that if a child had a daily temperature range of two or more degrees, with a rigor and free diaphoresis after injection, his second dose was not larger than the first. If this reaction occurred a second time, the third dose was no larger, but as soon as the range fell to one degree or less, the dose of vaccine was increased to double, triple, or more.

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*Read, January 6, 1913, before the Philadelphia Clinical Association.

In some cases the reaction was always feeble, and in these the improvement was likewise, as a rule, less striking, but nevertheless evident. In several of the cases a good reaction appeared after a combined injection of cacodylate of sodium, gramme 0.03 or even 0.025, with twenty or thirty million bacteria when it failed without the cacodylate. Many of these children showed tuberculous stigmata, many syphilis, or a combination of these.

In the first series of thirteen cases, a mistake was made by continuing the vaccine after the whooping had stopped, and no reaction had followed the injection of sixty or eighty million bacteria. Such children improved, to be sure, but in all probability the injection ceased to do much good after the spasmodic stage was passed.

In the second series of eleven cases a different plan was adopted. As soon as the spasmodic element appeared to be overcome by the bacterin, its use was stopped and not resumed unless a whoop or a cough in severity approaching a whoop was noted. In one or two instances this took place.

So far as treatment of the second stage is concerned, cacodylate of sodium, solution of calcium iodide, guaiacol, and oil of eucalyptus all acted well.

As previously stated, however, my intention was to bring to your notice the fact that the most distressing symptom of this disorder yields rapidly to a specific vaccine, and leaves merely a catarrhal condition, for which all of us know and use efficient remedies.

Among these twenty-four cases, the shortest duration of treatment was nine days, the longest forty-eight, and the average twenty-three. The "kink" disappeared on an average, one week sooner. Taking into consideration that this means that it was thought safe, at the expiration of the time stated, to return them to their classes, and that this judgment was confirmed by the failure to infect any more children in an assemblage of nearly five hundred, we feel that our results justify the use of the remedy in future.

Previous outbreaks had occurred in the institution, and the duration had then been much longer and the percentage infected much greater, as the isolation ward was not yet built.

I desire here to express my gratitude to Doctor Voight for having furnished the pertussis vaccine used, and to my colleagues, Dr. Joseph Lopez and Dr. Frederick Eft, for their kind assistance.

CONCLUSIONS.

1. The organism isolated by Bordet appears, clinically, to take a specific part in this disease.
2. A bacterin made with it rapidly controls the "kink."
3. The improvement is somewhat proportional to the systemic reaction, and when this is very feeble, it should be excited by some such remedy as cacodylate of sodium.
4. The specific element appears to vanish with the "kink," the case shortly after losing its infectiousness, and no longer calling for specific treatment.

1517 Arch Street.

THE BLOOD CATALASE IN MALIGNANT TUMORS.*

By G. L. Rohdenburg, M. D.,
New York.

Many investigators have shown that in cases of malignant tumor the proteolytic activity of the blood enzymes is diminished. Not as much work has been done with the blood catalase. The method adopted in these experiments is old in principle, though the exact technic is perhaps new. The apparatus used (Fig. 1) is a modified gas burette. It consists of two chambers of slightly different calibre, connected by a U tube. The A arm of the apparatus is filled to the twenty c. c. mark with hydrogen peroxide rendered faintly alkaline by the addition of decinormal sodium hydrate. The B arm is filled to the zero mark with tap water. At the outlet E a bent overflow tube is inserted through a tightly fitting rubber cork and a beaker placed under it to catch the drip. The blood to be examined is collected as for a blood count. A white cell pipette is filled with blood up to the first graduation beyond the tip and distilled water added to the 1.1 mark. The pipette is then placed in outlet D, the mixture rapidly blown out, and the opening closed with a tightly fitting rubber cork. Within a few seconds there is a liberation of oxygen, which passes over to chamber B and depresses the level of the tap water in this arm. At the end of five minutes a reading is taken on arm B, this arm being graduated in cubic centimetres. A red cell count is then made, and what has arbitrarily been termed the catalase index is determined.

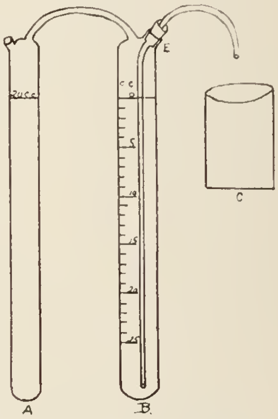

Fig. 1.—Modified gas burette.

Among other things, the amount of enzyme action occurring in a given period depends upon the amount of enzyme present. It is obvious that some standard must be adopted in comparing different readings. We will suppose that in a given specimen the reading is six c. c. and that the red cell count is 5,000,000. It has been demonstrated that while some catalase is found in the white blood cells, the major portion is present in the red cells, the blood serum containing none (1). It is necessary, therefore, to compare the catalytic activity of a given number of red cells. For that reason we have arbitrarily adopted a standard of 100,000. It will be recalled that but one graduation on the white cell pipette was filled with blood. The measurements of fifty white cell pipettes taken at random gave a capacity of 0.3 c. mm. for each graduation. The reading six, therefore, indicates that the number of red cells in 0.3 c. mm. liberated six c. c. of oxygen in five minutes. In this instance that number is 1,500,000, or fifteen times 100,000. The reading in cubic centimetres is divided by fifteen, and the decimal so obtained has been termed the catalase index. If larger amounts of blood are taken up in the white cell pipette, proper allowance must be made in determining the catalese index.

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*The clinical work was done in part at St. Luke's and the German Hospitals, New York. For clinical material I am indebted to Dr. Francis C. Wood, Dr. O. G. T. Kiliani, and Dr. Franz Torek. For assistance in the experiments I am indebted to Doctor Mount and Doctor Petersen.

The possible sources of error in the test are several; but most of them are personal equations, and a standard having been adopted by examination of a series of normal specimens of blood, they can be disregarded. The most important controllable source of error is found in the temperature of the hydrogen peroxide. This reagent is usually kept in the ice box, and if it is used before it is warmed to room temperature, all of the readings will be low.

Winternitz (2) and his coworkers, who have done extensive work with the blood catalase in pathological conditions, have concluded that the catalytic activity of supposedly normal blood is, for the given individual, constant over long periods. It may vary, however, considerably in different supposedly normal individuals. Our preliminary experiments in determining the normal catalase index confirm these conclusions. While in the first of our experiments the test was repeated three times with each blood specimen, the variations noted were so slight that in subsequent tests but one reading was made. We have considered as normal any index between 0.27 and 0.47.

The normal catalase index having been determined, the blood in thirty-one patients suffering from a group of miscellaneous diseases was examined to note the diagnostic value of the reaction. The data are presented in table 1. In tuberculosis the index was normal in one instance and depressed in one. In three cases of pneumonia the index was normal in two and markedly depressed in the third (the blood from the depressed case was taken two hours ante mortem). In pulmonary conditions associated with nephritis it was markedly depressed. No change from the normal index was noted in a case of simple pleurisy with effusion, but a marked elevation occurred in a case of bronchiectasis. In five cases of typhoid fever the index was normal except in one instance. Empyema of the gallbladder, syphilis, enteroptosis, and erythromyalgia showed no change from the normal in the one case of each examined. The same was true of true cases of uncomplicated endocarditis, two cases of pernicious anemia, one case of arthritis deformans, and one case of x ray dermatitis. In two cases of acute articular rheumatism, and in two cases of cerebral arteriosclerosis without kidney involvement, the index was markedly elevated. In two cases of nephritis and in one case of hepatic cirrhosis complicated by nephritis the index was markedly depressed.

TABLE I.

Sex	Age	Diagnosis	C. c. of O liberated	Red cell count	Index
F	38	tuberculosis	5	4,320,000	.38
M	17	tuberculosis	2	3,180,000	.21
F	45	pneumonia	5	3,840,000	.43
F	7 mos.	pneumonia	2	4,360,000	.15
M	49	pneumonia	4	4,830,000	.27
M	62	bronchiectasis	10	4,560,000	.73
M	34	asthma and nephritis	2	3,960,000	.16
M	51	pleural effusion with nephritis	2	4,120,000	.15
M	20	pleural effusion	5	3,500,000	.47
F	40	syphilis	4	3,100,000	.44
F	30	typhoid	4	3,520,000	.38
F	42	typhoid	4	3,580,000	.34
F	22	typhoid	3	4,080,000	.25
M	32	typhoid	2	3,760,000	.18
M	25	typhoid	4	4,960,000	.27
F	34	empyema gallbladder	3	3,480,000	.27
F	34	enteroptosis	4	3,200,000	.40
F	35	erythromyalgia	5	4,840,000	.36
F	30	pernicious anemia	1.25	1,160,000	.34
F	42	pernicious anemia	2	1,880,000	.35
F	62	arteriosclerosis	7	4,210,000	.55
M	66	arteriosclerosis	9	3,760,000	.87
M	56	x ray dermatitis	7.5	5,560,000	.45
M	59	acute rheumatism	8	3,840,000	.69
F	30	acute rheumatism	7	4.490,000	.48
F	55	arthritis deformans	4	4,760,000	.28
M	55	endocarditis	4	3,880,000	.34
M	36	endocarditis	4	4,460,000	.27
F	27	uremia	2.5	4,220,000	.19
F	39	chronic nephritis, interstitial	1	3,520,000	.09
M	46	hepatic cirrhosis with nephritis	2	4,300,000	.15

A series of sixty-seven cases of malignant tumor formation were next examined. According to the catalase index the cases fall into one of three divisions, for the index may be either raised, normal, or depressed. Those cases in which the index was high were cases in which an early diagnosis was possible because of clinical features which are self evident. The data of this group are given in table 2.

TABLE II.

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
F	39	Hydatidiform mole, chorioepithelioma fourth month of pregnancy	8	4,200,000	.63
M	51	Epithelioma of nose three eighths inch in diameter. Noted four months. Physician	9	4,600,000	.65
F	29	Carcinoma of breast eight weeks after trauma	9	4,000,000	.65
F	56	Epithelioma of cervix uteri. Examined four months previous and cervix found normal	8	3,800,000	.70
M	42	Melanosarcoma of uveal tract. Tumor three eighths inch in diameter. Early operation because of acute glaucoma	9.5	4,200,000	.75
M	42	Epithelioma of glans penis four months duration	8	4,800,000	.55

Twenty-eight cases, in all of which the tumors can roughly be described as operable though much further advanced than those of group one, showed no change in the catalase index. The data are presented in table 3.

TABLE III.

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
M	45	Epithelioma at anus	4	4,300,000	.30
M	52	Epithelioma of cheek	5	4,650,000	.36
M	47	Epithelioma of cheek	4.5	4,700,000	.31
M	39	Carcinoma of tongue	3.5	3,500,000	.30
F	54	Carcinoma of tongue	4	4,000,000	.33
M	60	Carcinoma of tongue	3.5	3,900,000	.29
F	47	Carcinoma of esophagus	3	3,000,000	.33
M	52	Carcinoma of esophagus	3.5	3.200,000	.36

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
M	48	Carcinoma of stomach	3	2,800,000	.35
M	47	Carcinoma of stomach	4	3,900,000	.34
M	54	Carcinoma of stomach	3.5	4,000,000	.29
M	65	Carcinoma of stomach	4.5	4,800,000	.31
F	50	Carcinoma of stomach	3.5	4,000,000	.27
M	35	Carcinoma of colon	4	4,200,000	.31
M	50	Carcinoma of colon	4.5	4,900,000	.29
F	47	Carcinoma of colon	4	4,350,000	.30
F	8	Sarcoma of humerus	3.5	4,000,000	.27
M	34	Sarcoma of femur	3.5	3,840,000	.30
M	25	Sarcoma of testes	3	3,230,000	.29
F	39	Carcinoma of uterus	4	4,200,000	.31
F	40	Carcinoma of uterus	3.5	3,800,000	.31
F	44	Carcinoma of uterus	3	3,200,000	.31
F	40	Carcinoma of breast	4	4,400,000	.29
F	39	Carcinoma of breast	3.5	3,400,000	.31
F	51	Carcinoma of breast	4	3,970,000	.33
F	47	Carcinoma of breast	4.5	4,700,000	.31
F	39	Carcinoma of breast	3.5	4,200,000	.27
M	65	Carcinoma of prostate	4	3,850,000	.34

Thirty-three cases, some of which were operable, others not, showed a depressed catalase index. Some of these cases also showed albumin and casts in the urine indicating a probable nephritis. The data are presented in table 4.

TABLE IV.

Sex	Age	Diagnosis	C. c. of O	Red cells	Index
M	46	Carcinoma of esophagus	2	4,980,000	.13
M	61	Carcinoma of stomach	1.5	3,880,000	.12
F	62	Recurrent rodent ulcer	2.5	4,880,000	.17
M	60	*Carcinoma of stomach	.5	2,360,000	.07
F	65	*Carcinoma of colon	1	3,880,000	.08
F	66	Carcinoma of colon	1	3,680,000	.09
F	61	Carcinoma of stomach	1.5	3,880,000	.12
F	61	*Carcinoma of gall-bladder	1	3,000,000	.11
M	31	Sarcoma of inguinal glands	2	4,560,000	.14
M	50	Carcinoma of tongue	1.5	3,200,000	.15
M	47	Carcinoma of tongue	2	3,000,000	.22
M	45	Carcinoma of stomach	1	3,200,000	.10
M	65	Carcinoma of stomach	1	3,500,000	.09
M	59	Carcinoma of stomach	2	3,800,000	.17
F	54	Carcinoma of breast	2	3,600,000	.18
F	49	Carcinoma of breast	1.5	3,500,000	.14
F	61	Carcinoma of breast	1	3,200,000	.10
F	39	*Carcinoma of breast	1	4,000,000	.08
F	45	Carcinoma of breast	1.5	3,980,000	.12
F	52	Carcinoma of uterus	1.5	2,000,000	.25
F	49	Carcinoma of uterus	1	3,780,000	.08
F	47	*Carcinoma of uterus	1	3,240,000	.10
F	49	*Epithelioma of cervix uteri	2	4,200,000	.16
F	54	Epithelioma of cervix uteri	1.5	4,000,000	.12
F	54	Epithelioma of cervix uteri	1	3,600,000	.09
M	50	*Carcinoma of kidney	1	3,800,000	.08
M	54	Carcinoma of pancreas	.5	3,200,000	.05
M	52	*Carcinoma of prostate	1	3,400,000	.09
M	58	*Carcinoma of prostate	1.5	3,880,000	.12
M	73	Carcinoma of prostate	2	4,200,000	.15
F	45	Rodent ulcer	2	4,000,000	.15
M	35	*Recurrent sarcoma of femur	1	3,900,000	.08
M	55	*Carcinoma of gall-bladder	5	3,200,000	.05

It is not probable, judging from the variations noted, that the determination of catalase activity is of any diagnostic value in cases of malignant tumor. A high catalase activity, such as has been noted, occurs in conditions other than malignant tumors. Winternitz noted its occurrence in peritonitis, and it occurred in the cases of acute articular rheumatism, bronchiectasis, and cerebral arteriosclerosis, as shown in table 1. A normal index is obviously of little value; a depressed index occurs in other conditions, notably nephritis.

The exact significance of the inhibition of enzyme activity, both proteolytic and catalytic, is far from clear; it is not a change distinctive of cancer alone. That inhibition is due to the formation of antibodies is at the present not proved.

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222 WEST 136TH STREET.

INSTRUCTION IN SEX HYGIENE.*

A Parent's Problem.

By MARY SUTTON MACY, M. D.,
New York.

Fifty years ago, perhaps even twenty-five years ago, the parents who desired to instruct their growing children in subjects of sex were so few as to be almost an unheard of phenomenon. To-day the parents who wish so to guard their little ones are legion and they are incessantly putting to the doctors the questions, "What shall I tell?" "When shall I tell it?" and "How am I going to?" It is my purpose, to-night, to offer a few suggestions in answer to these questions, though I might summarize the answers thus. 1, What shall I tell? The truth. 2, When shall I tell it? Always as soon as the child shows any curiosity or interest, perhaps first at two years of age, perhaps not till five or six, and from then on till maturity. 3, How am I going to? Simply, sincerely, earnestly, and as a matter of course.

Let us consider these answers more carefully. You will say to me, "It is easy for you to say 'tell the truth,' but what is the truth and how much of the truth can I tell, or my child understand?" I am sorry that I have not time to go into all the details with you, but I can give you the names of some books which will instruct you in the detailed facts to be given, and I can give you a general statement of what truth must be told. The best of the books that I know are The Mystery of Life Series, written by Dr. Isabelle Thompson Smart; but there is a whole host of books—good, bad, and indifferent—which could be listed for you by any librarian, and from which you might get information and suggestions. I have limited my suggestion, because I know Doctor Smart's books are scientifically accurate and helpfully suggestive. The truth which you must tell consists in facts about the birth, the growth, and the functions of the whole body. Here and now let me emphasize the necessity of instructing children in the functions of the whole body, avoid overemphasis on sex, on digestion, on muscular activity, on circulation, or on the nervous or mental processes, and above everything avoid suggesting sex abnormalities, indigestion, laziness or overfatigue, heart disease, or morbid, nervous, or mental processes. More of this later; let me return to the truth you should tell. Every fact you give the child should be constructive, not destructive; hopeful, not discouraging; wholesome, not morbid; positive, not negative; and every fact you give must be adapted to the child's age, past mental experience, and present mental capacity. Common sense will tell any one that the amount of truth to be told to the two year old and to the fifteen year old is different; but I wish to emphasize that it is only the quantity and not the quality of truth which should differ.

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*Indicates albumin and casts present in the urine at the time of examination of the blood.

*Read before the Public Health Educational Committee of the American Medical Association, at Yonkers, N. Y., February 17, 1913.

Thus we have come to the second question, "When shall I tell it?" and the answer "always." To the baby's lisping question, "Where did baby come from?" do not lie. The fairy tales of stork or market basket, waterspout, milk bottle, or ash can may be pretty symbols or humorous, teasing replies, but they are all harmful, and every one is liable to be found out sooner or later by the child and mercilessly judged in its true light as a lie, and once your child's confidence in your truthfulness is shaken, your control is lost and your power to influence the future life is forfeited.

The baby will be content usually with the answer, "From a seed, just as a flower comes from a seed," or "From an egg, as the birdie comes from an egg," according to the child's familiarity with flowers or with birds. The habit of "sleepy time tales" or "twilight talks" with your little ones has its value here, because long before the child has arrived at the age to ask, "Where does baby come from?" you can have taught facts about the flower's seed and the bird's egg. Nature stories may be deftly interspersed with real and favorite fairy tales which the children crave for, and Nature stories can be begun in the old, old way, "Once upon a time." I am too devoted to Peter Pan and Snow White myself to desire to take the fairy tale out of the baby's life, all I ask is that you answer truthfully the child's earnest questions about life. The little one understands that a fairy tale is only make believe, but he cannot understand that Mother or Father is "making believe" when he asks earnestly for information and receives a false reply. The twilight talks have another good purpose if they are wisely guided; they serve to soothe the excited child, to relax the muscles, to quiet the fears, and to prepare the little body and mind to relax in peaceful sleep. To accomplish this the talks must not be ghostly, nor fearsome, nor in any way calculated to inspire terror or dread, and Nature stories can serve in the desired manner, at the same time giving food for thought and laying foundations for future information of vital and definite kind. The habit of twilight talks established in babyhood is easily continued in later childhood years, and it is an easy and simple transition which makes it possible to incorporate in these hours, as the child grows older, tales and statements of facts which will answer questions asked or forming in the child's mind. Then, too, if during the day your little one asks for information you cannot give, because of ignorance or embarrassment difficult to overcome at the moment of asking, you can put off the question temporarily by the promise, "We'll take that up in our twilight hour to-morrow," or "day after tomorrow," according to what you may have already promised for the twilight hours, and according to the time you need to get the information necessary. Please let me sound a warning: Keep your word; do not put the child off with such a promise, and then forget or neglect to answer. Seek the information you need in the time you give yourself, or find out how to overcome your own embarrassment, as the case may be; but be prepared to answer questions when your child asks them, or promise at some definite time and then make good!

So we come to the third problem: "How to tell it." If you adopt the time of telling that I have suggested, that is the twilight hour, or "sleepy time tale," your problem of how to tell things will be much simplified, since with the littlest ones the familiar "Once upon a time" will introduce to them any simple little tale, and it is easy to continue "there was a little boy" or "a little girl who wanted to know certain things." Clothing your information in simple language which the child can understand, leading the little mind along the path of knowledge from things which are known to it to the new, or as the scientific expression is, "from known to unknown" is the royal road to knowledge. One important thing to bear in mind in learning "how to tell" is not to tell too much. It is as dangerous to gorge the baby's mind with information as to gorge the little stomach with sweets, and the mental indigestion which is sure to follow "telling too much" is as hard to treat—yes, harder—as the physical indigestion from the sweets. Answer the little one's question truthfully, simply, but do not use the opportunity to dilate on allied topics, or to spread a feast of information before the eager mind. If you answer only the question asked, you will speedily be rewarded by more questions, until the curiosity is satisfied, and you will leave room for later experiences to develop a normal curiosity at a normal time in the future, and in a normal way. If you overanswer the question asked, you will stop questions for the time. That is, you will stop the child's questioning you, but start up a process of subjective, morbid questioning which will result in unwholesome mental habits and evil effects. If you underanswer the question asked you will be deluged with counter questions until you learn how to answer sufficiently in simple selfdefense. If you fail or refuse to answer the question, some one will answer it for you, and probably in a way you would not desire. Therefore it is the part of wisdom to do yourself that which you would have well done. For the older child more detailed information is needed, and pictures, manikins, models, and such aids to instruction can be used to advantage. For this you will do well to prepare yourself beforehand by seeking personal instruction until you have mastered the practical details and knowledge, after which you will not find it hard to teach the child a little at a time when occasion serves.

All that I have said thus far applies to other truths than those of sex hygiene with equal power, but now I wish to say a few words of warning which apply most forcefully to instruction in sex. First and most important: Do not overemphasize it. Within the last decade and a half sex hygiene has come so prominently before the public mind—the adult mind—that we are in danger of making it too prominent to the child's mind. The pendulum has swung so far from the policy of telling the child nothing that we are in jeopardy of telling him too much. The child is entitled to sufficient information about the function of sex to save himself from the dangers and pitfalls of neglect and abuse, just as he is entitled to sufficient information on the subject of the digestive function to save himself from dyspepsia and other pitfalls of the kind, and sex and stomach should loom equally large in his horizon and no larger than muscle, or nerves, or mind in the abstract.

Secondly, in way of warning, avoid prohibitive "don'ts" in teaching the child of sex. To tell a little child—for example—not to masturbate is a most excellent way of leading him to experiment, for the purpose of finding out the reason for the "don't." Negative suggestion of this character is fruitful of much danger. Effective substitution of interest alone is the best and simplest way of arresting bad habits and of preventing their formation. Give the child other things to do with his hands, other games to play, other means of amusement than those involving the bad habit forming or formed. Constant care and watching will be necessary, if the habits are formed, and possibly change of environment to break up unwholesome companionships may be necessary; but avoid the "don't do that," and substitute the "do this" or "try this" in order to gain your end.

Third: In your instruction of the young child in sex matters avoid reference to the abnormal so long and so far as possible. If the child's personal observation results in questions concerning abnormalities, treat the immediate subject as you would a disease and let the child understand that such things exist as disease does, because of error in habit or in living, but do not be detailed in your information unless it cannot be avoided, and make your facts constructive in their trend. In all this instruction it is well to have as your motto:

Look up, not down; look out, not in;
And lend a hand!

Probably no living creature is more susceptible to suggestion than a little child, and it is frequently forgotten that the actions and objects of the child's environment, as well as the spoken "do's" and "don'ts" are as pregnant of possibilities for good and for evil. For this reason it is doubly important that the parents have a keen and constant oversight of the companions, caretakers, associates, and objects which surround their child. You cannot hope to keep from the little one all you would not desire him to know, but if you gain and retain the confidence you may so use even the undesirable but unpreventable facts and happenings of his environment that they may be positively useful and not detrimental in forming his character.

The price of wholesome minded, healthy children is good principles and eternal vigilance.

101 West Eightieth Street.

BERIBERI.

A South American Aspect of the Disease.

By Stanley B. Doyle, M. D.,
New York.

Beriberi, although always spoken of as a disease of the coast of China and seldom mentioned as being found in this country, except casually, is extremely prevalent along the west coast of South America, from the Amazon river in the north to the Rio de la Plata in the south. The Amazon river, although explored to its source, is not navigable, except for a few hundred miles from its mouth, and therefore has not been a place for study by the physician.

The Department of Tropical Disease of Tulane University intends, with the help of the government, to investigate the tropical fevers, of which little is known, except the symptoms and possible chance for cure. Pathological investigation will, I hope, bring out some of the puzzling features of some of these tropical diseases which are puzzling only because it is impossible for the lone physician to carry out the laboratory investigations that are necessary to bring out a clear cut picture of the disease.

Beriberi or a similar disorder has been described in this country as found among the New England fishermen who frequent the Grand Banks of Newfoundland and also among the sailors in the gulf ports of Alabama, but as it is well known that the seafaring class of men always try to go south in the winter and north in the summer, it is extremely probable that the cases that are described so far north as the Grand Banks had probably been to some South American or other tropical port some months previous, carrying with them from the tropics the infection that is so slow in developing.

The etiology of beriberi is as yet undecided, two main views prevailing: 1. It is an acute infection; 2, it is a toxemia due to food, with a polyneuritis due to inanition.

It seems extremely probable that the true cause of the disease is a vegetable organism which is most commonly found in rice, fish, or water. The rice, whether polished or unpolished, seems to contain the organism, but the unpolished rice to a less extent than the polished.

Among some of the important factors are overcrowding, as in asylums, jails, ships, and in the rainy seasons with exposure to the wet. Some authorities state that Europeans are comparatively free from beriberi, but this is not so, as in my experience Europeans are attacked in the same degree as the native, providing they are both on the same diet, namely, fish and rice.

The disease itself is probably not directly contagious as far as I have observed, but as the period of incubation varies from about one to three months, cases are lost track of, and as any one who was in a beriberi district while the disease was raging, would be lost sight of by the investigating physician, if attacked by beriberi some months afterward in another part of the country, he would be reported as presenting an isolated case.

The disease is divided into four stages that are easily recognized, except the incomplete or rudimentary form which may be confounded with the prodromal symptoms of any infectious disease.

1. *Incomplete or rudimentary form.* The symptoms to be noticed in this stage of the disease are a period of constipation extending over some ten days and followed by gastric disturbances, such as loss of appetite, vomiting, and pain, at first only over the gastric area, but later becoming a girdle pain not unlike that of tabes. These symptoms usher in all the other forms. When the rudimentary form is of long duration it is accompanied by paresthesia and weakness of the lower extremities.

2. *Acute pernicious or cardiac form.* Following the symptoms of the rudimentary form, the pain extends over the precordia; palpitation, dyspnea, and pain become more intense, and the patient is threatened with cardiac failure. While in this stage the patient either dies if prompt treatment is not instituted or passes into the atrophic stage of the disease, with or without the intervention of the dropsical stage.

3. *Dropsical or wet form.* The dropsical form is marked by an edema which extends over the whole subcutaneous tissue, with effusions into the serous sacs. The atrophy and disturbances of sensation are not so marked in this form, as they are masked by edema, while the dyspnea, cardiac symptoms, and gastric disturbances continue. As the edema clears up, the atrophy becomes apparent.

4. *Atrophic form.* In the atrophic form the wasting is very marked and accompanied by paresthesia, pain, and weakness, usually of the lower extremities, but at times reaching to the arms and neck, which in some cases become so severe that the patient is unable to move his limbs. The pain on pressure over the muscles is slight, but becomes agonizing when pressure is exerted over the nerve trunks, especially over those of the lower extremity. Cardiac palpitation and edema are of little importance in this form, although they are sometimes found to a slight extent.

PATHOLOGICAL FINDINGS.

The urine throughout the disease is free from albumin, except in the latter part of the disease; if elimination is being pushed by diuretics there may be a slight trace of albumin. The color of the urine is light amber, except when fever is present, which is seldom; then it is a typical fever urine. The blood shows a pronounced secondary anemia, which would account for some of the cardiac symptoms, while the degenerative inflammation of not only the peripheral but also of the pneumogastric and phrenic nerves accounts for the remaining cardiac symptoms and the dyspnea.

PROGNOSIS.

The mortality of this disease is given by various authorities as from two to fifty per cent.; but as many of the cases go undiagnosticated, the mortality is probably nearer the lower figure. Cases diagnosticated early and receiving prompt attention almost immediately end in recovery.

DIAGNOSIS.

The diagnosis is easy where a polyneuritis is associated with an edema and the case is in the tropics. The diagnosis of the various forms is comparatively easy for any one who has had experience with this disease.

TREATMENT.

Numerous forms of treatment have been described by the various authors, but none of these seems to answer, as each stage must be treated independently. There is no chance of aborting the disease as would seem possible in an affection of this sort. The rudimentary form of this disease calls for free cartharsis and the cardiac form for digitalis. In the cardiac form I have found infusion of digitalis to have the best effect, as its action as a diuretic will aid in keeping down the edema along with sustaining the heart. Magnesium sulphate gives the best results as a cathartic. Later on in the disease strychnine and massage will complete the cure. A milk diet throughout the course of the disease is advisable, and later getting out of the country where the disease is epidemic, as recurrences are frequent.

CASE I. F. H., aged thirty-five years, came to me at Rio de Janeiro, Brazil, suffering from what seemed to be chronic constipation. He later had gastric disturbances and pain over the precordium. After free cartharsis the patient went back to work, but returned three days later and showed signs of edema and polyneuritis. The treatment was with infusion of digitalis and magnesium sulphate. Later, as edema cleared up, with some stimulation and massage the patient completely recovered. Atrophy was not marked.

CASE II. A. B., aged twenty-four years; when I first saw him he had been sick for six days. He had not resided in a beriberi district, but had eaten rice three or four times a week and some fresh fish. There was a sudden onset with cardiac pains and dyspnea, paresthesia and weakness in the lower extremities, pain on pressure over all nerve trunks, marked atrophy of all muscles, especially those of the calves of the legs; no edema. The treatment was strychnine, iodide of potassium, and massage, and resulted in an apparent cure. One month later I saw this patient and he was undergoing a second attack, which, however, was not as severe as the first and readily responded to treatment.

725 MADISON STREET, BROOKLYN.

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Therapeutic Notes.

An Antigalactagogue Preparation.—Hodgkinson, in the *Australasian Medical Gazette* for September 14, 1912, reports his experience with potassium iodide in cases in which it is necessary to check the secretion of milk. He found, upon administering the remedy in about three hundred cases, that one dose usually sufficed to arrest completely the mammary function. Any discomfort present disappeared, as a rule, in five or six hours. The preparation generally administered was:

℞ Potassii iodidi, ...gr. xxx-xl (2 to 2.6 grammes);
Antipyrinæ, ...gr. x (0.6 gramme);
Spiritus ammoniæ aromatici, ...ʒss (2 c. c.);
Syrupi, ...℥i (30 c. c.);
Aquæ, q. s. ad ....℥ii (60 c. c.).
M. ft. solutio.

This is given in one dose as soon as the breasts swell and become painful, and may be repeated in twenty-four or forty-eight hours, if required. The amount of iodine given is varied according to the patient's general condition. The treatment is advantageous in that it dispenses with the necessity of dietary restrictions, massage and bandaging, belladonna plasters, etc.

A Styptic Dressing for the Nasal Mucous Membrane.—Pischel, at a meeting of the Laryngorrhinological Society of Vienna (*Revue de thérapeutique médico-chirurgicale*, September 15, 1912), stated that after intranasal operations, in order to avoid plugging the cavities, which is so badly borne by certain patients, he proceeded as follows: Epinephrine is first applied to the open area, and if the bleeding is not arrested, the surface is cauterized, either with the galvanocautery or chromic acid.

It is next painted with tincture of benzoin, a ring of cotton placed around it, and collodion then allowed to fall on it drop by drop. An assistant meanwhile accelerates the drying of the collodion by blowing in a current of air, either cool or warmed. After four to six days, cocaine is applied and the covering of collodion removed.

Use of Pituitary Extract in Labor.—Aubert, in *Revue médicale de la Suisse romande* for November, 1912, reports that in a series of 355 labors, pituitary extract was used forty-two times, or in twelve per cent. of the cases. The drug was almost always given in the second stage, weakness or arrest of the pains being taken as the indications for its use. In thirty-seven cases, one c. c. of the twenty per cent. solution proved sufficient, in four cases, two injections were administered, and in the remaining case four injections were without effect, forceps being subsequently used. The action of pituitary extract generally begins five or ten minutes after injection, the uterine contractions becoming more frequent, powerful, and prolonged. The number of forceps interventions was lessened since the use of the drug had been taken up.

Care of Skin of Face in Children.—G. Norman Meachen, discussing this subject in the *American Journal of Dermatology* for October, 1912, remarks that in spite of care in the daily toilet, a child's face will often show signs of roughness, if not an incipient eczematous inflammation. The promiscuous use of glycerin upon the face is not to be recommended, as its hygroscopic effect may here be too pronounced. Neither is it safe to employ any ordinary white face cream, as a few of these contain lead salts. A preparation which the author considers useful is as follows:

℞ Cetacei, ... }
Ceræ albæ, ... } ....āā grs. xlv (3 grammes);
Aquæ rosæ, ...ʒvi (24 grammes);
Olei rosæ, ...gtt. ii;
Olei amygdalæ expressi, ...℥i (30 grammes).
M. fiat cremor.

This cream is best employed at bedtime after the face has been washed and dried. It is gently worked into the skin with a fine towel.

For the painful cracks in the mucous membrane of the lips, appearang spontaneously as the result of the habit of biting the lips from nervousness or anemia, the following simple salve is useful:

℞ Adipis lanæ, ...ʒiii (12 grammes);
Olei olivæ, ...♏xx (1.25 grammes);
Carmine, ...q. s.
M. ft. unguentum.

Paraldehyde Intravenously. — Noel and Souttar, in the *Lancet* for September 21, 1912, report highly favorable results obtained by the use of paraldehyde intravenously as a hypnotic or anesthetic for minor operations. The hypnotic effect is exceedingly rapid and altogether devoid of unsatisfactory circumstances. The authors mix from five to fifteen c. c. of paraldehyde with an equal amount of ether and dissolve the mixture in 150 c. c. of a cold one per cent. solution of sodium chloride in sterile distilled water free from dead bacteria, or in default of this, in boiled tap water. The solution is placed in a sterile bottle with a rubber stopple through which pass two glass tubes, and is driven into the vein by means of attached bellows.

By this method of administration the unpleasant taste and preliminary exciting effect of paraldehyde taken by mouth are avoided. In thirty seconds consciousness begins to disappear, in forty it is lost, and in ninety the corneal reflex is absent and anesthesia is complete. Up to this point about from five to ten c. c. of paraldehyde will have been given, and small operations, such as removing teeth or suturing wounds, may be performed With a small dose (five c. c.) the patient passes through a short period of anesthesia into an easy and natural sleep, from which he awakes later without any aftereffects. The most striking results were seen in alcoholics, acute and chronic. Thus, a laborer with a scalp wound and incipient alcoholic dementia was put to sleep in forty seconds and the wound sutured without disturbance.

The measure was also carried out for its hypnotic action in cases of grave cardiac and pulmonary disease with perfect success. The authors do not suggest that it can replace other hypnotics with slower and more lasting effect, but draw attention to it as a method by which under the most trying circumstances they never failed to induce within sixty seconds a condition closely resembling normal sleep.

An important factor of safety in the method is the rapidity of excretion of the drug. At each instant the patient exhibits the maximum effect of the dose so far given, for the moment injection ceases the action begins to pass off.

Thyroid Substance in Mental Diseases.—R. G. Naylor, in the *Australian Medical Journal* for November 16, 1912, reports the results obtained with thyroid feeding in twenty cases of mental disease, including primary dementia with or without catatonia, mania, acute and chronic melancholia, delusional and puerperal insanity. In each case the patient was put to bed, received one drachm of magnesium sulphate, and the next day fifteen grains (one gramme) of a trustworthy thyroid preparation, three times a day, after meals. This was repeated for four days, and the dose next increased to twenty grains (1.3 gramme) for five more days. The drug was then stopped, the patient having plenty of nourishing food and being kept abed for fourteen days, then maintained recumbent in the open air for a week more.

For the first three or four days there are headache, a full and frequent pulse, and a rise in temperature up to 99° to 101° F. Some patients get much excited. There is no danger, however, in the use of the drug if the cases are carefully watched.

The results obtained were, twelve cases cured, three slightly improved for a time, and five apparently uninfluenced. The cases showing the greatest increase in blood pressure were those in which the greatest benefit was secured. The author advises that all recent cases in patients under forty-eight years of age receive a course of thyroid. In melancholia, before the brain cells give evidence of degeneration, the results are very gratifying.

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CHARLES E. de M. SAJOUS, M. D., LL. D.,
Supervising Editor.

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THE MEDICAL TREATMENT OF EXOPHTHALMIC GOITRE.

The number of theories concerning the pathogenesis of exophthalmic goitre seems to be growing apace with time. Besides Möbius's conception, which attributed all the symptoms of the disease to excessive secretory activity of the thyroid gland, and the nervous theory, which made irritation of the sympathetic system the exciting factor of the same syndrome, there have arisen a number suggested by the innumerable researches on the internal secretions which have seen light during the last decade. Among these may be mentioned the thyrogenital theory (Schauta, Peter, Müller), based on the known functional relationship between the ovaries and the thyroid gland, which accounts for the development of the disease in predisposed women during physiological or operative menopause; the thyrohypophyseal theory (Salmon), based on the belief that the secretion of the pituitary controls the thyroid and that a destructive lesion of the former causes enlargement of the latter; the thyrothymic theory (Markham), in which enlargement and overactivity of the thymus is regarded as a pathogenic agent; the thyropancreatoadrenal theory (Eppinger, Falta, and Rudinger), in which hyperthyroidism is thought to cause excessive adrenal activity and inhibition of the pancreas; and finally, the intoxication thyroadrenal theory (Sajous), in which the morbid process is ascribed to excitation by poisons, of endogenous or exogenous origin, of the centres which govern the thyroid and adrenal glands, with resulting overactivity of both these organs. It is probable that each of these hypotheses, all of which are sustained by considerable clinical experience, has its place in the aggregate of cases, and that with Debove we should recognize from the standpoint of pathogenesis and therapeutics, not one type of exophthalmic goitre, but several.

This conclusion entails a greater discretion than has been the rule in our treatment of the disease, a careful identification of the cause being necessary in each case. When Graves's disease develops at puberty or during menopause, physiological or operative, it has been found to yield in many instances to the influence of ovarian extract. When it occurs in conjunction with an enlarged thymus, status lymphaticus, or general adenopathy, treatment of these conditions is in order, including the use of arsenic and the x rays. The thyropancreatoadrenal theory of the Vienna school has not as yet been sufficiently studied to form the basis of a specific treatment. When there is reason to believe that the pituitary is involved, pituitary gland might be tried. As to the older American adrenothyroid theory, with intoxication by poisons of internal or external origin as cause, the treatment is based on the now established antitoxic functions of the thyroid, but a clear distinction between an inadequate thyroid and a normal organ stirred to excessive activity must be made. In the former variety, a small goitre with no exophthalmos or tremor may be the only sign of the affection, but a precursor perhaps of a severe case of Graves's disease; a slight reduction in the proteid diet, attention to the bowels, and a single grain of desiccated thyroid gland, three times daily, will cause disappearance of the goitre, by compensating for the deficiency of thyroid secretion and relieving the gland of the hyperemia and swelling which excessive activity involves. Iodine and the iodides are often toxic in such cases, even when applied locally. A form due to autointoxication from the intestinal canal, which also belongs to this class, has been clearly identified by W. H. Thomson. Here a milk diet and other measures calculated to arrest the formation of intestinal poisons have been found by this clinician to be of curative value.

These instances will suffice to emphasize the fact that the modern therapeusis of exophthalmic goitre must be based upon a careful inquiry into the cause of every case in point and elimination of this factor where possible. It involves also, in most instances, the adoption of the intoxication theory with diminution of the antitoxic functions of the thyroid as the initial underlying feature of the morbid process.

FEEBLE MINDEDNESS AND THE BINET-SIMON SYSTEM.

Too much reliance must not yet be placed on the value of the Binet-Simon measuring scale for the determination of the mentally feeble. As a diagnostic test it has only a relative value in that class in which the Binet standard has been established. The originators of this system intended, and indeed restricted its use among French school children, who had for them certain familiar characteristics and from whom, and for whom, they devised a standard. This standard can have little accuracy of application to other classes of children without appropriate modifications. Indeed, certain investigators have made various modifications to suit the individuals with whom they were working. On the number and appropriateness of these modifications will depend to a large degree the value of this system.

The Binet-Simon system is of little use in diagnosticating feeble mindedness. No tabulated system is necessary to detect the distinctly feeble. They are easily apparent to every one, even on the barest contact. The system has practical application only in estimating the degree of retardation, in respect to mental development, of an individual when compared to an arbitrary standard-normal used as a control. All those who do not measure up to this standard are considered to be retarded to a degree proportionate to the distance from the normal. This control or standard becomes more accurate when derived from the class for which the standard is devised—somewhat after the principle of the application of autogenous vaccines; that is, a standard for French children, for American, for German, etc.

The Binet-Simon system commits itself only to the diagnosis of defectiveness or retardation and not to that of distinct feeble mindedness, unless the retardation amounts to at least ten years. Retardation of the mind may be compared to poor physical development, feeble mindedness to physical invalidism, imbecility to a physical condition bordering on the moribund, and idiocy to death.

The Binet-Simon calculation of a ten year retardation before it considers the retardation to be so marked as to be tantamount to positive enfeeblement, is very liberal when it is considered that this measuring scale is applied only up to the age of sixteen years. At this age an individual is really an adult, and is everywhere considered *sui juris*. If, then, he has but the mentality of a six year old individual, he is so obviously defective that no such elaborate means as the Binet-Simon measuring scale is needed to detect him. Such an individual has had only about three years of mental development, if the time at which a child usually gives signs of the exercise of the mind is placed at about three years.

It is easy, therefore, to dispose of the ten year class. But what is to be done with defectives who are retarded a less number of years? Are they feeble minded or not? With the Binet-Simon scale they are not, not having been defective ten years. Besides, to be consistent, the diagnosis of positive feeble mindedness would have to be deferred until the expiration of this ten year period. Up to that time the real significance of the retardation could not be determined. This brings us back again to the old method of determination, namely, the observation and education of the child under reenforced methods of education, and the postponement of any opinion until it is shown that the child does not progress materially under such methods. Any sequential progression would point only to a simple retardation, amenable to treatment under painstaking and scientific methods. The Binet-Simon system is, therefore, of assistance only in sifting out and segregating those retarded mentally. But its value is none the less great, since from these must necessarily come the real defectives—the feeble minded.

URBAN AND RURAL LIFE FROM THE VIEWPOINT OF HYGIENE.

A paper read by Dr. Peter H. Bryce, chief medical officer to the Bureau of Immigration, Canada, at the last meeting of the Canadian Public Health Association, brought vividly before the medical profession and the laity the fact that the drift of population, in the new world as in the old, is to the cities. The figures quoted by him as regards immigration to Canada were so remarkable that the attention of all interested in questions of public health should be directed to them. Canada is very sparsely populated and her chief concern is to procure healthy, lusty immigrants to cultivate her immense tracts of agricultural land. But Doctor Bryce clearly points out that what is abundantly apparent in Canada, even more than in the United States, is that in spite of every organized effort on the part of the government to place immigrants on the land the aggregate of immigration to Canada in ten years, which was 1,114,802 by the seaports plus an additional 524,852 in nine years from the United States, has not equaled in rural increase the natural increase of the population of Canada in 1901 at a rate of twelve per cent. in ten years. On the other hand, while the total population increase in Canada was from 5,371,315 to 7,204,838, or thirty-four per cent., the total urban increase was from 2,021,799 to 3,280,444, or an increase of 1,258,645 or 62.25 per cent.

The increase of urban population in this country is relatively almost as great as in Canada, and in Australia the city population grows by leaps and bounds. In Europe the manner in which people are flocking to the towns is arousing alarm in the minds of foreseeing individuals, and in Great Britain the situation has become acute and dangerous from almost all points of view. In Europe various measures have been devised to relieve the congestion, the main means being by emigration, but when emigrants, on reaching the lands in which is abundant room, prefer to perpetuate the problems of the old world by massing together in large centres, the difficulties in the way of solution are greatly aggravated. From the economic, as well as from the health standpoint, the matter is very serious. The land must be cultivated, and in this country, in Canada, and in Australia the inhabitants are naturally averse to permitting immigration of Asiatics on a wide scale. Thus all these countries are on the horns of a dilemma. White immigrants, as a rule, will not settle on the land, and the yellow and black ones are not allowed to do so, thus much of the soil is left untilled.

From the health standpoint, the question has an alarming aspect. City life, physically, mentally, and morally, places a greater strain on the individual than country life and tends to produce a race inferior in most respects. In Europe the effects of long continued industrial and town life are only too palpably evident, and it should be the object in the comparatively thinly populated countries of what is known as the new world to avoid the mistakes which seem as if they might wreck some of the richest and most prosperous nations of Europe. Back to the land is no parrot call; it is inspired by regard for the best interests of health, mental, physical, and moral.

THE ETIOLOGY OF CANCER.

Professor von Czerny has issued an interesting report, according to the *Münchener medizinische Wochenschrift* for April 1, 1913, on his forty years' experience with cancer.

He believes that for the formation of cancer, 1, a certain individual predisposition is necessary which can be either congenital or acquired, although we do not know exactly the nature of this predisposition. For example, certain material which would inhibit or defend the body against the formation of cancer may be absent; debilitating diseases may form a suitable field, etc. 2. There must exist a local initiation, such as trauma, injury, inflammation, a scar, or other congenital malformation. 3. Finally, a real cancer organism must exist, which possibly belongs to the group of the so far unknown ultramicroscopic organisms and which is brought to the human subject by an intermediate carrier. Whether this carrier is the bedbug (Morau) or other bloodsucking parasites or one of the family of the small round worms carried by cockroaches is not certain. Whether heredity plays an important rôle we do not know, but observations seem to point to a certain infection, not direct, but indirect through parasites. As in all other infectious diseases, the virulence of the exciter is of great import, so that a healthy body can overcome a small number of exciters.

SIMPLE METHOD OF REDUCING SHOULDER DISLOCATIONS.

An improvement on a well known method of reducing dislocations at the shoulder is quoted by *Presse médicale* for April 5, 1913, from a work on the practice of medicine and surgery in the country by Legrand, of Marcigny. This practitioner and author had many hundreds of cases and was so frequently annoyed by the poor quality of assistance obtainable that he was forced to devise some way of reducing these dislocations by himself. His custom was to extend himself supine on a mattress by the side of his patient, their heads being in opposite directions, to fasten a handkerchief around the patient's wrist, and, placing his heel in the latter's axilla, to pull till reduction was complete. He always found the strain on his arms very severe and was eventually inspired to tie the ends of the handkerchief to a napkin which he passed around his own body like a shoulder belt. Thenceforward he had little trouble. Once when operating on a Goliath of a patient, he found great aid upon the latter's turning over slightly on his side; this movement, modifying somewhat the muscular contraction, caused the arm to slip easily into place.

GASOLINE INTOXICATION.

Intoxication by gasoline is not an unknown phenomenon in the United States. Selby W. Plummer reports a case in the *British Medical Journal* for March 29, 1913, of a boy, aged sixteen years, who was overcome while cleaning out the pit of a private garage near Durham and was lifted out unconscious. Shortly afterward he vomited violently, then seized his brush and attempted to continue his work. At his home, two miles distant, whither he was instantly removed, the physician noted shallow breathing, a thready pulse, marked inward strabismus, and miosis; the lips were bright red and the cheeks flushed. He was cold, his teeth chattered, and the reflexes were absent, as well as the sensory reactions. Three hours later, treatment having apparently not been found necessary, the patient could be aroused to answer questions and complained of intense headache and pain in the stomach; the reflexes were still absent. Later he fell asleep and spent an uneventful night. The next morning his memory of the accident was poor. although he remembered being sick. The medical adviser believes the boy was not subjected to the gasoline fumes longer than three and a half minutes, and states that an exposure for a very few more moments would have been fatal.

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News Items.

Radiotherapeutics in New York.—A department for treatment with radium emanation has been established at the New York Post-Graduate Medical School and Hospital, for public use and scientific investigation.

Typhoid Fever in Royersford, Pa.—It is reported that an epidemic of typhoid fever is spreading over the towns of Royersford and Spring City, Pa., with alarming rapidity. Within a few days sixteen cases with three deaths were reported.

New Office Building for Physicians in New York.—It is reported that plans are being prepared for a thirty-five story office building for physicians, to be erected at the southeast corner of West End Avenue and Seventy-second Street. The estimated cost is $2,000,000.

Campaign to Raise Fund for the Mountainside Hospital, Montclair.—Residents of Montclair, Bloomfield, and neighboring towns in New Jersey have organized a twelve day campaign to raise $300,000 for the Mountainside Hospital. Subscriptions amounting to nearly $50,000 were announced at a dinner given in Montclair on the evening of April 7th. Half the amount of the fund is to be used for a new hospital building.

Meetings of Philadelphia Medical Societies.—Medical societies in Philadelphia will hold meetings during the coming week as follows: Monday, Medical Society of Woman's Hospital; Tuesday, West Philadelphia Medical Association, Medicolegal Society, and St. Mary's Hospital Clinical Society; Wednesday, County Medical Society; Thursday, Pathological Society and the Germantown Branch of the County Society; Friday, Neurological Society, South Branch of the County Society, Northern Medical Association, and the Medical Club (reception).

Hall of Public Health Opened.—The Hall of Public Health of the American Museum of Natural History was opened on the evening of April 16th, at a public meeting, Dr. Henry Fairfield Osborn, presiding. The evening was devoted to a discussion of the campaign for civic cleanliness instituted by the Department of Health of the City of New York, and the plans for the spring cleaning, which will begin next week, were announced. Among the speakers were Health Commissioner Lederle and Dr. C. E. A. Winslow, curator of the department of public health of the museum.

Medical Society of the County of New York.—A stated meeting of this society will be held on Monday, April 21st, the change in date being due to the fact that the House of Delegates of the State society meets in Rochester on April 28th. The following papers will be presented at the scientific session: The X Ray Treatment of Uterine Fibroids, Menorrhagia, and Metrorrhagia, by Dr. Samuel Stern; The Internal Secretions as They Concern the Gynecologist, by Dr. Samuel Wyllis Bandler; The Elastic Area in the Isthmus of the Uterus an Early and Positive Sign of Pregnancy, by Dr. Louis J. Ladinski; The Municipal Disposal of Garbage, a Menace to Public Health, shown in moving pictures by Mrs. Spiegelberg; Demonstration of the Physiological Method of Treating Flat Foot, by Dr. Jacob Teschner. These papers will be discussed by Dr. Joseph Brettauer, Dr. Robert T. Frank, Dr. Edwin B. Cragin, Dr. Hermann J. Boldt, Dr. J. Riddle Goffe, Dr. Robert L. Dickinson, Dr. Ellice McDonald, and others.

Philadelphia Surgical Clinics Bulletin.—On April 14th the issuance of a daily *Bulletin of Surgical Clinics* was inaugurated by a committee of twenty-one physicians representing the staffs of the various hospitals of the city. This bulletin will contain a list of the operations to be performed in thirty-three city hospitals, and will be posted each morning in the hospitals and in the College of Physicians, where a bureau of information has been established, which may be reached by telephone. The committee believes that these bulletins will not only enable visitors to find out promptly where they can see operations which will be of interest, or operators whose technic they wish to study, but will also stimulate postgraduate study.

Federal Authorities Ask Doctor Friedmann to Resume Demonstrations of Tuberculosis Treatment.—An intimation has been officially conveyed to Doctor Friedmann by the United States Public Health Service that the time has arrived for him to resume the demonstration of his treatment for tuberculosis, in order that the federal authorities may be able to form a judgment on the value of the treatment. The letter to Doctor Friedmann was signed by Passed Assistant Surgeon John F. Anderson, director of the hygienic laboratory and chairman of the board of investigation. Having the approval of Surgeon General Blue and Secretary of the Treasury McAdoo, it is virtually an ultimatum to Doctor Friedmann to comply promptly with promises made to the medical authorities that he expedite his treatment so that the government may reach a verdict as soon as possible for the benefit of the American people.

New York Division of the Army Medical Reserve Corps.—This division of Medical Reserve Corps of the United States Army, which was recently organized, held a meeting on April 11th. Major E. E. Persons, of the Medical Corps, presented a paper on the National Defense and the Part the Medical Department will Play Therein, which was discussed by Colonel William Stephenson, Lieutenant Colonel Raymond, and Major Truby, of the Medical Corps, and the following first lieutenants in the Medical Reserve Corps: Dr. John A. Wyeth, Dr. Howard Lilienthal, Dr. Reynold Webb Wilcox, Dr. Max Einhorn, Dr. Walter M. Brickner, Dr. H. Sheridan Baketel, Dr. Thomas E. Satterthwaite, Dr. Harold Hays, and others. The New York Division is a very enthusiastic organization, and its members are planning a definite line of instruction, which will include field work, didactic instruction, and drill of the mounted officer.

American Society of Tropical Medicine.—The tenth annual meeting of this society will be held in Washington, D. C., on May 6th, 7th, and 8th, with headquarters at the Hotel Bellevue. The first item on the programme is the address of the president, Dr. Edward R. Stitt, of Washington, on the Value of a Course in Tropical Medicine for the Training of the Internist. This will be followed by the reports of the secretary, Dr. John M. Swan, of Rochester, N. Y., and of the treasurer, Dr. C. Lincoln Furbush, of Philadelphia. An excellent programme of scientific papers has been arranged, an interesting feature being a general discussion, on Thursday, of the Importance of Intestinal Parasites in Tropical Pathology. Complete programmes may be obtained from the secretary, Dr. John M. Swan, 457 Park Avenue, Rochester, N. Y.

Course in Tropical Medicine at the University of Maryland.—At the beginning of the year a course of lectures on tropical diseases was inaugurated at the Maryland University School of Medicine, under the direction of Surgeon J. A. Nydegger, of the United States Public Health Service. The first lecture was given on Monday, January 13th, by Doctor Nydegger, his subject being History of Tropical Medicine from Ancient Times Down to the Present. On each succeeding Monday throughout the term there has been a lecture on some subject relating to tropical medicine, usually illustrated by lantern slides. The attendance at these lectures has been greatly beyond expectation, although voluntary, showing the decided interest which is being taken in tropical diseases at the present time. Next year the course will be extended to include the full scholastic year. Cases and specimens of tropical diseases will be collected and exhibited, in addition to which clinical lectures and practical instruction will be given in the diagnosis and detection of these conditions. It is intended to make the chair of tropical medicine a permanent one in the university.

Medical Society of the State of New York.—The 107th annual meeting of this society will be held in Rochester on April 29th and 30th and May 1st, under the presidency of Dr. John F. W. Whitbeck. A programme has been mailed to each member, and it is hoped that there will be a large attendance from New York county, as the meeting promises to be one of unusual interest. Full information may be obtained from the office of the society, New York Academy of Medicine, 17 West Forty-third Street.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on the evening of April 21st. The programme will contain the following papers: Intestinal Adhesions, by Dr. Robert T. Morris; Relation of Adhesions and Intestinal Angulations to Chronic Constipation, by Dr. Robert Coleman Kemp; Radiographs of Obscure Stomach and Intestinal Cases, with a Caution Regarding Dangerous Tendencies in Recent Radiography of the Gastrointestinal Tract, by Dr. Sinclair Tousey. Among those who will take part in the discussion of these papers are Dr. Anthony Bassler, Dr. Ward J. MacNeal, Dr. William P. Healy, Dr. Parker Syms, and Dr. Thomas A. Gonzales. All who are interested are invited to attend.

A Medical Missionary Wanted in Beira, Portuguese East Africa.—The American Board of Commissioners for Foreign Missions has issued an appeal for a medical missionary to go to Beira, a town of about one thousand inhabitants, situated south of the Zambesi River, in Portuguese East Africa. The field is an important one and presents large possibilities. Applicants must be graduates of a high grade medical college, and must be thoroughly qualified professionally and physically. For four years the board has been trying to fill the position, and the man who is willing to undertake the work will be sent to Lisbon to acquire a working knowledge of the Portuguese language, and to London for a special course in tropical medicine. Physicians who wish to investigate this and other opportunities for medical missionary service in India, China, Turkey, Korea, and Persia should write to Mr. Wilbert B. Smith, 600 Lexington Avenue, New York.

Massachusetts Homeopathic Medical Society.—The annual meeting of this society was held in Boston on April 8th, 9th, and 10th, under the presidency of Dr. George R. Southwick. Officers to serve for the ensuing year were elected as follows: President, Dr. P. Brown, of Springfield; vice-presidents, Dr. John H. Paine, of Boston, and Dr. Mary A. Leavitt, of Somerville; secretary, Dr. E. S. Caldwell, of Boston; treasurer, Dr. T. M. Strong, of Boston; chairman of the Board of Censors, Dr. George R. Southwick, of Boston. The second day's proceedings were brought to a close by a reception to the retiring president and Professor Lemuel H. Murlin, of Boston University, and a banquet at Young's Hotel. Dr. J. Wesley, of Somerville, acted as toastmaster, and addresses were made by Doctor Southwick, Doctor Murlin, Dr. N. Emmons Paine, of West Newton, and Dr. John L. Coffin, of Boston. All the speakers made an urgent appeal for an endowment fund for the medical department of Boston University.

Fourth International Congress on School Hygiene.—This congress will be held in Buffalo, N. Y., August 25 to 30, 1913, under the patronage of President Wilson. Dr. Charles W. Eliot, president emeritus of Harvard University, is president, and Dr. William H. Welch, professor of pathology, Johns Hopkins University, and Dr. Henry P. Walcott, chairman of the Massachusetts Board of Health, are vice-presidents. Dr. Thomas A. Storey, professor of hygiene, College of the City of New York, is secretary general of the congress, and further information regarding the work of the congress may be obtained from him. There is now being arranged a comprehensive programme of papers and discussions covering the entire field of school hygiene. There will be scientific exhibits representing the best that is being done in school hygiene, as well as commercial exhibits of practical and educational value to all interested in schools. There will be delegates from the leading nations, and from every college and university of note in this country, and from various other educational, scientific, medical, and hygienic institutions and organizations. The congress is also open to all persons interested in school hygiene. Applications for membership should be sent to the secretary general.

Personal.—Sir William Osler, regius professor of medicine at Oxford University, arrived in New York on Sunday, April 13th. He will go to Baltimore to attend the opening of the new psychiatric clinic at Johns Hopkins University, where he was for many years professor of medicine. Sir William was accompanied by Dr. F. W. Mott, of London, and Professor William McDougall, of Oxford University.

Dr. R. B. Tuesler, of St. Luke's Hospital, Tokyo, Japan, delivered an illustrated lecture in Philadelphia on Wednesday evening, April 16th, in the interest of medical missions in the Far East. Dr. William H. Jefferys, of Shanghai, also spoke.

Colonel William Stephenson, Medical Corps, United States Army, who for nearly two years has been stationed at Governor's Island, New York, as sanitary inspector of this department, has been ordered to Chicago to become chief surgeon of the Central Department. This is a promotion for Colonel Stephenson, who is recognized as one of the most accomplished sanitarians in the Medical Corps of the Army.

Dr. J. N. Hurty, of Indianapolis, State health commissioner of Indiana, has been employed to draft a model health bill for the State of Iowa and submit it to the Iowa Legislature, at the request of the speaker of the Iowa House of Representatives.

Society of Sanitary and Moral Prophylaxis.—Feeling that a passage of formal resolutions by the society, relative to the recent loss it has sustained by reasons of the untimely death of its founder and president, Dr. Prince A. Morrow, would by no means represent its feelings relative to his death, the Executive Committee of the Society at a meeting held on Tuesday, April 1, 1913, passed the following resolution:

Resolved, that a Memorial Meeting of this Society may be held on the evening of Thursday, May 22, 1913, at the New York Academy of Medicine, to commemorate the life and work of Dr. Prince A. Morrow, our late president, and that an announcement of this be made at the next regular meeting of the society.

A committee was duly appointed to prepare the programme for the memorial meeting. This committee consisted of James Pedersen, M. D., Edward L. Keyes, Jr., M. D., and Dr. Thomas M. Balliet.

Work has already commenced in preparation for this memorial meeting and all members of the society will receive notice in due time of the completed programme.

The formal resolutions, adopted April 10th, were as follows:

The death of our honored president, Dr. Prince A. Morrow, has come to the members of this society as a deep personal sorrow, and is an irreparable loss to the cause in which he so ably and so heroically led. Almost single handed he inaugurated, in 1905, a movement in this country which is already nationwide, and which promises to be the first successful attempt, by means of public enlightenment, to reach the root of an evil of the ages and a curse of mankind. A man of great intellectual force, of strong personality, and of unflinching courage, he entered upon the task against unusual odds, inspired others with his own enthusiasm, and founded this, the first society of its kind in America, which has already become the parent of over thirty similar societies in as many different States.

In the guidance of this movement which had to deal not only with a delicate subject, but also with a false public sentiment, the greatest wisdom was required. Doctor Morrow led the way with unerring judgment and tact. To-day there are arrayed in the ranks of his followers many of the foremost and conservative men and women of the country.

To those who came more intimately in contact with him as his personal associates on committees, his death comes as a personal bereavement; to all of us it is a loss which will be deeply felt for a long time to come. All knew him as a man of great ability, of the highest character, courageous and true; and as a society, we place upon our records this brief testimony of our love and high esteem. We extend to his family our deep sympathy in their great bereavement and irreparable loss.

Edward L. Keyes, Jr., M. D.,
Thomas M. Balliet
Henry P. de Forest, M. D.,
Committee on Resolutions.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

February 22, 1913.

Varicella in Adults.—C. Stäubli observed three cases of varicella in adults during the past year. Two of them occurred in brothers who were stricken at the same time. One of the cases presented severe general symptoms, an infiltrative character of the efflorescence, and at the beginning presented the picture of a moderate variola. In none of the cases could the source of the infection be traced, from which fact the conclusion must be drawn that in cow pox an indirect contagion among many persons is possible.

Treatment of Third Stage of Labor.—K. Reber reports that in the obstetrical wards at Berne the following rules are observed in the treatment of the third stage: When the hemorrhage is not particularly profuse, the uterus is watched uninterruptedly for two or three hours for the state of its contractility until definite signs of the spontaneous separation set in. Only at this juncture is an attempt at expression permitted. In cases of more severe hemorrhage due to partial separation of the placenta, Crede's method is to be tried and when expression is not accomplished the attempt is to be repeated under an anesthetic. With the aid of narcosis manual expression has the desired effect. Only after this procedure is an intrauterine manipulation permitted. Notwithstanding these carefully planned indications in 1.8 per cent. of the cases manual separation of the placenta had to be resorted to. The author believes this large percentage to be due to the many untreated cases of endometritis of the women of Berne.

WIENER KLINISCHE WOCHENSCHRIFT.

February 6, 1913.

Parasitotropy and Toxicity of Salvarsan.—K. Ullmann shows that in the syphilitic tissues of man and in all the blood constituents of mice and rats thus far examined which contain the Noganatrypanosomes or spirochete of recurrent fever there have been found large deposits of arsenic after salvarsan treatment, while in all of the examinations of control subjects not containing spirilla, no trace of arsenic could be found. These researches are therefore strictly in accord with the supposition of the parasitropic action of salvarsan.

February 13, 1913.

Internal Secretion of the Mamma. — Schiffmann and Vystavel show that injections of mammin Poehl, i. e., sodium chloride extract from the hides of cows which have been freed from the so called precipitable proteids, had the following effect: Out of four pregnant animals treated with mammary extract all aborted. In growing animals injection of the extract of mammary glands from other and the same animals has an inhibitory effect on the development of the glands and the genitals.

Radiological Findings in the Colon in Renal Tumors.—A. Luger does not agree with Stierlein that new formations in the kidney and its neighborhood can be detected by a typical median dislocation of the colon. In most of the cases the author found that the displacement was lateral and in many other cases the portion of the colon remains lying above the tumor. In a detailed case of left sided hypernephroma another striking Röntgen picture was disclosed, showing the impossibility of filling that portion of the colon lying above the tumor. Clinically the general symptoms were those of a chronic intestinal stenosis, so that the diagnosis of intestinal tumor was made at first.

Lordotic Albuminuria.—K. Dietl asserts that for the production of lordotic albuminuria, beside the mechanical moment of lordosis, the condition of the bloodvessels must be taken into account. Out of the six cases examined, four showed marked vasomotor disturbances with rigidity of the arteries, hemicrania, asthma, etc., from which it is evident that the strengthening of the vasomotor system and improvement of the general health are sufficient to bring about the cessation of the albuminuria.

Conditions for the Development of a Tuberculous Meningitis.—H. Koch says that tuberculous meningitis develops chiefly during the last months of winter. It is a disease attacking children in the earliest years, the first and second especially. In twenty-three per cent. of the cases hereditary influence was proved. In one family four out of nine children died of this condition. It could be shown that nourishment of the blood exerted a protective influence. In the great majority of the cases other diseases preceded the tuberculous meningitis, especially measles, whooping cough, varicella, diseases of the lungs, and tuberculous affections of other organs. There is no doubt that these diseases released the meningitis, partly by direct mechanical influence, partly indirectly, by weakening the organism. These factors are of significance in the formation of tuberculous meningitis only when at the same time active tuberculous processes are present in the body.

February 20, 1913.

Formation and Prevention of Consecutive Disturbances in Pleural Adhesions.—L. Hoffbauer says that the atalectasis of the lower portions of the lungs in pleural adhesions is due just as much to the resultant disturbance in the circulation as to the low position of the diaphragm, the action of which is compromised. Discomfort is lessened by lying on the diseased side, not on the normal side. Somewhat later abdominal breathing is to be practised. These measures are for the purpose of increasing the activity of the diaphragm muscles and to favor its position.

February 27, 1913.

So Called Orthotic Hemoglobinuria.—L. Jehle, in adding to the observation of Porges and Strisower reported in No. 5, 1909, of this publication, cites two cases of orthotic albuminuria in which lordosis produced attacks of hemoglobinuria.

Effect of Carrying the Spine in Orthotic Albuminuria.—L. Jehle found that orthotic albuminuria due to pathological lordosis can be removed immediately by having the patient bend one leg at right angles to the hip and knee, and supporting it thus by some device. After retaining this position for ten to fifteen minutes even severe albuminuria disappears. This procedure serves to distinguish the orthotic from the nephritic albuminuria.

Action of Adrenalin in Acute Experimental Nephropathies.—Hess and Wiesel found that rabbits poisoned by uranium oxide can be kept alive by adrenalin injections as long as there is no anuria even after the animals have received many times the lethal dose of uranium. Signs of improved function are decreased albuminuria and increased diuresis. The fast color of uranium oxide is noted in the clinical picture. The intense parenchymatous degeneration of the kidneys is in no way influenced by adrenalin.

PRESSE MÉDICALE

March 15, 1913.

Cholecystectomy from Behind Forward.—A. Gosset and E. Desmarest, in an illustrated article, advocate this type of cholecystectomy because of certain disadvantages attending the ordinary method, in which the fundus of the gallbladder is freed first and the operator then works down toward the bile ducts. These disadvantages are, that in beginning to free the fundus with the scalpel the liver tissue is not infrequently injured, that several ligations of branches of the cystic artery are required instead of one ligation of the main trunk, and that in pulling upon the gallbladder, the biliary duct may be brought out and kinked and the cystic duct consequently easily injured. In the procedure employed by the authors, which has given uniformly successful results in thirty-two cases, the biliary duct is first exposed behind the angle of the duodenum, its covering peritoneum broken through with gauze, the lower part of the mesocyst cut to expose the cystic duct, the latter ligated and cut near its junction with the hepatic duct, and then peeled upward, putting on the stretch the vessels to the gallbladder, which can thus be easily ligated. The remainder of the gallbladder is then rapidly freed and removed, leaving as much as possible of its peritoneal covering so that a canal can be formed for subserous drainage. The operation is effected more quickly than with the old method, the vessels can be more perfectly dealt with, and in many cases even no drainage is required. The operation is not applicable alone, as might be thought, to cases where the ducts have been but slightly involved, since even where there is marked and long standing fibrosis the terminal portion of the cystic duct is healthy in two thirds of the cases and can therefore be easily ligated.

Diagnosis of Aortic Aneurysm.—M. Letulle reports a case of supposed tumor in the mediastinum in which x ray examination seemed to show the mass to be independent of the aorta and nonpulsatile, but operation, nevertheless, revealed a large sacciform aneurysm, which, as autopsy later showed, had even eroded the spinal column. He concludes that absence of pulsation under the x rays in doubtful cases of this kind does not permit of ruling out aneurysm.

March 19, 1913.

Treatment of Gunshot Wounds.—P. Reclus argues against the removal of bullets discharged from military small arms or revolvers unless they are so superficially situated as to be practically visible, all aseptic precautions can be taken, and especially unless they can be extracted without additional injury to the tissues. The only conditions indicating extraction are, 1, penetration of the bullet into a joint, hindering the function of the latter; 2, where the encysted projectile causes pain—an exceptional circumstance; 3, where it has caused serious injury to a vessel, nerve, or visceral organ. In the last of these contingencies, indeed, the intervention is not for the purpose of removing the bullet, but for arresting hemorrhage, sewing up openings in hollow viscera, etc. Under all ordinary circumstances, the application of tincture of iodine to the orifice of entrance of the projectile is alone indicated.

Heliotherapy in Nontuberculous Affections.—A. Aimes points out that exposure to sunlight is of therapeutic utility, not only in "surgical" tuberculosis, but also in a large variety of other conditions, general and local. Thus it is of benefit during convalescence from infections, in anemia, in rhachitis, in acute rheumatism, and in neurasthenia, while among local conditions those likely to be improved include sluggish wounds and ulcers, chancroids, suppurating buboes, erysipelas, ulcerated skin cancers and luetic lesions, burns, gangrenous skin conditions, ununited fractures, osteomyelitic cavities, sprains and contusions, congestive states of deep organs, and affections of the conjunctiva.

SEMAINE MÉDICALE.

March 19, 1913.

Esophageal Pulse and Jugular Pulse in Primary Cardiac Tumors.—L. Bard presents tracings from a case of primary neoplasm of the left auricle and points out the fact that in cases of this variety in which the diagnosis during life is uncertain, information of considerable weight may be obtained by comparing the jugular and esophageal tracings, the former representing the activity of the right auricle and the latter of the left auricle, which is the portion of the heart most frequently involved in primary cardiac tumors.

REVUE DE MÉDECINE

March, 1913.

Research on the Presence of Koch's Bacillus in the Blood in the Tuberculous.—A. de Verbizier was unable to find the tubercle bacillus in the blood of any of a series of fifteen patients. Guineapig inoculations were also negative.

Infections by the Paratyphus B Organism.—E. Job asserts that from the clinical standpoint two classes of paratyphus B infection occur, that resembling typhoid fever and that resembling alimentary intoxication. Closer study showed, however, that points of similarity exist between these two forms and, indeed, bacteriologists have already demonstrated that the paratyphoid bacillus and that of meat poisoning were identical. While paratyphus B infections may be propagated in the same ways as is typhoid, the fact that the former is far more widespread in distribution and occurs in association with both animate and inanimate matters renders its origin, in concrete cases, often impossible of determination. Of twenty-eight cases observed by the author, seven were sporadic, and in each of the latter the origin of the infection could not be discovered. The measures required in paratyphoid prophylaxis are the same as those already in force for typhoid, viz., isolation of cases, pure water, proper drainage, etc., but they are less likely to prove effectual, owing to the ubiquitous distribution of the germ.

Tuberculous Colitis and Pericolitis.—M. Piéry and A. Mandoul report twenty cases in which acute, subacute, or chronic colitis or pericolitis were observed, either during, or more frequently after the course of various disturbances of known tuberculous nature. In addition to hypertrophic tuberculosis of the cecum, ulcerative tuberculosis of the colon, obstructive intestinal fibrosis, and tuberculous appendicitis, all of which are already well recognized, the authors would ascribe to the tubercle bacillus the causation of a disturbance termed by them "tuberculous muccorheic enterospasm," many cases of mucomembranous enterocolitis and of plastic colitis and pericolitis and some cases of Hirschsprung's disease. Measures such as prolonged vegetarian forced feeding, recalcification, outdoor life, residence at great altitudes, heliotherapy, etc., are often indicated in cases of enterocolitis, even where there is merely a suspicion of tuberculous disease.

SEMANA MÉDICA.

January 13, 1913.

Present View of Tuberculosis.—Quevedo, referring to the different views we have at present regarding the contagiousness and prophylaxis of tuberculosis, establishes the following conclusions: 1. In the actual state of science we cannot deny the existence of three types of tuberculosis, the human, the bovine, and the avian. 2. Man is generally infected by the human bacillus and seldom with the bovine. 3. The boiling at home of the mixtures of commercial milk renders it free from tuberculous contagion. 4. The principal seats of contagion are the lungs, the intestines, the skin, etc. 5. Raw milk from cows suffering with tuberculous mastitis, if taken habitually, may produce tuberculous lesions of special type. 6. Meat from tuberculous animals taken raw is dangerous only if the lesions are of a certain type. 7. As to the innocuousness of the meat the anatomopathological form of the tuberculous lesions is more important than the greater or less generalization of the infection. 8. The present idea about inspection and confiscation is erroneous, so the author suggests that it should be modified by a professional convention in order to make effective the prophylaxis of human tuberculosis and to facilitate fighting the bovine form.

Effects of Salvarsan on the Internal Ear.—Botella, speaking about the effect of salvarsan on the internal ear, says that the Ehrlich drug, like all the heroic agents, must be handled with great caution, and physicians must convince patients that the immediate cure they expect is not possible when all other treatment is suspended, and that at the same time the drug favors facial and auditory complications. An injection of salvarsan must never be given without a previous and scrupulous otological examination. Salvarsan must never be applied to a patient suffering from a recent lesion of the acoustic nerve in either of its branches.

Prophylaxis of Sudden Death.—De Castro states that in the sudden pass from life to death there is a moment which must be known by the physician in order to be able to determine the cause of death and to prevent it when possible. The principal symptoms which constitute this moment between life and death are apoplectic stroke, syncope, coma, and collapse. Death, the author says, has, of course, no treatment, but a more effective prophylaxis should be employed in order to lessen the awful number of cases of sudden death which happen in the world. As death almost always depends on the habits observed during life, there are two rules to lessen the number of sudden deaths, a great deal of philosophy and a great deal of hygiene, in other words, to know how to live and to know how to die.

February 20, 1913.

Detection of Carbon Monoxide in the Blood.—De Dominicis asserts that in every case of poisoning by the oxide of carbon the blood suffers characteristic changes, and these cases are so frequent that they make a very interesting chapter of the technic of medicolegal science. The blood takes a special cherry red color which cannot be confounded with any other, so that on the dissecting table the special poison is detected by means of spectroscopic examinations. The oxide of carbon, *in vivo* as *in vitro,* substitutes the oxygen of the oxyhemoglobin leading to a formation of carbooxyhemoglobin of cherry red color. This special color of the blood which already appears extensively in all the visible mucous membranes, is more apparent in the serous membranes and especially in the brain. To examine the blood which contains oxide of carbon, the author says that he employs first the spectroscopic examination as suggested by Hoppe-Seyler. The blood is diluted with distilled water and then placed in a vial in order to obtain between D and E two different bands; the ocular microspectroscope of Abbe can be used for all examinations. The author, after explaining the technic of the process, asserts that the oxide of carbon in the blood can also be detected by numerous chemical reactions which are all based on the greater resistance of the carbon monoxide blood compared with that of the normal fluid. Of all these reactions the best is the one suggested by Kunkel Wetzel with tannin. The reaction is carried out in an ordinary test tube. The blood is added to ten c. c. of distillate water; afterward is added ten c. c. of a three per cent. aqueous solution of tannic acid. The mixture is now shaken and the test tube closed with cotton and paraffin. The same is done with the normal blood, which acquires immediately a brick red color. The blood which contains oxide of carbon appears of a rose red color.

BRITISH MEDICAL JOURNAL.

March 29, 1913.

The Mucus Channels and the Blood Stream as Alternative Routes of Infection.—Charles J. Bond contends, as a result of extensive studies, that infective organisms frequently gain access to many portions of the body by way of the mucus channels, along which they ascend by the reverse currents of mucus developed. These reverse mucus currents arise as a result of: 1. Stasis of the normal secretion or excretion; 2, the presence of a fistulous communication at the proximal end of the tract by which the contents can escape without passing down the regular channel; 3, through active absorption of the contents of a mucus canal at some one point in its course, acting much as does a fistulous tract. The passage of insoluble indigo particles against the normal current in the mucus channels has afforded proof of this as a possible mode of spreading infective organisms. Duodenal ulceration may thus result from stasis in the small intestine, although there has been no fecal regurgitation. The gallbladder, biliary ducts, and pancreatic ducts may become infected in a similar manner through stasis below. The genitourinary tract of both male and female supplies many examples of this type of ascending infection. Similarly infections of the female breast and of the salivary glands may often be accounted for on a like basis. In general such ascending infections present symptoms somewhat different from those resulting from hematogenous infection. In the case of hematogenous infection the organism is very much attenuated in virulence before it escapes into the channel which it is destined to affect, as the gallbladder or pelvis of the kidney, and its growth there is almost free from symptoms. On the other hand, if it escapes in virulent form it is usual to find severe symptoms of a septichemia, of which the local infection is but a small part. When the infection reaches a region by means of ascending mucus transmission it is usual to find localized symptoms of such infection without any evidence of simultaneous or preceding blood infection. This question of source of infection has an important bearing upon the matter of immunity and such studies should lead to much valuable information, both in regard to treatment and especially toward determining whether or not the secretions from mucus organs contain active protective substances.

Henoch's Purpura with Intussusception.—Seymour Barling reports a case of this kind occurring in a boy, aged four years. Operative removal of a considerable portion of the involved intestine led to recovery. The association of intussusception with Henoch's purpura is not very common, and the correct diagnosis of the presence of intussusception is difficult at times on account of the presence of severe abdominal symptoms in the disease. Barling suggests the following points for diagnosis: Intussusception is very common under the age of three years and Henoch's purpura is rare below this age. A past history of joint symptoms or of purpura may be of great assistance in a case in which these are absent at the onset of acute abdominal symptoms. Bloody vomitus is seldom present in intussusception, while it may occur in purpura, also blood may be present in the urine in the latter disease. In the purpura the belly wall may be rigid and the abdomen distended from the onset, while this is very uncommon in intussusception. The presence of the characteristic sausage shaped tumor is very suggestive of intussusception, and an examination under an anesthetic may be of great aid in determining its presence in some cases.

LANCET.

March 29, 1913.

Eczema Oris as a Manifestation of Congenital Syphilis.—Leonard Findlay and H. F. Watson describe the lesion as being situated at one or both angles of the mouth, radiating therefrom toward the cheek, sometimes in the form of fan shaped patches. It may completely surround the mouth and implicate the face extensively. The patches are irregular and their margins may be either sharply cut or ill defined. The color is red, the hyperemia at times being very marked. As a rule the surface is dry and scaly, but there may be some discharge with the formation of crusts. The lesion frequently invades the buccal mucosa, and the lips may be swollen. There may be a similar condition about the nostrils. The disease is most obstinate and chronic. The patients do not usually present stigmata of congenital syphilis, and the proof of the nature of the lesion rests upon the results of Wassermann reactions and specific treatment. Of twenty-one cases the Wassermann reaction was positive in all but two, and in the mother of these patients the reaction was found positive. In only one case was the disease associated with the acquired form of syphilis, in all of the others the syphilis being congenital. The disease seems to be almost limited to children.

Hyoscine Morphine Anesthesia for Alcohol Injection in Neuralgia.—Wilfred Harris recommends the use of one third grain of morphine and 1/150 grain of hyoscine, given hypodermically, twenty minutes before operation. This dulls the sensation so as to prevent serious discomfort to the patient, but it still enables the operator to determine, by questioning, when he has penetrated the nerve. Under deep general anesthesia one cannot be certain that he has entered the nerve, and when no anesthetic is used the pain is often too great to permit of the successful completion of the operation. By this method it is also possible to gauge the dose of alcohol so as to produce destruction of the desired region of nerve supply while avoiding the danger of injecting the alcohol back along the nerve sheath so as to reach the Gasserian ganglion with resulting destruction of this and its danger of causing corneal ulceration.

Remarks Introductory to the Clinical Study of Pulmonary Tuberculosis.—C. T. Williams has traced the heredity in 1,000 cases of pulmonary tuberculosis and finds that in twelve per cent. there was a direct history from father to son or mother to daughter. When brothers and sisters, uncles and aunts were included the percentage rose to roughly fifty. The family predisposition is much more common among women than among men; the transmission is more common through the mother than through the father; as a rule fathers seem to transmit to sons and mothers to daughters. Paternal inheritance seems to include not only a tendency to the disease, but also a resisting power which the male possesses to an extent greater than the female. A paternal inheritance is much less serious than a maternal, for the maternal inheritance is associated with an inferior resistance. Females with a family history of disease tend to be attacked as long as seven years earlier than those not so predisposed. There is no such great difference among males. Among the cases in which there is a family predisposition the disease tends to run an acute course in a larger proportion than among those in which there is no predisposition. If both parents have had the disease the risk that the children will suffer also is pronounced, double heredity exercising the greatest influence.

PRACTITIONER.

March, 1913.

Cavernous Sinus Thrombosis.—Adair Dighton reports two cases of this rare disease, one of which ended in recovery. The first patient, a child, thirteen years old, was operated upon for acute mastoiditis. A week later the temperature rose to 101° F., on the next day to 102.4°, with no obvious cause. Calomel was administered, and on the morning of the next day the temperature was normal. During that day the patient had a chill, the temperature rose to 104° F., and by the next morning she presented a typical picture of cavernous sinus thrombosis. Operation for extensive thrombosis of the lateral sinus was then performed and the patient recovered, convalescence being delayed by septic synovitis in several joints. The particular points to which Dighton calls attention are: 1. The apparent latency and then rapid onset of the disease. 2. The recovery of the cavernous sinus. He thinks that the passage of a large volume of water down the lateral sinus, jugular bulb, and jugular vein acted as a kind of suction pump and sucked the thrombus from the cavernous sinus by way of one of the petrosal sinuses. 3. The occurrence of all the septic synovitis metastases on the opposite side of the body from the mastoiditis. This he explains by a theory he brought forward, in 1911, in the New York Medical Journal; the patient lay on the healthy side during her illness so that all bacteria and diseased products gravitated to that side. 4. The healing of the wound with so little scar, which he attributes to the use of scarlet red. The other case was one in which a boy, six years old, had received a blow on his right temple a month before. When admitted he presented distinct symptoms of cavernous sinus thrombosis, and an operation was performed at once, but unsuccessfully. On autopsy it was found that the right frontal sinus and ethmoidal labyrinth were full of pus and communicated with the orbital cavity by means of a fistula in the orbital plate of the ethmoid. The points of special interest are: 1. The misleading history of an accident, as it led one to suspect that the condition was due to a fracture of the skull. 2. The state of development and disease of the frontal sinus in a six year old boy. 3. The part played by the anterior and posterior ethmoidal veins, and the extension of the disease to the orbit and cranial cavity.

Treatment of Adenoids and Tonsils.—E. Ward maintains that more care than is usual should be taken to avoid transforming a trivial operation into a serious one by operating without an examination of the general condition of the patient, as well as of the nasal passages and throat. Only very exceptionally should any case be operated in, unless symptoms of adenoids are present. Enucleation of tonsils is unnecessarily severe, but a general anesthetic should always be given and the condition dealt with thoroughly. More care should be taken to teach students the best way of performing this operation, for nearly every practitioner is willing to undertake it.

Ear, Nose, and Throat Work in General Practice.—Hugh P. Costobadie points out that many of the conditions that cause patients to complain of these organs depend upon some defect of general health which must be sought for and treated. Many of them are secondary to adjacent, but less apparent trouble, as when nasal catarrh is caused by a septic tonsil, a septic tonsil by carious teeth, or by a middle ear discharging through the Eustachian tube; hence a routine examination is important. No special skill is required to make a thorough examination, and many conditions met with can be recognized very readily, especially those in which a direct view can be obtained. The general health is so dependent on the upper air passages that general practitioners will be illogical if they neglect proper examination and careful treatment of nose, throat, and ear conditions.

Oxygen as an Adjuvant in General Anesthesia.—Hugh R. Phillips urges the use of oxygen in conjunction with other anesthetics for the following reasons: Cyanosis is almost entirely avoided. The anesthesia appears to be lighter, while patients seem to require less anesthetic, and recover more rapidly from its effects. Muscular relaxation is more easily maintained. Respiration never becomes embarrassed. The heart's action is stimulated, and patients usually have a better pulse at the end of an operation than at the beginning. Vomiting is much less frequent. In patients who have disease of the heart or lungs the combination gives excellent results. The danger of chloroform appears to be minimized by the addition of oxygen. In operations about the nose and mouth, for which oxygen is passed directly through chloroform, this method allows the anesthetist the use of both hands to keep the jaw in position and give intermittent assistance to the surgeon. The disadvantages consist chiefly in the extra bulk of the apparatus and the extra expense of the oxygen itself.

INDIAN MEDICAL GAZETTE.

March, 1913.

Value of Amorphous Cinchona Alkaloid in Malaria.—E. E. Waters presents the results of his observations in detail, part of them tabulated, and concludes that the amorphous alkaloid is from three to five times as effectual as quinine sulphate, and may be given in proportionately smaller doses. It has no unpleasant effects, can be given in small tablets, is rapidly effectual, and is inexpensive.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 3, 1913.

Some Factors which Influence the Excretion of Formalin in the Urine of Children and Infants taking Hexamethylenamine (Urotropin).—Fritz D. Talbot and Warren R. Sisson come to conclusions from their observations of the results produced by the administration of urotropin to children which are not altogether in agreement with the conclusions reached by other authors concerning the results produced in adults. They find that all children are capable of breaking down hexamethylenamine and that consequently all excrete formaldehyde. Relatively large doses are often necessary before the excretion of formaldehyde takes place. The more acid in the urine the greater is the decomposition of urotropin and the excretion of formaldehyde, and as it has been shown by other observers that the antiseptic power of urotropin is dependent, not upon the hexamethylenamine, but upon the presence of free formaldehyde, they conclude that urotropin should not be given with drugs that cause the urine to turn alkaline. They also believe that, to insure the efficacy of the drug, specimens of urine should always be examined for the presence of free formaldehyde after the administration of urotropin.

Coxa vara, with Especial Reference to the Question of Spontaneous Recovery.—James Warren Sever defines coxa vara as a reduction of the normal angle of the neck of the femur with the shaft from an oblique toward a right, or even an acute angle. He says that rhachitic coxa vara is a frequent and concomitant condition of bow legs and knock knees, but may exist independently. In all cases there is a tendency to spontaneous recovery and, though the correction of a coexisting knock knee or bow legs may hasten the process of recovery, the condition apparently requires no treatment, and there is probably very little or no permanent disability in the average case.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 5, 1913.

Experimental Study of Bone Growth and the Spinal Bone Transplant.—Fred H. Albee finds that many liberties may be taken with the bone graft without impairing its success, as it has certain bacteria resisting properties. It is very probable that the amount of Haversian blood supply partly or wholly determines whether the bone graft lives as such or acts as an osteoconductive scaffold. Sufficient emphasis has not been laid upon the importance of using a sharp instrument with force in order to separate with the periosteum the embryonic layer of active osteogenetic cells situated on the periphery of the compact bone. The bone transplant apparently stimulates osteogenesis on the part of the bone into which it has been implanted. In the dog a spinal graft loses its identity at about the fourth month, as after that time the bone bridge has not the appearance of having originated in that way. Bone taken from another species, such as the sheep, did not unite to the recipient bone of the dog, although asepsis had been preserved, moving the unreliability of the procedure rather than that sheep's bone will not unite to dog's bone as a graft. By means of a bone graft a bone bridge between different vertebræ was found, although breaking down the spinous processes, splitting the spinous processes in halves, and the insertion of periosteal bridges all failed to produce a continuous bone bridge. Bone transplants taken from the spinous process showed evidence of less osteogenesis than when taken from a long bone (e. g., the ulna). Bone denuded of periosteum proved equally satisfactory to bone grafts on which the periosteum remained, but their persistency was not tested. As the metal splint produces bone absorption and favors infection the bone graft should be used when possible, on account of its germ resisting property and its early adhesion by bone growth to the bones. The periosteum to be actively osteogenetic should be removed by a sharp elevator, making the cleavage deep and including the osteogenetic layer of cells; otherwise it will only constitute a connective tissue limiting membrane, without hopes of much osteogenesis. Periosteum and marrow substance on the bone graft aid in establishing an early and more abundant blood supply from recipient bone to the transplant.

Treatment of Gonorrheal and Other Infections with Digestive Bacterial Extracts.—J. O. Hirschfelder observes that the use of the digestive bacterial extract of the gonococcus in gonorrhea of the male, both acute and chronic, favorable results apparently followed, but were not absolutely positive. In the female the evidence was somewhat stronger, but still not conclusive. It may be reasonably assumed that when the gonococci are present in the urethra, any antibody formed in the blood would have difficulty in reaching them, and one would be prepared for a failure of the remedy; marked and striking effects, however, were produced in the resistant organs of prostitutes. In systemic gonorrheal affections more favorable results have been obtained. Of seven patients with epididymitis, under the care of several observers, all but two rapidly recovered. Seven patients with gonorrheal rheumatism received this treatment, and all recovered and remained well. In every instance the improvement was rapid and in most was uninterrupted. In three cases of typhoid a digestive extract of the typhoid bacilli was injected, with apparent good result. In two cases of articular rheumatism an extract made from the culture of an endocarditis streptococcus was injected, and improvement followed in both cases. The writer hopes that the principle of the production of antibodies by the use of digestive extracts of the different microorganisms may be proved to be a general one.

Acute Arthritis among Negro Laborers on the Panama Canal.—Walter Baetz found that ninety-one per cent. of the acute arthritides admitted to the male negro wards during the past year were caused by venereal disease. Syphilitic etiology was proved in sixty-three per cent., the Wassermann test being positive in 93.6 per cent. of these cases. An intensive mixed treatment, carried to the point of tolerance, enabled these men to return to work in an average of 18.8 days. Gonorrheal origin was proved in twenty-eight per cent. of the cases, and in these vaccine treatment yielded, in the great majority of cases, very good, sometimes brilliant results. In no case did an unfavorable result follow this treatment. The average number of days under treatment was twenty-four. All other types of arthritis were so few as to be practically negligible. In none of the one hundred cases was acute articular rheumatism met, nor was acute or chronic endocarditis recognized.

Rabies; a Pathognomonic Sign Generally Overlooked.—M. B. Wesson calls attention to the characteristic development of the paralysis of rabies noted in a series of animals, including man. dog, hog, guineapigs, and rabbits. The paralysis first appeared in the "left hind leg," and this in a short time developed into a left hemiplegia, the paralysis becoming general. In an animal that has suddenly become nervous and irritable, the development of a weakness in the left hind leg, without any apparent reason, is sufficient to warrant a tentative diagnosis of rabies.

Preparation and Employment of a Potent Polyvalent Antistaphylococcic Serum.—A. Thomas's antistaphylococcus serum, containing eighteen strains of *Micrococcus aureus,* possessed direct therapeutic efficiency in a series of conditions, both general and local, due to infections by *Micrococcus aureus.* The writer holds that biological therapy by a potent polyvalent antistaphylococcic serum is more effective in the presence of a staphylococcic bacteriemia than is the corresponding autogenous bacterin. It is to be preferred over bacterin in the treatment of furuncles and carbuncles on account of the more immediate and decisive effects of the serum; on the other hand, if we supplement the serum with two or three inoculations of the autogenous bacterin we confer a more intensive and lasting immunity in the individual. No attempt was made to standardize the antiserum with respect to standard units. Therapeutic failure or inefficiency of many sera is referable to the deficiency of the immune body content of that particular serum—an improper or incomplete immunization of the animal used in the production of the serum.

MEDICAL RECORD.

April 5, 1913.

Surgical Conditions of the Abdomen in Their Relation to Life Expectation.—Morris B. Miller opens the discussion of the topics presented by urging with emphasis a greater deligence and care in the methods employed to arrive at a sound conclusion as to insurability, first place being given to the value of a good history. Appendicitis, as far as its acute forms are concerned, is obviously not a subject for consideration by the life insurance examiner, nevertheless the question may arise as to the insurability of the individual who has had an attack of acute appendicitis, but who has recovered without operation and in whom there may or may not be indications of appendicular irritation, and again the individual who has definite signs of local tenderness at the time of the examination or whose history shows transitory attacks of so called appendicular colic, and, finally, the individual who has undergone operation. The first cannot be considered a good risk by reason of the great liability to a recurrence of the trouble. The second class has practically no mortality, but the general impairment of health due to the digestive derangements and to the associated mental perturbation make an operation desirable. As to the third class, the postoperation cases, in a healthy person operated during an interval or at the beginning of an acute attack, the wound being closed without drainage and with no complications the applicant may be considered acceptable three months after the operation, as beyond that time incisional hernia is not likely to develop. In cases where abscess, or general or diffuse peritonitis has occurred, necessitating drainage, there is a distinct liability to acute obstruction any time within two years, and also to incisional hernia, which is apt to be dangerously strangulated. In these cases, if after two years no obstructive or painful phenomena have occurred, no hernia is present, and the appendix has been entirely removed, acceptance may be advised. Inguinal hernia of unusual size, or one that frequently slips away from the truss, or one that is reducible only with effort and pain, or one that has omental or intestinal adhesions in the sac or to the margins of the hernial opening, would disqualify the applicant. Maldescent of the testicle, when associated with hernia, renders the subject uninsurable on account of the well known tendency of the undescended testicle to sarcoma, as well as for other reasons. Femoral hernia is more serious than inguinal hernia, and other forms (umbilical, incisional, interstitial, sciatic, gluteal, etc.) should always be cause for declination. The modern radical cure may be followed by relapse (five to eight per cent.) but usually not after six months. Gallbladder disease in its relation to infection, and ulcer of the stomach or duodenum are worthy of thought in connection with insurance. The great majority of individuals operated upon for gallstones, who have had no untoward symptoms after a reasonable lapse of time, are acceptable for insurance, but cases of cholecystitis without gallstones operated in, especially if there are other visceral lesions, should be looked upon with great suspicion. The presence of peptic ulcer, acute or latent, is a sufficient ground for rejection, by reason of the dangers of subsequent hemorrhages, leading to anemia or sudden death, perforation, perigastric adhesions, pyloric stenosis or cicatricial distortion of the stomach, the liability in these cases (twenty per cent.) of the development of pulmonary tuberculosis and, finally, because of the close relationship of chronic ulcer to carcinoma. The history of an acute ulcer in early life, followed by a perfect recovery, as shown by unimpaired gastric function, may, however, be ignored. It should not be forgotten that over fifty per cent. of medically cured cases recur. The judgment may be favorable in cases operated in, if a full history of the nature of the lesion and of the operation is obtained, if there have been no symptoms and if three years have elapsed after evidence of full recovery.

Vapor Anesthesia and Its Advantages.—Henry C. Falk, after the use of the Gwathmey vapor apparatus for a year, details many of the advantages accruing from its use. Preceding anesthesia, and one hour before operation, one eighth grain morphine, and one half hour later another one eighth plus 1/150 atropine, are administered hypodermically. Owing to this preliminary medication, the patient is in a tranquil state of mind and takes the anesthetic quietly with lessened psychic shock. As the warmed ether vapor is turned on the smothering sensation, coughing, or laryngeal spasm, which occurs with cold ether, is absent, and there is usually no stage of excitement. The respirations, pulse, and color are normal, and the patient is ready for operation in from five to ten minutes. By this apparatus the percentage of air and ether can be kept at an even plane, and increased or diminished at will. Sponges, suction apparatus, and other means for the removal of saliva and mucus from the throat, are unnecessary, as the warm vapor does not increase the salivary secretion. There is little or no bronchial irritation, patients with chronic lung disease doing as well with the warmed ether as with cold chloroform. There is a more unobstructed field for the operator working on the head and neck or on the nose and throat; in the latter the use of the Gwathmey-Ferguson mouth gag, allowing even continuous narcosis with the anesthetist out of the way of the operator and his assistant; in tonsillectomy a suction apparatus is added. Toward the end of narcosis, a large amount of warm air is pumped into the mask, and this hastens the recovery of consciousness and reduces postoperative nausea, the latter being absent in about sixty to seventy per cent. of all cases. The postanesthetic delirium or "ether jag" is absent. Continuous narcosis can be maintained by the use of 2.5 to three ounces of ether an hour. Postoperative albuminuria is present in thirty per cent. of patients and three to four per cent, of hyaline casts, compared with ninety-five per cent. of albuminuria and seventy per cent. having casts by the use of former methods.

ARCHIVES OF INTERNAL MEDICINE.

March, 1913.

Studies of Renal Function in Renal, Cardiorenal, and Cardiac Diseases.—L. G. Rowntree and R. Fitz investigated the function of the kidneys in fifty-seven patients, by means of the following tests: Phenolsulphonephthalein, lactose, salt, water, potassium iodide, and the accumulation in the blood of uncoagulable nitrogen. The renal function can unquestionably be determined much more accurately with these tests, they conclude, than through ordinary clinical studies alone. For general use the phthalein test is of more value prognostically than any other single test; diagnostically, it is of value in cardiorenal disease for determining the relative responsibility of the heart and kidney for the clinical condition. The lactose test is of great value for determining the existence of abnormal renal function; the suppression of lactose excretion may also be of considerable value prognostically. The salt test is of no value alone, though it may prove useful in conjunction with others. The amount of water excreted in pure nephritis in response to sodium chloride stimulation may be of value, but the potassium iodide test is practically useless. In cardiorenal disease one can determine whether stasis or nephritis is the more important factor, most readily by repeated phthalein tests, though the determination of incoagulable nitrogen in the blood may also be of value. It is also possible—most readily with the lactose and phthalein tests—to diagnosticate the presence or absence of impaired renal function in cases where clinically nephritis is suggested.

Effects of Administration of Iodine in Thyroid Carcinoma.—D. Marine and A. A. Johnson gave iodides to three cases of thyroid carcinoma—two human and one canine—and studied the question of comparative storage of iodine in the tumor and nontumor thyroid tissues, both in material removed at operation and that obtained at autopsy. The cancer tissue was found to exhibit practically no capacity for iodine retention, in contrast with nontumor thyroid tissue, which showed a marked capacity for storing iodine.

Experimental Observations on the Coagulation of Oxalated Plasma, with Study of Purpura.—J. H. Austin and O. H. P. Pepper suggest that in the clinical study of coagulation, not only should a complete blood count and enumeration of the blood platelets be made, and the coagulation time of a drop of blood from the finger determined with one of the clinical coagulometers, but certain other simple tests performed, which the authors outline, to ascertain whether there is a deficiency of calcium or of fibrinogen in the blood and whether the prothrombin present is inactive because of being bound by antithrombin. They report cases of purpura, jaundice, and anemia, as well as controls, in which these tests were carried out. Their studies in purpura, in which normal coagulation was observed, lead them to state that the factor determining purpura is not constantly involved in coagulation as studied in oxalated plasma. No method of study has as yet offered a satisfactory explanation of purpura.

Primary Carcinoma of the Larger Bronchi.—C. V. Weller was able to collect ninety well authenticated cases of this condition, and considers it comparatively frequent. The maximum of cases was found in the age period from fifty-six to sixty years inclusive. In eighty-seven cases, seventy were males. The data in regard to etiology are meagre. Among fifty-five cases, forty-five of the neoplasms were alveolar, acinar, or adenomatous, five medullary, three scirrhous, and two carcinoma simplex. Ante mortem diagnosis is often possible. The chief symptoms, in the order of their frequency are cough, progressive dyspnea, hemoptysis of variable degree, pain in the chest, shoulder, or arm, and pressure phenomena, such as dilated veins of the head and thorax, edema, recurrent laryngeal paralysis, dysphagia, etc. Fever and night sweats are nearly always absent. The physical signs vary with the extent of the neoplasm, the degree of bronchial stenosis, and complicating lung conditions. Bronchoscopy and especially radioscopy are of diagnostic help. Although in the past the diagnosis of bronchial carcinoma has been considered to be chiefly of prognostic value, the condition is now becoming an operable one; its early recognition is obviously essential.

ARCHIVES OF OPHTHALMOLOGY.

March, 1913.

Clinical and Experimental Researches on Intraocular Drainage.—M. J. Schoenberg thus summarizes the results of his studies: The degree of intraocular pressure depends in a great measure on the integrity of the draining system of the eye, and the examination of the rate of ocular drainage is of more importance than the simple measurement of the intraocular pressure. The rate of ocular drainage can be measured by the aid of the Schioetz tonometer in animal and human eyes with a certain amount of accuracy. Normal eyes have an ocular pressure and a rate of ocular drainage varying within relatively wide limits; glaucomatous eyes have some impairment in the function of the draining system. It is safe to suppose that in incipient or prodromal glaucoma the draining system may be undergoing slight alterations which, though too small to raise the intraocular pressure above the upper limit of the normal, are yet sufficient to be discernible by the measurement of the rate of ocular drainage. There are patients with eyes in a condition of latent glaucoma in which the intraocular pressure is within normal limits—about fifteen to twenty-six mm. Hg. The diagnosis in such cases can be cleared up to a certain extent by the measurement of the rate of ocular drainage.

Effect of Chronic Glaucoma on the Central Retinal Vessels.—F. H. Verhoeff maintains that secondary glaucoma always produces, sooner or later, intravasculitis of the central retinal vessels, leading ultimately to complete obstruction. The same variety of changes are seen as in cases of primary obstruction of these vessels. Thrombosis does not occur. Dissecting aneurysms not infrequently occur in both the vein and the artery, producing complicated appearances which have been mistaken for canalized thrombi. Obstruction of the central vein due to secondary glaucoma, probably owing to its slow development, seldom if ever produces the intense hemorrhagic retinitis often seen after primary obstruction of this vessel. In chronic primary glaucoma, intravasculitis of the central vessels, where not coincidental, is the result, not the cause, of the increased intraocular pressure. In the majority of cases it probably does not reach a sufficiently high degree to impair vision until the latter is already lost from other causes.

INTERSTATE MEDICAL JOURNAL.

March, 1913.

Abderhalden's Serodiagnosis of Pregnancy and Its Practical Application.—Henry Schwarz calls attention to the work of Emil Abderhalden, professor of physiology in the University of Halle, and to a number of articles describing the technic for a serodiagnosis of pregnancy and its results. Abderhalden has proved that there is present in the blood of pregnant women a proteolytic ferment which causes cleavage of placental albumin and of placental peptone. This ferment is not present in the blood of nonpregnant women. Two methods may be used to demonstrate the presence or absence of this enzyme; the dialyzation method and the optic method. In the dialyzation method about one gramme of placental albumin is placed into a small dialyzer with two or three c. c. of serum; for the outer fluid from fifteen to twenty c. c. of distilled water are used. This dialyzation apparatus is incubated for from sixteen to twenty-four hours, when the outer fluid is tested by color reaction for the presence of peptone. The experimenter at first used the biurette reaction, which, as it had its limitations and required a certain experience, was replaced by triketohydrindenhydrate or ninhydrin. For each test with presumably pregnant serum, a control test must be started. There are three possibilities in the results of this test: The dialysate of the test shows the characteristic blue color, while that of the control remains colorless (the person whose blood has been tested is pregnant); the dialysates of test and of control remain colorless (showing nonpregnant serum); the dialysates of test and control turn blue (there is some error and the test must be repeated after the error has been discovered and eliminated). The optic method requires expensive apparatus, but is simple. A mixture containing one c. c. of a ten per cent. solution of placental peptone and of two c. c. of serum is placed in a very small polarization tube, and the initial rotation is read off in the polariscope. The tube is now placed into an incubator and the change in rotation is read off from time to time during the next thirty-six hours. The maximum change in rotation with nonpregnant serum never exceeds 0.03°, while with pregnant serum the change amounted to from 0.05° to 0.20° and more.

Stone in the Antrum of Highmore.—Norman H. Carson reports this unique case, as a careful search of medical literature revealed none like it. The calculus was made up almost entirely of calcium phosphate and was found in the course of an operation for a squamous celled epithelioma involving the antrum of Highmore.

The Physiology of Fainting.—Logan Clendening has had two interesting experiences during the past two years which correlate each other and throws a possible light upon the physiology of fainting. In both instances, during a life insurance examination, the applicant has fainted; once while the pulse was being counted, and once while the blood pressure was being taken. In the first case the applicant was standing beside the writer's desk when his pulse was being counted. The writer had counted about half a minute when the pulse, which had previously been large, rapid, and bounding, suddenly stopped. So sudden was the transition that the writer thought the artery had rolled from beneath his fingers, and as he sought to recover it, he felt a tug upon his arm and looked up to find the young man with blanched face and quivering eyelids swaying from side to side and finally tumbling in a heap at his feet. In the second case, the blood pressure was being estimated, when suddenly the mercurial column of the sphygmomanometer fell to 60 mm. and no pulse was felt; the applicant fainted and became unconscious. From these two observations the writer concludes that in syncope the heart, for a brief period, entirely stops beating; that in consequence there is an enormous fall of general blood pressure, which, according to the researches of Hill, would cause an immediate cerebral anemia and loss of consciousness.

Amebic Dysentery, with Special Reference to Ipecac Treatment.—Jesse S. Myer and Jerome E. Cook report six cases of amebic dysentery and present a brief review of the status of the ipecac treatment. While the number of cases (six) is small, the uniformly prompt and lasting results obtained by the writers in this disease so notoriously resistant to treatment other than ipecac is worthy of notice. Very large doses are not always necessary to secure therapeutic results, as proved in the earlier cases of the writers, though perhaps they are desirable. The drug is well borne if administered with a salol coating.

NEW YORK STATE JOURNAL OF MEDICINE.

March, 1913.

Use of Fetal Serum to Cause the Onset of Labor.—A. J. Rongy reviews the experiments of van der Heide and of Sauerbruch and Heyde on the action of fetal blood serum as a means of bringing on labor in animals and in the human female. In four women van der Heide succeeded in inducing labor by the injection of from two to 17.5 c. c. of fetal serum, intravenously. In three others the injections induced transient pains, but failed to bring on labor. In six women the serum was effective in reinstituting labor in patients in whom had developed uterine inertia. Eight women showed no effect of the injections. Rongy injected fetal serum intravenously into nineteen women not in labor and thus induced labor in six patients who were at least from ten to eighteen days before term. In two cases of inertia the serum was effective. Seven cases were wholly negative as far as results in the direction of induction of labor were concerned. In the experience of both van der Heide and of Rongy the injection of the serum is quite harmless, though it usually induces some rise of temperature and pulse rate together with nausea and even vomiting. Rongy saw one remarkable instance in which the serum was injected to induce labor in an eclamptic woman, and the symptoms of threatened eclampsia at once disappeared and did not return. He finds that some of the failures which he had with the serum were probably due to the use of too large a dose, for experience showed that a small dose, followed in four or five hours by a larger dose, is the most effective mode of use, while the injection of a large dose at one time often failed to induce uterine contractions. The initial dose must be determined for each patient and is still not sufficiently worked out. These results do not entirely fit in with the conception that the onset of labor is an anaphylactic response, but in many ways they do seem to confirm the idea that the cause of labor is a deluging of the maternal system with fetal products. An interesting observation made in the course of the investigation is that a woman may have uterine contractions of considerable force and duration and experience no pain. In fact the onset of pain seems to depend upon the impingement of the presenting part of the fetus upon the maternal bony pelvis.

Indications for Abdominal Cæsarean Section, with the Technic of the Operation and Analysis of 352 Cases.—Ross McPherson sums up his analysis thus: 1. Cæsarean section is the preferred method of delivery under conditions where a viable child may not be delivered by normal ways and provided the mother can take the surgical risk. 2. The mortality statistics show that early examination, freedom from previous manipulation and from other efforts to deliver are important points for the best results. 3. The fact that the patient has been some time in labor need not preclude the efficiency of the operation. 4. Conditions for this operation should be satisfactory, as it requires a particular technic with skilled assistants for the best results. 5. The most important points of the technic are: A. High incision; b, nondelivery of the uterus from the abdominal cavity; c, the absence of any method of constriction to prevent bleeding; d, a special method of suture. 6. Given such conditions as are demanded for the technic of the operation, and with the elimination of those patients who would die under any method of treatment, we may hope for a mortality not to exceed two per cent.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.

The President, Dr. L. L. McArthur, Chicago, in the Chair.

Etiology of Ileal Kink, Circumcecal Membrane, and Cecum Mobility.—Dr. F. Gregory Connell, of Oshkosh, Wisconsin, concluded that: 1. Anomalies of development offered a rational explanation for these conditions. 2. Coincident or resultant inflammation might cause confusion. 3. Describing the embryological changes in the ileocecal region under the single term "rotation" likewise caused confusion. 4. Such changes were: Migration, rotation, and fixation, one or more of which might be imperfect. 5. The Jackson or circumcolic membrane might be due to excessive rotation, delayed migration, early or anomalous fixation. 6. The Lane kink might be due to excessive or anomalous fixation. 7. Cæcum mobile was due to an absence of fixation.

The Fetal Peritoneal Folds and Their Relationship to Jackson's Membrane and Lane's Kink.—Dr. Joseph Rilus Eastman, of Indianapolis, called attention to the striking similarity of the fetal peritoneal fold described by Jonnesco and Juvara, and designated by them "the parietocolic fold," to the adult peritoneal anomaly described by Jackson as membranous pericolitis and generally known as "Jackson's membrane." Further attention was called to the probable causal relationship between the bloodless fold described by Treves and a pocketlike anomalous peritoneal reflection which was not rare in the adult, and which passed from the mural peritoneum upon the right side quite low down, extending upward and inward over the caput coli and vermiform appendix to be attached to the last two or three inches of the ileum, and to the peritoneum of the caput coli. It formed the boundary of a precolic fossa in which the cecal head and appendix might rest as in a pocket. It was likely that the caput coli with the appendix were, in not rare instances during operations for appendicitis, shelled out of this peritoneal pocket, the peritoneal fold, that is the bloodless fold of Treves which formed the pocket being looked upon by the operator as an affair of adhesion formation. Moreover, although conceptions of Lane's ileopelvic band, the structure to which was ascribed an important part in the causation of Lane's kink, were somewhat varying, it might be well in discussing the nature and origin of this band to recall that Douglas Reid, of the University of Cambridge, had described under the name of "genitomesenteric fold," a rather common fetal fold of peritoneum which passed from the terminal portion of the ileum into the pelvis. Concerning this genitomesenteric fold, which might be found readily in a surprisingly large percentage of fetuses after the seventh month, or even after birth at term, the question might be raised as to whether it was not related to angulations or gravitations or other deformities of the terminal ileum to which it was attached.

The parietocolic fold of Jonnesco and Juvara in most cases arose from the peritoneum at the left or inner side of the ascending colon, passing over the anterior aspect of the ascending colon in an upward slanting direction. It was attached to the parietal peritoneum at the right of the ascending colon. It might adhere to the anterior and lateral aspects of the colon. He ascribed to this fetal fold practically the same relations as were presented by the parietocolic fold when found in the adult.

The fold which was described by Douglas Reid and called by him the genitomesenteric fold passed from the mesentery of the last part of the ileum down into the pelvis, being attached below to the genital gland. It would be seen that it had a secondary connection with the ileum and through the peritoneum of the mesoappendix with the appendix itself, a connection which was perhaps responsible for the frequent association of appendicitis and oophoritis. He had seen this fold in the adult. By lifting the last part of the ileum upward, a thin fold of peritoneum which was quite loose could readily be seen passing from the mesentery of the last part of the ileum over the brim of the pelvis to the region of the ovary. There was no sharp border of this fold upon the right side. It spread out on the right into a rather narrow fold of Treves. Reid had described this genitomesenteric fold as passing under the appendix, whereas the fold of Treves passed over the caput coli and appendix. In the speaker's cases the inner or left border of the bloodless fold of Treves had ended in each case below in the genital gland in the fetus at the ovary in the female after birth, and at the internal abdominal ring in the male at term. This was not seen as it was observed by Reid. Certainly it was not noticed as a separate distinct fold, but rather as the inner prominent edge of the bloodless fold of Treves, passing from the terminal ileum to the genital gland. It was this genitomesenteric fold of Reid, or the prominent inner border of the fold of Treves as the case might be, which corresponded in its position and attachments to the ileopelvic band of Lane. The relationship between the fetal fold and Lane's band was, perhaps, only suppositional, but it seemed not unlikely that they were identical.

Concerning the origin of Jonnesco's fold, it might be said that several succeeding stages of its formation indicated that adhesions formed between the cecum and parietal peritoneum, while the cecum was still subhepatic. The subsequent descent with torsion or rolling inward upon the long axis drew the mural peritoneum over the ascending colon in a slanting direction.

Relation of Appendicitis, Mucous Colitis, and Membranous Pericolitis.—Dr. A. E. Benjamin, of Minneapolis, drew the following conclusions: 1. The colon bacillus was a most deadly enemy of the human race. 2. Owing to the dietary habits and the upright posture assumed by man, the propagation of the bacillus was favored. 3. The congenital body form and the imperfect development of the large intestine, as well as insufficient support and pressure of clothing, favored visceroptosis, and visceroptosis favored stasis. Repeated attacks of colitis in children might terminate in a chronic form of the disease manifested in later life. 4. Intestinal stasis caused a multiplication of colon bacilli within the colon. 5. The weakest portion of the colon, namely, the cecum, owing to its anatomical location, was the natural receptacle for retained feces, mucus, bacilli, and other contents of the bowel. 6. The two fixed points, namely, hepatic and splenic flexures, inhibited fecal circulation, and where there were kinks, resulting stasis occurred. 7. The reverse peristaltic waves and the uphill course of the first part of the colon were prime factors in the production of stasis in the cecum. 8. When stasis and intercolonic tension existed in the presence of retained infectious microorganisms, the law of osmosis was put in operation and a transmigration of these organisms through the walls of a thinned out colon occurred. 9. There was always a reaction on the part of tissue thus invaded and barriers offered to protect surrounding structures. 10. Without the colon these barriers were manifest in the form of a veillike membrane radiating from the parietal peritoneum to and over the area of the colon most affected. 11. This membrane might not be placed uniformly over the colon or cecum, but often in an imperfect and crippling manner. 12. The pressure of these bands might cause degeneration and scarring of the intestinal wall with contraction, resulting in thick bands or dense adhesions which produced obstruction and secondary stasis. 13. When these fibres hampered the action of the large gut they were a menace to the health of the individual and must be removed. 14. The appendix was often caught in this veillike membrane or dense bands with resulting constriction and degeneration of its walls. 15. When the freedom of action of the appendix was thus interfered with, bacteria were retained and further degeneration and infection resulted. Acute attacks of appendicitis might supervene following chronic symptoms of the disease. 16. A chronic colitis sooner or later might result in membranous pericolitis and demand surgical intervention to relieve imprisoned or restrained portions of the colon or appendix. The results of such an operation depended to a great extent upon the inauguration of consistent dietary and general hygienic measures following the operation. 17. Buttonhole incisions for appendicitis should seldom, if ever, be employed. 18. Surgeons must take a more comprehensive view of diseases of the abdomen, especially of the right side, and cease to focus their attention on the appendix alone. 19. A careful observation must be made of all the abdominal organs at the time of the operation, and a general view taken with a clear understanding of the clinical symptoms and careful investigation of the pathological conditions requiring attention, and with an intelligent interpretation of these their results would be quite satisfactory.

Dr. Van Buren Knott, of Sioux City, Iowa, said he had thought that the so called Jackson membrane was more a congenital anomaly than a pathological entity. He had encountered it many times when the abdomen was opened for any pathological condition, when no symptoms existed which could be attributed to the presence of the membrane.

Dr. W. D. Haines, of Cincinnati, said there was a definite and known cause for colitis. It was an infection of the intestinal wall, and it was the same as other mucous lined surfaces when they became infected, the difference being chiefly in the mechanics of the part, whether it was the gallbladder, the appendix, or gut itself. If one was not absolutely sure of the diagnosis before operation, the incision should be sufficiently large to permit one to see and act intelligently.

Dr. Jabez N. Jackson, of Kansas City, Mo., said the main thing he had endeavored to force upon the profession was the recognition of a pathological or abnormal condition, whether it was congenital, inflammatory, or what not in its origin, a condition which was found about the right side of the colon in a very definite percentage of the cases, and a condition which was clearly definable. It was a clinical entity which presented an absolutely characteristic train of symptoms.

Dr. W. W. Grant, of Denver, reported a most interesting case in which there was a condition of the appendix without local symptoms other than those referable to the stomach. While examination showed hyperacidity of the stomach, an exploratory operation showed absolutely no disease of the stomach or gallbladder, but the tip of the appendix was covered with the so called Jackson membrane, looking exactly as it did in the fetus, except that there was a great deal of congestion and redness of the bloodvessels covering the cecum. Removal of the appendix cured this patient in two months.

Dr. Daniel N. Eisendrath, of Chicago, suggested that cases be watched for the next two years, observations at the operating table made, and cases followed along to see how much benefit had been derived from the various methods of operation, and how much need there was for any operation in a great many of these conditions. He had made notes in a great many cases of so called movable cecum, of ptosis of the ascending colon and transverse colon, and he had been following them up. A chart exhibited contradicted what Doctor Jackson had said, namely, that the Jackson membrane did not form in ptotic colon. This picture showed that the cecum lay between the bladder and the right pelvic wall. Doctor Jackson had pointed out that the circumcolic membrane covered the ascending colon down to the cecum. In these cases there was absolutely no symptom referable to the ptotic condition of the colon. The entire ascending colon and cecum were in the condition that had been described as cæcum mobile or complete ptosis of the cecum.

Dr. Warren A. Denis, of St. Paul, thought this question could be definitely settled by means of cooperative work and by making definite records of the conditions found in the various cases. If all recorded the actual conditions found in children operated upon, they could determine the relative frequency of this membrane in children. A certain number of cases would be operated in later in life, and in some of them this membrane would develop, and perhaps in some of them it would not, but they could reach a definite conclusion only by having a good many men work together.

Retrocecal Appendicitis.—Dr. Jabez N. Jackson, of Kansas City, Mo., described four separate anatomical subvarieties of the general postcecal type. 1. The appendix, possessing its usual mesentery, was distinctive only in the fact that it ran upward along the outer side of the colon which overhung and confined it in the limited peritoneal space external to the colon. 2. Another type ran upward external to the colon under cover of the peritoneum of the posterior parieties, which formed its investment, usually incomplete, on its posterior circumference, and even though complete not furnishing a mesentery proper. 3. Again, he had found the appendix running up along the external wall of the colon itself and invested by its proper tunic and likewise without mesentery. 4. In the fourth type the appendix ran upward directly behind the colon beneath which it was buried in connective tissue entirely, and had no direct peritoneal investment whatsoever.

In the retroperitoneal type we might permit embolic infection of the liver with multiple abscesses entirely beyond any hope of relief by surgical means or otherwise. He would, therefore, emphasize the need of early diagnosis and early removal of the appendix as particularly indicated in this anatomical type of appendix.

Dr. W. W. Grant, of Denver, stated that in a paper, Retrocecal Appendicitis, read before the Colorado State Medical Society, in 1903, he called attention to a symptom not mentioned by the essayist in speaking of the symptomatology, namely, a tender point two inches above, on an intersecting line directed upward from McBurney's point and from the umbilicus. In these cases of postcolonic appendicitis, without preliminary symptoms, one would find this to be the most distinctly tender point. A prompt operation in the class of cases described with drainage through the lumbar region would cure a large proportion of them.

Dr. Walter B. Dorsett, of St. Louis, said he was particularly interested in Doctor Jackson's classic description of this condition, but mostly in regard to the necessity for lumbar drainage even after we had opened anteriorly. Three such cases had come under his observation. In these he was fortunate enough to make a diagnosis of retrocecal appendicitis and opened, first, through the lumbar region, drained, and then went in afterward in front and removed the appendix, for the reason that the appendix was very hard. He removed it through a lumbar incision. It was worth while to consider drainage before the ablation of the appendix.

Gunshot Wounds of the Abdomen.—Dr. Maurice Kahn, of Leadville, stated that of forty-one cases of gunshot wounds seen in civil practice, thirteen (thirty-one per cent.) were of the head, eight (nineteen per cent.) of the chest, and thirteen (thirty-one per cent.) of the abdomen. He cautioned against dogmatism in asserting that portions of the body distant from the wound of entry were not involved, as remote organs were occasionally injured. He cited a rare case of his own: A boy was accidentally shot with a 22 calibre rifle, the bullet entering the external aspect of the right thigh at its middle third, and death from peritonitis resulted on the fourth day. He maintained that the soft tissues of the abdomen were incapable of deflecting a bullet, hence a bullet must traverse that cavity in the straight line of its projection. On account of the danger of hemorrhage and the rapid absorption in the upper abdomen, he also combated the universal belief that wounds of the lower abdomen were attended with a higher mortality rate than were those of the upper abdomen. Despite the fact that army statistics show that conservative treatment was the more successful in war, and that it was possible for a bullet to traverse the abdominal cavity without visceral perforation, and he cited one case of his own in which this occurred, nevertheless, in every case of penetration of the abdomen by a bullet, multiple perforations of the viscera were to be assumed and prompt surgical exploration was demanded. The symptoms usually mentioned were not those of perforation, but were signs of hemorrhage or peritonitis. Given a case with indications of probable involvement of the abdomen, one should not wait for symptoms, but should proceed at once with the operation. Needlessly long incisions, evisceration, rough handling of the gut, and long exposure were to be condemned; however, much time might be wasted by attempting a thorough search through an insufficient opening; therefore, he always made an opening sufficiently large to permit rapid work regardless of its length. Also, in the presence of a belly full of blood, he turned out intestines abundantly to expedite finding the source of the hemorrhage, which, if profuse, arose from the solid viscera, mesentery, omentum, or large vessels, as wounds of the hollow viscera bled but slightly. Trimming the bruised edges of intestinal wounds required time, which might be of great import, and was unnecessary, as the edges could be safely infolded. On account of the tonically contracted bowel, care should be exercised that the bight of the suture was no deeper than was intended. Thorough exploration for distant perforations was urged, as many cases had been lost by neglecting to repair all wounds. The general principles governing drainage in abdominal conditions would determine one's procedure in a given case. When in doubt it was safer to drain. Of thirteen cases, seven were operated in. Excluding one, which involved the thorax and abdomen, and which was fatal through secondary pulmonary hemorrhage, this left six pure abdominal cases with intestinal perforations operated in within eight hours of the accident; five ended in recovery, and one was fatal, a mortality of seventeen per cent.

Dr. W. W. Grant, of Denver, said, in reference to the diagnosis, that if we knew the point of entrance of the bullet and its exit, we could tell with some degree of accuracy what course it had pursued; but often there was no exit; the bullet was lodged in the body, and under these circumstances and conditions, he suggested that the x ray would locate the bullet, and knowing its entrance, even if we did not know its exit, we should know pretty well what course it had pursued, and this could often be done within an hour or two. It was a fact, every hour, after about four hours, increased the mortality from these wounds without operation. Therefore, operation in every case of wound from a bullet should be undertaken. If there had been no wound of the intestine or stomach, the patient would not die from an exploratory operation. The first consideration was hemorrhage and not extravasation, because it was the hemorrhage that produced shock; it was the hemorrhage that produced immediate death and not peritonitis, so that the first consideration was to stop the hemorrhage.

Intussusception.—Dr. S. C. Beede, of David City, Nebraska, said the recurrence of intussusception shortly after its reduction had been sufficiently frequent to make it necessary that the operation performed include such a fixation of the bowel or shortening of its mesentery as would prevent recurrence at this site. Whatever might finally be demonstrated to be the actual cause of death in obstruction of the bowels, experience had shown that drainage of the stagnant fluid in the gut above the point of obstruction promoted the recovery of the patient. Advanced cases of intussusception formed no exception to this rule, and in them provision for such drainage must be made. Threading the gut on a glass tube introduced into it through an incision in its lumen was unclean, time consuming, and involved more visceral manipulation than was admissible in our ideal operation. The method of stitching into the gut a large rubber catheter with rows of purse-string sutures after the manner of a Senn gastrostomy, as repeatedly described by a former president of this association, was decidedly superior and its principle should be included.

Important as this drainage might be, it was of still greater moment that gangrenous tissue should be removed from the field of absorption. When it was present, resection of the bowel must be done; and as it frequently existed in the irreducible invagination, whether or not it showed upon inspection, it followed that irreducible intussusceptions must always be exercised, and the expedient of anastomosing the gut above with that below the obstruction or of simple enterostomy must never be adopted.

The speaker described a technic which best met the indications. It was adaptation of well known methods with some variations that had seemed of sufficient value in his own work to warrant their presentation.

Dr. Daniel N. Eisendrath, of Chicago, said that anyone who had operated in a case of intussusception in an infant and had seen the degree of shock which these children suffered, knew that the greatest amount of operative interference was the thing that would give the highest mortality. Where it was impossible to pull the intestines apart, it was much better, if the child was in any degree of shock, to bring the intussuscepted part out through an abdominal incision, and do an enterostomy to tide the child over for two or three weeks, and then do resection at leisure when the child was in good condition.

Dr. Clifford U. Collins, of Peoria, said that these cases should be operated in inside of twelve hours if we expected to decrease the mortality very much. The general practitioner must be educated to bring these cases to the surgeon sooner than he had been doing.

Dr. William D. Haggard, of Nashville, said that the contention of the essayist, that enterostomy was extremely valuable in these cases as an adjunct, was sound practice, and he thought, moreover, it was preferable to the use of

Moynihan's long tube. Those who had used this tube knew that while it was theoretically excellent, it was difficult to thread through a number of feet of distended intestine, and whenever one touched the intestine the peritoneum broke, so that the use of the appendix was particularly to be commended as a drainage route for enterostomy.

Doctor Beede, in closing, was glad that Doctor Eisendrath had been able to save some of these children by enterostomy, and then later excising or resecting the bowel. He had not been able to find a record of any such case in the literature he had consulted.

President's Address: Transplantation of Tissues.—Dr. L. L. McArthur, of Chicago, said that given the appropriate conditions, any tissue might be transplanted, the difficulties increasing with the vascularity rather than the complexity of the structure, those structures requiring the least circulation proving to be the more successfully grafted. He instanced fat, a tissue made up of a delicate living reticulum stored with an enormously disproportionate amount of fatty globules. For its existence and maintenance it required little else than plasma and asepsis under body conditions. Hence it could be transplanted free and in almost any bulk, provided these conditions were maintained. For this reason, we might now look to see the cavities in bones filled, instead of with Mosetig Moorhof's plug or Beck's paste, by pads of living fatty tissue taken elsewhere from the patient, as was recently demonstrated at Garré's clinic in Bonn; or, as the author had several times done, deposited such fatty tissue in areas heretofore treated by Gersuny's paraffin injections, it being particularly adapted to filling out those greater deformities not amenable to paraffin. He gave as an example the cosmetic filling out of the deformity left after a partial resection of the lower jaw. This had given him most gratifying results. Encouraged by the successful transplantation of this tissue, till recently considered so liable to slough, he had stolen elsewhere from the patient an envelope of fatty fascia to protect the musculospiral nerve just released from the callus of a humeral fracture, or a nerve trunk just sutured after resection for neurofibroma. Again, the hygroma that developed after Murphy's interposition of fatty fascia need no longer be obtained from a pedunculated flap taken from the immediate neighborhood of the joint, often at the sacrifice of structure essential to a good result and adding a complication to the operation, but might be secured elsewhere. For the ankylotic hip or knee, the operation could thus be remarkably simplified.

Experimental Study of the Therapy of Shock.—Dr. M. G. Seelig, Dr. J. Tierney, and Dr. F. Rodenbaugh, of St. Louis, in a joint paper, attempted to check up the work of Professor Yandell Henderson on shock. Henderson's theory of shock was that this symptom complex was due to a lack of carbon dioxide in the circulating blood. The essayists, therefore, attempted by direct methods to increase the carbon dioxide blood content. For this purpose they introduced intravenously into shocked dogs varying quantities of a molecular (8.4 per cent.) solution of sodium bicarbonate. Sodium bicarbonate was dissociated into sodium carbonate and carbon dioxide by three elements in the blood, viz., serum albumin, hemoglobin, and acid sodic phosphate. The quantity of the solution used varied from five to 200 c. c., and the condition of the dogs varied from normal to a state of profound shock.

An analysis of the results obtained on a large series of experiments on dogs showed that sodium bicarbonate was a powerful blood pressure raising salt, the rise in blood pressure persisting over a fairly long period of time. Likewise, this salt markedly increased the amplitude of the heart beat, though it had no appreciably constant effect upon the rate. The depth of respiration was always increased by the infusion, though the rate of respiration varied within wide limits.

After it had been definitely determined that the above noted effects were constant, it was attempted to determine by what mechanism the rise of pressure was occasioned. To this end, the bulk of fluid injected, the alkalinity of the sodium bicarbonate, the hypertonicity of the solution, and the free carbon dioxide resultant from the injection, were studied separately.

The authors reached the conclusion that bulk and hypertonicity played a minor rôle in raising the blood pressure; that alkalinity played a more important part, but that it seemed most probable that some additional undiscovered factor was responsible for the pronounced rise. Whatever this factor was, it seemed to act directly on the heart, even when this organ was isolated from its central nervous system relationships. The authors were not able to attribute any of the pressure effect of the infusions to the increased carbon dioxide content of the blood.

(*To be concluded.*)

Letters to the Editor.

MALARIAL ORCHITIS.

Fort Pierce, Florida, *April 9, 1913.*

To the Editor:

One of the peculiarities of malaria as found in Florida and Cuba, is orchitis, with or without remission of symptoms, such as neuralgia or tumefaction. These cases are often accompanied by some urethral discharge, such discharge showing a mixed saprophytic bacterial flora, and in most cases the patient is positive that he has the typical gonorrheal orchitis. Microscopically, I have found crescents most abundant in the blood, in these cases. All that is necessary to class the trouble etiologically, is a few massive doses of quinine. As a rule, I find three or four one drachm doses sufficient, but I have had cases that would not succumb to less than 120 grain doses. I find it a good principle to continue one thirty or forty grain dose weekly, for one or two months, to prevent recurrence.

C. G. Roehr, M. D.

SNAKES IN IRELAND.

War Department,
Office of the Surgeon General,
Washington, *April 10, 1913.*

To the Editor:

The casual reader of the editorial article in your issue for April 5, 1913, entitled The Dangers of Antityphoid Vaccines, especially if he did not have an opportunity to read in full the articles upon which the editorial comment is based by Professor Vincent's assistants, Doctor Louis and Doctor Combe in *Monde médical* for December 5, 1912, and Doctor Spooner in the *Journal of the American Medical Association* for October 12, 1912, might readily infer that this procedure has dangers which are considerable and not negligible. It is believed, however, that this inference is a mistaken one which is not justified by a careful reading of the articles in question and by a study of the vast experience on record in the office of the Surgeon General of the Army covering more than 100,000 immunizations.

It is true that Louis and Combe detailed with considerable fullness the conditions which they consider to contraindicate the employment of the vaccine. Spooner also recounts incidences of temporary exacerbations in cases where the immunization was employed on persons suffering from various diseases. The conclusions of these authors, however, differ in no respect from those of Russell as expressed in *Circular No. 7,* Surgeon General's Office, April 24, 1912:

"*No person should be immunized who is not perfectly healthy and free from fever at the time.* In case of doubt it is advisable to take the temperature and to examine the urine. If the man has fever or any other signs of illness, the prophylaxis should be postponed until he recovers. This precaution is necessary to avoid its administration to men who may be coming down with typhoid or other fevers.

The men should be cautioned not to drink beer or alcohol in any form on the day of treatment.

This prophylaxis is borne well by children and by women, using doses proportionate to the body weight, taking 150 pounds as the unit. Women should not be given the first dose during or near the time of the menstrual period."

These suggestions are simply the suggestions of common sense and experience and do not imply that the procedure applied with any reasonable amount of precaution is dangerous in any accepted meaning of the word. None of the writers quoted have stated any case in which a permanent injury has been caused by this procedure and their conclusions are far from being in any way adverse to it. Louis and Combe conclude their article as follows:

"We are thus undoubtedly in possession of a method which it is not claiming too much to say, is for typhoid fever as efficacious as is the vaccination of Jenner for smallpox. The results which it has given in Morocco have surpassed all hopes and convinced the most skeptical."

"Antityphoid vaccination," recently wrote the Chief Medical Officer of the Hôpital Louis at Meknès, "is followed here in an intensive fashion. There remain in all the garrison only about 200 unvaccinated Europeans. The results are surprising. The typhoid wards, formerly so crowded, are to-day almost empty. With more than 4,000 troops there are actually only two typhoid cases under treatment. It is wonderful."

The conclusions of Spooner in the article referred to are as follows:

"Frequent injections of small amounts of a low virulence vaccine cause slight inconvenience.

They seem to produce a protection among nurses, who are eight times more liable to the disease than the average individual.

Their morbidity, under ordinary conditions, is 1.4 per cent., or nineteen cases among 1,361.

Only two cases developed under these conditions.

Case morbidity among the uninoculated in these hospitals is nearly nine times greater than among the inoculated, subjected to similar conditions.

No permanent untoward effects have arisen from over 5,000 injections.

The blood picture indicates a certain protection lasting at least two and a half years.

The use of this means of protection has been shown to be safe in two epidemics and very efficient in at least one of them."

In the great recent experience of the United States Army where typhoid immunization is compulsory, although temporary inconveniences and accidents have occurred which should properly be classed as disagreeable but not dangerous, there seems after a reasonable discrimination is exercised between *post hoc* and *propter hoc*, no grounds for belief that this procedure is any more dangerous than vaccination against smallpox. It does not appear to have increased the morbidity from any other cause. Even as regards tuberculosis it does not appear to have stimulated into activity latent processes in any appreciable number of cases. The average rate per mille of admissions for tuberculosis during the three years, 1910, 1911, and 1912, during which there have been more than 100,000 immunizations, has been 3.56 as compared with an average rate of 4.43 admissions per mille for the three years antecedent to 1910.

On the other hand there is a real danger in an attitude of unjustifiable pessimism and excessive precaution. The only officer of the United States Army who died of typhoid fever in 1912 would in all human probability have escaped being cut off in the prime of life if the typhoid immunization had not been withheld on account of the recent arrest of a pulmonary tuberculosis in his case. Is not the conservatism rather extreme which would seriously weigh the slight inconveniences of typhoid immunization against its remarkable benefits and which solemnly declares that the question of its adoption is still *sub judice*, when typhoid fever is so near extinction in the army that the Surgeon General has not received the report of a single case in the army during the current calendar year, the date of the last case reported being December 9, 1912?

J. R. Kean, Lt. Colonel, Medical Corps, U. S. Army.

THE ACTION OF CROTALIN IN EPILEPSY.

Philadelphia, *April 14, 1913*.

To the Editor:

Dr. Ralph H. Spangler's communication on crotalin in the treatment of epilepsy, published in your issue of the fifth inst., is of much interest, since it demonstrates clearly that this drug has a decided influence in checking the progress of epilepsy.

It is not to this point, however, that the writer desires to draw attention, but to the explanation which Doctor Spangler offers as to the manner in which crotalin acts. He seems to be satisfied in believing that the increased coagulation of the blood, which is present in epilepsy, is accountable for the seizures, and that crotalin, by thinning the blood, inhibits the attacks, but leaves entirely out of consideration the possibility of the exaggerated coagulability being a concomitant rather than a cause of the seizures.

The writer has probably had as large as, if not a larger experience in the hypodermic administration of crotalin than anyone else, and believes it exceedingly doubtful whether the small dose which is ordinarily given in this disease has the least influence in modifying the general coagulability of the blood directly; nor does he believe that the beneficial effect of the drug is at all proportionate to the degree of local reaction which it calls forth at the seat of injection, as Doctor Spangler seems to think. Indeed, the writer is convinced that crotalin in the early history of its administration was given in too large doses in many instances, and that its best effects are, as a rule, obtained in minimum doses, especially in beginning the treatment of any case.

Without entering into any discussion as to the manner in which crotalin acts in subduing epilepsy, it seems that if epilepsy is caused by excessive coagulation of the blood, and that, if crotalin checks the disease by inhibiting or decreasing such coagulation, it is incumbent on Doctor Spangler, in order to establish his theory, to make comparative experiments with agents like the watery extract of the medicinal or common leech and other substances, which have the undoubted power of diminishing the coagulation of the blood, and find out whether they manifest the same influence on epilepsy as is done by crotalin.

Until he does this, or in some other way shows a more logical connection between his premises and his deductions, his contention that crotalin relieves epilepsy through the blood falls by the wayside. Thomas J. Mays, M. D.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Prisms. Their Use and Equivalents. By James Thorington, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. With 118 Illustrations, of Which 18 Are Colored. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. vii-144.

This little book describes prisms in general, the refraction of light and the optical effects produced by them, the methods of nomenclature, and the uses to which they are put, particularly in ophthalmology. It contains little that is new, except a description of the author's double truncated prism, but is a handy volume for reference, although mathematical formulæ have been, as a rule, omitted.

The Labyrinth. An aid to the Study of Inflammations of the Internal Ear. By Alfred Braun, M. D., and Isidore Friesner, M. D., New York. With Fifty Figures in the Text and Thirty-four Half Tones on Thirty-two Plates. New York: Rebman Company, 1912. Pp. 250. (Price, $4.)

The authors of the present work have had as their aim to present to the medical profession the clearly established basic truths in connection with labyrinthine disease; and, in the points which are still *sub judice*, to give the hypotheses which seem the most plausible. They have succeeded admirably in both these aims. The book is clearly printed, judicious use being made of bold faced type and of italics, and is well illustrated with diagrams and halftones. There are 234 pages of matter beside the bibliography, list of authors mentioned, and the index. The six chapters are as follows, viz.: Anatomy, physiology, methods of examination, pathology, symptoms and treatment of labyrinthitis. *En résumé,* the book accomplishes what it sets out to do, i. e., to give the most recent facts and thoughts on this very complex subject. It does this in such a way that one can grasp the points as they are brought out. There are a few typographical errors, as there are bound to be in all new books; see, e. g., pp. 26, 108. The bibliography makes no pretense at completeness, and is largely of the German works on this subject. But it is useful. The index is fairly complete, making it easy to refer to a given subject in its different aspects. The work is similar in style and binding to the other books of the Rebman Company in this general series.

Ueber Laparo- und Thorakoskopie. Von Dr. H. C. Jacobaeus, Privatdozent in Stockholm. Mit einem Geleitwort von Prof. Dr. L. Brauer. Sonderdruck aus "Beiträge zur Klinik der Tuberkulose," herausgegeben von Prof. Dr. L. Brauer, xxv, Bd., H. 2. Mit 5 Tafeln und 1 Textabbildung. Würzburg: Curt Kabitzsch, 1913. Pp. 170.

Doctor Jacobaeus, in a book of some 170 pages, gives a very interesting presentation of the application of cystoscopic methods to the examination of the peritoneal and pleural cavities. The first part is devoted to the technic and general indications for the use of the instrument; then follows reports of cases of diseases of the liver, of tuberculous peritonitis, and of cancer of the stomach and liver. The difficulty and risk in employing this procedure seem no greater than in tapping for ascites. The site for the puncture depends obviously upon the situation of the area to be viewed. In examining the thorax the same technic is employed, but the statement is made that not only the skin should be anesthetized at the point of puncture, but the pleura as well. The following were the diseases in which this was done: Tuberculous pleurisy, idiopathic and nontuberculous pleurisy, chronic exudative pleurisy, empyema, and a case of experimental pneumothorax. The method seems to be of very distinct value, particularly as it does not entail the same risk as an exploratory operation. This publication is well worthy of serious consideration.

Synthèse du bacille de Koch. Par Albert et Alexandre Mary. Paris: Jules Rousset, 1913.

In a brief brochure of twelve pages the authors undertake to prove that the Koch bacillus is not the pathogenic agent in tuberculosis. They hold that this bacillus is nothing more than a precipitation product; that it occurs instantaneously on the addition of drops of tuberculin to glycerophosphate of sodium, the medium habitually employed. These bodies, thus artificially obtained, possess the same acid resistance and difficulty in staining that the so called bacillus itself has. One cannot feel that there has been given any good reason for altering the views so commonly held concerning this phenomenon.

Die Behandlung der Knochen- und Gelenktuberkulose mit orthopädischen Massnahmen. Von Dr. F. Oehlecker, chirurgischen Sekundärarzte. Band I. Würzburg: Curt Kabitzsch, 1913. Pp. 90.

This brochure of ninety pages gives emphasis to the methods of treatment advocated by the author in tuberculosis of the various joints. His bibliographical references are confined entirely to his own countrymen and ignore the very extensive researches in the same field by English, Russian, and American writers. The application of plaster of Paris is well described, with numerous illustrations and withal the booklet embodies a thoughtful presentation of the subject, giving the reader much information.

Die exudativ-lymphatische Diathese. (Eine kurze Skizze für den praktischen Arzt.) Von Privatdozent Dr. Paul Sittler, Colmar i. Els., früherem Dozenten für Kinderheilkunde an der Universität Marburg a.L. Würzburg: Curt Kabitzsch, 1913. Pp. vi-111.

Under this title Doctor Sittler gives a very interesting presentation of the symptom complex known as status lymphaticus. After the introduction there follows a general review of the condition, then some twenty pages devoted to the therapy of the disease. The various manifestations of this malady as they appear in the different systems of the body are quite fully discussed, and the relationship to infectious diseases, particularly tuberculosis, is brought out. In considering the underlying causes, Czerny's statements are given, i. e., that it is due to a congenital defect in the chemistry of the body as a result of which all tissues of the body may show great variations in the amount of the watery constituents. It may be due to an overloading of the body by acids. As a result of his investigations Sittler believes that this symptom complex is due, less to an insufficiency of a single gland, such as the thyroid, than to a complicated disturbance of the correlating mechanism of the different glands having internal secretions. Attention is also called to the resemblance of this condition to anaphylaxis. Although this may not be a common disease, nevertheless, it probably occurs much more often than is appreciated, and this volume is very timely in calling attention to a subject concerning which so little is known.

Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp, Prof. Küttner, Prof. Lange, Prof. Lanz, Prof. Payr, et al. Herausgegeben von Prof. Wullstein und Prof. Wilms. Dritte umgearbeitete Auflage. Erster Band. Mit 375 zum teil mehrfarbigen Abbildungen. Pp. xii-660. Zweiter Band. Mit 211 zum teil mehrfarbigen Abbildungen. Pp. vi-496. Dritte Band. Mit 5 Tafeln und 493 zum teil mehrfarbigen Abbildungen. Pp. ix-622. Jena: Gustav Fischer, 1912.

This work has reached its third edition in four years. A glance at the names of the collaborators assures the reader that all subjects have been written by men of wide experience in teaching and practice, who all hold positions as professors of surgery and directors of surgical hospitals. The work consists thus of a collection of authoritative articles by men who are active teachers and practitioners of surgery. Furthermore, some of the articles are written by men specially interested in the particular subjects assigned to them, who have made careful study and investigation in these fields. There are two changes in the arrangement of the subject matter, which are striking and which may or may not commend themselves to the reader. In the first place, the surgery of the extremities is not treated in topographical sequence, but is arranged according to tissues. Thus soft parts, bones, and joints are taken up separately, and the injuries, diseases, and deformities of each are discussed in order. There is no doubt that in this way many repetitions are avoided. The second change is that most of the subjects usually under the head of general surgery will be found described in conjunction with the special topics. Only four subjects, anesthesia, healing of wounds and inflammation, suture and hemostasis, and the treatment of wounds, make up the introductory part of the work. This arrangement is also used for the purpose of avoiding repetitions. It is very probable that serious objections will be raised to these innovations. The work has already been translated into the Hungarian and Russian languages and will in all probability appear soon in an English form.

The Bradshaw Lecture on the Biology of Tumors. Delivered at the Royal College of Surgeons of England, on Thursday, December 5, 1912. By C. Mansell Moullin, M. A., M. D., F. R. C. S., Consulting Surgeon to the London Hospital, etc. London: H. K. Lewis, 1913. Pp. 39.

Although one lecture is very little in which to discuss the subject of tumors, yet this small monograph forms an interesting presentation of the topic. Stating that no proof has ever been brought forward that the structures commonly spoken of as tumors, simple or malignant, are caused by parasites, Doctor Moullin traces the changes occurring in the somatic cells. He holds that the progressive development of the organs and tissues of the individual is the outcome of the mutual relations that have been built up between the infinite variety of cells of which the body is composed. Consequently if differentiation is checked, especially in its earlier stages, the property of growth is capable of reasserting itself with all its old energy, or even with increased energy. The result of this is a tumor. Although by no means exhaustive, this résumé of the question is excellent.

BOOK AND MAGAZINE NOTES.

A book entitled *Slight Ailments* was a useful companion of the graduating medical student and the doctor some thirty years ago; it disappeared, we believe, owing to the distinguished author's inability to reconcile himself to the teachings of modern pathology; for him the bacteria were consequences of disease, not causes. For the past fifteen years or so *Minor Maladies*, by Leonard Williams, M. D., M. R. C. P. (New York: William Wood & Co.), has occupied the useful place of its predecessor. The third edition of 396 pages has just made its appearance and will be found packed with information, either passed over lightly in heavier treatises or difficult to find in an emergency. The book discusses in an interesting and practical way indigestion, constipation, diarrhea, headache, goutiness, change of air, the general health, and similar topics, while a chapter is devoted to insanity—hardly a minor malady—and a particularly valuable section of fifty pages is given to a study of some drugs and their uses. The reader may be surprised to note the author's faith in sarsaparilla. There is a thorough discussion of thyroid extract and some useful warnings are given concerning digitalis. A little editing would help the next edition; there is no good reason for giving the dose of one cough mixture as one drachm, and of the next as one teaspoonful (p. 51). We think our friends will like this book very much. In an American edition it would have been well to substitute our usual legal procedure with an insane patient for that followed in England.

We commented editorially some time ago on the discovery that the supposed fragment of intestine preserved in the College of Physicians and Surgeon in London and supposed to have come from the body of Napoleon was not authentic; since that discovery grave doubts have been cast upon the story that the great commander died of malignant disease. Arnold Chaplin, M. D., however, in *The Illness and Death of Napoleon Bonaparte* (London: Hirschfeld Brothers, Ltd., 1913; pp. 112, price 70 cents), considers that the facts which he cites in his carefully written thesis, "allow an opinion to be formed with tolerable certainty that the cancer which killed Napoleon was secondary to a chronic ulcer, from which he must have suffered for some considerable time, and in the edges of which it orignated." Doctor Chaplin believes that Napoleon suffered from gastric ulcer for three years and that the cancer developed only some eight months before his death. The fact that a correct diagnosis was not made during life, he attributes to the division of the attending physicians into two political camps, one of which wished to prove that Napoleon was being slowly done to death, while the British practitioners were concerned to show that "captivity in St. Helena was as healthy and almost as blissful as residence in the Garden of Eden." They were all men of limited professional attainments and, in some cases, of mediocre intelligence. It is interesting to note that the author of this interesting monograph does not believe that the relic in the English museum is genuine.

Miscellany.

AN OPEN LETTER TO GOVERNOR SULZER.

New York, *April 12, 1913.*

To Hon. William Sulzer, Governor, The Senate, The Members of the Assembly of the State of New York:

The Medical Society of the Borough of the Bronx by unanimous vote at its regular meeting on this ninth day of April, 1913, resolved to, and does hereby protest against Senate Bill No. 869 (Int. 793), entitled, "An act to amend the public health law, relative to medical licenses."

The statute now in effect provides that on the unanimous recommendation of a committee of three of the Board of Medical Examiners, the Regents of the University of the State of New York shall have power to revoke said license or said registration to practise; and the causes for this action we find in the present statute to be: Guilty of fraud and deceit in practice, guilty of crime or misdemeanor or guilty of fraud or deceit by which he was entitled to practise; undertaking or engaging in the procuring or performing of criminal abortion; offering or undertaking to violate any of the provisions of section 1142 of the penal law; habitual drunkenness or habitual addiction to the use of morphine, opium, cocaine, or other drugs having similar effect. While in the foregoing are some causes for action in which the procedure does not involve trial by jury, we nevertheless have no criticism to make of such present statute.

The proposed statute, however, gives beside the above named, the following causes for action which do not involve a trial by jury of laymen: Advertising in any newspaper, pamphlet, etc., by writing letters or causing them to be written, etc., as to the cure of disease or defects of the sexual organs; announcing professional services without compensation or acceptance of fees in consideration of the assurance that an incurable disease may be permanently cured; wilfully betraying a professional secret; employment of capper, solicitor, or drummer for securing patients; division of fees or promise of division of fees, etc., in securing patients; any action not consonant with good morals or anything said or done detrimental to the health or morals of others; any other act, which, in the judgment of the Board of Regents is inimical to the good name and character of the medical profession or which, in the judgment of said board tends to impair public confidence in a member of that profession.

We protest against putting in the statute books of the State such kind of legislation; our profession is one of hard work, giving enormous services to charity and is educated at higher expense of time and money than is any other vocation or avocation; it stands before the public in a peculiarly sacred and intimate position and to rest such causes of action in the taking away of a man's livelihood on a pedagogic administrative body is to morally belittle a medical man, contract his usefulness, and limit his courage. There is no special or general demand so far as we know by the profession in this State for such legislation; to even get a definition from a commission of medical men as to what constitutes advertising would be a difficult piece of work.

Further, the power proposed in said bill to suspend a license also does not appear necessary, as the present law allows for the reinstatement of revoked licenses by the Board of Regents.

Further, a practitioner judged insane by a court automatically loses the power to practise; it appears to us unnecessary that such should be specially defined in this act.

Lastly, the sections in the proposed statute annulling the power of full pardon with restoration to practise by the Governor or President of the United States seems to us unconstitutional.

To take away the property, the liberty, or the life of a man is a process of law completed only by a jury of laymen, said right going back to the Magna Charta. To revoke the license of a practitioner of medicine is to take away his means of livelihood.

Isaac M. Heller, M. D., President.
John J. Decker, M. D., Secretary.

A Turtle Serum Used Five Hundred Years Ago.—The recent exploitation by Doctor Friedmann of a serum derived from turtles as a cure for tuberculosis has caused research into historical medical literature, especially in France. The following forgotten bit of history is contributed by a writer, M. Gaulois, and is condensed from a Parisian journal:

On July 8, 1483, King Louis XI of France sent George the Greek, master mariner, to the Cape Verde Islands to seek "various things touching nearly to the well being and health of our person."

The Cape Verde Islanders had the reputation of possessing a cure of leprosy, a report of which had been brought back to France by a traveler from the coast of Guinea at about the time King Louis was in declining health.

According to the recital of this traveler, the big sea turtles were caught by the islanders when they came out on the beach at low tide to feed. They were at once killed, and their blood caught in large tubs. Persons afflicted with leprosy bathed in the blood, and afterward ate of the turtle's flesh. This treatment was kept up for two years, at the end of which time the patients were usually completely cured of the dreadful disease.

This record would tend to show that Louis XI was a leper. That such was the case had been rumored by chroniclers, but the reason of the expedition to the Cape Verde Islands, now published for the first time, throws much light on the psychology of Louis XI, his ill humor, and his sedulous avoidance of mankind during the last days of his life. The wretched man evidently believed himself to be smitten with leprosy. He was, however, never fated to test the efficacy of the sea turtle remedy, for he died August 30, 1483, before the return of the expedition.

Meetings of Local Medical Societies.

Monday, *April 21st.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Medical Society of the County of Erie, N. Y.; Elmira Clinical Society; Hartford, Conn., Medical Society.

Tuesday, *April 22d.*—New York Dermatological Society; Metropolitan Medical Society of New York City; New York Medical Union; New York Psychoanalytic Society; Alumni Association of Seney Hospital, Brooklyn; Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society; Woman's Hospital Society, New York; Rome, N. Y., Medical Society.

Wednesday, *April 23d.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

Thursday, *April 24th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club, New York; New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association.

Friday, *April 25th.*—New York Academy of Medicine (Section in Public Health); New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Academy of Pathological Science, New York; Italian Medical Society, New York; Hospital Graduates' Club, Brooklyn; Audubon Medical Society, New York.

Saturday, *April 26th.*—West End Medical Society; New York Medical and Surgical Society; Howard Medical Society; Lenox Medial and Surgical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 12, 1913:

Appel, Daniel M., Colonel Medical Corps. Relieved from duty as chief surgeon, Central Department, and at the proper time will proceed to San Francisco, Cal., and take transport for Honolulu about May 5th, and on arrival will report to the commanding general, Hawaiian Department, for assignment to duty as chief surgeon, Hawaiian Department. **Chase,** Alpha M., First Lieutenant, Medical Corps. Honorably discharged from the service of the United States after the expiration of all leave due him, his services being no longer required. **Crosby,** William D., Colonel, Medical Corps. Relieved from duty at the Soldiers' Home, District of Columbia, and will proceed to Fort Sam Houston, Texas, and report in person to the commanding general, Southern Department, for assignment to duty as chief surgeon of that department. **Doerr,** Charles E., Captain, Medical Corps. Granted leave of absence for one month and two days, at such time as can be granted by post commander. **Edger,** B. J., Major, Medical Corps. Left Fort William Henry Harrison on April 3d, for Fort George Wright for duty. **Garcia,** L. C., Captain, Medical Corps. Arrived at Fort Morgan, Ala., on April 6th, for duty. **Kennedy,** J. S., Lieutenant, Medical Reserve Corps. Ordered to Fort McPherson, Ga., on April 8th, for temporary duty from Fort Barrancas, Fla. **McCaw,** W. D., Lieutenant Colonel, Medical Corps. Detailed as a member of the preliminary examining board of the Medical Corps, vice Colonel Louis A. La Garde, relieved. **Maus,** L. M., Colonel, Medical Corps. Granted leave of absence for ten days about April 9th. **Stephenson,** William, Colonel, Medical Corps. Relieved from duty as sanitary inspector and assistant to the chief surgeon of the first division, and will proceed to Chicago, Ill., and report to the commanding general, Central Department, for assignment to duty as chief surgeon, Central Department. **Thode,** E. T., First Lieutenant, Medical Reserve Corps. Will proceed from Fort Hamilton to Fort Jay for temporary duty from April 9th to 19th inclusive. **Wright,** F. S., Captain, Medical Corps. Granted three months and twenty days' leave of absence, about June 1st, with permission to go beyond the seas.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 12, 1913:

Abeken, F. G., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, St. Louis, Mo., and ordered to the Naval Station, Guam, via Army transport from San Francisco on May 5th. **Higgins,** M. E., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the U. S. S. *Illinois.* **O'Malley,** J. J., Assistant Surgeon. Detached from the U. S. S. *Elcano* and ordered to the U. S. S. *Saratoga.* **Osterhaus,** Karl, Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Navy from March 25, 1913. **Tompkins,** J. A., Assistant Surgeon, Naval Medical Reserve Corps. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Recruiting Station, New York, N. Y. **Wickes,** G. L., Passed Assistant Surgeon. From waiting ordered to Navy Yard, New York, N. Y.

Births, Marriages, and Deaths.

Married.

Hilbert—Ashman.—In Nanticoke, Pa., on Wednesday, April 2d, Dr. John A. Hilbert and Miss Annie Ashman. **Posey—Sherk.**—In Lititz, Pa., on Thursday, March 27th, Dr. Silas Robert Poset and Miss Edna Mae Sherk. **Reed—Wilson.**—In Central Islip, N. Y., on Monday, March 31st, Dr. Ralph G. Reed and Miss Lelia B. Wilson. **Ryon—Hurlock.**—In Wilmington, Del., on Wednesday, April 2d, Dr. Elijah William Ryon and Miss Helen M. Hurlock. **Simrell—Morris.**—In Clark's Summit, Pa., on Wednesday, April 2d, Dr. Herbert Eugene Simrell and Miss Trystine Morris.

Died.

Baldwin.—In New York, on Friday, April 11th, Dr. Jared Grover Baldwin, aged eighty-five years. **Bennett.**—In Bridgeport, Conn., on Saturday, March 22d, Dr. Harry Raymond Bennett. **Blair.**—In Lynn, Ind., on Sunday, March 30th, Dr. James S. Blair. **Born.**—In Cincinnati, Ohio, on Thursday, April 3d, Dr. Charles Born, aged seventy-three years. **Cheeseman.**—In Watertown, N. Y., on Thursday, April 3d, Dr. Byron C. Cheeseman, aged fifty-six years. **Cheesman.**—In Swedesboro, N. J., on Monday, April 7th, Dr. John Passmore Cheesman, aged sixty-one years. **Fearn.**—In Oakland, Cal., on Sunday, March 30th, Dr. Radford Fearn, aged sixty-eight years. **Johnson.**—In Kansas City, Mo., on Thursday, April 3d, Dr. George W. Johnson, aged seventy-nine years. **Juler.**—In Cincinnati, Ohio, on Thursday, April 3d, Dr. Henry Cundell Juler, aged eighty-six years. **Lung.**—In Spokane, Wash., on Monday, March 31st, Dr. John A. Lung, aged eighty-nine years. **MacLeod.**—In Buffalo, N. Y., on Thursday, April 3d, Dr. Norman Keatchie MacLeod, aged thirty-four years. **Paynter.**—In Lawrenceburg, Ky., on Wednesday, April 2d, Dr. C. M. Paynter, aged fifty-eight years. **Staples.**—In Dubuque, Iowa, on Wednesday, April 2d, Dr. George Allen Staples, aged fifty-four years. **Sternlicht.**—In New York, on Tuesday, April 8th, Dr. Isaac Sternlicht, aged fifty years. **Stutzman.**—In Tower City, Pa., on Monday, April 7th, Dr. Harry A. Stutzman, aged thirty-six years. **Thomson.**—In Hastings, Ont., on Monday, April 7th, Dr. James Thomson, of Winchester, aged twenty-five years. **Winch.**—In Monepelier, Vt., on Friday, March 28th, Dr. John H. Winch, of Northfield, aged fifty-eight years.

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Original Communications.

INOPERABLE PRIMARY CARCINOMA OF THE BREAST.*

Some Good Results in Treatment by Means of the Röntgen Rays.

By George E. Pfahler, M. D.,
Philadelphia.

In the treatment of inoperable primary carcinoma of the breast, the Röntgen rays do not enter into competition with any other method, since there is no other that has accomplished sufficiently good results in this class of patients to deserve comparison. Any cure, any increased comfort, or any improvement is just so much gain in a class of patients that is otherwise hopeless.

Patients suffering from carcinoma of the breast may be considered inoperable, either because of the extent of the disease, such as extensive metastasis, or because of some unfavorable physical condition, such as cardiac disease, advanced arteriosclerosis, advanced nephritis, diabetes mellitus, etc., or a patient may offer absolute refusal of operation.

In this class of patients we shall still be able to hold out some reasonable hope. How much hope will depend upon the extent of the disease, the rate of growth, and the general condition of the patient; and as much upon the skill with which the rays are applied.

This report is based upon a study of twelve cases, which is all of this type that I have treated in the past fourteen years in which I have been doing röntgenotherapy. I have treated hundreds of cases of recurrence, following operation, upon which I shall make a later report.

Case I. Mrs. B., aged seventy-three years, was referred to me for treatment by Dr. Edwin T. Robinson, November 8, 1902. She had injured her left breast three years previously, and noticed the tumor one and a half year before coming to me, at which time it was four inches in diameter and had bled frequently, on two occasions profusely. The discharge was offensive. There was no palpable glandular involvement. It was inoperable because of cardiac disease, and because of her age. The bleeding, the discharge, and the tumor decreased progressively. Treatment was irregular on account of an attack of bronchopneumonia and repeated attacks of rheumatism. On inquiry Doctor Robinson has very kindly sent the following note: "Mrs. B. died in April, 1906, nearly four years after beginning treatment. The tumor mass had entirely disappeared, which you will remember was originally about the size of half a small cantaloupe. In place of it there was a small ulcer, with retracted tissue about it and considerable induration of the surrounding parts. There was never at any time evidence of metastatic growths, or axillary or clavicular involvement. Pain was never present even after she was confined to her room. She died of exhaustion, aged seventy-seven."

Case II. Mrs. E., aged eighty-three years, referred by Doctor Ulrich, April 20, 1903. Tumor had been noticed by the patient a year previously, and at the beginning of treatment was about half the size of a fist. No axillary nor supraclavicular glands were palpable. Inoperable because she was feeble, had marked arteriosclerosis and cardiac disease. Her age (eighty-three) also made operation inadvisable. She was seldom able to leave her room, and was treated there. Under treatment the tumor gradually became softer, more movable, and smaller, until at the end of six months there was nothing left but a small mass of what appeared to be shrunken scar tissue. During this time she had been given fifty-four applications of the rays. This then remained stationary without further treatment. The family moved to the western part of the State, and about two years later I learned that carcinoma of the cervix uteri had developed, from which she died about a year later. Recurrence in the breast did not develop. This patient was eighty-six years of age when she died; she had been free from recurrence about three years. This result was obtained about ten years ago.

This patient, who was treated ten years ago, never got well, but the discharge, bleeding, and tumor disappeared. She was free from pain, and lived four years.

Case III. Mrs. B., aged seventy years, was referred by Doctor Frank, November 23, 1904. A tumor had been growing in her breast for two years, and was then three inches in diameter, with marked retraction of the nipple. It was typically a scirrhous carcinoma. Inoperable because of her absolute refusal, and because of her age and marked atheroma of her arteries. Under x ray treatment, this tumor was reduced in six months, and eighty-five applications of the rays to a small fibrous mass about an inch in diameter, about one half inch in thickness, and freely movable. It had a puckered appearance, was never painful, and gave no annoyance during eight years that I had the opportunity of following the case. She died of senile changes in the summer of 1912.

This patient had a typical scirrhous carcinoma of the breast; was inoperable; was made comfortable and free from any symptoms of the disease for eight years during which I observed her. She went about her usual affairs and had the general good health of a woman from seventy to eighty years of age.

Case IV. Mrs. E., aged forty-nine years, was referred to me by the Rev. Dr. Russell H. Conwell, July 27, 1908. She had been operated upon for carcinoma of the left breast five years before, at one of our leading hospitals. At that time the tumor was said to be the size of a walnut, and was excised. Recurrence developed within two years. When she came to me the tumor tissue involved the entire mammary region, with axillary and supraclavicular involvement. The mass was so large that it left the impression on my mind of an extensive primary growth. It was a hard, painful, adherent, nodular mass, ulcerated at several places (Fig. 1). It was so far advanced that I wrote to Doctor Conwell that I believed

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*Read before the Philadelphia County Medical Society, February 12, 1913, with demonstration of patients.

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nothing would be accomplished. In the absence of any other hope, I treated her with the rays.

In a month the mass of tumor tissue was reduced to half, and the ulcers were healing. In two months it was reduced to a third, the ulcers were healed, and in three months no tumor could be palpated. There remained, however, a puckered central scarlike mass of tissue, about one half inch in diameter, which was freely movable, and which was not painful. I believed there was no malignant tissue present, but I feared that later this mass would undergo degeneration and accordingly referred her to Dr. Wayne Babcock for operation January 18, 1909.

I believed that only a local excision was necessary, but Doctor Babcock did a complete operation. Pathological examination of the specimen by Doctor Duncan showed some evidence of malignant disease. She was sent back to me in six weeks, when both Doctor Babcock and I felt a hard nodule in the supraclavicular region about the size of a pea. This reduced under treatment to one eighth of an inch, and has remained stationary. About a year ago, a hard nodule one half inch in diameter was discovered in the *right* axilla. This has decreased in size, but has never disappeared. At first she was treated daily, then less often, and during the past three years she has been seen once a month for the purpose of keeping her under observation. In the four and a half years she has had seventy-six applications of the rays. The left mammary area shows marked telangiectases (Fig. 2).

This woman was clearly inoperable when referred to me for treatment because of the extent of the disease, and seemed hopeless even in my estimation. The disease had practically disappeared in three months. The puckered scar was then removed. Her general health improved immediately, and during three and one half years she has felt and looked perfectly well. This case does not strictly belong to this group, but my impression was that she had a primary case, until I had asked her to report for demonstration, and then referred to my original notes. The fact that the disease was recurrent and metastatic, makes the result all the more convincing.

Case V. Mrs. T., aged thirty-eight years, referred by Dr. Samuel Johnston and Dr. Ernest Laplace, January 8, 1909. Tumors had been noticed in her breasts eight years previously. They gradually increased in size and secondary nodules developed under the anterior axillary fold.

At the beginning of treatment there was a mass, one and a half inch in diameter, in the lower outer quadrant of the left breast, and one two and a half inches in diameter in the upper and outer quadrant, with a small nodule under the anterior axillary fold. Both were hard, nodular, and adherent. There was a similar tumor in the right breast, one and a half inch in diameter, in the lower inner quadrant. She was considered inoperable because of the extent of the disease. She was treated three times a week at first. During the past three years she had been seen once or twice a month, partially for treatment and partially for observation. In all she had been treated 114 times. The tumors were reduced to a fibrous mass about one half inch in diameter, freely movable, and not tender. Her general health had at no time been interfered with, and in general appearance she looked perfectly well.

The treatment was carried to the point of producing an erythema, several times, and as a result the skin was atrophic and showed a number of telangiectases.

This patient was living and symptomatically well, over four years after she was referred with carcinoma of both breasts with metastasis. She had suffered no inconvenience except that of coming for treatment.

Case VI. Mrs. H., aged sixty years, referred by Dr. John McGuigan, March 22, 1911. A tumor had been developing for a year and a half, and when I saw her it involved the entire breast, with hard nodules in the axilla, and smaller nodules, the size of a pea, in the supraclavicular region. In addition she had an aneurysm of the arch of the aorta, and irregular heart action. She was inoperable because of the aneurysm, and the condition of her heart, but also because of the extent of the disease.

Under treatment the disease apparently disappeared, and the whole mammary area became soft and movable in about nine months, and after fifty-four applications of the rays. At this time she had an attack of cardiac failure and was laid up in bed for about two months. Since then she had been treated occasionally. Four months ago some metastatic nodules appeared below the mammary region in an area that had not been treated. These received irregular treatments and decreased.

This patient was absolutely inoperable. The disease was arrested for about a year, and even showed signs of disappearing. However, results in this case and in Case V were less satisfactory than in any of the others.

Case VII. Mrs. G., aged thirty-seven years, was referred to me by Dr. John Deaver, July 14, 1911. A carcinoma had been growing in the right breast over three years. In September, 1910, she was taken to Doctor Deaver by Dr. George Miller for operation, but at that time the disease had advanced so far that Doctor Deaver considered operation inadvisable. Ten months later, when the carcinoma had become an ulcerating mass, she was taken to Doctor Deaver again, at which time he referred her to me. She then had an ulcerating tumor about four inches in diameter, adherent to skin and ribs, with several small metastatic nodules about the tumor (Fig. 3). There were enlarged glands in the axilla and the supraclavicular region. She suffered from severe pains.

Under treatment the ulcer gradually healed, the tumor tissue disappeared, and even the scar tissue became movable upon the chest wall (Fig. 4). There was no definite evidence of disease in this area for about a year. (In these patients, it is difficult to decide just when the disease has all disappeared.)

About May 1, 1912, a tumor developed in the upper and outer quadrant of the *left* breast. She was sent to Doctor Deaver, May 18, 1912, to have him see the result in the *right* breast, and to confirm the diagnosis of carcinoma in the *left* breast. The tumor in the *left* breast had nearly disappeared and in its place was some increased firmness, which, I believed, was due to fibrous tissue. She had 206 applications of the rays in all, counting both sides.

During all this treatment she improved in general health; pains were relieved; and she increased in weight and strength. There were, of course, some atrophy and telangiectases of the skin on the right side. After two or three years, this is likely to degenerate and become necrotic. If so, and there is no carcinoma present, excision and skin grafting should be done.

This patient was clearly inoperable because of the extent of the disease. The disappearance of this advanced disease in the right breast under the action of the rays gave encouragement when signs of carcinoma developed in the opposite breast nearly a year later. The relief of the symptoms in the second breast shows that good results may at times be obtained even in a patient with a pronounced constitutional tendency.

Case IX. Miss H., aged forty-five years, referred by Dr. William Martin, October 5, 1911. She had noticed a tumor in her right breast several months, which she thought followed a bruise (walking into a rail). A sister had died from a carcinoma of the uterus about a year previously. Examination showed a tumor in the right breast about half the size of a hen's egg, a small palpable gland in the axilla, and a barely palpable gland in the right supraclavicular region. In the upper and outer quadrant of the *left* breast a tumor about the size of a pigeon's egg was palpable. She had signs of osteoarthritis in the cervical and upper dorsal spine. She had a polypus on the cervix of the uterus.

There was some doubt in the diagnosis, therefore I referred her to Dr. M. P. Warmuth, who amputated the *right* breast, cleared the axilla, and removed the small

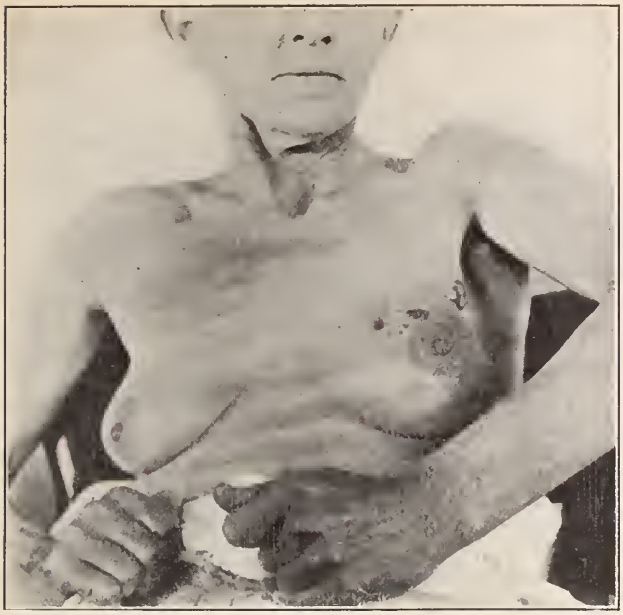

FIG. 1.—Case of Mrs. E., showing hard, adherent, nodular, ulcerated mass before treatment.

gland from the right supraclavicular region and a polypus from the uterus. Microscopical examination by Dr. Henry S. Wieder showed distinct scirrhous carcinoma.

Within two weeks after the operation, she had the excruciating pains of carcinoma, and within a month the entire operative area was indurated and showed distinct recurrence in the wound, the axilla, and the supraclavicular region, recognized by Doctor Warmuth and myself. At the same time the tumor in the *left* breast increased in size to that of a fist; and with enlarged glands in the axilla.

Very active daily treatment was given to the recurrence on the right side, until a slight dermatitis appeared, then treatment was given to the *left* breast—*which was clearly inoperable,* under these conditions—and each side was treated in turn until all evidence of the recurrence had disappeared from the right side, and until the *left,* inoperative breast had become soft and all parts freely movable. On the two sides she had had in all 186 applications of the rays.

At the end of nine months no distinct evidence of the disease could be recognized. She had returned to her usual affairs of life, was taking gymnastic exercises, and had been quite well since.

During the early part of January, 1913, she bruised the left breast; the skin which had been damaged by the rays became eroded and painful. I then referred her to Doctor Warmuth for excision of the breast. The axilla was not opened, because we believed the rays had sealed this glandulary area.

Pathological study by Dr. Eugene Case, confirmed by Dr. Joseph McFarland, showed no evidence of malignant disease anywhere, but showed pigmentation and necrosis of the skin and chronic diffuse fibrosis of the breast.

The results in this patient seem to be most striking and indisputable. The carcinoma of the right breast, with metastasis, was thoroughly removed, and upon microscopical examination proved to be an undoubted case of malignant disease. The disease recurred at once, and no one doubted the recurrence. All this recurrence disappeared under the action of the rays. The disease in the left breast increased rapidly after amputation of the right. No one doubted its malignant character. Under the action of the rays, the clinical signs of the disease disappeared, and subsequent amputation of the breast showed neither microscopic nor macroscopic carcinoma.

CASE X. Mrs. E., aged seventy-eight years, referred by Dr. John J. Lynch, May 27, 1912. She had noticed a tumor in the right breast for about two months. It was then three inches long, two inches wide, and one inch thick, and occupied the upper inner quadrant. There was a smaller mass outside of the nipple, one under the anterior axillary fold, and one in the axilla. She was considered inoperable because of the extent of the disease, her advanced age, her feeble condition, markedly atheromatous vessels—and a cardiac lesion.

Under x ray treatment all signs of the disease disappeared, excepting a small, freely movable nodule about the size of the end of a finger, which occupied the site of the largest tumor. This was accomplished in eight months, with thirty-seven applications, which had to be given irregularly because of the difficulty in getting the patient to my office. At no time was there any evidence of dermatitis, and the skin was not damaged. The result in this patient was especially good because the metastatic nodules, as well as the primary growth, disappeared without any damage to her skin.

CASE XI. Mrs. K., aged fifty-four years, referred by Dr. C. H. Maxwell, of Morgantown, W. Va., August 26, 1912. She noticed a tumor growing in her left breast over a year, which had become painful during the last three months. She had been sent to two surgeons in Pittsburgh, who advised operation, but could give no encouragement as to the outcome.

Examination showed a scirrhous carcinoma involving the entire breast, which was adherent, and showed marked retraction of the nipple. Three nodules could be felt in the axilla, and at least one in the left supraclavicular region. She was inoperable because of the adherent carcinoma, and the metastasis in the axilla and supraclavicular region.

Under the x ray treatment the supraclavicular and axillary nodules disappeared. The mass in the breast shriveled to about one half its former size, and was more movable. She had sixty-two applications in five months, and continued treatment.

CASE XII. Mrs. W., aged seventy-three years, was referred for treatment, September 16, 1912. She noticed a tumor in the left breast about a year ago, which was three inches in diameter; with enlarged glands in the axilla. She refused operation because a sister had died two years after an operation for carcinoma of the breast. She had a loud aortic systolic murmur.

Under x ray treatment the axillary nodules disappeared, and the tumor in the breast was reduced to one third of its original size, and became freely movable. She had thirty-eight applications of the rays in five months.

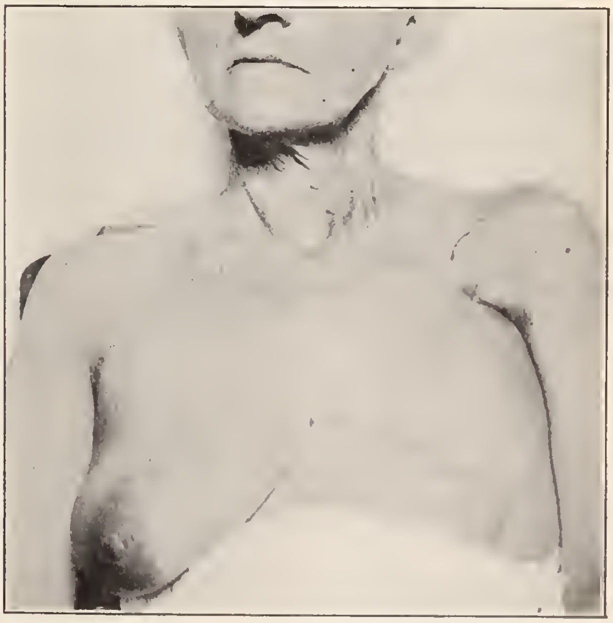

FIG. 2.—Case of Mrs. E., after three months' treatment with x rays.

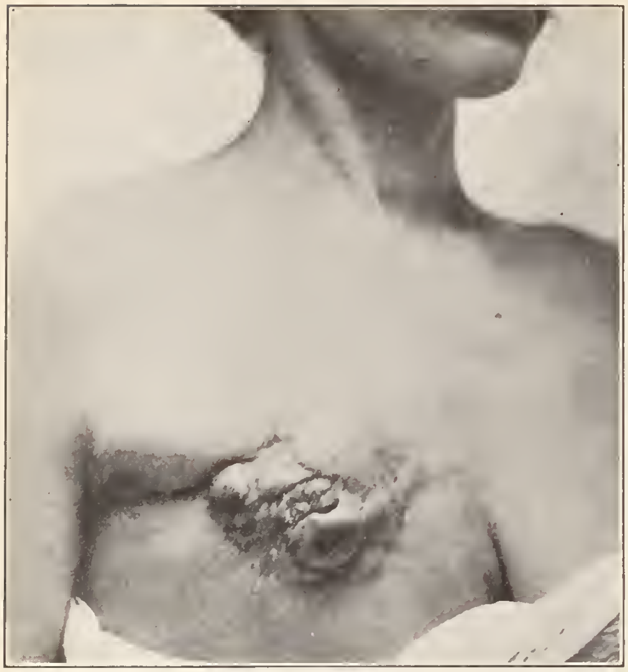

Fig. 3.—Case of Mrs. G., showing ulcerating tumor, four inches in diameter, adherent to skin and ribs, with metastatic nodules; enlarged glands in axilla.

These last two patients are under active treatment, the metastases have disappeared, and the primary tumors have been greatly reduced. After they reach a stationary stage, if they do not entirely disappear, I will ask to have them excised locally, and hope to make a later report of complete success.

TECHNIC.

The details of technic in connection with the individual cases have been omitted, because it would have required unnecessary and wearisome repetition.

Dose. Each application in the early cases corresponds to about 2 x, and in the later ones to about 4 x (4/10 of an erythema dose). This dose should be accurately measured, either by the Kienböck quantimeter, the Holzknecht radiometer, or the Sabouraud and Noire disks.

The *tube* should produce penetrating rays corresponding to 6 or 7 Benoist, and should be kept uniform. If tubes are allowed to get soft, the skin will absorb nearly all of the rays and a burn will result. I like the water cooled tube best.

Any *instrument* can be used if properly managed. Large machines will reduce the time of the exposure, but will also heat and reduce the vacuum of the tube rapidly. Therefore large machines are capable of doing great good or great harm according to the management. I prefer a forty plate, high speed static machine.

The *time* of each exposure will depend upon the apparatus used and the amount of current flowing through the tube. This will usually be from five to twenty-five minutes, but should never be long enough to exceed an erythema dose, on any one area of skin.

The *repetition* of the application will depend upon individual circumstances. In general, I believe the more quickly all parts of the diseased area can receive a full dose of the rays, the more satisfactory will be the result. By careful use of a large apparatus, with which the time of exposure is short, two or more applications can be made on the same day. If the apparatus is small, and therefore the exposure long, it will be too fatiguing to give more than one application on one day. I commonly begin with daily treatments, so as to arrest the disease as quickly as possible. When all parts of the skin have received a full dose, the treatment should be interrupted for two or three weeks.

The *distance* of the anode from the skin is usually twelve inches, but this may be varied according to circumstances.

Protection of the skin is most important. A dermatitis should be avoided as far as possible. The parts of the body that are free from the disease should be protected by lead, but especially the face and hair. *Filters* such as the leather filter which I first recommended over seven years ago (*Transactions of the American Röntgen Ray Society,* September 28, 30, 1905) and which consists of a layer of sole leather interposed between the tube and the patient, will give considerable protection. To this may be added, if necessary, one mm. of aluminum. It is possible to burn a patient through any filter. The disease should be attacked from as many directions as possible, and all lymphatic areas in the directions of drainage should be thoroughly rayed. The rays should reach the mediastinum, for when axillary and supraclavicular metastases have taken place, there is great danger also of mediastinal involvement.

The total *duration* of the treatment will vary with the individual case, but will always extend over several months to a year or more. I commonly treat a patient for a few weeks actively, and then interrupt for a few weeks.

REMARKS.

In all instances, this treatment involves a struggle and a considerable expense, but when one realizes

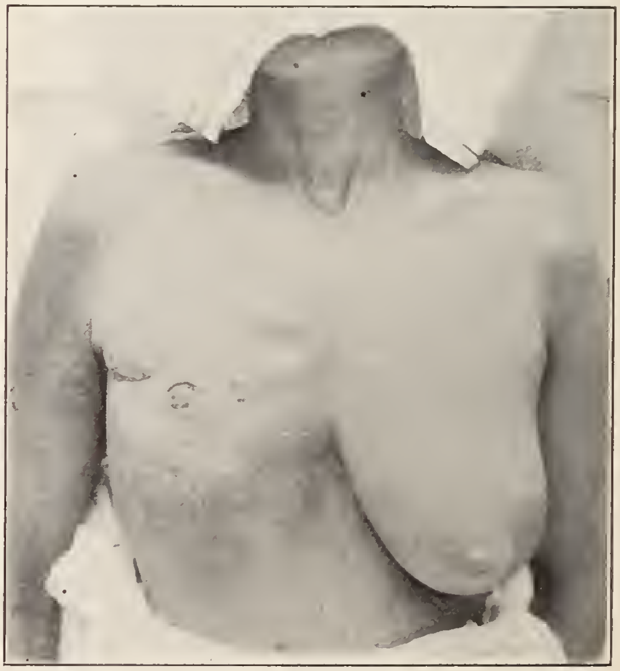

Fig. 4.—Case of Mrs. G., showing result of x ray treatment; ulcerating mass replaced by firm fibrous tissue.

that we are dealing with an otherwise hopeless class of patients, the results justify the effort. I do not know that any of these patients have been cured, and am not reporting them as such. I believe that no one knows absolutely when a patient is cured of carcinoma, no matter what the method of treatment may have been. In this group, an otherwise hopeless class of patients has been rendered free from symptoms of the disease from one to eight years. This report is not made to suggest the replacement of nor in any way to interfere with the operative treatment of carcinoma of the breast, but rather to supplement it, or offer hope to patients who are inoperable.

CONCLUSIONS.

1. In inoperable cases of carcinoma of the breast, x ray treatment offers a reasonable hope of relieving the patient of the symptoms of the disease, prolonging life, and possibly causing complete disappearance of the disease.
2. Patients have been relieved of the symptoms of the disease for from one to eight years.
3. No other method of treatment has ever accomplished as much in this class of patients.
4. A careful mastery of technic is essential to success.

1321 Spruce Street.

INTRAVESICAL DIAGNOSIS AND TREATMENT.

With a Description of New Instruments.

By Leo Buerger, M. D.,
New York,
Associate Genitourinary Surgeon and Associate in Surgical Pathology, Mt. Sinai Hospital; Attending Surgeon, Har Moriah Hospital.

Although the optical and mechanical construction of the modern cystoscope has been considerably improved during the last few years, relatively little progress has been made in the technic of intravesical operative work. It is true that Nitze had already developed an ingenious operating cystoscope more than twenty years ago. This instrument, however, because of its complicated mechanism, its large size, and high cost, failed utterly to popularize those diagnostic and therapeutic measures that lesions of the bladder impose upon the cystoscopist. The tendency of late years has been toward the realization of simpler methods; and toward this end a number of workers have struggled, with the result that a multitude of devices for operative work have been proposed. Although some of the instruments, heretofore described, have considerable merit, most of them seem to be lacking either because of the complexity of their construction or because their small size and fragility restrict their utility to such an extent that they may be safely regarded as rather of theoretical than of practical value.

It was with a view to making certain operative procedures in the bladder feasible through the cystoscope that I began working some five years ago. It soon became apparent to me that the catheterizing cystoscope,[1] even though it was provided with a single catheter outlet (as suggested in previous publications[2]), would have to be modified so as to permit of the introduction of instruments of adequate size. Two types of operating cystoscope were then developed. One of these was provided with two sheaths (a convex and a concave) and its capacity was adequate for a No. 12 French catheter. The second type, the new model of which will be described in a future publication, was fitted with an angulated eye piece,[3] thus allowing the introduction of straight instruments. It is the first type of operating cystoscope which will appeal to the cystoscopist as being simple to manipulate and of sufficiently large capacity to carry useful operating devices.

In this paper I wish to call attention to the construction of those operating instruments that have been found most useful, both in the diagnosis and in the treatment of vesical lesions.

INSTRUMENTS FOR THE REMOVAL OF INTRAVESICAL TISSUE AND FOREIGN BODIES.

Although pathological changes of the vesical interior are, as a rule, not difficult to diagnosticate, there are certain tumors, ulcers, and rare lesions that will often tax the diagnostic acumen of even the most experienced cystoscopist. In such cases, we must apply to the bladder the same methods which are employed in surgical work, namely, *the excision* or *removal* of *pieces* for *microscopical examination*. Although a number of ingenious devices

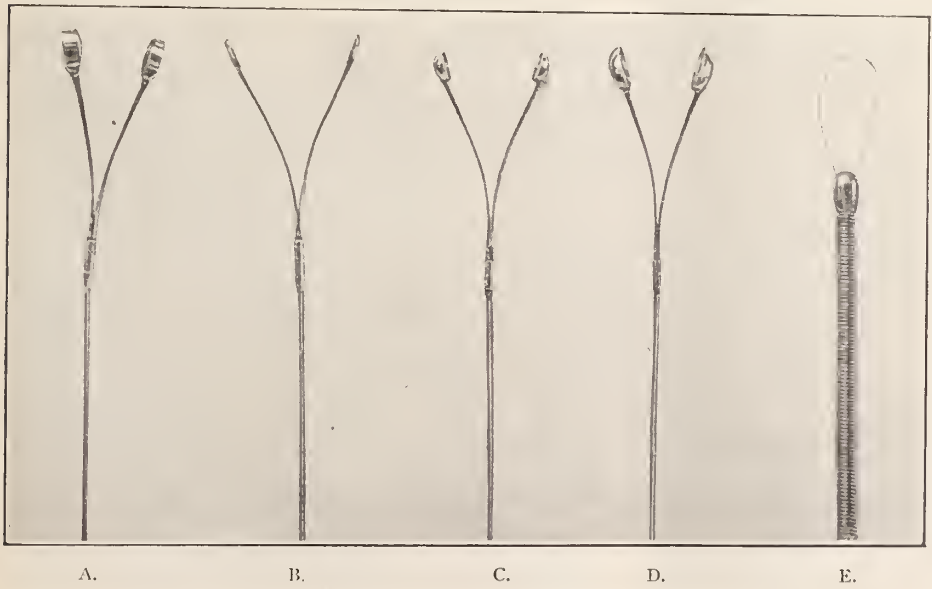

Fig. 1.—Working ends of operating instruments, natural size. From left to right: *A*, ring punch forceps; *B*, grasping forceps; *C* and *D*, small and large cup shaped punch forceps; *E*, snare.

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[1] *Annals of Surgery*, February, 1909.

[2] Buerger: Concerning the Armamentarium of the Cystoscopist, etc., *American Journal of Urology*, September, 1911.

[3] Buerger: A Catheterizing and Operating Cystoscope, *American Journal of Dermatology*, May, 1911.

have been employed in the past for the purpose of securing pieces of tumors for pathological examination through the cystoscope, these instruments have been either too delicate for the obtainment of adequate portions of tissue, or, on the other hand, they have been so unwieldy, rigid, and cumbersome that their employment is not unattended with danger to the patient.

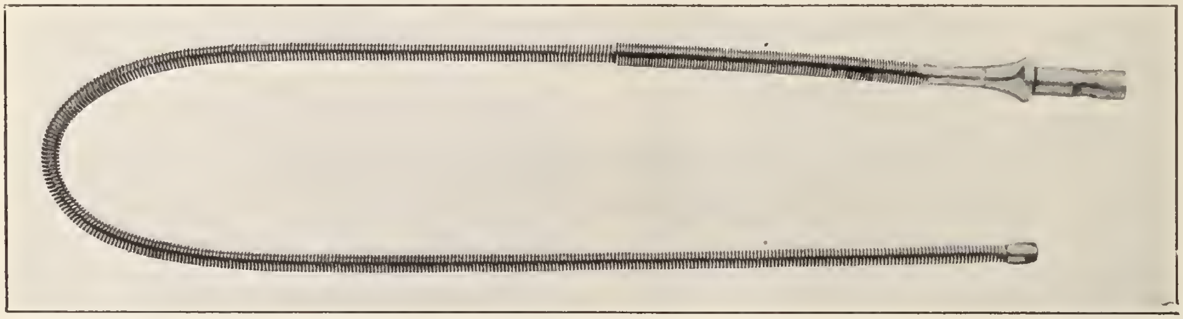

FIG. 2.—Spiral cannula.

It was with a view to overcoming these difficulties that a special set of forceps, snare, and cutting instruments were designated. These have given me the utmost satisfaction, for not only can ample material be obtained with them (if they are correctly applied) but they also have a wide sphere of usefulness in intravesical therapy.

The various instruments resemble each other in their general assembly, being made up of a shank carrying a special detachable working end (or jaws) (Fig. 1), a spiral cannula (Fig. 2), and a handle. The flexible wire shank must be made sufficiently strong to bear the tensile force necessary to produce firm closure of the working end; and, on the other hand, the wire must not be so rigid that its flexibility is impaired, for the usefulness of all instruments of this type depends largely upon our ability properly to direct or bend them by means of the deflector of the cystoscope.

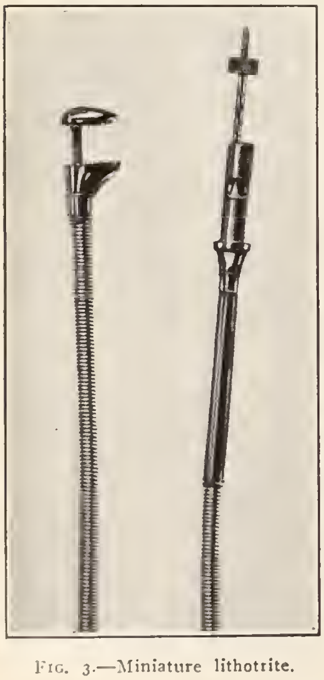

FIG. 3.—Miniature lithotrite.

The cannula (Fig. 2) is made of several sizes, being constructed of spirally wound, very flexible wire with reinforcement of the proximal end. The far end of the tube is capped by a rigid small metal tube, while the flexible end has a fitting which telescopes into the handle. The distal extremity serves for the proper closure of the jaws of the instrument, these being ensheathed as they are closed. For very delicately jawed instruments, small cannulæ will suffice, whereas in those cases where strong and rigid jaws are appropriate, larger cannulæ will be found necessary. For the purpose of simplifying the armamentarium, a universal handle was constructed. This was made as light as possible, so that when it hangs from the ocular end of the cystoscope, its weight is practically negligible, thus producing no interference with the delicate manipulations that are necesary for an exact and precise technic. By means of a scissor type of handle, a forward and backward motion is imparted to two of the upper arms, one of which holds the cannula, and the other of which serves for the attachment of the wire shank. When the scissorlike handles are brought together, the jaws attached to the wire shank are drawn into the cannula and thereby made to close. A fine tooth ratchet attached to the lower limbs of the handle serve to fix the jaws of the forceps in any position desired. Thus the forceps are locked, and the attention of the operator can be directed to the execution of other manipulations.

The upper branches of the handle carry two movable receptacles. One of these holds the cannula, the other receiving the working shank. By means of a swivel joint, the latter makes possible the rotation of the shank, and hence the turning of the jaws.

For the removal of minute foreign bodies or small concretions in the lower end of the ureter, the type of jaws depicted in Fig. 1B is well adapted. The opposed surfaces are transversely corrugated, and the jaws diverge in a straight line and are without terminal teeth.

When pieces of tissue are to be removed for microscopical diagnosis or when small friable stones are to be crushed and removed, when gravel is to be extracted, when ulcers are to be excised, when mucous membrane of the ureteral ostium is removed for the diagnosis of renal tuberculosis,[4] and even for the avulsion of small papillomata, the two types of forceps of the pattern illustrated in Fig. 1 A, C, and D, are most useful. At the extremities of the diverging branches there are two semiovoid, slightly elongated, cup shaped jaws. Their cutting edges are fairly sharp, so that even pieces of mucous membrane suspected of pathological change may be excised in a sort of punch fashion. A smaller hemispherical cup shaped forceps is useful in the case of minute lesions (Fig. 1C).

MINIATURE LITHOTRITE.

In my hands, a working end larger than that just described has been found useful for the purpose of crushing small stones recently descended from the ureter. A crusher, built after the fashion depicted in Fig. 3, will often accomplish the crushing of ureteral calculi when the cup shaped forceps fails. The latter type is then useful for the removal of the fragments.

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[4] This new method for making a positive diagnosis of renal tuberculosis has been described in the *American Journal of Surgery*, February, 1913.

INSTRUMENTS FOR DILATING THE URETER.

Although dilatation of the ureter can at times be successfully accomplished by means of bougies and the insertion of two or three catheters simultaneously into a single ureteral orifice through the author's operating cystoscope, a new method was found to be far more effectual. This method consists in the application of the d'Arsonval current by means of metal olive electrodes introduced into the ureter, the indifferent pole being applied to the abdomen through a large metal plate.

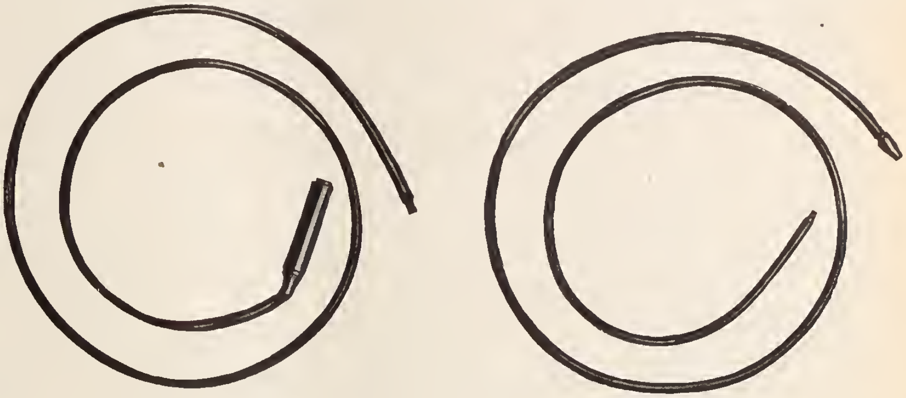
Fig. 4.—Electrode for method of d'Arsonval olivary dilatation.

The technic of this procedure and its utility as demonstrated in case of descending ureteral calculi will be described in a separate publication.[5] Here it will suffice to call attention to the very simple instrument necessary for the execution of the work.

A No. 9 or 10 French silk ureteral catheter serves to insulate a wire conductor, the proximal end of which has a plug for attachment to the high frequency machine, the distal end being provided with a screw thread (Fig. 4). To the latter, metal olives of various sizes are attached in sizes varying from 6 to 18 French (Fig. 5). The smaller olives are ovoid with a tapering point; the largest ones are flattened so as to allow of their passage through the fenestra of the cystoscope.

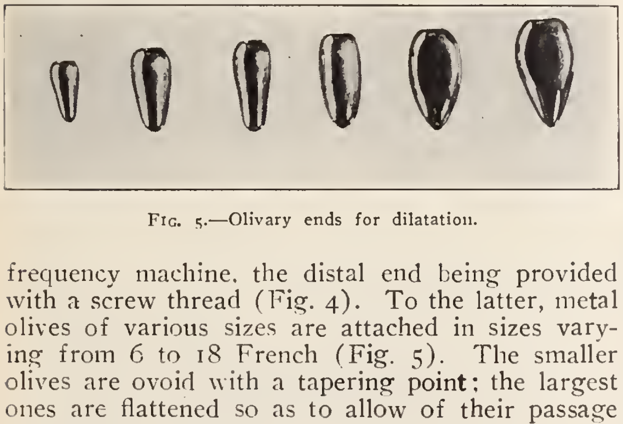
Fig. 5.—Olivary ends for dilatation.

Technic. The shank of the dilating bougie is passed into the telescope in the following manner: After the choice of a suitable rubber cap has been made, this is affixed to the catheter outlet of the telescope and the insulated conductor is introduced. The screw end is made to pass beyond the lens prisms of the telescope, and a suitable olive is attached. Just as in the case of the various operating forceps, the telescope is introduced into the sheath in such a manner as to permit the olive to enter in advance, the conductor being retracted just before the introduction into the ureter is begun.

THE INTRAVESICAL SNARE.

For the removal of papillomata and polypoid tissue, for the extraction of small stones and foreign bodies, and for avulsing papillomata, a specially constructed intravesical wire snare has been found of great value (Fig. 1D). The general assembly of the component parts of this snare is the same as that of the intravesical forceps previously described. The wire cannula is more flexible than that which is recommended for ensheathing the stronger varieties of forceps and can therefore be easily deflected. Indeed, it can be made of such small calibre that enough room is left in the operating cystoscope for the introduction of a single fulguration wire or catheter.

In order to form a wide loop, the distal end of the cannula is provided with a knob that is perforated by two diverging channels through which the wire emerges. These holes are made to separate in order to facilitate the development of an ample loop.

THE INTRAVESICAL KNIFE.

This simple instrument consists of a lance blade or scalpel fitted at the end of a flexible wire or spiral handle (Fig. 6) and is manipulated in very much the same way as an ureteral catheter. It was found useful in puncturing a case of closed ureter with ureterocele, and may also be found of value for ureteral meatotomy as a preliminary step when the ureter is to be dilated, and its orifice is abnormally small.

THE INTRAVESICAL SCISSORS.

Experience has taught me that the intravesical knife will not always suffice to cut the mucous membrane of the vesical interior because of the elasticity and toughness of this membrane. It was therefore found expedient to construct a scissor forceps which is particularly of value in incising the upper ureteral wall, when for any reason it is thought wise to do a preliminary ureteral meatotomy before proceeding to dilatation.

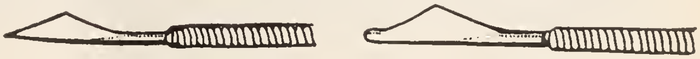
Fig. 6.—Intravesical knife blades; sharp pointed and blunt.

TECHNICAL CONSIDERATIONS.

Proper adjustment and assembly of the operating instrument. Before proceeding to use any of the operating instruments, it is well to acquaint oneself not only with the details of the various components, but also with the proper adaptation and assemblage of the parts. If this is done, the delicate manipulations necessary for precise work after the instrument is in place in the cystoscope will become much simplified.

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[5] *American Journal of Surgery*, May, 1913.

When forceps are to be used the assemblage and technic of introduction into the cystoscope should be carried out in the following way: The cannula, provided with a proper rubber tip, is introduced into the telescope through the catheter outlet, being pushed inward until its extremity lies at least one cm. beyond the lens prism (Fig. 7). A suitable working end with its shank is now inserted in reverse fashion and the handle securely attached (Fig. 8). Finally the adjusting screw of the wire shank is put into place and brought up until it meets the rotating or swivel mechanism.

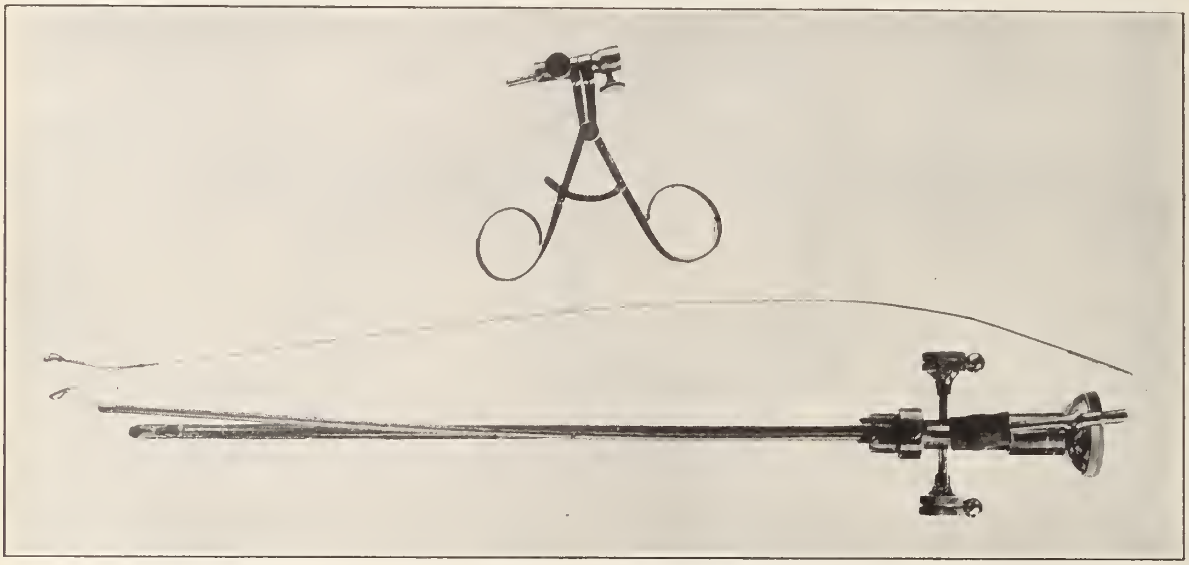
FIG. 7.—Telescope with spiral cannula attached, preliminary to introduction of forceps and affixing of handle.

When the parts have been thus assembled, it is well to test their working as follows: The scissor handles are closed until the jaws are in contact, attention being paid to the proper working of the ratchet. Then, with the jaws in any position, the swivel joint is tested. This mechanism has for its purpose the production of rotary movements in the working jaws. When removing a foreign body or a piece of a tumor or a lesion, the jaws may be thus turned in any direction desired. This obviates the necessity of moving the whole handle of the cannula or the cystoscope.

In a general way, the technic is similar to that employed in ureteral catheterization. For the proper execution of the necessary manipulations, the following mechanical points must be observed: First, the comparative rigidity of the flexible cannulæ compared with the ureteral catheter; second, the comparatively large size of the cannulæ; third, the limitations in the strength of the deflector of the cystoscope; fourth, the recession[6] of the jaws as they are made to close; and, fifth, the advantage of working at close range, even though the technical difficulties are thereby enhanced.

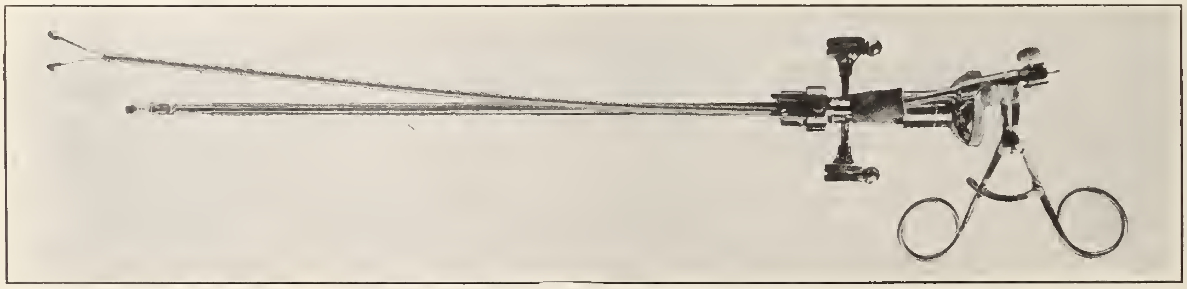
FIG 8.—Telescope and forceps assembly, the jaws being open when handle is attached.

The rigidity of the cannula must be borne in mind when attempts are made to deflect it, particularly when we wish to reach objects at long range. It is often expedient, therefore, to make excursions with the shaft of the cystoscope, lifting the ocular up so as to compensate for lack of inclination of the cannula. The relatively large calibre of the cannula as compared with the ordinary ureteral catheter is responsible for the fact that the field is obscured for a time during the early manipulations. The jaws, too, if they are permitted to lie in front of the lens prisms, would also have the effect of interfering with the view. It is therefore wise to draw the jaw into the sheath while the object of our search is being located. It is only in the case of the very largest type of jaw that we are forced to leave them project in part into the field.

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[6] In newer models, now being tested, the recession of the jaws has been obviated.

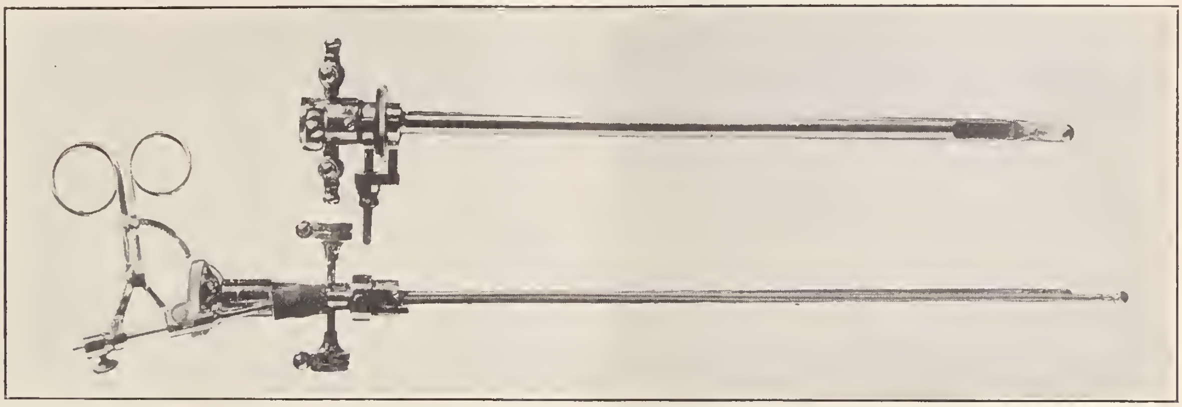

FIG. 9.—Sheath of operating cystoscope and telescope with forceps locked and in "advance position" for introduction into sheath.

In the manipulation of the lid, too, care must be taken that deflection is gradually produced, for very sudden movements of the deflector may cause the wire tractors to become loosened and dislodged. A special fixation screw has been provided to secure the deflector in any desired position.

Another difficulty that we must combat in the use of forceps of the type here advocated is due to the type of mechanical closure employed. The jaws are made to shut by receding into the distal end of the cannula. It will therefore become apparent that when they are open and in contact with the tissue to be attacked, a compensatory forward motion of the cannula or the cystoscope is required lest the jaws recede from the object to be seized.[7]

Because the necessity for deflection becomes progressively less as the vesical wall is approached, working at moderate range is recommended. It is true that certain technical difficulties become thus enhanced. However, these can be overcome with a little practice. We must try to subdue our desire to see a large part of forceps and cannula in the field at the same time, contenting ourselves with seeing the jaws and a small portion of the cannula.

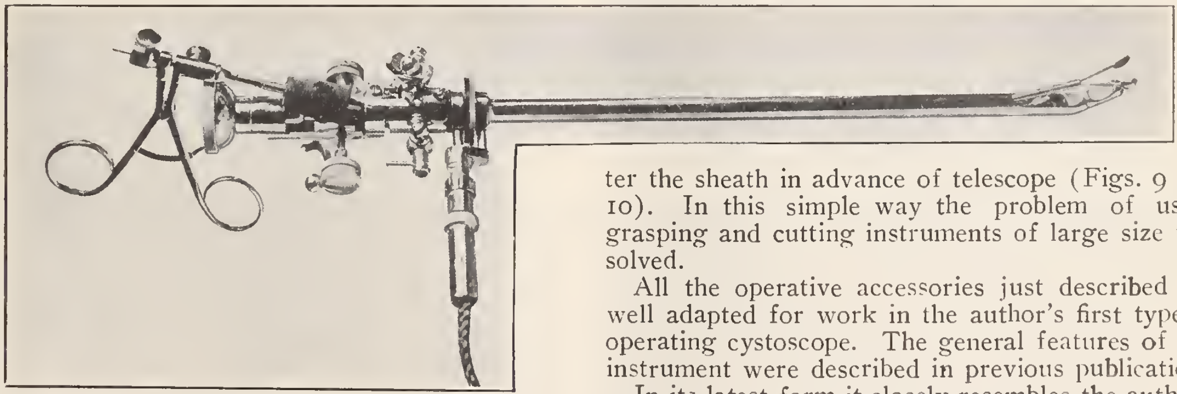

FIG. 10.—Complete assemblage with forceps deflected and ready to grasp tissue situated in roof of the bladder.

Even in cases where a portion of the jaws remain out of view, we will learn with a little practice that as the object is being ensnared an excellent view of the closing jaws can be obtained.

The introduction through the cystoscope of instruments in sizes much larger than the capacity of the catheter outlet would admit, is made possible by giving the working end or jaws a suitable form and by a variation in the technic of introduction. Thus the fenestra can be made to permit of the passage of comparatively large jawed forceps if the latter are introduced in the closed position and if they are flattened in one diameter. Then again it is expedient to ignore the catheter outlet altogether by introducing the forceps in the following way: The flexible spiral cannula is first fitted with a rubber cap, and then introduced through the outlet into the telescope (Fig. 7). The handle is now affixed and the operating jaws selected for the given case are introduced in retrograde fashion (Fig. 8). After securing the jaws and locking them, they are made to occupy a position at least one cm. beyond the distal end of the telescope, and are made to enter the sheath in advance of telescope (Figs. 9 and 10). In this simple way the problem of using grasping and cutting instruments of large size was solved.

All the operative accessories just described are well adapted for work in the author's first type of operating cystoscope. The general features of this instrument were described in previous publications.

In its latest form it closely resembles the author's catheterizing and irrigating cystoscope for routine work, except that the sheath is oval. Two types of sheath are supplied, the convex with the lamp on the side of the convexity of the sheath, and the concave with the lamp on the opposite side. Just as in the catheterizing instrument, the convex type is useful for near work in the region of the sphincter, whereas the concave type has a wider sphere of usefulness, being adapted not only for work at a distance (in the retroprostatic pouch and in the vault), but also at close range if the sphincteric region is excepted.

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[7] More recent models which are now being thoroughly tested will soon be perfected. The jaws of these instruments will not recede as they are closed.

The telescope is of the same calibre as that of the catheterizing telescope, its lid, however, being somewhat smaller. The catheter outlet (or outlet for operating instruments) is large enough to admit a No. 12 French catheter, and there is ample room for the passage of large operating instruments. The catheter outlet, too, is so fashioned that it has a minimal curve, thus permitting even straight instruments to enter, provided that their distal portions are flexible.

With this armamentarium we can not only amplify and enrich the diagnostic data that may be gained by mere observation cystoscopy, but therapeutic procedures can be carried out with ease, precision, and certainty. For purposes of the ablation of tumors, for the excision of callous refractory ulcers, for the dilatation of strictures of the ureter, for expediting the passage of ureteral calculi, for the removal of foreign bodies and calculi, for the cure of papilloma by a snaring process, and for the diagnosis of renal tuberculosis by microscopical examination of excised pieces of the ureteral orifice, the instruments above described have been found indispensable.

40 East Forty-first Street.

OPERATION, WHEN REQUIRED, IN ALL COMMON RECTAL DISEASES, WITHOUT GENERAL ANESTHESIA OR PAIN.*

By Waters F. Burrows, M. D.,
New York.

My subject, in its application to those suffering with anorectal affections, has reference to conservative surgery in a region heretofore often mutilated by methods justly termed radical. Although formerly using general anesthesia in these cases, the writer, during the past few years, has found it preferable, when required, to operate in all cases of hemorrhoids, fissure, anal ulcer, pruritus ani, and spasmodically contracted or hypertrophied sphincter ani muscles, leading to constipation or anal neuralgia, cryptitis or fistula originating in the same, without the use of ether or chloroform, and the resulting cure has been complete and more satisfactory than that following the usual radical procedures. In addition, ischiorectal abscesses are opened under local anesthesia, and most other cases of fistula, as proved by the development of the technic of these rectal operations, can likewise be thus painlessly and thoroughly operated on. In short, experience shows that in over ninety-five per cent. of all rectal and anal diseases requiring surgical intervention, with the exception of cancer, extensive, generally "horseshoe" fistulæ of long duration, and complete prolapse, the general anesthetic should be avoided. Following these operations under local anesthesia, which are carried out in the office, the patients, without pain or laying up at any time, proceed to hotel or home, returning the next day for dressing of the wound.

Many patients afflicted with anal and rectal disease become debilitated by these affections and suffer from indigestion, poor nutrition, and lessened resistance to bacterial invasion, and a general anesthetic for these individuals has additional danger. A relatively large number are attacked by tuberculosis in some form, and although the writer contends that most fistulæ are nontuberculous in nature, yet when this disease is present or when a dormant tuberculosis of the lungs exists, general anesthesia has frequently most unfortunate results in lighting up the process, spreading it throughout the body, and, locally, increasing the difficulty of accomplishing a radical cure.

There are three sequences of anorectal operations done under general anesthesia which are absent when such procedures are performed under local anesthesia. Whereas with the former, shock and reflex impulses are so marked that voluntary micturition is frequently impossible for a day or more, requiring catheterization of the patient with its concomitant dangers of cystitis and kidney infection, with the latter no such difficulty is encountered, and, in the writer's practice, without exception, voluntary emptying of the bladder is possible. Second, the loss of weight and strength which accompany the use of ether or chloroform, due both to the toxic effect of the anesthetic and the enforced confinement to bed, is entirely absent following operations performed by the writer's method, which necessitates no toxemia nor confinement. Lastly, the indications for making the bowels constipated for a period of two to four days or more, thought so necessary in major operations performed for minor rectal conditions and leading to abdominal discomfort, distention, and perhaps autoinfection, are rarely present.

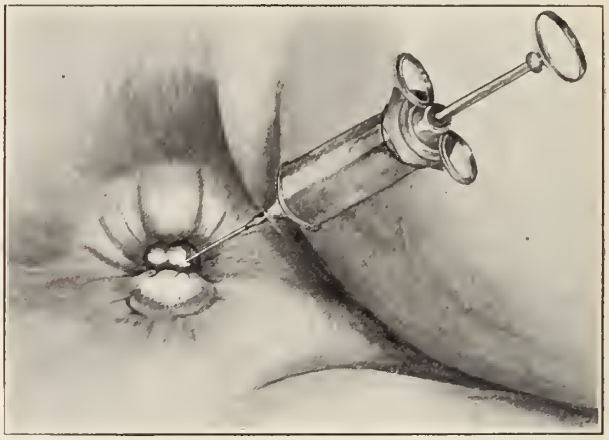
Fig. 1.—Injection of the anesthetic solution into an extrointernal hemorrhoidal mass.

The ideal solution for local anesthesia is easily sterilized, effective, nonpoisonous, and one which causes a minimum amount of postoperative reaction and pain. Cocaine, novocaine, tropacocaine, betaeucaine, stovaine, alypin, quinine and urea hydrochloride, saline, or distilled water may be used. Novocaine is satisfactory, and, in a 0.25 or 0.5 per cent. solution, as generally used, is a safe anesthetic. Quinine and urea hydrochloride, satisfactory in selected cases, causes undue swelling, at times sloughing, and delayed repair at others. The use of saline or sterile water in producing analgesia has been not a small source of wonder to the lay community. However, since the anesthetic effect of these injections is due to and only accompanies overdistention of the tissues, which may cause pain, and persists for a most limited duration of time, its use here is subject to many restrictions. They are unsatisfactory in that large group of cases where inflammation is present, and therefore specific anesthetic solutions, not sterile water nor saline, are preferably used for producing the local analgesia necessary when operating for fissure, ulcer, fistula, or contraction of the sphincter muscles. Freezing mixtures, ethyl chloride, for example, are of service in momentary procedures, such as opening an abscess cavity, or preliminary to the introduction of the needle used for the anesthetic. Spinal anesthesia advocated by some authorities for these operations, on account of its dangers should never be used.

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*Read before the Stamford Medical Society, March 11, 1913.

For the correct and complete performance of rectal operations under local anesthesia, a thorough knowledge of the anatomy and physiology of the rectum and anal canal is requisite, and certain heirlooms of the past must be discarded. For example, textbook authors and teachers have long elaborated upon the necessity when cutting the sphincter ani muscles to do so at right angles to their fibres in order that their functions be retained, and not obliquely, which has been assumed to be the origin of rectal incontinence when occurring, neglecting to emphasize the far more important factors of preservation of nerve supplies. In not a few instances, as a result the anal canal has been practically surrounded by incisions, opening horseshoe tracts for example, nerves have been severed indiscriminately, and the vain hope entertained that, with the sphincter uncut or cut only at right angles to its fibres, bowel control would be retained. In these cases incontinence has ensued and the mental and physical state of the patient has been made far worse than it was before.

Pathological conditions of the rectum demanding operation are not as numerous as those of the anal region. The rectal valves in the past have been frequently accused of sclerosing and ulcerating, leading to constipation, but this is rarely the case. When necessary, however, they may be divided through their free borders by means of a pressure clip or ligature, which devitalizes the tissues and falls off in the course of a few days. The resulting proctitis may temporarily stimulate the rectum and cause soft bowel evacuations, but permanent cure thereby of constipation is not attained. The usual variety of rectal prolapse, which consists in an extrusion of mucosa largely derived from the upper anal canal and lower rectum is readjusted, and polyps are readily removed under local anesthesia by ligating and cutting away the redundant or hypertrophied tissue.

The modified covering of the anal canal, its unique structure, together with the traumatism to which it is liable through bowel evacuations, passage of foreign bodies, and infection or injury coming from without, make inflammatory processes common. Ordinarily the lining membrane stretches sufficiently, although not to the same degree as the surrounding skin, to prevent tears, but with continued congestion and infiltration an abrasion may result upon the passage of hardened bowel contents, leading to a fissure perchance, which heals, or, persisting, may become tuberculous, or, as usual, remain simply inflammatory. Any denudation or ulceration of the mucosa permits deeper infection to take place, which may progress to abscess and fistula. Concomitantly there develops spasm of the anal musculature, which if continued leads to more or less permanent induration and hypertrophy of the muscles involved, and to increased difficulty of bowel evacuation.

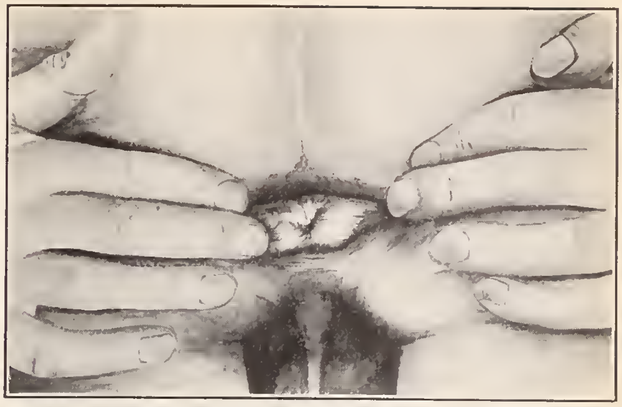

Fig. 2.—Abnormal anus. It is tight, and the sphincter muscles bulge without relaxing when the patient strains. Under local anesthesia, division, not divulsion, of the strictured canal is carried out.

Instead of starting as an abrasion, or as the result of chronic congestion dependent upon hepatic engorgement, excesses in eating or drinking or other general cause, Ball has pointed out that there exists a potent and frequent etiological factor of localized disease in the presence of the anal crypts. There are from six to ten of these small pockets, their openings pointed upward, just above Hilton's white line (the site of juncture of modified mucosa and skin). The free borders of these valves are endowed richly with nerve fibres which give anal sensation to the canal. At the attached ends the

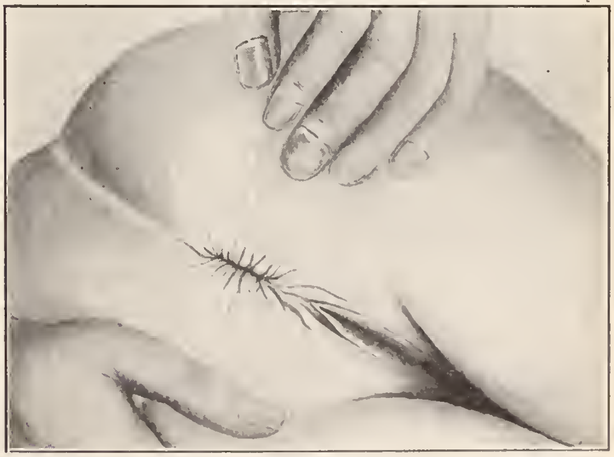

Fig. 3.—Pruritus ani. The skin is macerated, swollen, thrown into folds, lessened in elasticity, and has lost its pigmentation. Itching is worse at night. The writer's operation, based upon the theory of Ball, consists in dividing subcutaneously the nerves involved, working through two or three small cutaneous incisions, and is done without pain or laying up of the patient. Relief is immediate and cure permanent.

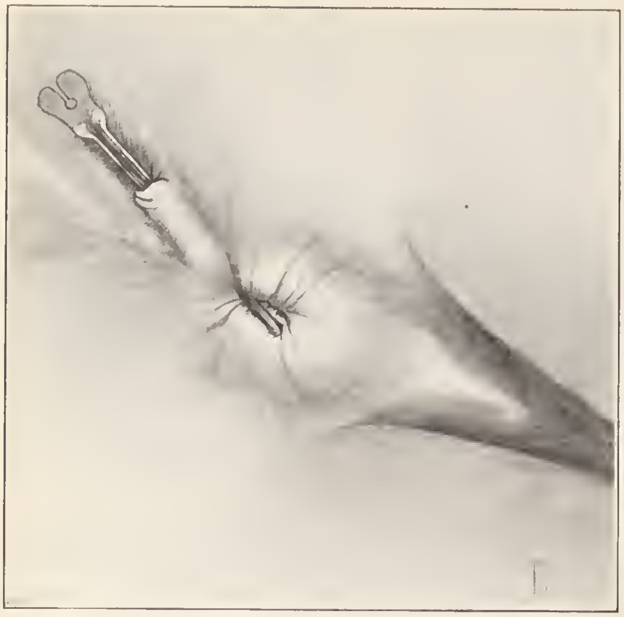

FIG. 4.—Director passed through fistulous tract, after production of local anesthesia and previous to division of overlying structures.

valves terminate in the columns of Morgagni, slightly raised ridges running longitudinally in the lower rectum and upper anal canal. With continued irritation the edges become hypertrophied, forming distinct papillæ, often half an inch long, and become a frequent source of anal affections.

Although to the anal valves have been attributed the functions of mucus formation and lubrication thereby of the canal, the writer believes that quite a different purpose is subserved. In short, the anal canal to be normal must be kept dry and completely evacuated when at rest. Continued moisture macerates the tissues, rendering them more liable to infection and traumatism, whereas, with the retention of bowel material, a source of chronic irritation exists. The external sphincter muscle, under control of the will, makes it possible voluntarily and thoroughly to evacuate the anal canal, provided that, in addition, the bowel movements are formed, whereby this muscle can effectively act upon the mass. The valves placed at the upper part of the canal, when not diseased, supplement the functions of the internal sphincter muscle in preventing secretions or small particles of bowel contents from constantly escaping from the anus. Such delicate structures, however, in a region exposed to traumatism and infection, are often injured by bowel contents of abnormal consistency. The hypertrophied papillæ, already mentioned, may prolapse, making the valve action ineffectual, continued irritation may involve finally the entire anal canal, or the crypts may become deepened or torn, incapable of natural emptying, chronically irritated, the retention place of inflammatory products, and lead thereby to localized abscess, which, extending, becomes ischiorectal, and discharging, internally or externally, forms a fistula, usually complete, although the internal opening may be temporarily blocked or healed over.

Venous vessels forming tufts upon the columns of Morgagni, often early become varicose with resulting pile formation. The area involved is readily distended with the anesthetic solution, and if not already prolapsed by the patient through straining or the injection of a small enema to be expelled at once, the swollen anesthetized tissue may be brought into view by means of the writer's rectal tractor, by a clamp placed upon it and eversion, or by his vacuum apparatus, after which various methods of removing the hemorrhoids may be used. However, it is best to avoid the clamp and cautery, which is painful, and the Whitehead operation, which is mutilating, destroying anal sense to a large degree, and nearly always results in constriction at the anus, if actual stricture does not occur, and in eversion of the mucous membrane, causing constant circumanal moisture and itching. On account of the danger of stitch abscess, extension of the inflammation to surrounding parts, and fistular formation, the writer does not advocate the removal of rectal tissue with the subsequent suturing together of mucous surfaces over the denuded area. The preferable method of removing *hemorrhoids,* hypertrophied anal papillæ, when the latter cannot be simply clipped off, rectal polyps prolapsed through the anus, and other nonmalignant pathological tissue in this region, is by longitudinal incision to either side of the mass and below, so that the resulting scar will be more or less lineal, thus avoiding any tendency to stricture formation frequently present when cicatricial tissue surrounds the lumen of the bowel. This procedure results also in placing the ligature, which ties off the pedicle of the hemorrhoid, at the upper part of the anal canal. generally in fact in the lower rectum, where its presence is not a source of irritation to the more sensitive anal structures below.

There is a distinct and limited field for the use of carbolic acid solutions in the treatment of purely internal hemorrhoids. The procedure, when correctly carried out, is without pain, and in selected cases produces a rapid and safe cure, but the results are not always permanent, and the writer almost without exception would advise that the method be supplanted with more rational surgical procedures.

Constipation, when due to anal inflammation or

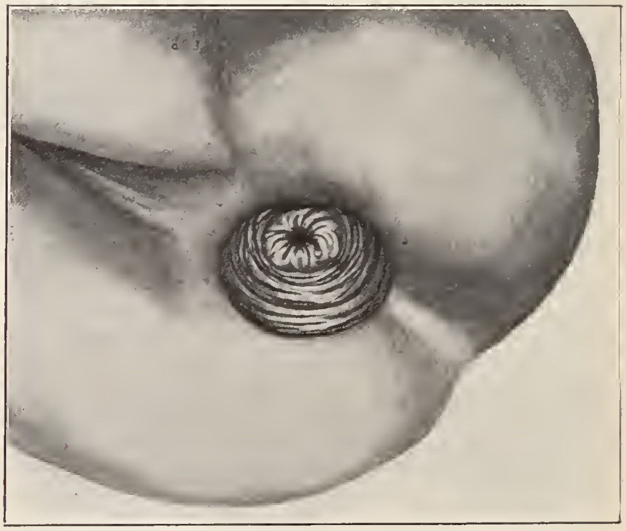

FIG. 5.—Complete rectal prolapse, unsuitable for operation under local anesthesia. Habitual prolapse in children, although a minor surgical condition, demands the use of a general anesthetic for its operative cure.

obstruction, *fissure, ulcer, anal neuralgia, cryptitis*, and painful conditions leading to *spasm and hypertrophy of the sphincter ani muscles,* are completely cured, in almost every instance, through division or partial division of these muscles. This is preferable to divulsing or stretching the structures, which not only requires a general anesthetic, but excessively traumatizes the entire anal canal, and, although relieving temporarily through putting the parts at rest, is generally followed by a reformation of a tight anus, predisposing to a recurrence of the anal disease.

Pruritus ani, a stubborn affection, in a certain number of cases can be permanently relieved by applications to the anal and rectal mucosæ, lessening the mucoid catarrhal discharge, which causes maceration of the parts and renders them more susceptible to low grade infections. Likewise bowel regulation, the avoidance of cathartics, and the attainment of formed bowel movements are important. Where simple prophylactic applications and symptomatic treatment of the itching areas fail to stop the process, removal of skin tabs, hypertrophied anal papillæ, slitting down, and thereby opening deep retention anal crypts, or a Ball operation can be satisfactorily carried out. The writer has had marked success in the radical cure of anal itching through means of his operation, a modification of the Ball technic, performed under local anesthesia, wherein the nerves supplying the affected area are severed in the subcutaneous tissue. The operation requires less than five minutes to complete, is carried out in the office, and gives immediate relief and a permanent cure.

Fistula in ano is a condition more difficult to relieve by radical operation under local anesthesia, unless one has had considerable experience, not only in finding the internal opening previous to operation and in anesthetizing the affected area, but also in determining the minimum and maximum which must be done. Many contend that all such operations must be performed under general anesthesia, and the fistulous tract thoroughly dissected out, and, with this latter point in view, the ramifications of the fistula are colored by injecting methylene blue, potassium permanganate, argyrol, collargol, or other such substance, so that at operation the entire tract may be found and opened up or dissected out according to ideas of the operator. But to show how unnecessary such extensive procedures are, one has only to recall the perfect results where this widespread removal of tissue has not been done, and those other instances where it has been impossible, on account of the danger of injurying important structures, to remove the stained areas. In one respect opinion is unanimous: The internal opening, if present, must be laid open by cutting the fibres of the internal and external sphincters lying over it, or the fibres of the external sphincter ani where the tract passes between external and internal muscles.

The writer's experience shows that all anorectal fistulous tracts can be completely healed by operating under local anesthesia, without causing the patient pain or laying him up, provided they have not been previously tampered with and operated upon until complications have ensued and masses of scar tissue have formed. Even in these apparently unfavorable cases the writer has repeatedly found it possible to cure the condition without the use of a general anesthetic.

In addition to the purely local *rectal ailments* there are others, either *secondary to pelvic or genitourinary inflammations,* or causing the most marked effect upon these parts, and manifested by reflex pains in the back, down the thighs, in the calves of the legs, discomfort, and a feeling of moist coldness locally, painful micturition, or neurasthenic phenomena. Upon examination an anal abnormality may be discovered, at first perhaps only congestion, which may lead later to more serious rectal trouble, causing in turn increased pelvic or genitourinary inflammation, prostatic fullness, and urethral discharge, dysmenorrhea, amenorrhea, menorrhagia, or leucorrhea. Even where the rectal condition is a secondary process, procedures under local anesthesia, as indicated, will relieve some of the most discomforting complications of disease located primarily in the genitourinary tract.

In this communication little has been said of *constipation,* since as a rule anal diseases are not its primary cause, but its frequency as an etiological factor leading not only to indigestion, nausea, and headaches, but also to hemorrhoids in particular, makes a word concerning this sequence of events necessary. As the writer has shown in his work, and has brought out in another paper, constipation is usually based upon one of two fundamental factors; *inflammation* in some part of the gastrointestinal tract (gastric or duodenal ulcer, appendicitis, cholecystitis, diverticulitis), leading to reflex spasm and slowing down or actual stoppage of the fecal current, or *mechanical obstruction,* situated, as the pain complained of by the patient indicates, in the lower abdomen on the left side (sigmoidal obstruction, most frequent), in the lower right abdominal quadrant (cecal, or ileocecal obstruction, less frequently ileac alone), at the hepatic or splenic flexure, or in the epigastric region, where adhesions surround the pylorus, constriction exists, or a displaced stomach interferes with its power to empty. In all these conditions constipation is an early manifestation and one frequently neglected until recovery through medicinal means and without operation is impossible. In time a colitis follows, often of the mucous type, with autointoxication and indicanuria, the liver is overburdened with toxic material; it becomes congested, and the accompanying fullness in the portal circulation is transmitted to the hemorrhoidal veins which empty into this system, with the consequent development of piles. The chronic congestion and inflammation at the anal canal soon make possible other anal diseases, such as fissure, cryptitis, fistula, and pruritus ani. It is evident, however, that when constipation causes the anorectal condition, and not the latter the former, as may occur, the operative cure of rectal ailments should be secondary to correction of the abnormalities leading to bowel irregularity, although, even under these circumstances, the minor affection may be the more annoying and, when eradicated, may lead to a symptomatic cure.

CONCLUSIONS.

To summarize, local anesthesia will lead to less delay among patients in obtaining the relief, which, on account of the fear of pain or in the supposition that the use of a general anesthetic is required, they have neglected to secure until complications have frequently ensued and the health has suffered. When one comprehends that there are but three or four rectal and anal cases in a hundred, apart from cancer, which do not permit of ready relief and cure through operation, if required, performed under local anesthesia, there will no longer exist uncertainty in regard to the proper procedures to advise. Only too often in the past has dissatisfaction arisen over confinement, prolonged and exceeding the time thought necessary, and, although there are but few patients operated upon who have the experience to judge of these factors, yet, if you will carry out this line of work in your practice, you will save the sufferers time, and the pain and the anxiety which are usually associated with rectal surgery as done under general anesthesia.

40 East Sixty-second Street.

A SINGLE CASE OF VITILIGO.

By Nathan T. Beers, M. D.,
New York.
Attending Dermatologist, Methodist Episcopal, Brooklyn, and Swedish Hospitals in Brooklyn; Chief of Clinic, Department of Skin Diseases, Brooklyn Hospital Dispensary.

In Schamberg's *Diseases of the Skin and the Eruptive Fevers,* there is a photograph of a colored woman suffering with vitiligo. Of all of the splendid illustrations in this book, few are more spectacular or pleasing than this one. I have referred to it so many times that it has become one of the fixed images in my mind, coming before me whenever a case of vitiligo presented itself in the office or clinic. In the legend beneath the picture, Doctor Schamberg has stated: "Some of the white patches have later become partially restored with pigment." This statement is so at variance with the usually accepted prognosis in such cases and so opposite from the course of the disease in all of the cases which have come under my personal observation that I have often wondered at it.

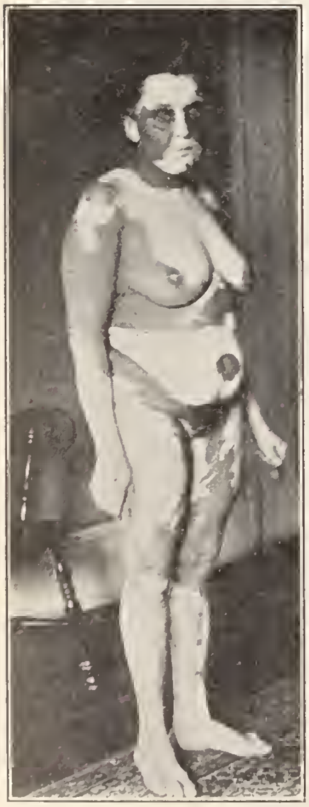
Fig. 1.—Front view of case of vitiligo.

I was greatly pleased when, lately, Dr. A. R. Paine, the senior visiting physician to the Brooklyn Hospital, turned over to my service the woman whose pictures appear herewith. She was brought into the hospital in the ambulance in an unconscious condition following an epileptic attack. She is forty-three years of age, a widow; has had thirteen children, nine of whom died from pneumonia. She gave a history extending over a period of twenty years, during which time the white areas on her body have steadily increased in size. I at once recognized in her the subject of Doctor Schamberg's photograph, and made arrangements to secure the new pictures which I herewith present.

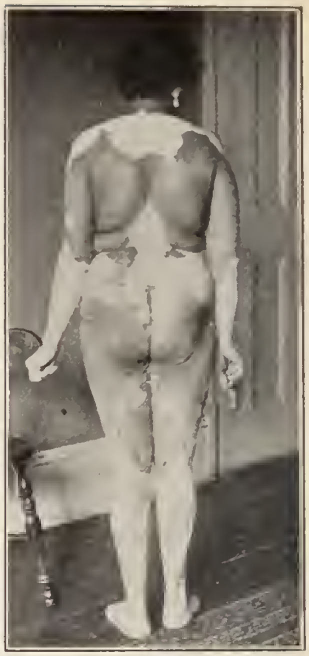
Fig. 2.—Back view of case of vitiligo.

It will be seen that the disease has been steadily progressing. The hair is still perfectly black and kinky, the forehead is almost entirely white, the chest shows an extension of the white area down to the nipples, while the hands and feet and most of the forearms and legs are devoid of pigment. The patient readily assented to being photographed, and stated that she had been photographed many times when she was travelling with the circus. If there are other pictures of this woman in existence to-day, it would be interesting to have them brought together with the photograph shown in Doctor Schamberg's book and these of to-day, which I present. The pigment, in this woman, is darkest on the face, shading off gradually to a creamy brown on the legs.

97 Gates Avenue, Brooklyn.

ORBITAL CELLULITIS.*

A Fatal Case Following Disease of the Accessory Sinuses of the Nose.

By Alfred Wiener, M. D.,
New York.

It is a well known fact that the nose and its accessory cavities are etiologically responsible for many of the orbital and ocular complications with which we meet. The antrum of Highmore, the anterior ethmoidal cells, and the frontal sinus are in close proximity to the floor, inner wall, and roof of the orbit. On the other hand, the posterior ethmoidal cells and the sphenoidal sinus are in immediate contiguity to the posterior half of the inner wall, the posterior part of the floor and roof of the orbit, and optic foramen. When disease exists in these sinuses, infection may be carried into the orbit, either through the vascular return which empties into the superior and inferior ophthalmic veins, or by caries and destruction of the intervening bony wall. Dehiscences, gaps, and defects in the osseous floor of the frontal sinus or lamina papyracea of the ethmoid may also permit infectious material to find its way into the orbit.

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*Read at the December meeting of the Section in Ophthalmology, Academy of Medicine, New York.

A case of this nature which recently came under my observation and which presented features of especial interest is the subject of this paper.

CASE. S. P., forty-six years of age, a merchant, married, father of four children, had suffered from vague pains over the right side of his face for a number of years, but never gave it much thought. About the middle of June, three weeks previous to the time that I first saw him, the pain became severe. At first it involved the right cheek and forehead, and then localized itself in, and back of the eyeball. Both the lower and upper lids became swollen and the eye was distinctly reddened. Movements of the eye aggravated the pain. He was under the care of his family physician, a keen and competent observer, who at once recognized the serious import of these symptoms. Patient was advised to consult a nose and throat specialist. As some relief was obtained through the measures advised by the family physician, patient prevailed upon his doctor to continue with this treatment, and wait for more urgent symptoms before consulting some one else. The pain, however, did not disappear entirely. The edema, which at first occurred only periodically, now became a more permanent feature. With his inability to attend properly to his business, and after a rather sharp and severe attack of pain, he was finally persuaded to consult a specialist. The patient appeared at my office July 5th presenting the following status:

A well nourished man of exemplary habits, with no history of any venereal or tuberculous trouble. On the morning I first saw him he complained bitterly of pain in and about the right eye. There was distinct edema over the lower lid and on the right side of the nose, representing the ethmoidal region. The movements of the eye were unimpaired but distinctly painful, especially when the patient was told to look toward the left. Pressure over the ethmoidal region and over the antrum was exquisitely painful. The same was noticed over the eyeball and over the teeth. There was some photophobia, but the pupil reflex to light and convergence was normal. The vision was unimpaired, registering 20/20 without the assistance of glass. The field was normal, there was no central scotoma, but there was a suspicion in my mind that the blind spot was slightly enlarged. This could not be accurately determined, as the patient became rather restless under the examination. An examination of the nose revealed the following: A most disagreeable and almost overpowering odor; a sanious and brownish, more or less purulent discharge was found covering the floor of the nose, inferior turbinated bones, and issuing from the middle meatus. The middle and inferior turbinated bones were hypertrophied, boggy, and in a state of polypoid degeneration. The pharynx and nasopharynx looked glazed and were covered with dark brownish scabs. As there had been no tenderness over the frontal sinus nor any symptoms present to point toward involvement of this cavity, it was not deemed wise to probe or inspect it in any way for fear of infection. This proved the correct procedure, as the operation later demonstrated. On transillumination the contrast between the two sides was very evident; the right side appeared distinctly darker than the left. There was no pupillary red reflex nor was there present the crescent of light under the lower lid so characteristic of the normal condition. Over the frontal sinus on both sides good transillumination was obtained. The temperature was 100.3° F.

I decided under these conditions to puncture the antrum in order to ascertain the nature of its contents. This was readily accomplished through the inferior meatus. A vile smelling fluid escaped through the trocar. It was brownish in color and, while at first fluid, soon clogged up the tube. The antrum was now washed out with normal saline solution, and more of this ill smelling fluid, together with a mass of dirty whitish clumps, was obtained. The whole clinical picture as well as the findings within the nose, left no doubt that we were dealing with an acute exacerbation of an old chronic ethmoiditis, in addition to an old chronic empyema of the antrum. The threatening, in fact the already suspicious symptoms within the orbit influenced me to advise the patient that a radical operation upon the antrum and ethmoidal region was urgently indicated. He was told to return home until his family physician could be consulted. On the evening of this same day the pain in the orbit became very severe and the edema over the lids more marked. The pain became so excruciating that morphine injections had to be resorted to.

I saw the patient on the following morning at his home. There was all the evidence present now of an orbital cellulitis, almost complete limitation of the movements of the eyeball, photophobia, and marked chemosis, with an intense edema of the upper and lower lids. Vision was good. The pain was intense, and all the portions about the orbit extremely sensitive to pressure. The temperature was 101° F. and there was a slight tachychardia. That same evening, in addition to the foregoing symptoms, the sight began to fail. An approximate examination of the field showed recognition of objects only in the lower and outer field. The hand movement could be seen in this part of the field at about four feet. An examination of the fundus showed dark tortuous veins and narrow arteries upon what looked like an intensely edematous membrane. It had very much the appearance of a detached retina. There were a few scattered hemorrhages, linear and flamelike in shape. The disc was only slightly blurred. On the following morning the patient presented the classical picture of a phlegmonous type of orbital cellulitis. The vision was entirely gone. The eyeball was in complete fixation. A slight exophthalmos with an intense edema of the upper and lower lids and marked chemosis were present. The fundus picture was about the same, with the exception of a few more hemorrhages and the disc more swollen, measuring about three diopters. The clear mentality of the patient, the absence of cranial symptoms, and the perfectly clear cornea certainly did not as yet make one feel absolutely sure about a cavernous sinus thrombosis.

In the presence of such a condition as above related only the most radical measures could be expected to offer any relief. In consultation with a colleague it was agreed that a complete exenteration of the ethmoidal cells as well as the antrum should be performed at once. The patient was removed to St. Luke's Hospital and I operated upon him that same evening. The ethmoidal region was first attacked. Both anterior and posterior cells were found completely broken down and filled with a mass of granulation tissue and small polypoid masses. Some were distended with a mucopurulent secretion, others with almost pure pus. No direct communication was found between these cells and the orbital cavity, but pus was close up to the orbital periosteum. A culture made from this showed pure streptococci. A small opening into the frontal sinus revealed the absence of any disease. The antrum was opened from the canine fossa and we found it almost filled with cholesteatomatous masses. It was unusually large, holding, I should say, about three ounces of the fluid. This may have been brought about through the action of the cholesteatoma upon the alveolar and cancellous tissue of the palatal processes. Unfortunately in this case no x ray photograph was taken, so that a comparison might have been made with the other side. The anterior wall was almost completely removed in order to deal thoroughly with the antrum. It was curetted of its entire contents. As the patient had been on the operating table almost one hour and a half, had lost a great deal of blood, and was beginning to show the effects, it was decided for the present that sufficient had been done to relieve him. An examination of the walls of the antrum showed no defect or erosion, due, as one might expect, to the cholesteatoma. The cavity was packed with iodoform gauze, but not sewed up. It was my intention to watch it, before establishing drainage through the nose. An examination of a culture made from the ethmoidal cells showed streptococci, that from the antrum was uncertain and not identified.

This exenteration of the ethmoidal cells and the antrum had practically no effect upon the desperate condition of the patient. On the second day after the operation the temperature reached 105° F., and the patient appeared extremely ill. It was no longer possible to make an examination of the fundus. The exophthalmos was a trifle more evident. The chemosis and edema were intense. The edema had now spread over the lateral portion of the forehead and to the lids of the opposite eye. A gangrenous area had appeared over the conjunctival portion of the outer part of the orbit, and a small abscess over the inner portion. The pain was excruciating. An examination of the fundus of the left eye was negative, and the vision normal. As the right eye was absolutely lost, and as we feared that the process was spreading rapidly toward the cranial cavity, if not already having reached it, it was deemed advisable, in the hope of checking the process, to exenterate the entire orbit. In this opinion I was upheld by a colleague who was called in consultation, and who also advised taking away the lateral wall. The complete exenteration of the orbit was done on July 11th. The entire contents of the orbit were found matted together and dotted here and there with minute abscesses. Near the apex was another gangrenous focus. The nerve lay entirely bare within its sheath surrounded by a sanious fluid. The orbital lining was intact, showing again no necrotic areas nor the slightest sign of any invasion from its neighboring sinuses. The lateral wall was removed in order to get at the pterygoid region, but nothing was found of any importance. The next day the temperature dropped to 101° F. The patient felt more comfortable, and appeared to be holding his own until the fourth day after the operation, when the temperature again rose to 104.4° F. His mentality was good, but there was more pain. The odor in the antrum as well as the orbit was again becoming vile in spite of the fact that dressing powder was used and the cavities were cleansed twice daily. The gangrene at the apex appeared to be spreading, and the walls of the orbit began to exfoliate. An autogenous vaccine which had been made was used for the first time. On the following day the temperature dropped to 100.2° F., but rose that same evening to 104° F. Notwithstanding the fact that the vaccine was continued, and large doses of hexamethylenamine given, the patient gradually passed into a septic condition. The blood cultures made were negative. Forty-eight hours before the patient died he presented the picture of meningeal involvement. The lumbar puncture substantiated this. Every effort was made to control this pyemic condition. The attack upon the cavernous sinus according to Levinger, of Munich, was considered, but in the presence of such a virulent sepsis, and with the possibility of endangering the other eye, it was not considered justifiable. The patient finally succumbed eight days after the second operation to what appeared to be a purulent meningitis. No autopsy was permitted.

PATHOLOGICAL REPORT.

Dr. F. C. Wood, pathologist of St. Luke's Hospital, submitted the pathological report, as follows:

Macroscopical. Specimen consisted of eye, which was received in formaldehyde solution with the muscular attachments and about 10 mm. of the optic nerve. The cornea was cloudy, the anterior chamber and lens appeared normal. The retina was edematous and in some places elevated from the choroid. The outer coats, muscle tissues, and nerve were edematous and flabby, the nerve being a mere soft string. The exudate covering the muscles and fat was tenacious. No pus was noted in the interior of the eye on close examination.

Microscopical. The orbital fat contained numerous small abscesses with infiltration of the fibrous and fatty tissue with pus cells and fibrin. The smaller bloodvessels contained thrombi. Edema of the tissues was very marked, and there were evidences of proliferation in the fibroblasts of the interlobular septa between the areas of fat tissue. Around many of the capillaries there was a ring of extravasated leucocytes lying in a fibrous network. Bacteria were numerous in the stained sections. The sclerotic coat of the eye was edematous and infiltrated with leucocytes and red cells. In places there were an enormous number of bacteria and pus cells forming small abscesses. These abscesses were lenticular in shape, lying between the bundles of the connective tissue of the sclera. The inner layers were in general more extensively involved in the inflammation than the outer, but especially so toward the posterior portion of the globe. There were numerous small collections of pus cells lying just under the choroid coat. The inflammation also extended forward over the anterior portion of the eye, and there were collections of pus cells in the conjunctiva just external to the cornea. The cornea epithelium was, in general, fairly well preserved, but near the periphery there were a number of small abscesses elevating the epithelium. The iris and the ciliary body were practically normal, except for edema.

The lens showed no microscopical alterations. The choroid coat of the eye was extremely edematous, and in many places there was more or less abundant infiltration with small pus cells and fibrin, and in many of the smaller vessels there were fibrinous thrombi. All the capillaries were characterized by an extreme distention with blood. This edema with suppuration in the choroid was perhaps more marked in the anterior hemisphere of the bulb than in the posterior, while the subchoroidal abscess formation was more abundant in the posterior portion. The retina was in some places still attached to the choroid coat; in other places it had been separated, partly by shrinkage, partly by serous exudation. The retina itself was in some places edematous and the vessels choked with blood corpuscles. In other areas the preservation of the retina was fair, though everywhere the edema dominated the picture. The rods and cones had in some areas lost their normal structure and become indistinct, highly refractile fibrils. This was especially so where there had been a subretinal fibrinous exudation. In other portions the preservation was still fairly good. Cross sections of the nerve showed that practically all of the nerve fibres were destroyed. After staining with Wolter's modification of Weigert's method for medullary sheaths, a few fairly normal fibres could be demonstrated. The small nerves lying in the orbit showed perfectly normal structure, so that the degeneration was practically confined to the optic nerve. Only about 10 mm. of the optic nerve were removed, and in that no trace of central vessels with the exception of a few very small twigs could be demonstrated. The sheath of the nerve was not much inflamed, but the perineural fat tissue was, like the rest of the orbital fat, edematous, and full of pus, fibrin, and serous exudate. In this area there were thrombi in the sections of the external and internal ciliary arteries and in the veins which accompanied them, so that thrombosis of the central artery was probable, especially in view of the fact that many of the choroidal vessels showed thrombi. The arteries also showed a moderate degree of endarteritis.

REMARKS.

The gravity of chronic sinus trouble is pretty well emphasized by the sad outcome of this case. The patient, although he was cognizant of the fact that the nature of the trouble which existed within his nose was serious, was unwilling at first to have any attention paid to it, in spite of the earnest solicitation of his family physician. When I first saw the patient he presented the clinical picture of an acute exacerbation of a chronic ethmoiditis which in all probability had already begun to invade the orbit. This was suspected on account of the edema of the upper and lower lids, the pain on movement of the eyeball, the photophobia, and the evidence procured on examination of the fundus. The rapid course of the cellulitis was not unusual, as even in uncomplicated cases, when the orbit is once invaded, this occurs.

Whether the occurrence of this rapid form in this patient was precipitated or aggravated by the puncture of the antrum, or a mere coincidence, is a question which I believe cannot be so easily answered. Unfortunate occurrences after puncture of the antrum have been reported by Hajek, Schmidt, B. Frankel, Kummel and Kayser, and others. The case reported by Hajek was an acute empyema of the antrum, which after puncture and washing out was followed by immediate pain, and the next day with a chill and temperature of 104° F. The following days were attended by repeated chills and temperature, with a cellulitis of the cheek and metastatic condition in the wrist joint. The operation upon the antrum through the canine fossa offered an explanation for the occurrence. The needle, which naturally was infected in passing through the wall of the antrum and pus cavities, entered the submucosa of the posterior wall, caused a rapid infiltration, with increased pressure within the antrum, and a thrombopheblitis followed. In my own case the trocar was introduced into the inferior meatus, and, without the slightest difficulty or discomfort to the patient, entered the antrum. At once there was an escape of fluid, foul and ill smelling, showing that the needle lay in the antrum. The washing out was also easily accomplished. Later the operation upon the antrum showed it to be of unusually large size, so that only with an unusually large sized trocar or with unusual force would it have been possible to enter the posterior wall or even the orbit. The pus in the ethmoidal region gave streptococcus culture; that from the antrum was unidentified. The pus in the orbit also showed a streptococcus infection.

This might, therefore, speak for the source of the trouble as starting in the ethmoidal region. When the orbit was exenterated there was not the slightest evidence, on examination, of any defect in the bony walls or the orbital envelope. Within this envelope was an infiltrated mass with scattered minute abscesses and gangrenous spots. The whole picture presented one of thrombophlebitis with gangrene. I feel at a loss to explain the exact origin of the cellulitis. While I am strongly suspicious that the puncture precipitated or rather added to the malignancy of the attack, there are still sufficient facts to make one feel that the ethmoidal region might be held solely responsible. The rapid onset of the blindness may have been due to either of one or two causes; a retrobulbar neuritis due to the involvement of the posterior ethmoidal cells, which were extensively diseased in this case; or to the marked thrombophlebitis of the orbital veins, choking off the entire circulation of the eye as well as the orbit. This might result in complete necrosis of the nerve. I believe the latter to have been the case, as the entire nerve was found in a state of necrosis, as reported in the pathological examination. The fundus picture was interesting, showing an intense edema of the retina, with very dark and tortuous veins and a few scattered hemorrhages. A rather rare finding was the cholesteatomatous masses in the antrum. Oppikofer tells us that it is not as infrequent an occurrence as heretofore believed, to find a metaplasia of the cylindrical epithelium into pavement type when there is a diseased condition of the sinuses. This is brought about by the transformed epithelium of the nose creeping into the accessory sinuses. We know that for a desquamative inflammation there is necessary the presence of flat pavement cells in the diseased cavity. The products of such an inflammation lead to the formation of moist, onionlike layers of epidermis lamellæ. Through bacterial decomposition there arises a foul smelling mass, and through pressure the bone is eroded and the cavity enlarged. This is probably the explanation of the cholesteatoma and foul odor which we found present in the antrum of this patient. Such cases are few in number and have been reported by Hegetschweiler, von Ropke, and Heimendinger and Winckler.

I wish to add a few words more in regard to the therapeutic measures pursued in this case. After the radical exenteration of the entire ethmoidal region and the antrum, also after several incisions had been made into the orbit to relieve the local abscesses, no relief was obtained. It was felt that the life of the patient was in jeopardy unless something still more radical could be done. Such virulent forms of thrombophlebitis are as a rule fatal. The question was, should we stand by as observers, resigned to let one eye go, and then the other (a living death if the patient survived with his sight destroyed), or wait for the death of the patient, which, as Leber says, is the better ending. With the sight of one eye gone, the patient seriously ill, and threatened with the utterly hopeless complication of an endocranial involvement, we felt justified in making at least an attempt to stay the process by performing a complete exenteration of the orbit. Four days following this procedure we were congratulating ourselves in the belief that we had succeeded in halting the process. The temperature now began to rise and the patient rapidly grew worse, passed into a septichemic condition with meningeal involvement, and finally succumbed. The question of entering the cranial cavity and attacking the cavernous sinus, as advocated by Levinger, was considered. In the presence of such a virulent infection, and with the possibility of the almost certain destruction of the remaining eye, together with the low vitality of the patient, we did not feel justified in recommending any further operative procedure.

616 MADISON AVENUE.

THYROID MEDICATION IN CHILDREN.*

By Murray B. Gordon. M. D,
New York,
Adjunct Pediatrist, Polhemus Memorial Clinic, Brooklyn.

Thyroid organotherapy is still in its infancy, but owing to our increasing etiological knowledge of retarded development, both physical and mental, it assumes an important position in our therapeutic armamentarium. Investigations in the past few years have proved its value from a sociological viewpoint as well as from a medical one. We are all familiar with the pictures presented in cases of myxedema and cretinism: The idiotic expression, the typical skin changes, the stunted growth, and impaired intellect; a symptom complex which has been classically accepted and proved to be due to absence or lack of thyroid secretion. Kocher, following Virchow in his investigations, proved that cretinism could be cured by artificial feeding of thyroid gland.

Recent experimentation has opened up a larger field: it has been shown that not only is thyroid gland or its extract efficacious in cretinism and myxedema, but also, which is more important sociologically and economically, in that type of cases termed by McCready (1) the "hypoplastic type" in which "there is marked deficiency in height and weight, persistent subnormal or variable temperature, delayed puberty, high arched palate, scaphoid scapulæ, delayed epiphyseal development as shown by x rays, enlarged tonsils and adenoid growths, dulled or erratic mentality with the various stigmata of degeneracy." A child of this type, while not an idiot or imbecile, will, if not treated, be a likely candidate for some city or charity institution, and thereby increase the cares of the already overburdened tax payers. Peabody (2) has found that seventy-seven per cent. of fifty insane patients that he examined showed changes in the thyroid gland. Noble (3) places the high arched palate as a sign of thyroid inefficiency instead of due to hypertrophied tonsils and adenoid growth produced by the "yielding of the palatine bones owing to their relative poverty in calcium salts, which in turn is due to an inadequacy of thyroid secretion."

These hypoplastic types run from one extreme to the other. There may be normal mental development with impaired physical growth and vice versa. One of my private cases, that of a boy three and one half years old, a precociously clever youngster, showed but just two signs of insufficient thyroid, an hypertrophied tongue and thickened speech. He has been fed on thyroid since eighteen months of age and his tongue is practically normal, though his enunciation is not quite perfect.

Dr. J. F. Crawford and I have had quite a number of these cases at the Polhemus Clinic, in children who are not cretins but who show some sign of degeneracy or backward development due to insufficient thyroid secretion. I shall cite just three cases as examples of the effects obtained with thyroid extract.

Case. (1336)—Louis S., twenty-one months old. Family history negative, the fourth child, no maternal history of miscarriage, full term child, natural delivery, weighing 8.5 pounds at birth. Breast fed up to three months, at present on beef juice, oat meal, whole milk, orange juice. Dentition, which was very severe, began at nine months; had never been able to sit up, crawl, walk, or even grasp articles. Could not talk, but seemed to understand when addressed. Profuse perspiration about head, strabismus for six months, bowels regular. Mother was informed at a New York hospital that baby was blind.

General appearance, that of a fairly well nourished child, gaping mouth, eycs staring, strabismus present. Upper set of teeth soft, had eighteen teeth, ten on lower, eight on upper jaw, one incisor being partly decayed and broken. Heart sounds regular, good quality, no murmur, pulse 118. Could not sit up, weak dorsal muscles, slight spasticity in mid dorsal region. Weight 19 lbs. 9 ozs. Unable to examine fundus of eye. No general rhachitic signs. Started on thyroid grain one half, twice daily, on December 9, 1910. The child became brighter, slept better, and lost its restlessness almost immediately. For the first month it lost four ounces in weight, but by April 10, 1911, it weighed 20 lbs. 6 oz.; it could sit up to some degree, could grasp articles and keep them in hand, and it displayed more intelligence, could follow objects with its eyes, showing that sight was present. By May 8th the weight was increased to 22 lbs. 2 oz. He was now getting two grains daily. Owing to severe teething, increased salivation, diarrhea, the thyroid was discontinued at different times, but it was noticed that the child became weaker then. We last saw the child, October 13, 1911, when the mother told us that she was moving out of the State. The child was a different being, it cooed and smiled, stretched out its hands at articles, and appeared vastly more intelligent than when it was first brought to the clinic. We had a good opportunity in this case to study the effects of prolonged medication, instances of which I shall mention later in the paper.

Case II (901). Mary H., two years old. Mother had been sterile for twelve years, then had had a miscarriage in two consecutive years previous to birth of this child who was a full term normal baby. Mother noticed signs of imbecibility at three months. Typical idiotic appearance, fontanelles closed, snuffles present. Thyroid started September 19, 1910. Mother last reported January 23, 1911; the child showed considerable improvement, but it seemed as if this was one of the cases where a maximum effect is obtained in a short time and then comes to a standstill. If this patient had been brought to the clinic as directed, and treatment continued, I think that we would have noticed a still greater improvement.

Case III (5357). Isadore L., fourteen months old, only child of father, who was thirty-eight years old, mother thirty, at time of marriage. Instrumental delivery at full term. Emaciated and of small stature at birth, weighing 3 lbs., could say "mamma" and "papa," could stand only with assistance. Weight 24.75 lbs. Started on one eighth grain thyroid extract, three times a day, April 19, 1911. By August 19, 1911, attempted to walk unaided. Larger vocabulary and very much brighter.

Demme (4) has reported a great frequency of goitres in the first year of life, fifty-three out of 643 cases being congenital; these children were nurslings and improved on thyroid medication given to the mothers. Kocher states that ninety per cent. of infantile cases can be cured by internal medication.

Siegert (5), of Cologne, has demonstrated as a sharp black line in radiograms, the transverse osseous lamella closing the diaphysis toward the epithelial nuclei, as found by Langhans and Dieterle in cases of congenital athyrosis; on thyroid treatment the radiogram showed that in a very short time nuclei were formed which normally require one, two. or more years for development. He believes that the radiogram provides the physician with a safe test by which to judge the progress of the case and the possibility of further development, further growth always being possible as long as the cartilages are unossified and the organotherapy is continued.

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*Read before the Section in Pediatrics, Medical Society of the County of Kings, January 22, 1913.

Thyroid administration in Mongolian idiocy is not able to effect a permanent cure, as there seems to be in these cases no further development beyond a certain point. This is not really a thyroid disease, though thyroid deficiency may be associated with it.

Holmgren (6) found eighty-nine cases of exophthalmic goitre in children under fifteen years. In thirty-seven cases size was mentioned and twenty-five of these children were tall, showing that extra function on the part of the thyroid means greater skeletal growth and vice versa; this fact can be made use of in dwarfism by the administration of thyroid extract.

There have been several favorable reports upon the use of thyroid in rhachitis (7). No bad effects were observed under its administration; the children, who were abnormally backward in growth, rapidly increasing in size under the treatment, which generally was kept up from two to six weeks with intervals of two months.

It has been found efficient in enuresis, especially when long continued or occurring in backward children. I have used it for this purpose at the Polhemus Clinic in two cases with good results. Leonard Williams (8) reported a case in which adenoids and tonsils were removed as a possible cause of enuresis, but which became worse after the operation. Reasoning that the child's system was deprived of some internal secretion, he gave small doses of thyroid, with the result that the incontinence almost immediately ceased, and an increase in height and weight followed. He also reported twenty-five cases of enuresis in which he used thyroid with but one failure, and this case was found to be due to round worms. Everybody has not met with such good success, for out of twenty-eight cases of enuresis (unselected and consecutive) treated by Firth (9) in which adenoids were not removed, nor anthelmintics given, sixteen were cured or improved, while twelve were not benefited at all. Firth noticed that the cases reacting to this treatment were those in which enuresis existed from birth and in backward children. In my two cases both children were normal, but the enuresis was of long duration. The dose given was from one quarter to one half grain twice daily, being increased every fourteen days. Williams gives one half grain, twice daily, for a child from two to six years old, and two grains for a child from thirteen to fourteen years; for younger children he gives one quarter of a grain. He says that the condition should be relieved in one week, but if it does not respond to treatment he alternates the thyroid with calomel, grain one tenth, three times a day, for a month.

Midelton (10) believes that very few cases of long standing so called rheumatoid arthritis exist without some degree of thyroid failure; in these cases in which there is a soft swelling about the joints rather than bony overgrowth, thyroid treatment has proved efficacious, due perhaps to the iodine and arsenic contained in the thyroid. In this connection, I may also mention that cases of chorea and of rheumatism coexisting with exophthalmic goitre (11) in children have been found amenable to organotherapy.

J. R. Clemson (12) noticed enlarged thyroid in rheumatism in children, which he explains as a need for increased thyroid secretion in acute follicular tonsilitis; if thyroid is supplied artificially the danger of resulting hyperthyroidia is eliminated. Reasoning from this, thyroid extract should be of benefit in those cases of scarlet fever in which there is an increase in the size of the gland, as in the three cases reported by Bauer (13). Some analogous condition in the system may account for the slight general enlargement of thyroid which was found to be fairly common in some districts of London school children by Hitt (14), and carrying the analogy still further, thyroid treatment should be of some value here.

It has been known for a good many years that the extract is of great benefit in such skin conditions as sclerosis neonatorum, ichthyosis (15), psoriasis (16), scleroderma, and eczema. H. Stern (17) has reported it as successful in treatment of Riggs's disease.

To what is the action of thyroid extract due? In addition to its physiological action it acts through the iodine and arsenic it contains, there being an increased activity of the commercial thyroid when arsenic is added. There is six times as much arsenic in human as in sheep's thyroid. Small doses of thyroid combined with arsenic in certain proportions, according to H. Stern (18), would yield as good or better results as when given alone in the usual massive amounts. Added arsenic enhances and regulates the thyroglobulin, it does not make any difference what arsenic preparation is used. He uses arsenous acid and sodium cacodylate, the latter being a good cardiac stimulant. He has not noticed any bad effects from this combination. Other authorities, however, caution against use of thyroid in combination with other drugs.

Beebe, in a personal communication to the author, writes that in his opinion the success is due to improvement in the metabolic conditions of these individuals. He does not think that we are in a position to say what the precise mechanism of improvement is. It probably is not a matter of circulation and not solely a matter of action on the brain itself. It may be in part due to an action on the brain cells, but he is inclined to believe that the effect is likewise due to an improvement of the nutritional condition of the individual to such an extent that brain cells are not subjected to certain deleterious or toxic products that otherwise might affect them. This would explain its action in impaired mentality and in backward children. If we accept the theory that the thyroid gland furnishes a hormone (19), that would explain the action of the extract in the different conditions in which success has been reported.

Precautions are necessary in the administration of thyroid extract. Haskovec (20) has shown on experiments with dogs that there is a lowered blood pressure with an increase in frequency of pulse beat, the lowering of the blood pressure being the result of a direct weakening of heart action by vasodilatation. This can be obtained in some patients by continued medication, as I found to be the case with one of the children in the clinic who was under continuous treatment for almost two years for impaired intellect; every now and then he would have an oozing of blood from the throat and mouth, this ceasing on discontinuance of the thyroid.

The untoward effects may be mental, gastrointestinal, or cardiac, depending upon the patient's individuality. I have noticed a progressive diarrhea in some children following prolonged use, while in others increased salivation or increased perspiration was produced. Too large a dose or long continued treatment sometimes results in tachycardia, irritability of temper, and skin changes akin to those of myxedema. In some cases, the skin becomes irritable, as in one of my cases, in which an intertrigo was set up.

The dose depends upon the individual susceptibility of the child, age and body weight apparently having no relation with it. At the Polhemus Clinic we make it a rule to start with a small dose, one eighth grain twice a day, for ten days on and ten days off. As a preliminary we give calomel, grain one tenth, for ten doses, followed by castor oil. We gradually increase the dose of the thyroid up to two grains, and sometimes two and a half a day. Practically all our cases showed some improvement in a short time, this being manifested by increased weight and developed mentality. We do not combine it with any drug, discontinuing it temporarily if necessary and substituting other agents. Iodides, arsenic, salicylic acid, pilocarpine, and phosphorus will be found to be thyroid excitants, while the opposite effect is produced by opium, chloral, bromides, and calcium. Milk and a cereal diet have the latter effect. Thyroid fed children do not bear either chloroform or morphine well.

"He who runs may read." In the great field of modern prophylaxis where the up to date physician finds himself, thyroid medication, while not a panacea, assumes a preeminent position, especially in pediatrics.

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4402 Twelfth Avenue, Brooklyn.

NEWER TEACHINGS OF DISEASES OF THE GASTROINTESTINAL CANAL.

By Mark I. Knapp, M. D., LL. M.,
New York.

IX.

Examination of Digestion.[1]

Diastatic digestion, the conversion of starch into sugar, is recognized in the ordinary way by means of Lugol's solution. The saccharification of the test meal I have not yet seen advance beyond the stage of the erythrodextrin. A weak solution of lugol, one to 250 of distilled water, is used.

Peptic digestion is recognized by the burette reaction, which is essentially Trommer's test for sugar, in which the reagents are used in a very dilute state. A small quantity of the chyme to be tested is put into a test tube to which is added first a little of a very weak solution of cupric sulphate and then a little of a very weak solution of caustic potash. A reddish violet color shows the presence of proteids.

It is assumed that pepsin is always present and the almost exclusive method hitherto, to demonstrate its presence, is by means of Mette's tubes. The operation involved in this process requires from fifteen to twenty hours, and, when we consider this time, we need not wonder why so few resort to this method. It has been my good fortune quite recently to discover a new reagent for the quick determination of the presence of the pepsin in the chyme. It came about this way. For certain reasons I used a weak solution of permanganate of potassium to wash the stomach of a patient. To my surprise the permanganate came back discolored. This happened repeatedly. The question at once came up, What discolors the permanganate? It could have been either the acid or the pepsin. I therefore made solutions of all the mineral and several organic acids, of a strength to correspond with the acidity of the stomach and used it on the permanganate, but no discoloration of the permanganate resulted. Rather, the permanganate assumed a deeper color. But when I took a solution of pepsin with hydrochloric acid the discoloration of the permanganate at once appeared. We know that urine discolors the permanganate, but urine contains pepsin, pepsin being eliminated by the kidneys. As one of my students intends to make a thorough study of this question, I refrain from making any further remarks and simply wish to bring to the attention of the medical profession that in the permanganate of potassium we have an excellent indicator for the presence of pepsin, and the operation requires but a few seconds. I hope that this method will soon supersede the Mette method, which I will now give.

Mette's method consists in allowing small, capillary glass tubes, filled with coagulated albumin, to be digested by the chyme. We then read off at each end of the tube the number of millimetres digested by the chyme. Of course, in the absence of pepsin or acid, there will be no digestion of the albumin.

The capillary tubes are of from one to two millimetres in diameter and thin walled. Before using them, they must be cleaned by putting them in boiling water and then washing in alcohol. After they are dried, fresh albumin is drawn into the tubes which filled are thrown into water of about 90° to 95° C., in which they remain for fifteen minutes. The tubes are then removed, dried, and the ends are closed by winding a very thin piece of absorbent cotton around them, after which the ends are dipped in molten paraffin. The latter procedure is for the purpose of excluding the air and to preserve the tubes, so that the tubes can be prepared in quantities for future use.

To determine the presence and action of the pepsin, a piece, about an inch and a half long, of the prepared Mette's tube is cut off with a file, and the ragged end filed straight and smooth. This piece of tube is then put into a Petri dish of ten c. c. capacity, the dish filled with the filtered chyme, and covered to prevent evaporation. For such determinations the acidity of the chyme must be brought up to a standard. The best would be to accept a certain acidity of free hydrochloric acid as standard. After we have determined the actual acidity (free hydrochloric acid), we bring the acidity of the chyme up to such standard by either adding the decinormal sodium hydrate, if there is too much free hydrochloric acid, or we add the decinormal hydrochloric acid up to the point of the accepted standard. The Petri dish, provided with chyme and the capillary tube, is covered and put into an incubator, the temperature of which must be kept between 37° and 38° C. for from twelve to twenty hours. This time may be varied to suit the wish of the experimenter, but the same length of time must be observed in all comparative experiments. The Petri dish is then removed from the incubator, the capillary tube is dried, and the column of the digested albumin is read off in millimetres. Normally about five millimetres of albumin are digested.

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[1] See Journal, March 29, 1913, p. 654.

To detect the milk coagulating rennin, from five to ten c. c. of the filtered chyme are carefully neutralized and mixed with ten c. c. of neutrally reacting milk, which is then put into an incubator and kept there at a temperature of 37° to 38° C. for about half or one hour. The coagulated milk, after removal from the incubator, proves the presence of rennin or its zymogen.

The test meal examination also yields to the test for alcohol; it would seem that alcohol is present in every test meal. This need not surprise us; the starch being converted to sugar and the sugar into alcohol. The alcohol is recognized by the iodoform test. Some filtered chyme is warmed up in a test tube with some caustic potash, then some little sublimed iodine is added and heated again, when the iodoform which forms, precipitates and the smell of iodoform is given off.

The Uffelman test for lactic acid. As this test is quite general, I wish to make a few remarks about it. This test, if properly executed, is certainly correct. But the misfortune is that it is open to a great deal of misinterpretation, and I have seen it misinterpreted even by one who held the position of director of the laboratory of a very large hospital. To a very thin solution of ferric chloride, in a narrow test tube, is added a little carbolic acid. The solution turns an amethyst blue color. Into the test tube is added the suspected chyme. In the presence of lactic acid the amethyst blue color turns a canary yellow. The ordinary test meal itself gives a sort of yellowish color to the amethyst blue color, and, therefore, unless one is thoroughly familiar with the reaction, he may mistake this yellowish color for the canary yellow. One can readily understand the importance of such a mistake if cancer is diagnosticated which does not exist. This was just what happened with that laboratory director. Once, on visiting this physician at his hospital laboratory, I found him making the Uffelman test and then make the diagnosis of cancer because of the yellow discoloration of the amethyst colored iron solution. But the yellow was not the canary yellow. On further discussion he confided to me that there were several cancer cases in the hospital. Very much interested in the discussion, I asked for the progress of such cancer cases, and the answer was that they were getting along quite well. I then called his attention to my floating test for lactic acid, and we then proceeded to apply the floating test to the chyme which he was then analyzing. The chyme did not respond to the floating test; there was no lactic acid in that chyme. No wonder his supposed cancer cases got along well, they were not cancer.

The fact that occasionally we get some patients who refuse to take the stomach tube has caused some investigators to devise a substitute. If the medical profession in general were to recognize that there is absolutely no contraindication to the introduction of the stomach tube, and that a test meal examination is absolutely essential—if our diagnoses are not to be based upon mere guesswork—there will soon be no objecting patient. Methods have been devised to test the motility of the stomach and the very gastric secretions by having the patients swallow some chemicals or minute appliances. My general criticism is derogatory to the employment of any such means; they prove nothing and are a nuisance, leading to fatal mistakes. The question of motility of the stomach is still confusing the minds of the profession. It is unfortunately still held by a good many that a prolonged sojourn of chyme within the stomach indicates atony of the stomach—a lessened motility, while a rapid emptying of the stomach evidences an increased motility of the stomach. Ewald devised the salol method for testing the motility of the stomach, in accordance with which the urine is tested for salicylic acid from half to three quarters of an hour after the taking of the salol. Many authorities have proved this test to be unreliable. The employment of the iodide of potassium for a similar purpose has likewise been abandoned.

A few years ago Sahli, of Berne, devised a quite ingenious method, "the desmoid reaction," the object of which is to determine the presence of free hydrochloric acid and the motility of the stomach. This method rests on the assumption that connective tissue and also catgut are digested only by hydrochloric acid. A small quantity, or a small pill of methylene blue, is enclosed in a small rubber bag and tied with catgut. This is swallowed by the patient. Normally the hydrochloric acid digests the catgut, which frees the methylene blue, which is excreted by the kidneys, giving the urine a blue color. This is to happen, normally, within six to seven hours after the swallowing of the rubber bag. Always ready to improve, Einhorn worked out his glass bead novelty, glass bead, and catgut. if the catgut is digested, then there was hydrochloric acid. And if there is no digestion of the catgut (which is recognizable according to Sahli by the failure of the urine to be colored blue or greenish blue, and according to Einhorn by the glass beads coming out through the rectum with the catgut attached to it), then the absence of hydrochloric acid or overmotility is diagnosticated. Neither of these methods takes cognizance of the presence of the condition of a relaxed pylorus, of insufficientia pylori. In insufficientia pylori the desmoid bag of Sahli and Einhorn's toy beads will get beyond the pylorus, although there may be sufficient hydrochloric acid. And a too rapid disappearance of chyme or other matter from the stomach I have already proved not to indicate excessive motility, but rather a relaxed pylorus. Also, various devices have been recommended to circumvent the necessity for introducing the tube for the purpose of ascertaining the presence of hydrochloric acid. Some advocate the patient's taking some sodium bicarbonate, which in the presence of hydrochloric acid will be decomposed, giving off carbon dioxide, which would give a hissing sound which could be heard. I confess I have not tried this simple method. But the objection to it is that, at best, it would tell simply the presence of an acid. And, as the acid in the stomach is always in solution, not only the free hydrochloric acid, but organic acids, and acids in combination would react as well with the soda, leaving us to guess what acid it is. Einhorn devised a silver bucket, a small affair suspended from a silk cord for the purpose of getting up some gastric contents. The patient swallows the bucket and, at the opportune moment, the bucket is hauled out of the stomach, filled with contents, which contents can then be examined. A most beautiful illusion. A bucket is sent down a well and is drawn up with water. There are no constrictions or tortuosities to impede either the bucket descending into the well, or its ascending out of the well; the oaken bucket has free elbow room all around. A reference to the anatomy, however, shows that Einhorn's bucket is not so favored; Einhorn's bucket has no free elbow room. Besides, there are plenty of tortuosities and folds and constrictions which conduce to a great many complexities. If by mere accident the bucket had filled itself just where Einhorn wishes, it is subjected to many somersaults before it reaches, head up, the cardiac opening; peristalsis is apt to play havoc with that dangerous toy. The danger arises from the fact that the bucket is not so obliging as to shoot itself out, but it has to be pulled. Were the bucket suspended from some rubber tubing, there would be no danger of lacerating the mucous membrane. But, as it is suspended from a thin silk cord, which is to be pulled along tortuosities, the cutting of the mucous membrane is a foregone conclusion. Thus it will be seen that in case the bucket brings up some contents we might examine them; but if it fail to bring up contents, we are not sure that the bucket did not spill out its contents. Under the most favorable conditions the quantity is too small, so says Einhorn himself, for effective examinations. The bucket should be condemned, according to Einhorn's own experiences. Einhorn tells us of ulcers of the stomach and of the duodenum which he demonstrates by means of the silk cord of the bucket. In my article which deals with this subject (The Fallacies of Einhorn's Duodenal Alimentation and Duodenal Bucket, *St. Louis Medical Review*, November, 1910), I believe I have proved that the said ulcers are the violent artifacts of the employment of the bucket.

The microscopical examination of the chyme. The normal chyme shows little more than the digested starch cells. The configurations of the starch cells vary with the kind of grain. The starch cells are easily recognized by the concentric rings. Beside the starch cells, single yeast cells are seen. The yeast cells are, as a rule, of an oval shape; they may, however, also appear perfectly circular. The concentric markings of the starch cells are very clear, perfectly defined. In the starch cells are seen bluish green and pink markings resembling rivers and lakes. Where the conversion of the starch, the diastatic digestion, is perfect, the bluish green markings preponderate; where the peptic digestion is relatively greater, the pink markings preponderate. In pyloritis, when there is an abundance of mucus, no concentric marking of the starch cells is seen, but instead, the cell appears swollen and cloudy. Under pathological conditions the chyme contains moulds, yeasts, bacilli, cocci, blood, etc. The picture varies with the variety of the fungus; also the different parts of the fungus look differently and, therefore, give different pictures under the microscope. This will be understood from the fact that moulds are plants and, as such, consist of various parts. Patches of irregular shape and form, clusters of spores or mycelium are mistaken for detritus. Single asci are mistaken for nuclei. Young mould filaments contain no granules, but consist only of a wall membrane and are segmented at regular intervals. A single segment, detached, looks like a crystal. Some authors speak of the presence of crystals in the chyme; unquestionably they misinterpreted the true facts. Spores crowded together are mistaken for cocci. Until I had studied the growth and the development of several mould varieties in pure cultures, I made the same mistakes. Spores are often so thickly set that nothing definite can be made out. They look like shapeless, formless, and structureless blotches; very often even their color defies description. Some cylindrical sections are very thin, with or without granules; others are wide. Such cylindrical sections may show longitudinal or cross or oblique markings and are usually of a light green color. Very often such so called bacilli are, either only, or best seen after staining and decolorizing. For staining I use a solution of fuchsine (fifty mg. to seventy-five c. c. distilled water). After staining, the specimen is decolorized with the decinormal solution of caustic soda. In some cases the bacteria (?) appear only after the decolorization.

For the purpose of microscopical examination the thin part of the chyme is used. For that reason the chyme is poured out from the beaker into which it was first put, into another beaker. A drop or two collect on the bottom of the first beaker, after the chyme has been poured out. The beaker is inclined and into the drop or two which has collected, a pipette is immersed and, by capillary attraction, some of the fluid gets up into the pipette. A drop of the fluid, which is now in the pipette, is put upon a glass slide and covered with a coverglass. In order to strain the specimen, a drop of the fuchsine solution is placed near the edge of the coverglass. Soon the fuchsine reaches the margin of the coverglass, and then gradually the specimen is stained.

The entire process of staining can be watched under the microscope. Then the specimen is decolorized with a drop or two of the soda solution, the soda solution, likewise, being placed near the edge of the coverglass. Any excess of either stain or soda can be carefully removed with blotting paper. The soda solution decolorizes, as a rule, everything but moulds and yeasts.

Under pathological conditions yeasts are found in a budding, growing, sporulating state. The yeasts are seen as mother and daughter cells and in chains. A few isolated specimens cannot be looked upon as pathological. But, when they are found in great quantities, they indicate a pathological condition. Abundant yeast growth is usually accompanied by a great number of bacilli of various shapes and sizes, and the presence of these does not negative the presence of free hydrochloric acid. Into the yeast group belong also the sarcinæ, yeast cells grouped in the shape of bales of cotton.

Blood is another of the abnormal constituents of the chyme, which can be recognized under the microscope, by the naked eye, and by chemical means. The peculiar coffee ground appearance of the gastric contents is characteristic of a hemorrhage, the blood having been acted on by the gastric juice. Chemically it is detected by several tests. To some gastric contents in a test tube is added a little freshly made tincture of guaiac (this is made by dissolving a little resin of guaiac in alcohol); then some old turpentine is added and the test tube is shaken up; a blue color shows the presence of blood.

Weber's test. Dilute the stomach contents with one third volume of glacial acetic acid and extract with about ten c. c. of ether. A few c. c. of the ether extract are mixed with ten drops of the tincture of guaiac and twenty to thirty drops of old oil of turpentine. The mixture turns blue in the presence of blood.

Quite recently arose the question of the presence of occult blood in the chyme, and various chemical tests have been devised for the purpose of detecting such occult blood. I have never interested myself in this. Either there is present a hemorrhage or there is not. Ordinary hemorrhages are easily recognized, whether recovered from the mouth or rectum. If we are to look for occult blood, we might as well ignore it altogether. No conclusions should be drawn from the presence of occult blood, even if we had an absolutely true means of detecting it, and we do not have that.

Bile may be found in the gastric juice. I have seen it only very rarely, and then occurring in insufficientia pylori. The bilious gastric contents are of a dark olive green color and viscid; a bright green, a grass green color is due to mould. However, the diagnosis of bile should never be made by guesswork, but by actual chemical tests.

The presence of inflammable gases in the stomach has been mentioned by some. I have had one such case in my practice. Exhaling upon a lighted cigar, the exhaled air flamed up and burned the patient's moustache.

Some more or less elaborate tests have been devised for the detection of cancer, but as yet no reliance can be placed upon any.

616 Madison Avenue.

ELECTRICITY IN RECTAL DISEASES.

A Neglected Resource in Their Treatment.

By Frederick H. Williams, M. D.,
Boston,
Proctologist, Commonwealth Hospital.

Bodenhamer declared: "There is no disease in the whole range of medical literature which has a more ancient history than hemorrhoids." A thousand years before the Greek era diseases of the rectum were spoken of as a scourge and a blight upon the human race. Bible records are replete with references of this kind. Moses speaks, in Deuteronomy, of *emerods* as a curse for disobedience. A similar reference in I Samuel speaks of this affliction as a punishment for sins. Rectal diseases are as prevalent as they are old. So frequently have they been observed at all times, in both sexes, among all races, in the robust and the infirm, that one need not apologize for reviewing an old subject, even though his contribution may be but a step in the direction of relief to suffering humanity.

I shall focus your attention, if I may, upon a neglected resource in the treatment of the commonest of all rectal diseases, i. e., varicose internal hemorrhoids. Before proceeding to speak of the advantages of electricity over some other methods of treatment, it may be profitable to review briefly the strong and weak points of the many operations in vogue.

Since Sir Henry Smith introduced the actual cautery in 1861 as a treatment for hemorrhoids, the cautery, or more recently the clamp and cautery, has enjoyed much popularity. Many surgeons believe it to be the simplest and best of the several operations in use to-day. The advantage of a comparatively short convalescence of one to two weeks, and its usual freedom from the dangers of infection, are urged in its favor. The significant fact remains, however, that Whitehead abandoned the method, Allingham objected to it, and Matthews showed his preference for the ligature operation, believing it to be less painful, less subject to the dangers of hemorrhage, and less apt to cause stricture.

The ligature operation has been practised for hundreds of years and has had the approval of the majority of physicians from the time of Galen to the present day. Among the most staunch supporters of this operation have been Cooper, Burke, Bodenhamer, Allingham, and Matthews, who have found it simple and applicable to almost every variety of hemorrhoid. The objections to the ligature operation are that convalescence is protracted; according to enthusiasts, the patient must expect to be confined to his room from two to three weeks. Ulceration and fistula are not uncommon complications, and almost all fatal results after operations for hemorrhoids have been due to tetanus following the ligature method of treatment.

Of the Whitehead operation, or excision, it may be said that few surgeons in this country are able to report such good results as Whitehead. The commonest sequelæ following the Whitehead operation are stricture, fissure, and exstrophy of the mucous membrane. These facts render this operation unlikely to become popular in ordinary rectal practice.

Occasionally dilatation under a general anesthetic meets all the requirements of mild cases, but when the hemorrhoids protrude, or when there is too much relaxation, as observed in aged subjects, dilatation is a fruitless and contraindicated measure. Of the other methods used, little need be said except that the law of survival of the fittest has consigned them to oblivion.

In spite of the remarkable progress in general surgery, there is plenty of evidence, from the standpoint of the observing practitioner, as well as that of the patient, that the surgical treatment of diseases of the rectum is far from perfect. Pennington (*American Journal of Surgery*, October, 1907) quotes Tuttle as saying: "A very large percentage, if not a majority of the cases of fistula operated in in hospitals and treated by general surgeons, are failures so far as cure is concerned"; adding, "Less than forty-five per cent. out of 2,196 cases collected are even claimed to have been cured." Since fistula is a common complication of and sequel to the various operations for hemorrhoids, these figures command our careful consideration. What is the remedy for this unsatisfactory record in the handling of rectal diseases? The solution of the problem seems to me to rest with the medical colleges. Let them acknowledge proctology as a separate course and require a definite number of hours' attendance, thus enabling the general practitioner to become better informed concerning a common class of diseases which are now scarcely mentioned in medical college courses. This innovation would create an incentive to develop new proctological resources without as well as within the domain of surgery.

It should not be inferred from the title of this paper that I believe electrotherapy has been neglected except in so far as it applies to proctology. Electrolysis is recognized as a powerful force to conjure with in scientific undertakings, and if properly controlled it is a most trustworthy expedient therapeutically. Although electrolysis has long been known, having been used by Gustav Crussel and Herr Schoenbein in the treatment of tumors as early as 1840, it was neglected for many years because of the brilliant achievements of antiseptic surgery. Without doubt Crussel, Schoenbein, Middledorf, and other early experimenters, expected electrolysis would be adopted as a most valuable adjunct to surgery, but such rapid advances were made in the field of surgery that electrolysis seemed unnecessary and was therefore neglected instead of becoming the natural substitute in cases where surgery was found to be unnecessary or contraindicated.

Newman (*Journal of the American Medical Association*, p. 701, 1891) averred that he had used the electrolytic current for stricture of the rectum as early as 1871. Briefly described, his technic was as follows: With his patient in the Sims position, he placed an insulated, olive pointed, negative electrode in contact with the stricture, applying the positive electrode to the abdomen or palm of the hand. He then allowed a current of five to twenty milliampères to flow from fifteen to twenty minutes. This current served to dissolve the stricture, and allow the electrode to pass. He treated his patients at intervals of two weeks and reported many cures. Le Fort (*Gazette des hôpitaux*, 1873) employed electrolysis to destroy strictures in much the same manner, except that he used a milder current and his technic was more crude. He allowed the electrode to remain in contact with the stricture for a longer time, occasionally leaving it in place over night. Nevertheless he reported good results. Beard (*Archives of Electricity and Neurology*, i, p. 98) used a similar method in 1874, calling his method a "galvanic chemical absorption." To Neftel (*Virchow's Archiv*, lvii, lxx, lxxxvi) belongs the greatest credit for placing electrolysis upon a scientific basis as a therapeutical agent. His experiments with benign and malignant tumors, including a record of examinations made ten or twenty years after treatment, are very convincing. Although many investigators will doubt the logic of Neftel's conclusions in regard to the cure of malignant neoplasms, he and his confrères were men of great ability, and it is only fair to accord his research work full credit.

Dubois-Havenith and Maes, in a communication to the Société médico-chirurgicale du Brabant, March 24, 1912, describe an ingenious technic for the removal of sebaceous cysts by electrolysis. It will be obvious to all that this neglected force is more specifically indicated in the treatment of diseases of the mucous surfaces than upon the skin, for it often disfigures the latter, while no such objection arises when used upon the mucous membrane. In fact, a firm cicatrix is especially desirable in these cases. Then, again, electrolytic treatment in diseases of the mucous passages, such as internal hemorrhoids, polypi, adenomata, etc., is less than half as painful as treatment upon the skin. Sir Charles Ball was one of the later investigators to recommend the use of electrolysis for internal hemorrhoids. Ball's technic was surprisingly simple. After bringing the hemorrhoid into view, it was painted with a four per cent. solution of cocaine. In five or ten minutes the parts were insensible to pain, and four or five sewing needles, attached to the negative electrode, were passed into the tumor and allowed to remain until the tissue turned white. This procedure was found quite painless, the patient was not confined, and there was entire absence of ulceration or other complications. After employing electrolysis in the treatment of internal hemorrhoids for over ten years, and observing its many advantages over surgical measures, I am led to wonder why the recommendations of Ball in this regard were not heeded long ago, and the method acknowledged to be the preferred treatment for uncomplicated cases.

The technic I employ may be successfully carried out in the office, and differs somewhat from that of Ball in permitting more exact control of the electrode, making thorough illumination possible and rendering accidental shortcircuiting through the speculum unnecessary. Pain is almost entirely eliminated, and a single application of the current effects a cure in ordinary cases. The patient needs very little preparation before treatment. A cathartic twelve hours, and an enema one hour before coming to the office prevent any interruption or delay during treatment. After the usual antiseptic cleansing, the patient is placed in the Sims position, a short proctoscope is passed, and the hemorrhoid is brought into view. Unless the sphincters are contracted, it is not necessary to dilate them. I prefer a three inch beveled proctoscope, which is easy to insert and satisfactory to operate through. If the tissue to be treated is confined to one side, a Hirschman oblique anoscope is useful. With these instruments it is possible to retain the hemorrhoids in view as long as necessary to carry out this plan of treatment without tiring the patient.

The choice of the syringe and the local anesthetic is an important consideration. Any one of the many anesthetics, such as cocaine hydrochloride and beta eucaine hydrochloride or lactate, may be used, but the percentage strength should be very low, because, first, the solution does not ooze away as in cutting operations; second, a larger quantity of fluid is necessary to get pressure anesthesia than when injecting the skin. This is due to the greater elasticity of mucous membrane and to the absorbent capacity of the loose cellular tissue about the rectum. Solutions of one tenth of one per cent. to one half of one per cent. are sufficiently concentrated to obtain perfect anesthesia. Beta eucaine lactate has the advantage of remaining stable upon being boiled and is reputed to be less toxic than cocaine. The syringe of choice is an all metal, three ring syringe of two drachm capacity, with a curved extension piece and a very small needle, to facilitate thorough infiltration without causing pain. The hypodermic injection should be made from the base to the apex of the hemorrhoid. When the tissue is distended and has a blanched appearance, the tumor is ready for treatment.

The stock electrodes upon the market are a disappointment to those who hope to do superior electrolytic work. They are coarse and awkward to handle, and often obscure the proctoscopic view completely. I have had made for my special needs, ten inch, monopolar, platinum electrodes, having three points arranged in a row. These slender electrodes permit good illumination; they do not interfere with vision, but facilitate carrying out the smallest details of this method of treatment. When the pile tumor has been injected and is no longer sensitive, the electrode should be passed into its centre, and its position changed from time to time until disintegration is complete. It should be remembered never to interrupt or make contact during a treatment, without first turning the rheostat to zero. A current of five to tweny milliampères, slowly turned on and continued for five or ten minutes, is usually sufficient to treat a single hemorrhoid. The exact time required will depend upon the size of the pile tumor, the strength of the current, also the resistance in circuit. As soon as the current is turned on, bubbles of gas form in the shrinking tumor, giving it a grayish white color. The resulting chemical effect is that of dissolving albuminous constituents, causing electrolytic decomposition of the salts contained in the tissues, and inducing molecular disintegration. If this technic is followed closely, it will not be necessary to repeat the application, although further treatment is not contraindicated where the first application proves insufficient. Antiseptic precautions are not to be forgotten, although this is not so necessary, as the electric current itself has an antiseptic and bactericidal effect. The absence of pain and other disagreeable manifestations following these treatments causes me to join with Neftel, who says of his experiments: "The first thing that surprised every surgeon who attended the electrolytic treatments was the slight general and local reaction following the operation." A few illustrative cases will indicate the safety and ease with which this method of treatment can be employed in office practice.

Case I (prolapsing internal hemorrhoids treated in office). Doctor D., sixty-two years of age, complained of having had hemorrhoids for twenty years. He did not wish to spend the time to go to a hospital, although it was his customary advice to others. Upon examination I found two large, protruding, sensitive internal hemorrhoids. A day of preparation was advised, during which the bowels were moved and a light diet was allowed. On the second day I treated both hemorrhoids with a mild current of ten milliampères. The treatment being completed in less than twenty minutes. No pain was complained of, the patient continuing about his duties as usual, which included making several calls. I saw Doctor D. every second day for a week and discharged him as cured. Sixteen months afterward I made an examination and found a normal rectum.

Case II (bleeding hemorrhoids with anemia). Mrs. M., aged fifty-four years, the wife of a prominent merchant, was referred to me with a history of frequent and profuse hemorrhages from the rectum, which for many months had kept her in a condition of exhaustion. She had been treated for nervous prostration and anemia, but had never had a rectal examination. Upon passing a speculum, three large hemorrhoids presented, one of which was bleeding freely. This I was told was almost a daily occurrence. As the patient had been taking the rest cure and was on a careful diet, I saw no advantage in delaying treatment and advised immediate electrolytic treatment, which was given an hour after the examination. The largest hemorrhoid was given a current of twelve milliampères for ten minutes. The patient experienced no pain, but a slight sensation of heat which quickly passed away. She said she felt better after the treatment and was permitted to be about her usual duties, which caused her no inconvenience. Ten days later the two remaining hemorrhoids were given a treatment lasting about twenty minutes, which completely obliterated the pile tumors. Defecations were only slightly more irritating than usual for two or three days. In one month Mrs. M. had gained much weight and strength and continued to enjoy perfect health until three years afterward, when I last saw her.

Case III (hemorrhoids complicated by painful ulcer). Mr. R., banker, aged forty-three years, came to me complaining of painful bowel movements and intense itching about the anus. He said he had been operated upon twice for piles, within two years. He complained of being unable to sleep and felt that his condition was gradually getting worse. Examination revealed two eroded hemorrhoids and a small painful ulcer, apparently of recent origin. The patient was prepared for treatment by being placed upon a soft diet, having the bowels thoroughly emptied and irrigated with a three per cent. solution of boric acid. With the patient in the left lateral position, a bivalve speculum was introduced in such manner as to expose the hemorrhoids and the ulcer. The hemorrhoids were anesthetized as well as the small fissure. The electrolytic current was applied for twenty minutes, and the painful ulcer painted with a six per cent. silver nitrate solution. No further treatment was needed for the hemorrhoids, but the fissure was treated every second day for two weeks, when the patient was discharged. At various times during the succeeding five years Mr. R. took occasion to inform me that he considered himself perfectly well.

CONCLUSIONS.

In conclusion, I wish to summarize briefly the results of my investigation and experience with the electrolytic current as follows:

Electrolysis is a safe and painless method of treating all cases of varicose internal hemorrhoids.

Patients are not confined to the room, or detained from their usual duties while under treatment, except in extreme cases.

Weak and aged patients who are unable to take a general anesthetic stand electrolytic treatments admirably.

Electrolytic treatments are not so easily given as electrocautery treatments, the former requiring more time and more exactness of technic.

There is no hemorrhage during or after treatment.

Ulceration, stricture, fistulæ, or abscesses have never been observed as a sequel to this method.

Records covering a period of ten years after treatment indicate that cures are permanent.

19 ARLINGTON STREET.

TREATMENT OF TUBERCULOUS BONE ABSCESSES AND SINUSES WITH TUBERCULIN.*

By W. SAULSBURY NIBLETT, M. D.,
Baltimore.

Since the recognition of tuberculous abscesses and sinuses the evolution of the treatment has been more or less in a chaotic state and is far from satisfactory. Many methods have been suggested and tried, but the attempt to go into this subject very deeply is confusing and almost hopeless as to the enumeration of the various methods of treatment; therefore, the object of this paper is in the nature of a small contribution of our experience at the Kernan Hospital for Crippled Children, and while we all agree that the observation is as yet meagre, we shall give the methods of treatment that have come under our own observation.

Among the various forms of treatment may be mentioned the following: Evacuation of the abscess and immediate closure: evacuation and drainage; evacuation and injection of iodoform glycerin; evacuation and swabbing out with carbolic acid, followed by alcohol; washing out with hydrogen peroxide, or forty per cent. formaldehyde solution, iodoform ether, zinc chloride solution, tincture of iodine; evacuation and injection of Beck's bismuth paste, or injection of chalk powder and petrolatum; vaccines in mixed infections; and, finally, we have used tuberculin, used both locally and systemically; the new tuberculin used systemically and the old tuberculin used in abscesses or sinuses.

One will readily conclude from all of the first named numerous methods mentioned above that the use of any one of these has not proved entirely satisfactory in the hands of orthopedists in all cases. We have used all the foregoing methods, but have found by experience that better results are obtained by the local tuberculin treatment. We must bear in mind that Nature is engaged in a general as well as a local germicidal warfare, and well directed assistance in building up the general condition of the patient will enable her to conquer. Remember to treat, first of all, the primary focus by the best means possible, and that the treatment of the abscess is secondary; therefore, not only orthopedic, but all hygienic measures must be enforced, such as sufficient sleep, fresh air, sunlight, good, nourishing food, proper clothing, etc. All these are most important adjuvants, but too much stress cannot be laid upon the importance of good food, fresh air, and sunlight, as these are the most important agents required, not only in phthisis, but in bone tuberculosis.

Other measures should be employed to improve the general condition, such as tonics and alteratives, which must be selected according to each individual case. We have had good results from using olive oil, strychnine, tincture of nux vomica, potassium iodide, tincture of ferric chloride, and syrup of the iodide of iron.

As to local treatment, we have found that the existence of a tuberculous abscess does not necessitate immediate evacuation, so we find that the expectant treatment, combined with thorough mechanical treatment, often yields good results. If the abscess is very large and deeply placed, there being no pressure symptoms, we have found that if the part is put at rest by traction and fixation and the patient allowed plenty of fresh air, sunlight, and good food, the contents of the abscess will become absorbed and the gaseous material will become encapsulated. Therefore, we religiously discourage immediate evacuation of the abscess unless it has signs of secondary infection, because an abscess that is opened is not only most prone to secondary infection by pyogenic cocci from the skin and hair follicles if left open for twenty-four hours, but may cause a dissemination of tubercle bacilli by way of the blood or lymph, setting up miliary tuberculosis or meningitis, or it may cause the formation of a sinus which not only will probably discharge as long as the disease is active, but is "the gateway by which death so often enters."

In cases in which the patient has a great deal of pain, due to pressure on nerves, bloodvessels, or bowel, or interference with digestive or respiratory functions, we advocate incision, evacuation of the abscess, and immediate closure. Under no circumstances do we allow an abscess to be left alone when the skin is becoming reddened from tuberculous infiltration, because it will ultimately break down and most likely become secondarily infected.

All abscesses secondarily infected should be opened at once, swabbed out with carbolic acid, followed by alcohol, which will destroy the remaining tubercle germs and the secondary infection. In some convalescent cases of bone tuberculosis, where the focus is circumscribed and easily accessible—for example, in the condyles of the femur—erasion may be done, always with the use of an Esmarch bandage and a tourniquet. The cavity is swabbed out with tincture of iodine and filled with the following mixture: Yellow wax, one part; wool fat, five parts; bismuth subnitrate, fifteen grains to an ounce of the mixture, after which the incision is closed. We believe this procedure has saved many joints from infection by direct extension. This does not, obviously, apply to tuberculous foci within the joint or vertebræ.

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*Read before the Baltimore County Medical Society, May 15, 1912, and Interurban Orthopædic Club, November 19, 1912.

There are certain cases, however, that refuse to heal under any local treatment, and ultimately result in the formation of an obstinate sinus. Here we have a rather difficult condition to treat, but we have had some success by the use of Beck's bismuth paste or by the use of a chalk mixture; but in the use of the former one has to be somewhat cautious to guard against bismuth poisoning, although we have had only one such case. As some patients seem to have a marked idiosyncrasy for the substance, we prefer using the chalk mixture. We have also used scarlet red and petrolatum (ten per cent. ointment) with some success.

I wish to go on record for the following method, which was suggested by Doctor Taylor and carried out with modifications by the writer in Doctor Taylor's service, and which so far as we have been able to determine is original. We have been systematically using old tuberculin locally with good results since August, 1911. It is very stimulating to the sluggish granulations and converts the creamy pus into serosanguineous pus. After two or three injections the sinuses appear healthier and the discharge is markedly decreased.

The technic is very simple and consists of the injection of about 120 minims of one to 500 old tuberculin solution into the depths of the sinus by means of a syringe or a small, soft rubber catheter, which is withdrawn as the injection is made, in the endeavor to bring the tuberculin into immediate contact with the walls of the sinus.

After three or four injections the strength of the tuberculin is increased from one to 500 to one to 250, or even one to fifty. This is governed by the reaction, both local and systemic. The injections are given biweekly. There is some systemic as well as local reaction after the first injection. The patient's temperature may reach 101° or 101.5° F., with some lassitude, but this is less marked after the first two or three injections, and usually disappears entirely after subsequent treatments. Great care must be taken to use weak tuberculin solution, as it is desirable to avoid a rise of temperature.

Our feeling in the matter is that the sooner we get the sinus closed or thoroughly plugged, aside from the treatment of the granulations with the tuberculin or some other substance to stimulate the walls of the abscess or sinus, the better it is for the patient.

The following are a few of the typical cases in which the tuberculin application to the sinuses was employed from the wards of the Kernan Hospital for Crippled Children:

Case I. W. K., male, aged twenty years. Tuberculous knee, duration eight years. Sinuses, four; September 2, 1912, these were discharging a great amount of creamy pus, when 150 minims of the old tuberculin (one to 500) was injected. The injections were given twice a week, gradually increasing the strength. After using the tuberculin for three or four injections the creamy pus was changed to serosanguineous pus and very much reduced in amount. November 15, 1912, the sinuses were about healed and had scarcely any discharge.

Case II. F. C., male, aged nineteen years. Neglected case of coxalgia of right leg, dating from 1905. He had seven sinuses in a boggy thigh, groin, and hip. The pus was extreme in amount, requiring dressing twice a day. Tuberculin was used twice a week. The pus decreased rapidly in amount and its character improved. At no time did the temperature go over 100° F. after the tuberculin injections. The dose was increased to about half an ounce of one to seventy-five of old tuberculin. The patient was on the high road to recovery.

Case III. M. L., female, aged sixteen years. Pott's disease, lumbar. Sinuses four, which had been discharging for three years. Strongest solution used one to seventy-five. No temperature reaction. Sinuses closed in six weeks after tuberculin treatment was begun, and did not reopen up to five months after the patient was discharged.

Case IV. H. C., male, aged sixteen years. Upper dorsal Pott's disease. One sinus on right side of neck which had been discharging profusely for eighteen months. On June 16, 1912, old tuberculin was injected into sinus, which was not followed by rise of temperature. Tuberculin was given twice a week, beginning with one to 500 and gradually increasing it to one to seventy-five. Sinus soon began to improve in appearance and the amount of pus markedly decreased. Sinus closed October 15, 1912, reopened a week after, but discharged not more than three or four drops daily for a week and then closed.

In all of these cases we used old tuberculin locally and residual tuberculin systemically. Other similar cases have been treated, but an enumeration of them would be simply repetition.

In conclusion we feel that tuberculin applied locally in the sinuses, associated with well recognized surgical and orthopedic methods of treatment, gives the most satisfactory results.

2000 North Charles Street.

OINTMENT IN GRANULATING WOUNDS

A Plea for Their Use in Treatment.

By G. Betton Massey, M. D.,
Philadelphia.

It is now twenty years since I began to use ointments as a protective dressing of the granulating wounds, sometimes very large, produced in the ionic, or cataphoric destruction of malignant growths of the surface. The comparatively quick healing of these wounds without skin grafting, the epidermatization proceeding from the skin edge and leaving but a small space in the centre for the actual cicatrix, has invariably attracted the attention of visiting colleagues, who noted the slight amount of purulent secretion from even large surfaces kept constantly supplied with ample covering of the ointment.

Two facts have recently led me to believe that this practice of treating granulating wounds with ointments has not been so general of late in other hands as it should be. One of these was the announcement of the value of scarlet red ointment and the considerable literature concerning it. It is my belief that many other ointments would yield equally good results. The profession has employed sterile gauze entirely too much on granulating surfaces, under the impression, apparently, that mere sterility was the desideratum, and overlooking the value of protection without irritation. Wounds so treated become foul in spite of sterile dressings, owing to the repeated wounding of the granulations when the layer of gauze into which the granulations have proliferated is removed.

The other experience leading to this brief communication was the recent appearance in my office of a detail man from a large manufacturer of dressings with a specimen of rubber impregnated gauze which was to be used next to the granulating surface of wounds. It was explained that this gauze would not become attached to the granulations. The sterile gauze was to be placed over it. That such a texture should be recommended for this purpose finally convinced me that ointments were greatly neglected.

During the twenty years mentioned I have employed skin grafting but once, in this case to lessen the distortion of a lower eyelid that would probably have followed its omission.

After many experiments with various ointments I have selected two as the most useful for the small and large wounds remaining after the destruction of malignant growths, and their occasional use in other wounds has shown their general value also. One of these, and the most important, is zinc oxide ointment diluted with four times its weight of semifluid petrolatum, etc. This is used on the wounds so freely that it alone comes into contact with the granulations. A gently antiseptic, gently stimulating action will be shown in a few hours. No water or other irritating substances are allowed to come in contact with the wound surface, and only the surrounding skin is cleaned with soap and water or alcohol when the dressing is changed. If an abundance of the ointment is used the wound will be self cleansing.

The other ointment, which is sometimes used for a time when the diluted zinc oxide ointment appears to have overreddened the granulations by overstimulation, is the boric acid ointment of the pharmacopeia; but this is seldom required.

The Massey Sanitarium.

SYPHILIS.*

A Discussion of the Serum Diagnosis and Its Use in Medicine, Public Health, and Law.

By H. M. Greene, M. D.,
Portland, Oregon.

Errors in the diagnosis of any disease are inevitable, even under the most favorable circumstances. Syphilis is no exception to the rule, as it has a career unsurpassed for the inclusiveness and variety of its manifestations. There is no organ in the body, nor any tissue in the organs, which syphilis does not invade; and it is therefore manifestly difficult to speak, at least at all concisely, of the pathology of the disease, just as it is almost impossible to describe its clinical symptoms without mentioning almost every symptom of every disease known. In fact it has been said that he who knows the whole pathology of syphilis and tuberculosis knows all pathology.

Certain symptoms and clinical signs characteristic of syphilis, when present, are conclusive evidence of its existence; but they are not conclusive evidence of its nonexistence when they are absent. The unreliability of symptoms in every disease has created a demand for laboratory tests upon which we could rely in a given case if a diagnosis could not be made by the clinical symptoms. The diagnosis of syphilis was made solely by clinical symptoms until Wassermann introduced a system of serum diagnosis of syphilis in 1906. The same system, in a modified form, was introduced later by Hideyo Noguchi, associate member of the Rockefeller Institute for Medical Research.

Both systems require a number of reagents which should be fresh and their comparative activity known. One of the reagents, the amboceptor, for the Wassermann test is prepared by immunizing rabbits against sheep blood corpuscles. Washed corpuscles are injected into the rabbit in increasing doses at stated intervals. About ten days after the last injection the rabbit is bled and the serum collected and standardized for use. Another reagent is a five per cent. suspension of washed sheep blood corpuscles in physiological saline solution. In the Noguchi test the amboceptor is prepared in the same manner, but by using human blood corpuscles instead of those from the sheep, and, instead of using a five per cent. sheep blood corpuscle suspension, a one per cent. human blood corpuscle suspension is used in a physiological saline solution.

There are also other variations in the other reagents and in the method of performing the Noguchi test; but the reaction in both instances depends upon one and the same thing, that is, will or will not the corpuscles in the blood corpuscle suspension be dissolved in a given period of time?

If complete hemolysis has taken place, compared with the negative control, the reaction is designated as negative; but if there is complete inhibition of hemolysis, compared with the positive control, the reaction is designated as positive.

To eliminate all error in technic, it is necessary to make two control tests along with the test in question; one control being a known negative and the other control being a known positive. If sixty to seventy per cent. of the bulk of the corpuscles is dissolved the reaction is doubtful and should not be taken into consideration for diagnosis. In a known specific case such slight inhibition should be an indication for further treatment as evidence of the continued presence of syphilis. If there is a faint trace of hemolysis, the main bulk of the corpuscles being intact, the reaction should be called weakly positive, while thirty to forty per cent. hemolysis is designated as faintly positive. Neither the weakly positive nor the faintly positive reaction should be accepted as a definite diagnosis of syphilis without the presence of strong clinical evidence in favor of such a diagnosis.

A number of investigators reporting results in a series of 1,771 cases of known syphilis in the various stages, using both the Wassermann and Noguchi tests on the same cases, report the following:

	Wassermann. Per cent.	Noguchi. Per cent.
208 primary syphilitics	88	94
669 secondary syphilitics	92	98
455 tertiary syphilitics	74	83
305 latent syphilitics	54	68
79 congenital syphilitics	98	98
55 cerebrospinal syphilitics	73	80

The results of comparison show that the Noguchi method gives a higher percentage of positive reactions than the Wassermann; probably because Noguchi uses an antihuman amboceptor.

The value of the serum diagnosis of syphilis cannot be questioned, with either system, in primary, secondary, tertiary, and especially in congenital syphilis; but in latent syphilis, if we depended entirely upon the Wassermann system for a diagnosis, there would be forty-six out of every hundred cases not diagnosticated—approximately one half. Depending upon the Noguchi system, thirty-two cases out of every hundred, or approximately one third would not be diagnosticated; yet this system by many clinicians is supposed to be too sensitive for practical use.

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*Read before the Fortnightly Medical Club, December 23, 1912.

Noguchi made a comparative test, in fifty-nine cases of latent syphilis, of his own system with the Wassermann system, with the result that sixty-one per cent. reacted positively to the Wassermann test and 75.5 per cent. reacted positively to the Noguchi test; which shows practically the same difference as recorded in the whole series, namely, better than fourteen per cent. in favor of the Noguchi test in this class of cases.

There is a suspicion among clinicians that the Noguchi test or system of the serum diagnosis of syphilis might give a positive reaction in nonsyphilitic cases.

It is my opinion that Noguchi's authority concerning this question is exceeded by none, as is evidenced by the fact that he has not only revised the Wassermann test and has made it more simple of application and more sensitive, as shown by statistics in known syphilitics, but has also confirmed his findings by devising the luetin reaction and butyric acid test. It is still further evidenced by the fact that Noguchi can confirm his findings by the cultivation of the specific causative factor of syphilis—*Spirochœta pallida,* a feat many times attempted by the most enlightened and patient workers, but never before performed.

In contradistinction, can you produce any evidence other than statistics concerning the reliability of the Wassermann test?

In primary and secondary syphilis not so much depends upon the serum diagnosis, because we have more pronounced clinical conditions from which we may draw conclusions and arrive at a diagnosis; but in tertiary, latent, and congenital syphilis the clinical symptoms in some cases are very indefinite, and it is in these cases especially that a great reliance is placed upon the serum diagnosis. Statistics show that in congenital syphilis the serum diagnosis by both the Wassermann and Noguchi systems is almost conclusive, while in latent syphilis neither one is very dependable.

It is my opinion that if a very faintly positive serum reaction is present in a given case, and by the administration of antisyphilitic treatment the same can be made to disappear, and that after treatment is suspended for a given period of time a faintly positive reaction should return, a diagnosis of latent syphilis should be made and the individual put on treatment. Notwithstanding the fact that he may be healthy himself, he should be regarded as is the typhoid carrier; for there are undoubtedly circumstances under which he could transmit infection to another individual or to his offspring.

It is a delicate matter for the physician to discuss the subject of syphilis with the laity in a number of instances, especially with the unmarried woman who has had sexual intercourse, for she is loath for any man to know that she has lost her virtue and contracted a disease of social impurity. Here the serum diagnosis of syphilis offers an easy solution of the problem.

History informs us that syphilis was described by Nusi King, a Chinese writer, in the year 2637 B. C., and became pandemic in malignant form throughout the known world A. D. 1494, during which time, from all reports, the whole of the human family was syphilized.

When we take into consideration the antiquity of syphilis, the fact that it can be transmitted to posterity, its prevalence throughout the human family, its incurability, and the length of time the infection remains active, the ease with which it is transmitted, the modes by which it is transmitted, and the nature of men and women relative to cohabitation, and also the number of accidental infections, can it be possible that the majority of humanity have escaped it?

For further consideration we may divide the human family into two classes—syphilitic and nonsyphilitic.

The percentage of syphilitics is great, no doubt; but I am glad to say that I think the great majority of mankind is not syphilitic; not on their own account, but on account of inherited immunity, a quality of untold value, but not to be boasted of; because if we didn't have inherited immunity we should probably have inherited syphilis, or should have acquired it.

By the presence of syphilis in many cases we can account for repeated miscarriages and for the stillborn. Locomotor ataxia and paralytic dementia are attributed directly to syphilis.

The number of positive reactions to the serum test for syphilis in epilepsy, insanity, idiocy, arterisclerosis, aneurysms, arthritis deformans, cirrhosis of the liver, and many diseases of the eye, compare markedly with the same number of positive reactions present in known latent syphilis.

While it is my opinion that the majority of mankind is not syphilitic, I am inclined to think that a great many physicians think too much of mankind to suspect that syphilis, a disease of social impurity, might be the cause of the majority of their chronic incurable ailments.

I shall undoubtedly be accused of attaching undue importance to syphilis, but it is appalling to think of the amount of physical suffering and mental anguish and bald heads that syphilis has caused; as it is represented in all classes, the "front row," the "amen corner," as well as in "the class that make burnt offerings on the mountain of Venus." The old darkey said, "Dat pox is de mos' lonesome (meaning loathsome) desez I ebber did see."

Could we not devise some plan to make a serum test for syphilis on every infant born? Ninety-eight out of every hundred syphilitics could then be detected and the blame placed for their condition. It would be easy and effective to tie off a section of the umbilical cord and send it to the laboratory with the birth report.

One day's work of this kind would do more to remove the curse of syphilis from mankind than all the closed towns, restricted districts, and licensed houses of lewdness that the world could create in a thousand years.

For public safety, locomotive engineers should react negatively to the serum test for syphilis. Would you fancy being on a train with an engineer having a delusion of grandeur?

Would it be wise to have a serum test for syphilis made on every man who commits a crime? It would give more information and be more scientific than to propound hypothetical questions. Syphilis might be responsible for the criminal's condition, and it might be that he could be relieved by treatment, which would be more humane and better than punishment.

In some diseases other than syphilis the serum test is positive, viz., malaria, leprosy, yaws, and extreme cachectic conditions. Alcohol and antisyphilitic treatment cause the test to be negative when an active syphilis is present. Alcohol should be prohibited for at least forty-eight hours in a given case if a serum test for syphilis is to be made. Antisyphilitic treatment should be discontinued for about thirty days before the test is made.

All patent and proprietary medicines should be prohibited for two reasons: First. They may contain iodine, arsenic, or some antisyphilitic drug; second, they usually contain as much or more alcohol than does brandy.

It is my opinion that syphilis causes more nervous wrecks than train wrecks; so when an individual sues a railroad company, a serum test for syphilis might place the responsibility for both wrecks.

Credit is hereby given authorities quoted—Noguchi and Osler.

Medical Building.

MORPHINE IN GENERAL PRACTICE.*

By C. J. Douglas, M. D.,
Boston.

The prevention of disease is an important part of a physician's duty. Our work in prophylaxis forms one of the noble and brilliant chapters in modern medical achievement, and one of which every physician is justly proud. And yet, paradoxically, there is one disease of the gravest character which medical men are not only failing to prevent, but are often doing much to spread and multiply. I refer to morphinism. I do not, obviously, mean to say that the medical profession as a whole has any part or lot in the spread of morphine addiction. Most physicians are careful, intelligent, and conscientious in the administration of morphine. But there are many individuals in the profession who, through carelessness or a failure to appreciate its dangers, are recklessly prescribing this drug, with the result that morphinism is often acquired, and their patients become helpless slaves. While morphine has a legitimate place in our materia medica, and is a valuable remedy when properly prescribed, yet our best physicians are increasingly cautious in its use, and never employ it except as a last resort. It is humiliating to admit that the widespread prevalence of morphinism is largely due to too careless prescribing by physicians. These prescriptions are often made by well meaning men, who seem to forget or ignore the dangers and limitations of this drug.

There are several reasons why morphine is so often employed as a universal panacea, and is given to patients suffering from ailments of the most diverse character. Most diseases are accompanied by pain or some sort of distress, and morphine will more promptly and surely relieve pain than any other remedy. Thus to overcome at once the most prominent and annoying symptom is highly gratifying to the patient and his friends. With the sympathetic family standing about and urging the doctor to "do something," it is a great temptation to exhibit a few doses of morphine, thus temporarily relieving the patient's distress and winning the applause of all concerned. If it stopped here it would not be so bad, but often it does not. The physician knows that probably the pain will return as soon as the effect of the morphine has gone. He cannot visit the patient several times a day, especially if he lives at a distance. He may therefore say, "Here are some morphine pills. Take one when you need it for pain." This makes the patient at once a self prescriber of morphine, and has given him a good start on the toboggan slide of morphinism. After he has taken it daily for a sufficient length of time he discovers that it is more essential to his comfort than it was at first, although the original disease may have disappeared. He finds that stopping the use of the drug produces great discomfort, and he also finds that another dose of morphine immediately relieves it. He may hope that after a few more doses he will be able to stop, but the more he takes, the more he has to. And thus floundering in this quicksand, he gets in deeper and deeper, until finally he realizes that he is hopelessly entangled and that all possibility of self help is out of the question.

A respectable country practitioner sent me a patient with this note: "The bearer is a very nervous man and I have been obliged to give him some morphine. Now he objects to giving it up. What can you do for him?" I found it to be a well developed case of morphinism caused by his family physician, as he admits in this ingenuous note. This is not the worst case I might cite, but the patient made a good recovery; but it fairly illustrates how morphinism is often produced. Such prescribing results from ignorance or thoughtlessness or indolence. Such a physician may become a dangerous menace to his community. The indiscriminate prescriber of morphine should be prohibited from practising medicine. It would seem to be almost justifiable to lock him up for the protection of the public.

Every physician should know that a patient cannot take morphine daily for any length of time without reaching a condition in which the abandonment of the drug will not only be "objected to," but will be impossible. Every physician should know that morphine is not a proper remedy for ordinary "nervous" symptoms. Every physician should know that morphine is not a good hypnotic. There are other remedies less harmful and more effective for the purpose of promoting sleep. In ninety-nine cases of insomnia out of a hundred its use is unwarranted if not contraindicated. Every physician should know that he cannot place morphine in the hands of a patient so that he may use it at will without the gravest danger of producing a morphine addict.

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*Read before the American Society for the Study of Alcohol and Other Narcotics, Washington, D. C., December 11, 1912.

The members of this society may so thoroughly agree with me that these propositions will appear like commonplace truisms. But many physicians are to-day prescribing this dangerous drug as if they were ignorant of these facts. It is time a clarion call was sounded to remind the careless morphine prescribers of the dangers of inflicting upon their patients a drug addiction.

Another difficulty complicates the situation. Many physicians are themselves addicted to the morphine habit, and the result is that they usually have great faith in the drug as a remedy for all ills—at least their prescriptions indicate such faith. The personal equation often modifies prescriptions in a peculiar way. Each physician is inclined to recommend his own habits. If he is a smoker he recommends smoke. If he is a vegeterian he recommends vegetables. If he uses alcohol to excess, the one thing, in his judgment, that most of his patients require is drink. If he uses morphine, you will find that drug in most of his prescriptions, and he will gradually build up a colony of morphine addicts among his patients. Morphine warps the judgment, and consequently the opinion of a physician who uses it becomes less valuable in proportion to the length of the addiction and the amount of drug taken. It is not surprising, therefore, that his prescriptions are peculiar.

Recognizing morphine as a valuable remedy when properly employed, how can it be exhibited so as to avoid the danger of an addiction? I will make one suggestion which will go far toward accomplishing this result.

Dispense all morphine personally, never employing a written prescription, as it may be refilled, even if otherwise ordered. Never allow the patient to know that he is getting opium or any of its derivatives, giving all such preparations in a disguised form. The object is to prevent the patient from becoming a self prescriber. This is equally important if the patient is a physician. No sick doctor should prescribe for anyone, and he is doubly disqualified for prescribing for himself. It is as dangerous for a physician to prescribe morphine for himself as for a layman to do so. The many cases of morphinism among medical men bear ample testimony to this fact.

In cases of incurable and painful disease, like cancer, for instance, the danger of an addiction need not be guarded against, and no special precautions in the exhibition of opiates need be observed.

It is more eminently true to-day than ever before that the medical profession is the guardian and protector of the public health. During recent years physicians have made brilliant discoveries tending to prevent disease, and in some cases making it almost impossible for the disease to recur. By these discoveries they have so promoted general hygiene and sanitary living that they have added ten years to the average span of human life. All this altruistic work on the part of physicians has resulted in reducing their own incomes. This was plainly inevitable. So markedly is this the case that there are five thousand fewer physicians in practice to-day in the United States than there were eight years ago. What other profession has thus labored for the good of mankind, knowing that the success of its work meant the crippling of its own means of support? Others may give time and energy for the public good when success will bring substantial rewards. But who except physicians are expected to devote their talents and education to the impairment of their own revenue for the sake of the welfare of others? Who but physicians cheerfully commit financial suicide in order to give physical health and length of days to their fellow men? With this noble record for our inspiration, no physician should be willing to have it said that through carelessness or needless ignorance any one has been injured by him. Let us hope that in the future physicians who find it necessary to administer morphine will do so with greater care, and will keep in mind the serious dangers and pronounced limitations of this habit forming drug. For of all the drugs that enslave there is none mightier than this.

321 CENTRE STREET.

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Therapeutic Notes.

Treatment of Facial Neuralgia.—Monestié, in a recent issue of *Journal des sciences médicales de Lille,* reports a case of severe trifacial neuralgia in which, all ordinary measures finally proving unavailing, two injections of the following solution were made into the infraorbital canal on two successive days:

℞	Sodii salicylatis, ...	gr. viiss (0.5 gramme);
	Cocainæ hydrochloridi, ...	grs. i¼ (0.075 gramme);
	Aquæ destillatæ, ...	ʒiiss (10 grammes).

M. ft. solutio.

The injections were administered slowly with a two c. c. syringe, under local anesthesia of the skin with ethyl chloride, the infraorbital foramen having first been located at the junction of the inner third and outer two thirds of the lower margin of the orbit, five mm. below a slight bony elevation palpable with the finger. Almost complete relief from pain was at once obtained, and at the time of writing this result had been maintained for six months.

Treatment of Marasmus in Infants.—T. N. Gray, in the *Journal of the Medical Society of New Jersey* for January, 1913, makes a strong plea for the topical use of codliver oil in feeding infants with congenital or acquired marasmus. The child is wrapped in oil soaked flannel from the axillæ to the crests of the ilia, and a covering of oiled silk is then applied. At twelve hour intervals the flannel is removed and, after the skin has been washed with soap and water, reapplied. In this manner the skin is kept constantly bathed in the oil, and whatever heat the infant possesses is retained. That some of the oil is actually absorbed through the skin is shown by the fact that if the oil soaked flannel is weighed before and after its application, together with the oil scraped from the skin and an allowance of ten per cent. for that which scraping does not remove, from thirty to fifty per cent. of the oil will be found to have disappeared. Meanwhile, nothing is given by mouth except an ample quantity of water.

The author's statistics bearing on the use of this method show that of thirty-six premature infants thirty were saved; that fifty-two patients with marasmus, nonsyphilitic or tuberculous, all recovered, and that of 220 infants with acquired marasmus, 206 recovered. The immediate results consist of a rise in the temperature, followed by evidences of an increase in the fat and water content in the body. The dryness of the skin and the wrinkles disappear, and later a gain in weight is observed. The treatment is dirty, attended with an unpleasant odor, and destructive of clothing, but in the face of the results obtained these inconveniences are of little consequence.

Turpentine Inhalations.—Plicque, in *Bulletin médical* for June 12, 1912, calls attention to the value of inhalations of oil of turpentine in various respiratory affections. The amount used should never exceed seventy-five grains (five grammes). For use in inhaling apparatus, the oil should be diluted ten times, or even, in some patients, forty times. Menthol, fifteen per cent., may be added.

For indirect inhalation a vessel containing lukewarm water, with one teaspoonful of the oil poured over its surface, should be placed at the foot of the bed.

Rubbing the skin over the chest with the oil produces a derivative effect which may be of value. If excessive irritation is caused, the following mixture may be substituted:

Oil of turpentine, ...30 parts;
Camphor, ...8 parts.

It is to be remembered that certain untoward effects, headache, ptyalism, gastrointestinal disturbances, and loss of weight, may be produced if the turpentine is used with undue freedom.

Treatment of Impetigo.—H. Triboulet, in *Nourrisson* for January, 1913, refers to the fact that the use of ordinary protective dressings is frequently a source of trouble in infants, as the little patients are rendered nervous thereby and prevented from sleeping. Furthermore, frequent changing is necessary if the dressings are to be kept clean, and this is difficult if the lesions are widespread. The following preparation is both effectual and convenient, in that no covering dressing is required:

℞ Fuchsine, ...grs. xv (1 gramme);
Absolute alcohol, ...ʒiiss (10 grammes);
Phenol, ...grs. lxxv (5 grammes);
Distilled water, ...℥iiiss (100 grammes).
M. ft. solutio.

In treating the skin lesions, the superficial friable part of the crusts is first removed by means of compresses soaked in a zinc sulphate solution:

℞ Zinc sulphate, ...grs. xv (1 gramme);
Distilled water, ...℥vii (200 grammes).
Fiat solutio.

Each projecting crust is then individually soaked by direct pressure of cotton, with the fuchsine solution. The surrounding healthy skin should not be touched. Upon allowing the solution to dry on thoroughly, a red glossy covering is formed which is impervious to air. Daily applications are made, and in eight, six, or even three days the crusts will be observed to shrivel markedly, almost disappearing. When the last vestige has fallen off, the underlying lesion will heal under the fuchsin in twenty-four hours.

This measure may be used with similar success in ecthyma, in the presence of somewhat confluent and deep seated crusts in varicella, in infected patches of pemphigus, and in various pyogenic skin infections, e. g., those accompanying nasal or aural suppurative processes.

Treatment of Pediculosis capitis.—Arthur Whitfield, in the *Lancet* for December 14, 1912, describes a procedure by which pediculi of the head in female children can be rapidly exterminated. The patient is placed on her back on a bed, with the head hanging over the edge, and the hair resting in a basin placed on a chair. The following solution,

℞ Phenolis, ...ʒiii (12 grammes);
Aquæ, ...Oi (500 grammes).
Misce.

is then poured over the hair into the basin and sluiced backward and forward until the whole of the hair is thoroughly soaked with it. Saturation of the hair over the ears and at the nape of the neck should especially be secured, since these parts are the sites of predilection of the parasites. The sluicing is to be carried out for ten minutes by the clock. The hair is then lifted from the basin and allowed to drain, but is not dried or even thoroughly wrung out. The whole head is then swathed with a thick towel, or better, with a large piece of flannel, which is fastened up to form a sort of turban. The head is allowed to remain thus for an hour. It can then be washed or simply allowed to dry, as the phenol, being volatile, quickly disappears. At the end of this period every pediculus and, what is more important, every ovum, is dead. The hair itself is not in the least damaged.

Treatment of Seborrheic Keratosis.—D. W. Montgomery, in the *Journal of the American Medical Association* for January 4, 1913, states that in this common affection, which occurs oftenest in elderly people, and of which light, especially its actinic rays, is now considered to be in many instances the exciting cause, curetting and the application of trichloracetic acid constitute the most effective local measures. Patches may, however, be held in check and even diminished in size by the following ointment:

℞ Acidi salicylici, ...gr. x (0.6 gramme);
Sulphuris præcipitati, ...ʒi (4 grammes);
Adipis lanæ hydrosi,
Petrolati,............ ....āā ℥ss (15 grammes).
M. ft. unguentum. Sig.: Rub in once a day.

If the skin surface is irritable and inclined to inflame, the soothing effect of the following combination may be taken advantage of:

℞ Hydrargyri oxidi rubri,
Camphoræ,............ ...āāgr. x (0.6 gramme);
Adipis lanæ hydrosi,
Petrolati,............ ....āā ℥ss (15 grammes).
M. ft. unguentum. Sig.: Rub into the affected skin at night.

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THE TREATMENT OF ASTHMA BY ORGANOTHERAPY.

In 1911 Januschke and Pollak found that epinephrin caused dilatation of the bronchioles after these minute bronchi, which, we may recall, open directly into the air cells, had been caused artificially to contract by muscarine. A similar effect was recently (1913) obtained by Jackson from epinephrin after pilocarpine had been used to cause contraction of the same bronchioles. This action, added to the probable participation of the adrenal secretion in the respiratory process itself (an action pointed out in this country ten years ago), accounts for the beneficial, and sometimes marvelous effects of intramuscular injections of a solution of epinephrin in arresting a paroxysm of asthma. Weiss found that instantaneous relief could be afforded with even greater certainty, and in the gravest paroxysms, by giving hypodermically a solution containing epinephrin and an extractive of the posterior lobe of the pituitary, the doses depending upon the age of the patient. A second injection was required in only ten cases out of three hundred to arrest the attack. From his viewpoint the pituitary, thyroid, adrenal, and genital glands influence not only the composition of the blood, including its cellular elements, but also, in keeping with the view advanced in this country, the intake of oxygen and the output of carbon dioxide. The introduction of pituitary and adrenal extractives into the organism is compensatory therefore, furnishing as they do to the blood some of its physiological constituents which it lacks. This may be deemed an essentially scientific procedure when compared to the use of toxics, such as morphine, cocaine, etc., which, besides, entail the danger of initiating morphinism, cocainomania, or kindred habits, even more dangerous than asthma itself. We may recall that two years before Weiss, S. Solis-Cohen, of Philadelphia, recommended the infundibular extract, orally or hypodermically, for the arrest of paroxysms of bronchial asthma. He noted, however, that its action was slower than that of epinephrin, though more persistent. Weiss, by combining the two agents, avoids their defects and preserves their advantages.

In the curative treatment of bronchial asthma Léopold Lévi and de Rothschild have recommended the internal use of thyroid and corpus luteum, having obtained satisfactory results in fifty per cent. of their cases. Better results may be obtained, however, in true bronchial asthma by giving desiccated thyroid gland, one grain, and desiccated adrenal gland, two grains, three times daily in adults. The spasmogenic toxics in some cases are the products of nucleins ingested in excessive quantities; in such cases the diet list should be reduced if there is reason to believe that the patient eats to excess, or red meats and eggs may alone be forbidden, and the intake of water somewhat increased. The fact that asthma may be due to many different causes and that the pathogenic factor should be carefully sought and eliminated if possible, need hardly be emphasized.

ACTIVE IMMUNITY TO DIPHTHERIA.

Von Behring has again been devoting his attention to the problems of diphtheria. This time he has evidently worked out a practical method by which active immunity may be produced. Every physician has felt the need of better means for protecting "contacts" than can be obtained by the use of antitoxic serum. The proteins of horse serum are alien to the human body and are therefore eliminated rapidly with the result that the antitoxine and the immunity conferred by it disappear sometimes within a week. Furthermore, the medical profession has become so hysterical over the rare occurrence of the alarming symptoms of anaphylactic shock that one hears too frequently "Why immunize? Diphtheria is so easily cured, why take the risk until it becomes necessary?"

Von Behring has evidently used the method of injecting mixtures of toxine and antitoxine so that there is very little danger of accidents due to an overdose of toxine. It is well known that harmless mixtures of toxine and antitoxine actively immunize animals injected with them. In guineapigs immunity appears more quickly and likewise disappears more quickly if there is an excess of antitoxine. The converse is also true; that is, if there is an excess of toxine, the production of antitoxine becomes evident later, but the resultant immunity is of greater duration.

There is one point nevertheless which has not been overcome by previous investigators. Ehrlich, in his work upon the constitution of diphtheria toxine, showed that one of the substances present is toxone. Toxone has less avidity for antitoxine than has either toxine or toxoid, the other important products of the diphtheria bacillus when grown upon artificial culture media. Toxone is the poison which causes postdiphtheritic paralysis. If then it should ever happen that in mixtures of toxine and antitoxine there was not quite sufficient antitoxine, the injection of the mixture might cause paralysis. Another objection that has been raised to the general use of methods for the production of active immunity is the fact that its production is necessarily slow—possibly requiring as much as two weeks before there is any appreciable production of antitoxine, and it is during just this period that immunity is desired most. In institutions or in homes where diphtheria has appeared antitoxine is incomparably to be preferred, because immunity is obtained by it within a few hours, and by the time that passive immunity has disappeared the greatest danger of infection is usually over.

The most systematic work upon the production of active immunity to diphtheria has been done by Theobald Smith (*Journal of Experimental Medicine,* 1909, xi, p. 241; *Journal of Medical Research,* 1910, xviii, pp. 433-443). The method described by Park (*Proceedings of the New York Pathological Society,* May, 1903, pp. 139-140) for the rapid production of antitoxine in horses is the common practice in many antitoxine laboratories. Park's method consists in using a mixture of toxine and antitoxine for the initial doses given the horse. After two or three such doses very much larger quantities of toxine alone may be injected than it would be possible to reach even after two or three weeks if toxine alone were used from the start. The first suggestion, however, that mixtures of toxine and antitoxine could be used to confer immunity or to produce antitoxine seems to have come from Babes (*Bulletin de l'Académie de médecine,* 1893, 3d series, xxxiv, No. 32, pp. 206-214). Madsen and Dreyer (*Thirteenth Congress of Medicine,* Paris, 1900, Section in Bacteriology and Pathology, pp. 40-47) made some observations upon the phenomena following the use of mixtures of toxine and antitoxine in which the toxine was not entirely neutralized. The antitoxine production was therefore believed by them to be due to the action of the unneutralized toxone. It has been shown, however, that even though sufficient antitoxine is added to neutralize the toxone entirely, antitoxine production results. This phenomenon is analogous to the production of immunity by the use of sensitized vaccines, the literature on which has been so much enriched by the contributions of Besredka. The suggestion that there is a chemical difference between the combining group of molecules and the group which has to do with the production of antibodies has received much support.

We are informed that it is von Behring's thought that persons known to be excessively susceptible to horse serum may be immunized in cases of emergency by serum from persons who have been treated with the toxine-antitoxine mixtures.

INDUSTRIAL COLONY FOR THE TUBERCULOUS.

All who have had experience with the control of tuberculosis realize the many difficulties to be overcome. Especially in connection with sanatorium treatment, much discouragement has resulted from the fact that, in many instances, patients discharged with their disease arrested are compelled to return to the crowded and, for them, unhealthful environment of a large city, where they promptly relapse and so nullify most of the good work which has been done by the sanatorium.

The lack of suitable occupations under proper conditions for such patients has been the great stumbling block in the way of more lasting and substantial progress.

A number of years ago, Dr. Hermann M. Biggs urged the establishment of an industrial colony in a locality in the country where the climatic conditions were favorable for tuberculous patients, where the land was cheap and where sanitary workshops could be erected, and where employees could spend the unemployed hours of the day, twelve or fourteen hours at least, out of doors. Dwellings with outside sleeping porches would be provided, patients and their families would be kept under continued supervision, all of the conditions of life, including their food and dietary, would be supervised, and the earliest indications of return of disease would be immediately recognized.

Through the efforts of Doctor Biggs, a law has just been passed by the Legislature and signed by the Governor authorizing any municipality or corporation maintaining a hospital or sanatorium for the treatment of tuberculosis to establish and maintain workshops in connection therewith, for the production of articles or supplies required by such hospital or sanatorium and by any other institution or department of such municipality. No person is to be employed in the workshop so established, except in a supervisory capacity, unless he is or has been a patient in the tuberculosis hospital or sanatorium.

This bill represents an enormous step forward in the administrative control of tuberculosis, for it will enable discharged patients to live and work under sanitary conditions. We understand that it is proposed to care for the families of such discharged patients in an industrial colony adjacent to such sanatoria and under the supervision of the sanatorium authorities.

THE MOVING PICTURE IN MEDICINE.

In medicine, as in pedagogy in general, there is constant discussion as to what is the best way to teach. Shall all subjects be taught by practical application, by didactic methods entirely, by a combination of both, or by something completely different? It is well understood that impressions received by the eye are retained more firmly as a rule than by the ear; yet both senses may become wearied if the one is used to the exclusion of the other. Consequently much effort is expended in finding some way that will enable the student to grasp thoroughly a subject in the shortest space of time with the least unnecessary expenditure of effort. This has to be done because the medical course is becoming more and more crowded each year.

The form that is obviously of least trouble to the instructor is the didactic. He says what he wishes and the student remembers what he can. To assist in the work the next step is to use charts or illustrations. They are of the greatest value and should be constantly employed. But there is something more valuable than a printed chart or picture, and that is the original from which they were taken. It is commonly impossible to carry out this idea to its completion. The internist must take up his lectures in some regular order. His clinics represent the attempt to do away with his didactic methods, but he has to take his patients as they come. The pathologist first used alcohol specimens in addition to illustrations, then, when methods were elaborated for the preservation of tissues in their natural colors, a great advance was made.

But the drawback to all, excepting the clinics, is that they represent dead structures. Cannot some method be employed that will give at the time when it is needed in the lecture course the picture of the living individual? Such a method has been found in the use of the cinematograph, the moving picture camera. By means of this instrument one is now enabled to obtain, for future presentation, cases of rare diseases, as well as of the ordinary diseases. The lecturer is no longer dependent upon a mere description, but after an appropriate discussion can exhibit the actual case. Now that psychiatry seems to be the most recent acquisition to the medical curriculum, the neurologist is put to it to get material. Take such a common disease as epilepsy: How many recent graduates have ever seen an attack? What description of dementia, of an ataxic gait, or of various tics can equal the moving picture of the actual patient? Various forms of similar conditions can be exhibited for comparison. In other words, the wards of a large hospital are immediately at hand. Then, too, the possibilities of this method in the fundamental branches are almost limitless now that pictures of microscopic bodies can be taken. One who has seen the capillary circulation in action, the leucocyte forming pseudopods, or the *Treponema pallidum* in syphilitic fluids will never forget the appearance. At present this method is in its infancy and consequently very expensive. But who can tell how soon a moving picture outfit will be a part of the equipment of every medical school, with the development of a central exchange from which films can be obtained?

RADIOACTIVITY AND VEGETATION.

Gabriel Petit and R. Ancelin reported to the Académie des sciences in Paris on March 17th, that their comparative experiments on the effects of plain water and that rendered radioactive, on vegetation showed unmistakably that the latter had a most stimulating influence. An interesting detail in the report, according to *Presse médicale* for March 29, 1913, is the manner in which these experimenters get a radioactive water. They do not use pure radium salts, but have devised an extremely economical process of simply allowing water to remain from twenty-four to forty-eight hours in tanks made from cement derived from refined ores containing radium. This ingenious idea they owe to Henri Farjas, a civil engineer, who has thus been able to render at will both water and air radioactive by simply coating baths or reservoirs with a cement of the kind described.

ALLEGED TOBACCO ANGINA PECTORIS.

Charles Fiessinger, according to *Semaine médicale* for April 2, 1913, in an address before the Académie de médecine on April 1st, warned his hearers against attributing severe angina solely to the influence of tobacco. Angina from tobacco might indeed be agonizing, but it would always cease with the withdrawal of the narcotic; where the angina persisted despite this withdrawal, it was necessary to make a Wassermann test for syphilis. Fiessinger gave details concerning three cases in which a positive reaction indicated the proper mercurial treatment, which was followed by immediate relief after other measures had proved fruitless.

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News Items.

Obstetrical Society of Philadelphia.—The stated meeting of this society, scheduled for Thursday, May 1st, will be held on Friday, May 9th, instead. On the latter date a joint meeting will be held with the Chicago Gynecological Society.

American Pediatric Society.—The annual meeting of this society will be held in Washington, D. C., on May 5th to 7th, with headquarters at the New Willard Hotel. Dr. John Lovett Morse, of Boston, is president of the society, and Dr. Samuel S. Adams, of Washington, D. C., secretary.

Hampden District Medical Society.—At the annual meeting of this society, held in Springfield, Mass., on April 15th, Dr. George D. Weston, of Springfield, was elected president; Dr. Abbott L. Cooley, of Chicopee Falls, vice-president, and Dr. Hervey L. Smith, of Springfield, secretary and treasurer.

A Meeting of Alienists and Neurologists.—Arrangements have been made for a meeting of the Alienists and Neurologists of the United States to be held in Chicago, June 24th to 27th, the week following the meeting of the American Medical Association in Minneapolis. This meeting is the outcome of a conference held in Chicago last year.

New Laboratory for the Wistar Institute.—The Wistar Institute of Anatomy at the University of Pennsylvania is to have a well equipped laboratory in the near future. The old police station at Thirty-seventh Street and Woodland Avenue is being remodelled for the purpose, part of it being fitted up as an animal house in which to carry on research work. Later a modern building will be erected to take the place of the present structure.

First Joseph Leidy Lecture.—The first lecture on the Joseph Leidy Memorial Foundation was delivered on the evening of April 17th in Houston Hall, University of Pennsylvania, by Edmund Beecher Wilson, professor of zoology at Columbia University. On this occasion a tribute was paid to the life and services of Joseph Leidy, the student, teacher, and investigator, by Charles Sedgwick Minot, professor of comparative anatomy at Harvard University.

Meetings of Philadelphia Medical Societies.—Medical societies will meet in Philadelphia during the coming week as follows: Monday, April 28th: Section in General Medicine of the College of Physicians and St. Agnes' Hospital Clinical Society; Tuesday, April 29th: Medicolegal Society and St. Mary's Hospital Clinical Society; Wednesday, April 30th: Annual banquet of the Northern Medical Association; Friday, May 2d: Kensington and Southeast Branches of the County Society.

Cape May County, N. J., Medical Society.—At the twenty-ninth annual meeting of this society, held in Cape May recently, under the presidency of Dr. Margaret Mace, the following officers were elected to serve for the ensuing year: President, Dr. Clarence W. Way; vice-president, Dr. E. Physick; secretary and reporter, Dr. Eugene Way; treasurer, Dr. H. H. Tomlin; censors, Dr. Duncan Blake, Dr. I. N. Griscom, and Dr. H. H. Tomlin. Two interesting addresses were delivered, one by Dr. James A. Kelly, of Philadelphia, on the Operative Treatment of Fractures, and the other by Dr. Morris Booth Miller, of Philadelphia, on the Nonoperative Treatment of Fractures.

Temple Medical School Standards.—The trustees of Temple University, Philadelphia, have approved the entrance requirements recommended by the American Medical Association, to include one year college credits in chemistry, physics, and biology, and a modern language, to take effect on January 1, 1914. The trustees have also endorsed the one year hospital work after graduation, and, with two hospitals under control of the university, feel well prepared to take care of this feature.

College of Physicians of Philadelphia.—At the next meeting of the Section in General Medicine, to be held on the evening of April 28th, the following papers will be presented: Report of a Case of Pellagra, by Dr. Joseph Sailer; Treatment of Hyperchlorhydria, by Dr. A. A. Stevens; Antityphoid Vaccine during the Course of an Epidemic, by Dr. C. J. Hunt, of the State Board of Health; Use of the Clinical Thermometer, by Dr. H. R. M. Landis; Value to the General Practitioner of Special Training in Pulmonary Diseases, by Dr. Charles M. Montgomery. All physicians are cordially invited to attend.

Henry Phipps Psychiatric Clinic Opened.—The formal opening of the Henry Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, took place last week, the exercises lasting three days, April 16th, 17th, and 18th. One of the principal speakers was Sir William Osler, regius professor of medicine at Oxford University, whose subject was Specialism in General Hospitals. Other speakers were Dr. K. Heilbronner, professor of psychiatry in the University of Utrecht, Dr. W. McDougall, professor of mental philosophy at Oxford University, Professor Bleuler, of the University of Zurich, Professor O. Rossi, of the University of Florence, Dr. F. W. Mott, of London, and Dr. Adolph Meyer, director of the clinic, who gave the closing address.

American Therapeutic Society.—The fourteenth annual meeting of this society will be held in Washington, D. C., on Monday and Tuesday, May 5th and 6th, with headquarters at the New Willard Hotel. An excellent programme has been arranged, an interesting feature being a symposium on Vaccine Therapy, which will form a part of the programme for Monday afternoon. The officers of the society are: Dr. Noble P. Barnes, of Washington, D. C., president; Dr. Howard Van Rensselaer, of Albany, N. Y., Dr. Robert T. Morris, of New York, and Dr. Francis M. Pottenger, of Los Angeles, vice-presidents; Dr. Lewis H. Taylor, of Washington, secretary; Dr. A. Ernest Gallant, of New York, treasurer. Complete programmes may be obtained from the secretary, whose address is The Cecil, Fifteenth and L Streets, N. W., Washington, D. C.

Kansas Medical Society.—The forty-seventh annual meeting of the State medical society of Kansas will be held in Topeka on Wednesday and Thursday, May 7th and 8th, under the presidency of Dr. George M. Gray, of Kansas City. The other officers of the society are: Dr. H. G. Welch, of Hutchinson, Dr. Clemens Klippel, of Hutchinson, and Dr. G. A. Blasdel, of Garnett, vice-presidents; Dr. Charles S. Huffman, of Columbus, secretary; Dr. L. H. Munn, of Topeka, treasurer; Dr. S. G. Stewart, of Topeka, librarian. Dr. O. P. Davis, of Topeka, is chairman of the committee on arrangements The House of Delegates will meet at nine o'clock on Wednesday morning, and at ten a scientific session will be held, the first item on the programme being the annual address of the president. Nearly thirty papers on topics of interest to the general practitioner will be presented, and the meeting gives promises of being very successful.

In Memoriam.—The following resolutions were passed by the council and adopted by the New York Academy of Medicine in memory of Dr. Algernon T. Bristow:

> WHEREAS, The Council of the New York Academy of Medicine has learned with profound sorrow of the death of Dr. Algernon Thomas Bristow, therefore be it
>
> *Resolved*, That the Council hereby records its appreciation of Doctor Bristow, the man and the physician. He became a fellow in 1901 and served as vice-president from 1906 to 1909. As an officer, as a member, and in his private practice he exemplified all that is best in the medical profession. He combined to an unusual degree the practical and the ideal in his work. Doctor Bristow was a man of great public spirit and much interested in all the activities of the academy. His wise judgment and genial personality will be greatly missed. Therefore be it
>
> *Resolved*, That a copy of these resolutions be sent to the family and to the medical journals.
>
> WILLIAM M. POLK, M.D., President.
> CHARLES F. ADAMS, M.D., Recording Secretary.
> WISNER R. TOWNSEND, M.D.,
> L. EMMETT HOLT, M.D.,
> Committee of the Council.

Gifts and Bequests to Hospitals.—By the will of Stephen Sanford, who died recently in Amsterdam, N. Y., St. Mary's Hospital, the Amsterdam City Hospital, and the Sarah Jane Sanford Home for Elderly Women will each receive $20,000.

At the annual meeting of the board of trustees of the Homoeopathic Hospital of Rhode Island, Providence, the executive committee announced bequests to the institution aggregating $150,000, all of which were subject to life interests and accordingly not available at this time.

By the will of Ferris S. Thompson, who died in Paris on February 18th, two trust funds aggregating $155,000 will eventually go to St. Luke's Hospital, and the Woman's Hospital will get a direct bequest of $25,000 and the principal of several trust funds. The American Hospital in Paris will receive $25,000, and Mercy Hospital, Chicago, $100,000, together with $5,000 from a trust fund left to the testator's wife and $100,000 upon her death.

By the will of John Fritz, late of Bethlehem, Pa., the Methodist Hospital of Philadelphia will receive $21,000.

A Campaign against Cancer Planned.—At a meeting held at the home of Dr. Clement Cleveland, on the evening of April 22d, steps were taken to organize a National Anticancer Association and begin a campaign of education on the prevention of cancer. A committee of organization was appointed and the general plans outlined. The chief object of the organization is to educate the public to recognize the early symptoms of the disease, by means of magazine articles, leaflets to be distributed through boards of health, social workers and women's clubs, special instruction in nurses' training schools, and public lectures. The campaign of education is addressed chiefly to women. Among the physicians present at the meeting were Dr. Henry E. Coe, president of the American Gynecological Society; Dr. Robert Abbe, Dr. Joseph D. Bryant, Dr. Charles L. Gibson, and Dr. Joseph Brettauer. Two committees already appointed for the consideration of such an organization were represented at the meeting, one organized at the annual meeting of the American Gynecological Society last May, and the other at the Surgical Congress in September.

Purification of Water.—Officers of the United States Public Health Service on duty at Evansville, Ind., Cairo, Ill., Louisville, Ky., and Memphis, Tenn., have been instructed, in view of the possible contamination of public water supplies on acount of the flood conditions, to recommend to health officers and other proper authorities the treatment of public water supplies with hypochlorite of lime, and where there is no public water supply that hypochlorite solution be distributed free to private homes for use in the purification of drinking water. A satisfactory solution may be made by adding one teaspoonful of chlorinated lime to one pint of water. Of this solution one teaspoonful may be added to two gallons of drinking water, which should then be allowed to stand for at least one half hour before being used. These officers have also been instructed that all cases of sickness in which there is fever be reported to enable the authorities to ascertain the presence of typhoid fever, smallpox, or other diseases that might become epidemic, before they have gained too great a foothold. The isolation of all cases of communicable diseases is also recommended.

Civil Service Examination.—Among the positions for which the New York State Civil Service Commission will hold examination on May 3d, is that of Physician (regular), female, New York State Training School for Girls, Hudson, N. Y. Examination open to women who are licensed medical practitioners in this State, who have graduated from a registered medical school, and who since graduation have had one year's experience on the resident medical staff of a general hospital, or in a State hospital or institution, or have been engaged for three consecutive years in the practice of medicine. Subjects of examination and relative weights: Written examination, covering anatomy and physiology; hygiene, bacteriology and pathology; chemistry, organic, inorganic, and physiological; materia medica and therapeutics (drugs, psychic, electric, and physiological); surgery, obstetrics and gynecology; internal medicine and diseases of children; diseases of the mind and nervous system; diseases of nose, throat, and skin, 6; education, experience, and personal qualifications, 4. A vacancy exists in the position of assistant physician at $1,000 per annum and maintenance, increasing to $1,200, and in the position of physician at $1,500 to $1,800 and maintenance.

Examination for Assistant Surgeons in the Public Health Service.—Boards of commissioned medical officers will be convened to meet at the Bureau of the Public Health Service, Washington, D. C., and at the Marine Hospitals in Boston, Chicago, New Orleans, and San Francisco, on May 5th and June 9th, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between twenty-three and thirty-two years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service as internes in hospital for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work. Successful candidates will be numbered according to their attainments on examination, will be commissioned in the same order, and will receive early appointments. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive $2,000, passed assistant surgeons $2,400, surgeons $3,000, senior surgeons $3,500, and assistant surgeon generals $4,000 a year. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information regarding the scope of the examination address a communication to the office of the Surgeon General, United States Public Health Service, Washington, D. C.

The New York Academy of Medicine and Tenement House Legislation.—At a meeting of the Academy of Medicine, held on Thursday evening, April 17th, Dr. Abraham Jacobi referred to certain erroneous statements that had been made in the public press and elsewhere regarding the action taken by the New York Academy of Medicine in regard to the tenement house law. He first presented the resolutions adopted by the council of the academy in April, 1911, which were taken up for reconsideration by the council in December, 1912, and referred to the Public Health, Hospital, and Budget Committee for study. This committee reported to the council on February 24, 1913, as follows: "The Public Health, Hospital, and Budget Committee has carefully considered for a long time the question of the open air tenements, has held a hearing at which the Tenement Economics Society, the Tenement House Committee of the Charity Organization Society, the Tenement House commissioner, and others were represented, has inspected the type of building under consideration, and after thorough discussion has been unable to reach an agreement." Before this report was handed in the following statement appeared in the Sunday edition of a New York newspaper: "During the past few weeks conferences between committees of the Charity Organization Society, the Tenement Economics Society, and the New York Academy of Medicine have resulted in an agreement to drop the seven foot clause in the present tenement law. The present law demands that no room in a tenement house be less than seven feet wide." This statement was untrue, Doctor Jacobi said, as the New York Academy of Medicine had never considered the cutting down to a width of less than seven feet, that means six feet, nor was such a proposition ever up before the Pediatric Section, nor before the Council. The reporter who made this statement made a mistake, for which the Academy must not be held responsible. Doctor Jacobi's report stated further that the New York Academy of Medicine was not responsible for a statement made by a Fellow of the Academy to the effect that the Academy was endorsing the water closet on the stairs of tenements, and also the measure that a board of appeal should have the power to override or overrule and alter the decisions of the Tenement House Commission. This the Academy had not done, and the assertion was not based on anything but a mistake which should be corrected by referring to the facts. Doctor Jacobi concluded his remarks by presenting a motion that these two points be referred to the Council, with the direction to verify or correct or officially deny the statements made in public meetings by one of the Fellows and others, and in newspapers, that the New York Academy of Medicine may be quoted as recommending firstly: Six feet tenement house rooms in place of seven, and secondly, the establishment of a Board of Appeal authorized to override or overrule and alter the decisions of the Tenement House Commission. The motion was passed.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

February 3, 1913.

Estimation of Carbon Dioxide Tension in Alveolar Air by Means of the Interferometer.—M. Hahn and R. Heim show from their previous experiments that in the portable interferometer of Zeiss we possess a very handy instrument for the easy, accurate, and convenient estimation of carbon dioxide tension on ambulatory patients for clinical purposes. The reading of the scale is quickly learned after a little experience. The instrument is also suited for theoretical examinations, especially in pharmacological experiments.

Histological Blood Picture in Severe Cases of Infantile Scorbutus (Möller-Barlow's Disease).—F. Glaser reports and illustrates two cases of infantile scorbutus; the second of these was in a boy of seven years, which is a great rarity. Under proper diet both patients were cured.

Degenerative Diseases of the Cornea.—R. Seefelder is desirous of explaining two degenerative diseases of the cornea to a large and nonopthalmological circle of readers. The conditions are not to be lightly passed by, as they endanger the function of both eyes. They are the marginal degeneration of the cornea and dystrophia epithelialis corneae.

Itching Relieved by Autogenous Vaccine.—A. Schischlo advises the use of autogenous vaccine in cases of toxic cutaneous itching.

Dosage of Arsenic Preparation in Drops.—W. Becker found that the patent glass ampoules are unreliable in respect to dose and, to avoid poisoning, the very active drugs should not be prescribed in drop form, but according to weight, at least until the administration of drop methods is perfected.

February 10, 1913.

Surgery of the Heart and Pericardium.—L. Rehn gives a short résumé of the present status of cardial and pericardial surgery. Although the hopes of Mikulicz for the surgical treatment of defective valves have not been realized, still the results in injuries of the heart, inflammatory processes of the pericardium, emboli of the pulmonary arteries, and cardiac syncope are encouraging.

Case of Isolated Traumatic Paralysis of the Suprascapular Nerve.—Behrend reports this lesion, occasioned by the blow of an iron bar. No operation was performed, owing to the relatively mild functional inconvenience.

Lepra Bacilli in the Circulating Blood and in the Heart Blood of a Lepra Fetus.—M. Rabinowitsch's investigations show that lepra bacilli circulating in the mother's blood can be transmitted to the fetus in utero through hematogenous channels.

Tuberculosis of the Joints.—L. W. Ely says that pure primary tuberculosis of the joints begins only in the synovia or lymphatic marrow. The presence of both these substances bears a relationship to the functional ability of the joints; when the latter ceases both disappear. The disease also comes to an end. The most important factor in the therapy of the tuberculous joint is to stop its functioning. Conservative treatment is sufficient in children. In adults the function of the joint must be entirely annulled by radical operation. When a secondary infection is added to the tuberculosis, so that the tissues which usually remain immune are attacked, there is added to a purely local and relatively harmless disease a spreading and dangerous one. Therefore the second therapeutic principle should be, Avoid secondary infection.

February 17, 1913.

A Papillomatous and Carcinomatous Tumor in the Stomach of the Rat Caused by a Nematode.—J. Fibiger says that a hitherto undescribed nematode causes an endemic unknown disease in the stomach and esophagus of the rat. The intermediary host in the development of the nematode is the cockroach. The disease was noticed endemically in wild rats. It can also be produced experimentally by feeding the rats with the intermediary host. In the incipient stage the disease consists of epithelial hyperplasia and inflammation, while if it progresses beyond this a form of papilloma ensues which may develop into colossal proportions. The papilloma is capable of being the preliminary stage of a malignant epithelioma with infiltrative heterotopic growth of the epithelium. Thus for the first time it has been possible to produce metastatic carcinoma experimentally in animals. The hypothesis of Borrel and Haaland that nematodes may produce the development of malignant growth in mice and rats is proved by the experiments of the author. Neither the parasites or the eggs of the parasites were found in the metastases.

Gastric Juice Anaphylaxis. — E. Manoiloff says that the assertion of Levierti that the gastric anaphylaxis observed in patients suffering with gastric carcinoma is specific is correct. From experiments on eleven persons, eight of whom were carcinomatous, it was shown that by means of the gastric juice of a carcinomatous patient anaphylactic reactions can be produced in animals previously treated with extract from a carcinoma, but that no anaphylactic reactions are produced by reinjection with the gastric juice of patients having extragastric carcinoma.

February 24, 1913.

Localization in the Cerebellum.—Max Rothman has succeeded in making mere definite and enlarging the localization in the cerebellum by means of experiments on dogs and monkeys.

Pancreas, Liver, and Carbohydrate Metabolism.—J. Wohlgemuth has shown that animals whose pancreatic ducts have been tied and whose pancreatic secretions have therefore found entrance into the blood stream, flooding it with diastatic ferments, undergo a marked change in their carbohydrate metabolism. The glycogen disappears from the liver, the tolerance for sugar is compromised, and the sugar of the blood is increased beyond the normal.. The pancreas, besides being in close relation to the liver, adrenals, and thyroid, is also in relationship with the kidneys.

Further Reports on the Treatment of Anemia, Leuchemia, and Rheumatic Disturbances by Thorium X.—A. Bickel relates cases which prove that thorium x is a symptomatically curative substance for the treatment of acute rheumatism, leuchemia, and anemia.

Nonoperative Treatment of Carcinoma.—A. Theilhaber is of the opinion that carcinoma is a disease of the connective tissue which expresses itself in atrophy of the subepithelial connective tissue. When the latter is poorly nourished, sparse and atrophied connective tissue cells, with a lessened power of proliferation and narrowed bloodvessels result. The therapy should follow Nature's healing method in carcinoma, i. e., encourage local hyperemia and local and general hyperleucocytosis. Hospitals should be equipped with special departments for the treatment of carcinoma for the purpose of furthering experimentation along these lines.

WIENER KLINISCHE WOCHENSCHRIFT.

March 6, 1913.

Treatment of Leucocythemia with Benzol.—Stanislaus Klein declares that the internal use of benzol, although it may have a favorable influence on the symptoms of leucocythemia, cannot be regarded as a sure remedy, efficient in every case. It is more effective in connection with the x rays, for the effect of the latter is increased by its use, and its effect is much more intensive and rapid upon organs that have been previously irradiated. The remedy is not borne well by all patients. The author has tried to give it in capsules, mixed with equal parts of olive oil, but finds that it seems to be borne better by the majority when given in milk, thirty drops of the mixture up to ten times a day. Much smaller doses suffice in particularly mild cases that have been treated with the x rays. He has also used the remedy subcutaneously, and finds that pure benzol causes a severe burning at the place of injection, that lasts for several days; the injection of equal parts of benzol and olive oil is better borne.—S. Stern reports a case of leucocythemia in which all of the symptoms were greatly improved by the administration of benzol. The leucocytes were reduced in 100 days from 260,000 to 13,300, while the erythrocytes were increased from three and one half to five and one half millions. The spleen became reduced in size to normal, the body weight increased, and the general condition was very good at the end of that time. How long this apparent cure may last is uncertain.

March 13, 1913.

Effect of Milk Diet upon Various Kinds of Strictures of the Stomach and Duodenum, and a Procedure for the Diagnosis of Spastic Ulcerative Strictures.—Siegfried Jonas says that a stricture in the stomach or duodenum is influenced by a milk diet to the same degree as its fundamental cause; hence a milk diet produces no change in strictures due to cicatrices, adhesions, or tumors, while autochthonic or reflex strictures caused by ulceration disappear under such a diet, because the irritation of the exposed nerves is relieved, and spasms excited by which irritation disappear. The disappearance of the symptoms of stricture under a milk diet points, therefore, to an ulceration as the underlying cause, while their persistence does not exclude it. Röntgenographs before and during the milk diet serve to determine whether a stricture of the pars media of the stomach, or a six hours' remains after a bismuth meal in the duodenum, depends on ulceration, and whether less than half of the bismuth meal remaining in the stomach at the end of six hours, the pylorus being normally patent depends on ulceration in the stomach or duodenum.

Neosalvarsan.—Wilhelm Lier says that in consequence of its ready solubility with neutral reaction neosalvarsan is very convenient to use, and that it produces its best effect in cases of primary and tertiary syphilis, as well as in the infectious, moist forms of the secondary period. In primary syphilis the outlook for a true abortive cure through neosalvarsan appears to be very favorable. It is also of good service in malignant, ulcerous syphilis, though only in large doses frequently repeated, while in the dry forms its effect is inferior to that of mercury. It should always be given in conjunction with the latter. Neosalvarsan is particularly indicated in those cases in which severe stomatitis, or irritation of the kidneys is produced by mercury, as the treatment then need not be interrupted. He considers the intramuscular injection preferable. It is little if at all painful, leaves no infiltrate, and may be given to ambulatory patients.

Infantile and Juvenile Tabes.—Hans Barkan maintains that the nervous disease which appears in childhood and presents as symptoms primary atrophy of the optic nerve. Argyll Robertson pupil, anisocoria, absence of the patellar and Achilles tendon reflexes, absence of ataxia, and frequently the presence of lancinating pains, paresthesias, trophic changes, and bladder troubles, should be designated as tabes juvenilis dependent on hereditary or acquired syphilis, and that it is the same as tabes of adults. Some of the sypmtoms, such as optic atrophy, are more common in the juvenile form, others, such as Romberg and ataxia, are more rare. Another difference is that among its victims the female sex decidedly preponderates.

March 20, 1913.

X Ray Treatment of Psoriasis vulgaris.—Leopold Freund recommends not to use the x rays in cases of the fresh eruption of psoriasis punctata, in which the disease is extending and involving new areas of the body, but to employ in this stage general baths, the application of sulphur, and the administration of arsenic, either internally or subcutaneously. Later, when new nodules no longer appear, and especially when dry, hard plaques are present which prove obstinate to every form of medicinal treatment and always recur in the same place, the indication is for the x ray treatment after a preliminary curettage.

March 27, 1913.

Stage of "Lymphoid Latency" in the Process of Infection with Tuberculosis.—Julius Bartel believes that it should be accepted as a newly discovered fact that it is possible for living tubercle bacilli capable of producing infection to remain latent in unchanged tissues, and that the necessary consequences may be deduced from this fact.

Combination of Adrenalin and Hypophysin and Its Clinical Utility.—B. A. Houssay says that the combination of adrenalin and hypophysin unites the intensive action of adrenalin upon the heart and bloodvessels with the protracted effect of hypophysin upon these organs. When these two substances are properly mixed the depressive action of hypophysin is lessened. Four or five drops of a one to 1,000 solution of adrenalin with one c. c. of the "active constituents of the hypophysis," or of a twenty per cent. dilution of some of the other constituents of the posterior lobe, may be given intravenously in cases of shock and collapse. As adrenalin is rather poisonous and hypophysin is harmless it is possible to reduce the dose of adrenalin by this combination and yet increase its beneficial action. The combination may be used successfully in fulminating intoxications associated with lowered tension, in tachycardia, and in myocarditis toxica, either subcutaneously or by mouth. The combination produces a greater and more persistent local ischemia than adrenalin alone. The adrenalin neutralizes the powerful enterokinetic action of hypophysin. The active constituent of the posterior lobe of the hypophysis counteracts the mydriatic effect of adrenalin.

ZENTRALBLATT FÜR CHIRURGIE.

March 8, 1913.

Paresis of the Phrenic Nerve after Kulenkampff's Anesthetization of the Brachial Plexus.—R. Sievers reports a case in which anesthesia of the hand was produced by novocain injected into the brachial plexus above the clavicle. Pains appeared in the same side of the breast, increased in intensity, while breathing became more and more difficult. The respiratory murmur could hardly be heard behind over the right lung, and the x ray showed that the right half of the diaphragm scarcely moved. Recovery took place in four days.

ZENTRALBLATT FÜR GYNAKOLOGIE.

March 1, 1913.

The Serum of Normal Pregnant Women in Cases of Uncontrollable Vomiting of Pregnancy.—W. Rubeska reports two cases of uncontrollable vomiting of pregnancy in which he used the serum of normal pregnant women. One, a woman of thirty-one years, pregnant for the first time; the second, a woman of twenty-nine years, third pregnancy. The author concludes that such a serum is not a certain remedy against hyperemesis gravidarum.

March 8, 1913.

Pituitary Extract in the Treatment of Placenta prævia.—Piero Gall reports briefly ten cases of placenta prævia in which pituitary extract was used. He believes, as a result of his experience, that many infants are saved that would otherwise have been born dead; also that the danger to the mother from loss of blood and infection is decreased.

Action of Pituitary Extract.—F. Lieven reports a case in which a prolonged contraction of the uterus was caused by the injection of pituitary extract. As a result of this, the fetal heart sounds became very weak and slowed down to eighty-two. Forceps was applied and the child delivered. It was deeply cyanotic, but in the course of five minutes began to cry and revived completely.

March 15, 1913.

Treatment of Eclampsia by Injections into the Spinal Canal.—Guggisberg's two patients were injected with ten c. c. and five c. c., respectively, of a fifteen per cent. solution of magnesium sulphate. The first patient was admitted to the hospital in an unconscious state, eight hours after the beginning of the convulsions. Some six hours later she died. The autopsy showed general congestion and many areas of hemorrhage. The second patient lived a little more than two days after the attacks began and showed practically similar conditions at autopsy. In neither case was there any improvement after the spinal injection, and attack followed attack.

Interstitial Pregnancy.—Siefart's patient was admitted to his service with the symptoms of a ruptured extrauterine gestation sac. The patient was unconscious and pulseless and died within a few hours after the operation. At the autopsy it was found that the uterine end of the tube was funnel shaped and in this portion was the ruptured area involving the wall of the uterus.. Inside of the dilated portion was the placenta.

March 22, 1913.

Primary Sarcoma of the Small Intestine.—R. Patek briefly reviews such a case occurring in his practice. He calls attention to the difficulty of making a differential diagnosis between this condition and disease of the genitalia, particularly if, as in his patient, the growth is attached by adhesions to the internal organs.

Primary Cystosarcoma of the Stomach.—H. Koudring made a diagnosis of ovarian cyst, as no other point of origin could be determined. At operation it was found that the mass arose from the posterior side of the greater curvature of the stomach in the region of the fundus. Two smaller masses, about the size of a hen's egg, were present along the lesser curvature. From the large tumor 7.5 litres of a bloody fluid were removed.

March 29, 1913.

The Electrocardiogram in Pregnancy.—Rubner, in order to determine whether or not there is an hypertrophy of the heart during pregnancy, made use of the cardiogram in five cases. He found that an increase in the size of the heart takes place, but that it remains within physiological limits.

ZENTRALBLATT FÜR INNERE MEDIZIN.

March 1, 1913.

Septichemia as a Frequent Complication of Other Infections.—N. T. Golubow maintains that not enough attention has been paid to "nonsurgical" sepsis grafted upon other infections. He has recently seen twenty such cases, seven ending fatally. In seven the throat was the port of entry of the septic infection, and in only two could the port of entry not be clearly distinguished. Many obscure conditions could be explained if these cases of mild sepsis were thoroughly studied.

March 15, 1913.

Quantitative Estimation of Small Amounts of Indol.—E. Herzfeld and J. Baur carefully compared the various methods of testing for and quantitatively estimating indol, and conclude that the most sensitive test is Ehrlich's p-dimethylaminobenzaldehyde reaction, which will reveal one part of indol in twenty millions, and is available for quantitative work to a dilution of one in ten millions. The reaction is suitable for spectrophotometric estimations. Only upon employing 215 c. c. of blood could the authors detect a substance yielding feebly but distinctly a positive indol test. One hundred c. c. of urine and ten c. c. of feces gave more pronounced reactions.

LYON MÉDICAL.

March 16, 1913.

Bearing of Intestinal Involvement on the Operative Prognosis in Tuberculosis of the Uterine Annexa.—L. Desgouttes and R. Oliver assert that the prognosis in operated cases complicated with tuberculosis depends in large measure on disease of adjacent organs, especially the intestine. Lesions of the colon, its sigmoid flexure, and the rectum should be carefully buried at the operation, and, in particular, isolated from the general peritoneal cavity. Drainage should be instituted through the vagina. Where the small intestine is diseased, adhesions should be broken up only when it is absolutely necessary, i. e., when loops of ileum adhere to the annexa themselves. Even the smallest foci should be buried, as they are often much more serious than one would suppose. Infiltrated areas may also be removed by resection. Where this is impossible, anastomosis, and occasionally unilateral exclusion, may be required.

PRESSE MÉDICALE.

March 22, 1913.

Importance of Minimal (Diastolic) Pressure in Sphygmomanometric Measurements.—V. Pachon states that while the minimal (or diastolic) blood pressure has hitherto usually been estimated merely for the purpose of establishing the mean pressure, and chief stress has been laid, in general, on the systolic pressure, the minimal pressure is, in reality, the most valuable figure of all, constituting the logical starting point in all sphygmomanometric work. Not only does the maximal (or systolic) pressure apply merely to single, isolated points in the pressure curve, but it varies within wide limits and at short intervals in a given individual, from relatively trivial physiological causes, and in abnormal states may prove actually misleading, as, e. g., in decompensated cardiorenal patients, where the maximal pressure may be normal, and the minimal pressure alone, by its abnormal elevation, confirms the clincally observed circulatory fault. The minimal pressure represents both the true, constant load in the arterial tree and the resistance which the heart is obliged to overcome before its contents can be expelled—both data of fundamental importance from the clinical standpoint. The additional facts that the minimal pressure is far more constant than the maximal at different times in the same individual and in different individuals; that it is practically the same at all points in the arterial tree, while the maximal pressure drops progressively from aorta to periphery; and that it can be accurately estimated by the oscillometric method, all combine to render the minimal pressure the true initial point from which conditions of lowered or heightened arterial tension should be reckoned.

Local Agglutinins in Diagnosis of Tuberculosis.—L. Karwacki, having observed that only small amounts of tuberculous agglutinins were present in the blood serum, as compared to the larger and more constant quantities occurring in pleural exudates of tuberculous origin, has led to suspect that these agglutinins were elaborated, not in the blood, but in the disease foci themselves. He reports tests of the agglutinating power of tuberculous sputum, of pus from cases of surgical tuberculosis, and of urine from renal or vesical cases. In each series distinct and constant evidences of specific agglutinin formation were noted, as compared to control cases. In one instance, pus from a recent tuberculous abscess brought about agglutination in a dilution as high as one to 2,000. A positive reaction in dilutions less than one to ten is nonspecific in the case of sputum and pus, while with urine the limit is one to five. Karwacki concludes that whereas agglutination with blood serum merely shows a tuberculous subsoil, the local agglutinins always permit of definitely asserting that a tuberculous lesion is present.

Ozone in Glycosuric States.—D. Labbé and P. Pérochon report eight cases of glycosuria, for the most part diabetics, in which repeated inhalations of ozone appeared to reduce or arrest the elimination of sugar.

SEMAINE MÉDICALE.

March 26, 1913.

Clinical Forms and Diagnosis of Syphilitic Cerebellar Hemiplegia.—Pierre Marie and Charles Foix divided cases of syphilitic cerebellar hemiplegia into two main groups—those in which the lesion is strictly confined to the cerebellar tracts and those of the cerebellopyramidal type, in which the disease process encroaches on the pyramidal system. The latter variety occurs more frequently, and four of the five cases reported by the authors belong to it. It is subdivided as follows: 1. Homolateral cerebellopyramidal syndrome, with more or less complete oculomotor paralysis on the opposite side; 2, the same syndrome, with marked speech disturbances and no ocular paralysis; 3, the same, with associated evidences of thalamic disturbance. The diagnosis of syphilitic cerebellar hemiplegia is not difficult provided care is taken regularly to seek for the minor indications of a cerebellar lesion; even if only a few of these signs are noticed, and in moderate degree, disease of the cerebellar tracts should be considered present. Early and energetic mercurial and salvarsan treatment should be tried; it may prevent the development of fresh lesions.

REVUE DE CHIRURGIE.

March, 1913.

Cancer of the Tongue in Young Individuals.—Gorse and Dupuich report a case of typical lingual epithelioma in a man, twenty-two years of age. The growth was removed surgically, but recurrence took place, the patient dying five months after the operation. The authors found recorded in literature only twenty-three cases of tongue cancer in individuals between twenty and thirty years of age and seven cases twenty years old or less. Whereas in the elderly the condition is much more frequent in the male sex, in the thirty cases collected by the authors in young subjects, twenty-two were females. As in the elderly, the site of the disease is usually the lateral margins of the tongue; there may be several foci of malignant change. Lymphatic involvement is often lacking. Two characteristic features are, more or less severe pain and retarded cachexia.

Surgical Manifestations of Inflammatory Tuberculosis.—G. Cotte and H. Alamartine discuss at length the surgical conditions arising through nonspecific activity of the tubercle bacillus, as reflected in the views of Poncet, who believes that in addition to ordinary tuberculosis with tuberculous lesions and giant cells there occurs another form in which nonspecific inflammation alone is produced. This form may involve any tissue or organ, but the most common manifestations are tuberculous arthralgia, acute, subacute, and chronic tuberculous rheumatism—the last either atrophic or hypertrophic—inflammatory tuberculosis of the serous bursæ and tendon sheaths, tuberculous osteomalacia and delayed rhachitis, many cases of Dupuytren's contraction, and keloids, as well as of mucomembranous enterocolitis, probably certain cases of appendicitis, inflammatory tumors of the stomach and colon, plastic induration of the corpora cavernosa, some cases of orchitis, hydrocele, and hematocele, kraurosis vulvæ, leucoplasia of the genitals, certain menstrual disturbances, hydrosalpinx, and uteroannexal infantilism. Tuberculous involvement of this nonspecific type may lead either to acute local congestions, to chronic sclerosing processes, or to the formation of tumor masses.

Occupational Aneurysm of Superficial Palmar Arch.—Regnault and Bourrut-Lacouture report the case of a gunner in the French navy in whom an aneurysm developed of the superficial palmar arch as the result of repeated forcible slapping of the breech of a gun in order to loosen the refractory breech block. The aneurysm, about the size of a hazelnut, was removed under local anesthesia with satisfactory results. The authors advise excision for all lesions of this kind, except where operation is refused, when compression may be tried.

Nutrition of Anesthetized and Operated Subjects.—E. Chauvin and S. N. Œconomos conclude from urinary analyses conducted on thirty-one patients, some operated upon under ether, others under chloroform, spinal and local anesthesia, that operative interventions, as ordinarily conducted, induce two forms of urinary disturbance: 1. A slight increase in the elimination of all nitrogenous products; 2, almost constantly an acidosis, generally very marked, manifested in an increase in the ammonia, total acidity and acetone, with circulation in the blood of a large amount of toxic substances. These disturbances occur whatever be the anesthetic used or the amount of it employed, except in cases of spinal anesthesia in which the patient is not dieted before operation. Most of them occur as the result of fasting alone, without anesthesia or operation; in fact, they are due in considerable measure to the limitation of food before and after operation, this factor being added to surgical shock and the anesthesia itself. The disturbances are in large measure prevented if the patient receives 150 grammes of glucose on the day before the operation and the three succeeding days. The following mode of administering the glucose proved acceptable to the patients: Tincture of nux vomica, 0.5 gramme; tincture of cinnamon, six grammes; glucose, 150 grammes; water, enough to make 300 grammes.

NOUVELLE ICONOGRAPHIE DE LA SALPÊTRIÈRE.

XXV, 5.

Syringomyelia; Hyperplasia of the Connective Tissue; Striated Muscle Fibres in the Spinal Cord.—André-Thomas and Quercy refer to recent advances in the pathology of syringomyelia, especially the hyperplasia of connective tissue associated with the gliosis, and report a case in which this process evidently played an important part in the rôle of cavity formation. The lower limit of the lesion extended to the second lumbar segment, but the upper limit was not determined, as the specimen obtained included only the fourth cervical segment. In addition to the gliosis, proliferation of connective tissue was present at all levels of the lesion; the bloodvesels throughout were very numerous with much thickened adventitia; and what was particularly curious and rare was the presence of striated muscle fibres in various spots between the fourth cervical and the eleventh dorsal segments. The authors believe that this is the first time that muscle fibres have been found in the spinal cord, and they ascribe the cause to defect in embryonic development.

Epilepsie tardive and Mental Disturbance Following Violent Cranial Traumatism.—Georges Petit records the history of a man who, at the age of twelve years, received a depressed fracture of the frontal bone. Eight years later convulsions first appeared and have occurred with increasing frequency for about thirty years. Progressive mental symptoms with terminal dementia have accompanied the process. In the absence of other apparent causal factors the cerebral traumatism is considered as the most probable origin of the epilepsy and dementia.

Vertebral Caries; Pott's Disease without Deformity.—J. Rotstadt presents a case which illustrates the extreme difficulty of diagnosticating vertebral caries when it compromises the spinal cord without causing any spinal deformity. In this patient, seventy-two years of age, during the last ten months of his life gradually developed symptoms of a lesion of the spinal cord at the level of the lower cervical segments, mainly weakness of the upper extremities, with muscular atrophy most marked in the intrinsic muscles of the left hand; weakness of the lower extremities with increased tendon reflexes; and ankle clonus and Babinski on the left side; impairment of sensation below the level of the distribution of the first dorsal segment at first having the character of syringomyelic dissociation, later involving all forms of sensation. The symptom of spontaneous pain appeared only about six months after the onset of the disease. This is remarkable, as early and severe pain is an almost constant manifestation of Pott's disease invading the spinal cord. At necropsy the lower cervical vertebræ were found to be necrotic, the dura greatly thickened, and the cord compressed but not invaded by infiltrations.

Spondylose rhizomélique.—Conto describes a case of spindylose rhizomélique with extreme deformity, and other points of interest as follows: The occurrence of the disease in a female, which is rare; the duration of the disease was more than fifty years (from the age of fifteen to sixty-six), and the progress was continuous during the entire period; the deformity was extreme, the sternum resting on the pubis, and the lower ribs were displaced by the crest of the ilium; during the first thirty years of the affection the process was confined to the spinal column, and during the last twenty years all of the articulations were involved by a process of ankylosing arthritis.

ROUSSKY VRATCH

February 9, 1913.

The Technic of the Wassermann Reaction; the Preservation of the Alexin of Guineapig Serum.—A. A. Melkich has found that the best and simplest method of preserving the alexins in serum is to add to the latter from six to eight per cent. of sodium chloride. The advantage of eight per cent. is that the mere addition of 100 times the quantity of water a normal salt solution is obtained. The serum may be kept at room temperature, and will preserve its properties for weeks.

Spontaneous Rupture of the Aorta.—A. D. Voloshin reports two cases of spontaneous rupture of the thoracic aorta. In one case, that of a healthy laborer, twenty-three years old, the rupture followed unusual exertion; in the other, a peasant, fifty-four ears old, there was a history of chronic alcoholism and syphilis.

Foreign Body in a Hernial Sac.—B. D. Stasoff operated on a left inguinascrotal hernia and found a needle in the sac. This needle had accidentally penetrated the abdomen six years before.

February 16, 1913.

The Direct Isolation of Koch's Bacilli from Tuberculous Tissues.—K. K. Vredensky employs the following method of direct isolation of tubercle bacilli from infected tissues: A small piece of tissue is removed with the usual aseptic precautions, placed in a Michel clamp, suspended on a previously sterilized silk thread, and immersed in five per cent. glycerin bouillon in a 100 or 200 c. c. Erlenmyer flask. The tissue is just under the surface of the medium, while the free end of the thread is secured by the cotton plug. The flask is then placed in a thermostat at 37° to 38° C. If at the end of three days the bouillon remains clear there has been no contamination. A very satisfactory growth is obtained in from one to two weeks.

The Treatment of Acute and Chronic Colitis with Tannic Acid and Bismuth.—D. M. Rossisky obtained very satisfactory results from tannismuth in the treatment of acute and chronic diarrheas of adults and children. The dose employed was from 0.1 to 0.5 gramme, several times daily. Immediate improvement followed the administration of this remedy.

Statistics and Etiology of Movable Kidneys.—J. T. Neishtab, basing his conclusions on observations in 329 cases, states that a movable kidney may frequently escape detection, owing to a concomitant affection which masks whatever symptoms may arise from the kidney. A movable kidney does not present pathognomonic symptoms, and, in the absence of any disturbance, requires no special attention. On the other hand, in some cases the condition is accompanied by marked nervous disturbances, and here a well fitting bandage may give relief. In some cases surgical intervention is indicated.

BRITISH MEDICAL JOURNAL.

April 5, 1913.

Cancer of the Tongue.—Charles Ryall examined a series of cases of cancer of the tongue with regard to the presence of syphilitic infection, and comes to the conclusion that there is an intimate causal relationship existing between the two diseases, since there was a history of syphilitic infection in eighty per cent. of the cancer cases. This contention is further borne out by the fact that lingual cancer is far more frequent in men than in women. The latter is the result of two factors, the greater frequency of syphilis and the more frequent presence of irritation through such habits as smoking. Ryall goes so far as to say that he would not hesitate to advise the excision of the tongue in a case of very extensive syphilitic lesion which remains uninfluenced by antisyphilitic remedies. In any case of lingual cancer he advises the total resection of the tongue, rather than the partial operation as frequently practised, on account of the fact that the disease is almost never confined to one lateral half of the organ.

Distilled Water versus Salvarsan in the Treatment of Syphilis.—G. Arbour Stephens was led to the trial of this treatment as a result of his observations on the influence of variation in surface tensions. He says that the value of mercury in the colloidal form as an antiseptic rests on its possessing the powers of both classes of antiseptics—the power of the heavy metals to combine with protein matter, and the power to modify the surface tension of all living cells. In some experiments made to determine the surface tension of individual substances it was found that coloidal mercury, as well as mercury perchloride and phenol, have a tendency to reduce the surface tension existing between mercury and potassium chloride, and that the fall is not complete at once, but is progressive. This is important, for, with such a varying degree of tension around living cells, the latter find it difficult to accommodate themselves to their surroundings, as, as the result of their failure to do this, their lives cease. The addition of boiled yeast to living yeast in a suitable medium stimulates the living yeast to marked activity, to a rapid life, and therefore to an early death. Similar increase of activity is seen in the case of the addition of boiled bacteria to cultures of living ones. Both of these phenomena are due to changes in the surface tension, which is in the nature of a lowering. This lowering of the surface tension is associated with a more rapid production of catalytic products in the cells. The injection of vaccines is associated with the production of antibodies. Therefore it seems justifiable to infer that the production of antibodies is closely associated with a reduction of the surface tension. In disease, rapid catalytic changes and rapid production of antibodies are interdependent. If one can induce such marked catalytic changes with or without a vaccine, there is a chance of liberating useful and remedial antibodies. In chronic disease the absence of a sufficient number of antibodies seems to be the cause of the continuation of the disease. In the absence of any vaccine to induce catalysis and increase the antibodies, the injection of distilled water was thought of. Stephens reports the results of such injections into a number of different cases and seems to have obtained good results, particularly in the case of syphilis.

LANCET.

April 5, 1913.

Nonparasitic Cysts of the Liver.—Sidney Boyd gives an excellent review of the pathology of the reported cases, some thirty-four in number, and offers some speculations as to the probable etiology of the different forms. The principal clinical features of the solitary cysts follows: Eighty-six per cent. of the reported cases were in the female sex, which is in agreement with the suggested congenital origin, as developmental defects are more common among females than among males. The youngest case was eighteen months old and the oldest seventy-five years, but in one instance the liver was known to be enlarged at birth. The signs and most part upon the size and location of the cyst. An abdominal swelling was diagnosticated as a cyst in An abdominal swelling was diagnosed as a cyst in most cases, and was present in all. Fluctuation was usually readily obtained, and it is characteristic of this form of cyst that it is of low tension. These cysts almost always progress rapidly and, if neglected, death will result in the same way as from ovarian cyst. The prognosis is not unfavorable if the condition can be operated on. Frequently, in the cases of apparent solitary cyst, there are smaller cysts, some of which may subsequently take on growth. Simple puncture should not be performed, as it has often been fatal.

The Pathology of Tuberculosis in Infancy and Childhood.—C. P. Lapage and William Mair report their findings in the post mortem examination of 150 infants or children in whom microscopic evidence of tuberculosis was present. Of this 150, there was glandular involvement in eighty-nine per cent., seventeen per cent. showing glandular tuberculosis alone. Pulmonary tuberculosis was present in fifty-four per cent., unaccompanied by other tuberculous lesion in fourteen per cent. Intestinal and peritoneal tuberculosis was found in forty-nine per cent., peritoneal disease alone in twelve per cent., and intestinal alone in three per cent. Marked general tuberculosis was found in forty-four per cent. The detailed study of the cases shows that either the bronchial or mesenteric lymphatic glands may be diseased without there being a lesion of the area drained by them. This occurred in twenty-eight per cent. of the cases with thoracic gland involvement, and in thirty-two per cent. with mesenteric gland involvement. From this it appears probable that the disease may spread from the abdominal to the thoracic glands, and *vice versa.* The disease may be spread, too, by the blood stream, and the bacilli may also pass through a healthy or very slightly damaged mucous membrane without its infection. There were twenty-five cases of chronic pulmonary tuberculosis with cavitation, and in all of these, including three infants under two years of age, the lesion was apical. In the total series the abdominal glands were more often affected than the thoracic in the ratio of seventy-one to fifty-five, and the most common condition of all was that in which both groups were simultaneously involved.

The Technic of Excision of Cervical Ribs.—A. S. Blundell Bankart makes an incision about four inches long parallel to, and about an inch from, the spinous processes of the vertebræ, with its centre opposite to the seventh cervical. The trapezius is divided in the same line and retracted outward, to expose the deep muscles. The outer margin of the deep spinal muscles leads directly to the transverse processes, and so to the origin of the cervical rib. The rib is divided at once close to the vertebra, and, being then movable, can be dissected easily from the soft parts without danger of their injury. The trapezius is then sutured with catgut, and the wound closed without drainage. The operation is almost bloodless.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

March, 1913.

Dental Aspects of Rhinology.—J. H. Gibbs emphasizes the importance of efficient mastication during early childhood for the proper development of the jaws and accessory parts, as well as for the prevention of dental disease in later life. The milk teeth should be used by chewing. In addition to the diet made up largely of milk, such articles as a smooth ended chop or chicken bone should be given the child to chew. Dry crusts, toast, or rusk, well buttered, may also be given. Unable to swallow these in the dry state, the child chews them, thus exercising the jaws and causing a sufficient secretion of saliva. The milk is given separately. This method is vastly preferable to giving the child food sodden in milk or gravy, such as soft porridge deluged with milk. A useful test for determining whether the tooth pulp is living or not is the temperature test. For it a small metal instrument is heated and applied to the crown of the tooth, or to a metal filling, if one be present. If the tooth pulp is alive, momentary pain will be felt on applying the heat. Cold may be applied by dipping a tightly rolled pledget of wool into some very volatile substance, like ether or ethyl chloride, and applying to the crown of the tooth. A positive result is conclusive, but a negative one is not.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 10, 1913.

The Conduct of Labor without Vaginal Examinations.—Charles M. Green maintains that the common custom of making frequent vaginal examinations during labor is a bad one and deserves to be classed as meddlesome, for these examinations disturb and often hurt the patient, they add to the risk of infection, and they give no information that cannot generally be obtained by external examination, except as to the condition of the cervix and the possibility of prolapse of the cord or of a fetal extremity. The great majority of cases are normal, so far as the fetal passenger and the maternal passages are concerned, and when delay occurs it is generally due to defective pains, which are not remedied by these examinations. Medical students should be trained to make vaginal examinations, in order to make them with accuracy when occasion requires. They should also be well trained in the external examination. They should then be instructed never to make a vaginal examination without a definitely necessary indication, and should be led clearly to appreciate the fact that the infrequency with which they explore the vagina in normal labor affords an excellent criterion both of skill in the external examination and of clinical knowledge and acumen in the practice of obstetrics.

Diabetes in Infancy and Childhood.—John Lovett Morse says that the etiology of diabetes in childhood is essentially the same as in later life. The predisposition of the Jewish race, however, is not as evident. Heredity is an important factor, but perhaps less so than in later life. It may be direct or indirect. The symptoms are, in the main, the same as in adults—polyuria, polydypsia, emaciation, and constipation. Polyphagia is perhaps more common. Symptoms of gastric disturbances are said to be more common. Disturbances of the skin, eye, and nervous system are less frequent. Marked changes in disposition are very common, the child often becoming quiet, morose, and sad. Enuresis is often the first symptom to call attention to the trouble, in other cases the first thing noticed is the presence of flecks of sugar on the clothing, vessel, or floor. Another early and suspicious symptom is irritation of the external genitals. The onset is usually described as acute in childhood, but is probably less often so than is ordinarily supposed, because what is taken for the onset is not infrequently the change from the mild to the severe type of the disease. The prognosis in childhood is almost uniformly bad. The treatment is the same as in later life, regulation of the diet. The carbohydrates are to be cut down as low as possible without bringing on an acid intoxication, and the calories lost in this way are to be made up by increasing the amount of fat and proteid in the diet. This is no more difficult in children over four or five years old than in adults, but in younger children it is difficult to give enough fat and proteids to cover the caloric needs, and in infants not old enough to eat meat and eggs, it is almost impossible. Drugs are of no use in the treatment of diabetes in children, except for the alleviation of symptoms.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 12, 1913.

The Purity of Commercial Sodium Salicylate.—W. S. Hilpert observes that while certain manufacturers emphasize the superiority of sodium salicylate made from oil of wintergreen or oil of birch, examination of the various pharmacopeias discloses the fact that in citing the requirements for sodium salicylate no stipulation or reference is made as to its origin. In a careful and exhaustive study of this subject by the writer and others, the conclusion is reached that the cheapest commercial synthetic sodium salicylate is the equal of the higher priced brands of the synthetic kind of the costly "natural" product.

The Wassermann Reaction in Diabetes mellitus, with Special Reference to Its Relation to Acidosis.—The study of seven cases in this connection by John H. Richards reveals some interesting facts. Four cases of diabetes with marked acidosis gave positive Wassermann reactions which were unaffected by antisyphilitic treatment. Two cases of diabetes in which the urine showed no acetone bodies in one, and only a slight amount of acetone in the other, gave negative Wassermann reactions. One case of nondiabetic acetonuria, with an absence of diacetic acid and of betaoxybutyric acid, gave a negative Wassermann reaction. Syphilis was not an etiological factor in any of the cases studied. From a study of the cases in the first group, it is evident that a positive Wassermann reaction is not indicative of syphilis in cases of diabetic acidosis. The cases in the second group prove that diabetic glycosuria, in the absence of acidosis, does not, in these cases at least, cause a nonspecific positive Wassermann reaction. The case in the third group shows that nondiabetic acetonuria, with an absence of diacetic and betaoxybutyric acids, does not result in a positive Wassermann reaction in nonspecific cases. Will nonspecific cases with marked acidosis of nondiabetic origin show positive Wassermann reactions, and what proportion of diabetic acidosis will show positive reactions?

Sporotrichum Schenckii.—It is interesting to note, says Kenneth Taylor, the widespread opinion that many of the refractory cutaneous lesions diagnosticated as syphilitic and tuberculous are due to infection with the sporothrix. Reports of human cases of pharyngitis due to this organism and the involvement of nearly every organ in some of the experimental animals would seem to show that its work is not confined to the superficial abscesses usually caused by it in the human subject. The organism can usually be secured by curettement and cultivated on artificial media, but is demonstrated with difficulty in the direct perforations in which only the spores have been seen. In the study of this organism the writer observed many interesting points. The spores of the organism were attached to the mycelia by short pedicles. So called chlamydospores were of frequent occurrence. Spores, similar in form to those grown on blood serum, could usually be demonstrated in paraffin sections of the tissue lesions, and shown in most cases in direct preparations from the abscesses. It appeared, in one case, that mycelial growth took place in the necrotic tissue at the centre of a large abscess caused by the organism. The best stain for the organism grown on artificial media, is methylthionin, for its demonstration in the tissues Gram's stain is the most satisfactory. After six weeks' growth at room temperature the organism failed to liquefy gelatin. After two weeks' growth, at room temperature, milk was coagulated. While there is insufficient basis for any definite statement, there is suggested by the writer's observations a hint of the possibility of producing immunity in animals by previous injection of small doses of pure culture.

Pyelotomy for the Removal of Renal Calculi.—After a careful study of renal calculi, Daniel N. Eisendrath is convinced that pyelotomy is the simplest and least serious method for the removal of calculi lodged at the junction of the ureter and renal pelvis, or for small or moderately large calculi, either free in the ampullary type of pelvis or in a primary calix of a bifid or trifid type of pelvis. It is also rapidly becoming the method of choice for small calculi lodged in the calices of the ampullary type of pelvis. Transverse or vertical incisions into the parenchyma may be combined with pyelotomy for the removal of larger calculi. For calculi in one pelvis or both pelves of a horseshoe kidney, as well as in bilateral cases, it is the best method, especially when complicated by anuria. There is less to fear from hemorrhage either during or after pyelotomy than in nephrotomy. The chance of overlooking a calculus is lessened through bimanual palpation of the pelvis and parenchyma. Pyelotomy can be more rapidly done, and the period of convalescence is much shorter (seldom more than from ten to fourteen days) than in nephrotomy. Pyelotomy is, however, contraindicated when the kidney is fixed by adhesions or the pedicle is short or if extensive infection be present.

MEDICAL RECORD.

April 12, 1913.

Peritoneal Adhesions of the Insidious Toxic Group.—All of the civilized nations, according to Robert T. Morris, are now undergoing decline, with various degrees of rapidity, as witnessed by the arrested development of the ductless glands and of other protective organs, in connection with other stigmata of physical decadence, which results in a loss of normal protective efficiency against the toxines which are thrown into the circulation in excess. These toxines are imperfectly metabolized, and cause harm directly or indirectly through the proteolytic changes induced by their presence. In this way various peritoneal adhesions, slowly developed, seem to take their origin from toxic irritation of the endothelial cells. This toxic impression is intensified by the colonic stasis, which is favored by the relaxation of peritoneal supports, common to quite a large number of persons at the present day. In these cases of colonic stasis radiography is necessary to show the position of the colon and stomach, and to determine if colonic stasis is due to interference with motility, through abnormal positions of the abdominal viscera, or to peritoneal adhesions, and whether surgery will remedy the conditions present. The operation of choice, which is done with ease and rapidity, exposing the patient to very slight shock, and which places the patient in a way to make him readily amenable to subsequent treatment against intestinal putrefaction and fermentation, consists in a simple short circuiting of the colon. The ileum or cecum is placed against some convenient portion of the sigmoid colon, and the two structures, held temporarily by traction sutures, are quickly united in such a way that four or five feet of the offending colon are thrown out of commission. While sufficient room is left for fecal storage, the useless area of the colon no longer turns into the circulation a harmful flood of toxines.

A Few Interesting Cases of Bone Lesions.—Walter W. Griffin points out the very material aid of x ray pictures in the differential diagnosis of bone lesions and the fact that in obscure cases the more radical method of sectioning for diagnosis is thereby obviated; proving his point by the presentation of the history of four illustrative cases. In the diagnosis of doubtful cases the writer would have us remember the value of the x ray, the Wassermann reaction, and pathological section. An x ray showing a bone which is "mouse gnawed" is highly suggestive of specific disease. Bone plates should be removed after bony union has been effected, since they act as foreign bodies and cause irritation by their mere presence. Though not strictly scientific, a therapeutic application of the "mixed treatment" is harmless and will often clear up a suspected syphilitic diagnosis.

The Pathology and Treatment of Callous Ulcer of the Bladder.—Leo Buerger reports in detail two cases of callous ulcer of the bladder in which by simple excision of the ulcers with a punch forceps, through the operating cystoscope, the patients, who had suffered most intense vesical symptoms for more than a year, were completely cured. The study of these cases clinically, cystoscopically, and pathologically, has conclusively shown that simple callous ulcer of the bladder can and does exist; the clinical symptoms being intense dysuria, urgency and frequency of micturition, with bloody and purulent urine. These manifestations become progressively more marked and take a chronic course; which argues that chronic cystitis and contracted bladder are often the sequelæ of solitary ulceration. The favorite site of this chronic ulcer is in the region of the trigone. Although they are usually simple and solitary, there may be one or more erosions elsewhere, secondary to the intense cystitis excited by the ulcer. Excision of the ulcer is the most effective and rapid method of cure; other methods (actual cautery, fulguration, silver nitrate irrigations) are useless. The margin of the ulcer shows an intensely inflamed mucosa and submucosa, there being a superficial deposit of urinary salts, a layer of necrosis and ulceration and a stratum of newly formed connective tissue in a stage of active inflammation. Careful search for this form of ulcer should be made in every case of chronic cystitis, especially in women, as the cystitis may be secondary to it.

AMERICAN JOURNAL OF INSANITY.

January, 1913.

Three Quarters of a Century of Institutional Care of the Insane in the United States.—Henry M. Hurd contributes an interesting account of the development of institutional treatment of insanity in this country. He divides this development into four distinct periods: First, the period of neglect lasting from the settlement of the country practically until the opening of the Utica State Hospital in 1843; second, the era of awakening which resulted in the establishment of institutions for the insane in nearly all of the eastern and central

States; third, the period of State care, beginning about the year 1850, when State provision for the insane in the United States first began to be considered to be a matter of State duty; and fourth, the period of scientific care, or the present era, when the care and treatment of the insane includes the study of mental diseases, their causes and development, laboratory investigations, and methods of prevention.

Occupation for the Insane.—C. Floyd Haviland considers occupation to be the most powerful single means at our command in curative treatment of insanity. While it is not a new method, "it is only in recent years that industrial and educational work has assumed a proper relationship with other institutional activities, none of which can be regarded as more important." The application of this method of treatment requires systematized plans of work under medical supervision and should be adapted to the individual patient's capacity and accompanied by recreation.

Nature of Metastatic Tumors of the Thyroid.—Adolph Meyer describes a case of tumor of the thyroid gland with metastases in the skull, femur, and of the bronchial and inguial glands. The tumor of the thyroid was not infiltrating, and presented a condition of adenocarcinosis with central fibrosis and partial calcification. That of the skull was limited between the endothelium of the dura and the external periosteum and presented uneven hyperostoses on the inside and fishbonelike processes into the elevated periosteum, it showed to a great extent normal thyroid structure. The tumor of the femur was distinctly infiltrating, and that as well as those of the involving the lymph glands have the type of adenomacarcinoma and normal thyroid tissue. The specimens show clearly the peculiar tendency of the thyroid gland to take up its normal appearance in its metastasis according to the opportunities of the soil. It is also interesting to note that the patient did not exhibit very marked symptoms of hyperthyroidism.

Pellagra in Maine; Recent Work on the Etiology of the Disease.—Henry W. Miller reports what he believes to be the first case of pellagra originating in Maine, and contests the theory that maize is the cause of this disease. The case described was fairly typical with the exception that diarrhea did not develop at any time, but, on the contrary, there was a tendency to constipation. The terminal dementia simulated that of dementia præcox. In reviewing the recent work on the etiology of pellagra attention is particularly directed to the theory of Sambon, who believes that it is caused by a protozoal parasite, probably transmitted by some blood sucking insect, probably a sandfly. Against the maize theory the contentions are made that pellagra is found where corn is neither cultivated nor eaten; that it is absent from many places where corn is the staple food; and that since the maize theory was first proposed no one has been able to prove it.

Heredity in Epilepsy.—Everett Flood and Marion Collins have made a careful and extensive study of the pedigrees of seventy-eight patients at the Monson State Hospital with the view of determining any hereditary factors in the production of epilepsy. The results of the authors' work so far indicate that alcoholism in the parents is not a cause of epilepsy in the children, although epilepsy and alcoholism are often associated. Feeble mindedness and epilepsy are also associated, and there is some evidence that both are caused by the same defect. Definite laws of heredity as a cause of epilepsy cannot as yet be formulated, but in a large proportion of cases there is some nervous defect on both sides of the family such as epilepsy, feeble mindedness, insanity, migraine, alcoholism, sexual immorality, and lack of moral sense.

JOURNAL OF MEDICAL RESEARCH.

March, 1913.

Relation of the Bordet-Gengou Bacillus to the Lesion of Pertussis.—Mallory, Hornor, and Henderson have been able, with sputum and with pure cultures of a microorganism corresponding in every way with the Bordet-Gengou bacillus, to produce the characteristic lesion in young animals and in four instances (one puppy and three young rabbits) to obtain the organism again in pure culture. They also have produced the same lesion in the nares, trachea, and bronchi of a young rabbit after infecting it through the nares with a subculture of the bacillus obtained originally from Bordet, and were able to grow the microorganism again in pure culture. They have, therefore, supplied the steps which have heretofore been lacking, according to Koch's laws, for the complete demonstration that the Bordet-Gengou bacillus is the cause of whooping cough.

Meningitis in an Infant Caused by the Typhoid Bacillus.—Lyall reports a case of purulent meningitis in a child, five and one half months old. An organism corresponding to *Bacillus typhosus* in its morphology, cultural characteristics, and biochemical reactions, was isolated from the spinal fluid and also from the nose before death. It also was obtained in pure culture from the brain, cord, spleen, and heart's blood at autopsy. The important point is that the usual pathological lesions characteristic of typhoid fever were absent.

Nature of Anaphylaxis and Relations between Anaphylaxis and Immunity.—Weil gives an interesting presentation of the question and discusses the two chief theories, first, that the anaphylactic reaction is intracellular; second, that the reaction is entirely humoral. Although the latter is the more popular, Weil reports experiments that tend to discredit it. He concludes that anaphylaxis is due to the reaction between specific antibodies present in the cells and the introduced antigen. In passive sensitization the body cells absorb the introduced antibodies from the blood, and the animal is thus made anaphylactic. The function of immune bodies present in the serum is to neutralize the introduced antigen, and so to protect the body cells. The anaphylactic animal, however, regularly contains in his circulation an insufficient quantity of antibodies to protect his body cells. The immunized animal is potentially anaphylactic; his body cells possess anchored immune bodies, but are protected by those in the circulation. Consequently, exactly the same antibodies are present in anaphylaxis as in immunity. In the former they predominate in the cells; in the latter, in the serum.

The Leucocytic Inclusions of Döhlé.—Cummins reviews the work of Döhlé and others who, upon examining the blood smears from cases of scarlet fever, found within the cytoplasm of the neutrophilic polynuclears, multiform bodies staining somewhat less darkly than the nuclei. Cummins made 155 examinations of ninety-five febrile and twenty-six afebrile cases, seventeen normal individuals, and sixteen laboratory animals. Fifteen of these cases were scarlet fever. It appears that the so called inclusion bodies are to be found in practically all febrile diseases, in pyogenic conditions (chronic) of afebrile character, in severe injuries without febrile disturbance, and in some normal individuals, but are apparently absent in laboratory animals. A nuclear origin seems probable. The alleged specificity to scarlet fever has not been corroborated.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.

The President, Dr. L. L. McArthur, Chicago, in the Chair.

(Concluded from page 848.)

Osteitis Fibrosa Cystica.—Dr. James F. Percy, of Galesburg, Illinois, reported a case, with lantern demonstration, in which he had operated, and reviewed the literature. He said the course of the disease was persistently chronic. The osteoporosis, due to the perseveringly destructive action of the osteoclastic cells, weakened the bony framework to the point of deformity, suffering, and uselessness. It was this that explained the infrequency of pathological fracture which, according to Pfeiffer, occurred twenty times in his report of forty-nine cases. Curiously, this author (Pfeiffer) advised against operative measures because the disease was essentially not malignant. He would use the knife only for the purpose of diagnosis or where the pain was excessive. Boit, however, insisted upon radical treatment.

The case reported by the author had been greatly relieved by the operative procedures followed. The pain had disappeared and the sense of insecurity and weakness in and about the hip had disappeared. The deformity had not been overcome, but this could be left to subsequent surgical treatment if it seemed wise to attempt it. The most important problem was the method to be pursued in this case where the iliac bone, especially the right, was so extensively involved. This question must also arise when the disease occurred in the small bones of the foot and hand or in the skull. It was necessary to remember that the disease always involved the endosteum and not the periosteum, and this fundamental pathological fact must be the basis of interference to arrest the destructive process.

The indications for operation could safely be enumerated as follows: 1. Interference with function and the development of deformity. 2. Pressure upon important vessels, nerves, and organs. 3. Prevention of pathological fracture from a large osteoporosis resulting from the disease. When the pernicious character of the pathology was considered, especially in relation to the ruinous work of the osteoclastic cells, a permanent recovery could be obtained in no other way than by radical operation.

Ventral Tumors of the Sacrum.—Dr. Arthur Aver Law, of Minneapolis, after discussing the embryology of these growths, reviewing the literature, and reporting a case, presented the following summary and conclusions: The large tumor showed a loose, rapidly growing connective tissue stroma in which were nests of embryonic cells growing in syncytial masses and suggesting malignancy in their manner of growth and appearance. Areas of hemorrhage, necrosis, and calcareous degeneration demonstrated the atypical character of the tissue, its rapid development, and imperfect blood supply.

The smaller tumor suggested a neuroma in its general characteristics, although neuroglia fibrils had not yet been demonstrated. That the tumor sprang from some misplaced remnants of the terminal portions of the neural tube seemed a logical conclusion. That portions of it had developed abnormal powers of proliferation and showed signs of malignancy change, while other portions had in an imperfect manner reproduced the adult type of nerve tissue, was the only explanation which apparently explained these rather widely diversified tumor masses.

What Pathological Conditions can the Gallbladder Have and Still Function?—Dr. B. B. Davis, of Omaha, pointed out that certain conditions found often at operation were bound to destroy normal function for all time. Undue narrowing of complete obliteration of the lumen of the cystic duct made a continuation of the function of the gallbladder impossible. If the obstruction was incomplete, bile would slowly flow in, but the process of emptying was so retarded that stagnation, which always invited infection, was sure to occur sooner or later.

Although safe and efficient delivery of the bile through the hepatic and common ducts into the duodenum could be carried on by the other forces without its aid, it could be done more effectually and with less liability to damming up of the current when accelerated by a perfectly functioning gallbladder. He would, therefore, be the last to recommend the indiscriminate removal of this organ. It ought never to be done unless it was so badly damaged that its function would be permanently lost. When one met with so many patients whose gallbladders had been drained, but who were not cured, there seemed to be something still to be said. The fact stood out that drainage operations were not followed by the uniformly good results that ought to be obtained. Patients too often felt a regret that they had not kept away from the surgeons. It was his opinion that many of the unfavorable results might be avoided by a more thoughtful consideration of the capacity of the gallbladder with which one was dealing to carry on its functions.

Dr. Charles H. Mayo, of Rochester, Minnesota, said that very often they took out the gallbladder when they should leave it. When a patient complained afterward and came back for a secondary operation, he said the gallbladder ought to have been removed in the first operation. In about one half of such cases they would find the gallbladder ought to have been removed primarily. In the other half they would find an enormous mass of adhesions; they would find the duodenum adherent to the liver and scarred; the pylorus adherent to the gallbladder and margin of the liver. They would say, they wished they had done something to prevent those adhesions, not thinking at the time that those were the adhesions that made secondary symptoms; that that particular gallbladder was not diseased, but that adhesions occurred on account of bad surgery and of not utilizing fat, as suggested by their president (Doctor McArthur) in his address, to prevent them.

Pyelotomy for the Removal of Renal Calculi.—Dr. Daniel N. Eisendrath, of Chicago, said the method of exposure and of bringing the kidney into the wound did not differ in any manner from that employed for nephrotomy. In order to perform a pyelotomy, one must be able to lay the kidney completely on its anterior surface to be able to gain access to the posterior aspect of the renal pelvis without much tension on the renal vessels. If the pedicle was short, or there was much fixation of the kidney by adhesions, pyelotomy was out of the question, and too much traction under such conditions would surely result in disaster. In the majority of cases, however, pyelotomy was possible if the incision was not too small and the wound edges were well retracted. Through the pyelotomy incision one could introduce the index finger and palpate the entire interior of the pelvis. The extraction of the calculi lying loose in an ampulla or one of the main divisions of a bifid pelvis was very simple.

The advantages of pyelotomy were: 1. It was the simplest and least serious method for the removal of calculi lodged at the junction of the ureter and renal pelvis, or for small or moderately large calculi, either free in the ampullary type of pelvis or in a primary calyx of a bifid or trifid type of pelvis. 2. It was the best method for calculi in one or both pelvis of a horseshoe kidney, as well as in bilateral cases, especially in those complicated by anuria. 3. Hemorrhage was far less likely to occur either during or after pyelotomy than in nephrotomy. 4. Bimanual palpation of the pelvis and parenchyma lessened the chance of overlooking a calculus. 5. Pyelotomy could be much more rapidly done, and the period of convalescence was much shorter than in nephrotomy. It was seldom more than ten to fourteen days, in his experience.

The disadvantages of pyelotomy were: 1. Pyelotomy was contraindicated when the kidney was fixed by adhesions or the pedicle was short, or if extensive infection was present. 2. A fistula might persist after operation. 3. The danger of bleeding either during or after operation from the circumpelvic vessels, although slight, must always be borne in mind. Pyelotomy was destined to become an active competitor with nephrectomy in the majority of cases.

Dr. William Jepson, of Sioux City, Iowa, said that nine years ago he nearly lost a patient from continuous hemorrhage, which began some eight or nine days after nephrotomy. The hemorrhage ceased from time to time, but reappeared, until it was five or six weeks before danger was passed and his fear was allayed. This was followed a year and a half afterward by another patient, a young man, who died. He had never done a nephrotomy since that time for the purpose of removing a calculus in the kidney. He immediately perfected himself in the technic of operating through the pelvis itself for the removal of stone from the ureter or kidney, if accessible.

Dr. A. W. Abbott, of Minneapolis, said that one of the greatest arguments in favor of the position taken by the essayist was the irreparable damage done to the kidney by any incision into it. If we incised it, we had to sew it up. It had been shown that the injury by the connective tissue formation after incision and fatty degeneration that followed, also the same process that took place after suture of the kidney, would make it inadvisable to cut the kidney unless we had to.

Observations on the Radical Cure of Inguinal Hernia. —Dr. William Hessert, of Chicago, said our choice of operative technic should be determined by the anatomical findings. We had all seen cases in which it would have been impossible to perform a typical Bassini operation. Owing to the absence of the rectus, the former could not be brought down to Poupart's ligament without creating too much tension. Either the muscle would tear at once or necrosis would occur later. Attention had been called to the fact that this inner portion of the canal should be especially fortified against recurrence.

The technic which was best adapted to meet the requirements of these cases was the imbrication modification of Andrews. By bringing down to Poupart's ligament the edge of the fascia of the external oblique and as much of the muscle as possible, a very firm covering for this weak area was secured; this weak area was further fortified by the overlapping of the lower flap of fascia. In cases where the triangle was especially large, good technic would be found of service. By incising the edge of the rectus sheath, the fibres were exposed and a portion of the muscle could be brought down and sutured to Poupart's ligament, thus supplanting the conjoined tendon which was absent. The operation could be completed by following the Andrews technic.

His conclusions were: 1. The conjoined tendon was deficient or absent more commonly than had been generally taught. 2. This anomaly supplied an important predisposing factor in the development of direct hernias, and probably played a certain rôle, though a minor one, in the etiology of oblique hernias. 3. The presence of this defect precluded the performance of the Bassini operation as a routine measure, except in children. 4. The Andrews imbrication method had fulfilled the indications regardless whether the tendon was present or absent. The Bloodgood transposition of the rectus was an excellent aid when required.

Dr. C. M. Nicholson, of St. Louis, Missouri, stated that in probably five cases out of ten that had come under his observation of hernia there had been a separation of the aponeurosis of the external oblique, and the intercolumnar fibres could be seen plainly a distance of an inch and a half. Every one who had dealt with inguinal hernia had noticed this. If the trouble was due in a large percentage of cases to the absence of any structure, it seemed surprising that clinically we got such excellent results by doing some modification of the Bassini operation, probably infolding in accordance with Ferguson's suggestion. He felt very sure in something over five hundred herniotomies, not strangulated or complicated, but simple hernias, he had seen but three recurrences, and these were all due to a condition other than that described by the essayist. All three were in children and were due to a lack of development of the external oblique muscle. He had therefore come to the conclusion that the cause of hernia was not due to a preformed sac, except in that variety of hernia which was congenital, that is, irrespective of the time it formed.

Dr. A. E. Benjamin, of Minneapolis, thought the essayist was right in his conclusion that the conjoined tendon was very often absent. It had been his practice in these cases to transplant the fat; after tying it off he passed it back of the transversalis and brought it up high, so as to have the intraabdominal pressure in the sac after that come against the transversalis muscle. In that way, we took off the strain, but the fibres of the transversalis and internal oblique he had brought underneath Poupart's ligament with modified Halsted mattress suture, bringing that out through the skin. This frequently was done because at the time he first improved the operation he did not have suitable catgut or suture material which he could rely on. At the present time this did not obtain.

Dr. F. Gregory Connell, of Oshkosh, Wisconsin, agreed as to the necessity of operating on the other side where there was a slight bulging, even though there was no demonstrable hernia, as he had had the same experience as others of subsequent hernia following the repair of the side where it had developed. He had met with the absence of the conjoined tendon. In these cases there was a direct hernia of the deep epigastric vessels formed under the internal margin; the internal ring, while not bulging, was below. We might call it a ventral hernia rather than inguinal, as it was not inguinal in the strict sense of the word in that it did not come through the inguinal canal.

Dr. M. L. Harris, of Chicago, stated that as the result of personal observations, he was fully convinced that all hernias that developed in the active period of life were congenital in origin. By this he meant they were due to congenital defects. He would exclude the hernias—the simple hernias—that developed in the aged, coming at a period of life when there was general atrophy and wasting of the tissues, as in old people with chronic bronchitis, emphysema, enlarged prostates, etc. Every hernia developing in the inguinal region during the active period of life had its origin in a congenital defect.

The absence of the conjoined tendon was a material factor in the causation of hernias, as was pointed out in an article which appeared two years ago in Russia. It was discovered that during the last Russian war an unusually large number of the conscripts constantly appeared with ruptures, who were otherwise healthy young men, who ought to be sent and were capable of going into service, but who escaped by reason of having ruptures. The authorities investigated the matter and after getting confessions from some of the subjects, it was discovered there was a regular place where these young men went and had these hernias produced, and they were produced by a young doctor who had discovered that by passing his finger up into the external ring and forcibly tearing the conjoined tendon from its insertion, these young men would all have hernias within a short time. That demonstrated clearly the influence of the conjoined tendon in producing hernia.

Dr. Daniel N. Eisendrath, of Chicago, said that his observation of this class of cases had taught him that it was possible to make a diagnosis before operation, so he made it a rule to ask the patient to let him operate on both sides, even though on the other side no hernia had appeared, because sooner or later a hernia would appear on the other side, and the patient might feel that there had been some negligence on the part of the surgeon in having operated on one side only, because he could not associate that with the fact that he had continually weak muscles there. In addition to the fact oftentimes of lack of development of the conjoined tendon or atrophy of the fibres of the internal oblique, this condition was found when the conjoined tendon was fairly well developed. It was found in stout individuals who had attenuated oblique muscles, where there was practically only white muscle and lying between the white fibres we found quite a lot of fat. What good did it do to perform the old Bassini operation? To do so would invite disaster. If one sutured this attenuated internal oblique, this weak or imperfect conjoined tendon, to Poupart's ligament and put the cord on top of it, he would have trouble or a recurrence, no matter whether he transplanted it or not. Those who were acquainted with the operation had adopted as a routine the Wyllys Andrews method of imbrication of the muscles because it had a tremendous advantage.

Final Results in Hypophyseal Surgery.—Dr. ALLEN B. KANAVEL, of Chicago, reported a case of typical Froelich type of hypophyseal disease with marked signs of endocranial pressure; operated in two years ago; infranasal route, cyst evacuated, recovery, result of feeding pituitary gland over two years. The indications for operation in cases of hypophyseal disease might be classified as absolute and relative. Operation was absolutely indicated in those cases in which the tumor immediately jeopardized the life of the individual or was causing progressive blindness. It was relatively demanded when because of perverted or increased or decreased secretion, the well being and ultimately the life of the individual was threatened. Therefore, if the tumor was growing rapidly or had grown to a large size, or if a cyst had suddenly filled, we had pressure symptoms both locally and generally that would imperatively demand intervention. As the safety of the operation increased, the field of the relative demand would be broadened.

Acromegaly should be treated more conservatively, particularly since many of the cases had passed over into the stage of hypopituitarism. As the safety of surgical procedures grew, operation should be attempted in the early stages of the disease before the growth had left the sella. The more complicated and late cases and those with atypical signs should be treated medically until the results in the typical cases were well established.

Coexisting Infection and Sarcoma of the Thyroid.—Dr. MILES F. PORTER, of Fort Wayne, Indiana, said sarcoma of the thyroid was very rare, and sarcoma complicated with infection still more rare. Only eleven cases were reported in the United States to June, 1906. A previous history of goitre existed in fifty-three per cent. of cases of malignant thyroid (carcinoma and sarcoma), and in half of these for more than ten years. Two thirds of the cases were in women, and fifty-three per cent. of the cases were in patients between forty and sixty years old. Metastasis of sarcoma of the thyroid by way of the lymphatics was not infrequent. Four additional cases of sarcoma were reported from the literature and one in the author's own practice in a boy of eleven years with metastasis in cervical lymphatics. The spindle cell variety was the most common. No other case complicated by infection was found in the literature The neighboring bones were frequent seats of etastasis. It was difficult to differentiate between the round cell variety and lymphosarcoma. Complete destruction of the gland tissue by sarcoma was quite common. Sudden growth of an old goitre, especially if accompanied with pain, was significant of malignant invasion, as was hemorrhage into a goitre. Careful examination of all goitres removed would develop the fact that malignancy was more frequent in the thyroid than it was now supposed to be.

Boning of the Thoracic Precardial Wall in Certain Affections of the Heart.—Dr. JOHN E. SUMMERS, of Omaha, stated that cardiolysis was done for the purpose of casing a heart musculature which was constantly being strained by the tugging of the heart against the chest wall because of adhesions between the pericardium and its neighboring organs, mediastinum, diaphragm, pleura, or sternochondrocostal wall. Professor Brauer, of Marburg, conceived the idea that it would be of advantage to remove the unyielding bony precardial wall, changing it "into a movable elastic wall formed solely by musculocutaneous flaps," which also gave a hypertrophied organ more room in which to work. This idea was carried out by Peterson and Simon, first in 1902. Very weak hearts would not be benefited by this operation. The patient must be one whose heart responded to medication and relief from all strain; this was the most important indication for operation and it must be positive. The more evident the sign of tugging, the better the condition of the heart muscle, and the more surely would relief come to it if the overlying bony wall was removed.

From the literature, which was all foreign, the most favorable cases and the only ones in which one could speak of the real lasting relief, were those which it was possible to keep under observations for a fairly long time after the operation. In all cases, however, where the symptoms pointed positively to operation, there was no question that amelioration took place immediately, or shortly after the operation. The study of the failures was important because it served to establish the exact indications and contraindications for operation. In all these, either the index for operation was not positive or there were other complications.

Observations on German Surgery.—Dr. CHARLES H. MAYO, of Rochester, Minnesota, said the twenty-five university centres in Germany might be classified according to equipment, wealth, numbers of students, and large centres of population. Their hospitals were large and were usually constructed on the pavilion system. Their beds numbered from hundreds to a few thousands. The hospitals were all well equipped with modern Röntgen apparatus, and this department of diagnostic work seemed to have been developed to a wonderful degree of perfection. Much care and thought had been given to the arrangement of the operating rooms, especially to the lighting system, several of them having the powerful arc focused on mirrors.

In all the operating rooms were a great many assistants, and after the essential details had been carried out by the master surgeon, the case was passed on to the first, second, and third assistant surgeon, who completed the work. The surgeons were exceedingly well prepared for their work. They had served long apprenticeships, and they all took pride in speaking of the well known men with whom they had studied and served as assistants.

The excellent team work of those engaged in diagnosis in all departments was worthy of note, each diagnostician following his cases to the operating table to witness the conditions found upon exploration. German surgeons had a great liking for reconstructive work, and much could be learned in a study of their bone, joint, and plastic work. In several clinics he had witnessed the entire transplantation of joints immediately upon their removal from amputated limbs to replace ankylosed ones. Various forms of local anesthetics were used, and the method had been highly perfected.

German surgery might be spoken of as a "school of surgery," and had more or less dominated the surgery of the world. The German surgeon was most efficient. While his surgery had originally developed almost entirely from the laboratory side, the clinical work to-day had certainly advanced remarkably. The methods of hospital support and control had created a system which was adapted to the masses, in contrast to the system in this country which considered individuals. Although many of their methods were not adapted to our institutions and people, they were well worth a visit from any of our surgeons, since there was much that could be learned from them.

Present Status of the Radical Abdominal Operation for Cancer of the Uterus.—Dr. REUBEN PETERSON, of Ann Arbor, stated that the chief reason for the unpopularity in this country of the radical abdominal operation for uterine cancer was its high primary mortality. Surgeons were not accustomed in these days of highly perfected technic to a primary mortality of from twenty to fifty per cent., which would be a fair estimate of the mortality of the radical abdominal operation, if all reported and unreported cases could be collected. Surgeons necessarily must be content with such a high mortality in emergency operations, neglected cases where the knife held out the only hope of saving life. Under such circumstances the surgeon consoled himself with the thought that without operation it was sure death for the patient within a few hours or days, and that every life saved was so much gain.

The present status of the radical operation for cancer of the uterus in this country was directly dependent upon early diagnosis of the disease. Unless patients could be operated upon earlier, they had about reached the limit of what could be accomplished by the operation, except as the primary and end results might be improved somewhat as the technical skill of the individual operators increased.

The main points to be emphasized were the poor results obtained in the operative treatment of carcinoma; the possibility of improving the results of such treatment by earlier recognition of the disease by both the profession and the laity; the necessity of inaugurating a campaign of education on carcinoma through committees appointed from the various national surgical and gynecological societies, and, finally, the desirability of having this society be the pioneer in this movement.

Some Phases in the Modern Treatment of Fractures.—Dr. W. D. Haines, of Cincinnati, said that given a competent surgeon with good hospital facilities, those fractures which might be reached in which the ends of the broken bone could not be kept in proper relation to allow union to take place with a reasonable assurance of overcoming marked deformity and the restoration of function, should be subjected to some type of open method in their management; that fractures occurring in the long bones should, after complete reduction, show crepitus as a final test for freedom from interposed soft structures; in the absence of this confirmatory evidence, union would depend upon examination through an incision and removal of the interposing structures; that all open fractures, after proper cleansing, should be freely exposed and reduced, and retained by appropriate mechanical means. Finally, that ununited or old fractures in which union had taken place at a faulty angle, inducing pain and loss of function, should be subjected to operation.

Election of Officers.—The following officers were elected: President, Dr. Jabez N. Jackson, of Kansas City, Missouri; vice-presidents, Dr. Joseph Rilus Eastman, of Indianapolis, and Dr. M. G. Seelig, of St. Louis; secretary-treasurer, Dr. Arthur T. Mann, of Minneapolis.

St. Louis was selected as the place for holding the next meeting, in December, 1913.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Problems of Life and Reproduction. By Marcus Hartog, M. A., D. Sc., F. L. S., F. R. H. S., Professor of Zoology, University College, Cork. With Illustrations. New York: G. P. Putnam's Sons, 1913. Pp. xx-362.

This volume is composed of various essays that have already been published in different nonscientific periodicals, the idea being to present biological matters to the layman in a form that could be understood by one not having a technical training. The articles as now printed have been revised so as to bring everything up to date. Certain of the chapters show a marked independence of spirit in maintaining views that have been frequently attacked. This is particularly the case where the transmission of acquired characteristics is concerned. The author here assails with ungloved hand those neoDarwinians who reject as nonexistent the factor of the inheritance of acquired characteristics. Weissmann with his theory of biophores is quickly set aside. When one compares the men on the opposing sides of the question it seems that the majority of eminent biologists are in favor of Lamarckian transmission as a factor in evolution and variation. To us this seems to be the only position tenable. Other essays deal with problems of reproduction and of heredity. One on the "new force," mitokinetism, presents an interesting and ingenious explanation of cellular division. Nuclear reduction, the function of the chromatin, and fertilization are dealt with, as are several other topics. The articles are interesting, agreeably presented, and clear. They should prove of interest to the layman particularly, but to the biologist as well and can be cordially recommended.

A Manual of Elementary Zoology. By L. A. Borradaile, M. A., Lecturer in Zoology in the University of Cambridge. London: Henry Frowde and Hodder & Stoughton; New York: Oxford University Press, 1912. Pp. ix-470. (Price, $3.75.)

Within a little more than four hundred pages the author has compressed much that is useful in zoological work. After an introductory chapter on the animal organism, the frog is taken up and occupies the most prominent part in the book, but as a matter of logical sequence it would have seemed better to place this useful animal elsewhere than at the beginning of the book. The unicellular forms of life are discussed, then the multicellular, through their complex types are taken up; the worms, insects, fish, pigeon, and rabbit. Other chapters are devoted to the mammalia, embryology, classification, evolution, and the position of the animal in the world. The text is lucid and well presented and the illustrations are numerous, well selected, and well executed.

BOOK AND MAGAZINE NOTES.

Lights is a familiar term for the lungs wherever the English language is spoken. "Rising of the lights" is not so well known, however, and a correspondent of the *Lancet*, in the issue for March 29, 1913, is inclined to think the expression a Scotticism for hemoptysis, as it is given in a Scotch Bill of Mortality for 1706 as a cause of fifty-six deaths, while "consumption" is credited with 2,716. The editor of the *Lancet* is inclined to agree with the correspondent in his surmise. Another correspondent, however, in the issue for April 5th, laughs this explanation to scorn and avers that "rising of the lights" is a well known Lancashire expression for flatulent dyspepsia. One of his "lady" patients, he says, complained of rising of the lights and said she had been swallowing "shot corns". (pellets of lead) to keep them down.

Dr. Leonard Keene Hirshberg, in his article on the prevention of cancer in *Harper's Weekly* for March 26, 1913, says that one variety of malignant disease is situated in a woman's bosom, meaning thereby, probably, one of her breasts. Bosom, strictly speaking, refers to the space comprised within the folded arms.

Our readers have had a fair share of communications dealing with the theories of Freud in the interpretation of dreams and have had an opportunity to be placed *au courant* of these fiercely debated subjects of modern psychological study. No. 15 of the Nervous and Mental Disease Monograph Series, published in New York by the Journal of Nervous and Mental Disease Publishing Company, is a neatly printed brochure of seventy-four pages, *Dreams and Myths*, translated from the German of Dr. Karl Abraham, of Berlin, by William A. White, M. D., of Washington, which will afford to those interested an accurate idea of Freud's postulates and conclusions. There is no doubt that Freud's contention that law reigns in the domain of the psychic as elsewhere, is correct; it is obviously unscientific to assign to chance the occurrence and nature of dreams. But that is not to say, as Freud asserts, that to him alone have been revealed the laws of the realm of dreams, their absolute connection with the sexual function, and their invariable dependence upon repressed desires.

We should like to ask reverently why it was necessary for all of Freud's translators to resurrect such a spelling as "phantasy"? We wish all medical translators would take a look into an English dictionary occasionally, before endowing us with new and weird terms; the English language is uncommonly rich already, as well as sufficiently flexible, yet we are becoming constantly alienated from the great body of scientists, not only by our barbarous nomenclature, but also by our syntax and orthography.

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Meetings of Local Medical Societies.

Thursday, *May 1st.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Dansville Medical Association; Practitioners' Club, Buffalo; Geneva Medical Society.

Friday, *May 2d.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society (annual).

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 16, 1913:

Bailey, C. A., Acting Assistant Surgeon. Directed to accompany the officer of the United States Immigration Service, on or about April 20th, from St. John, N. B., to Quebec, Canada, for duty in the medical examination of arriving aliens. **Hickey,** J. P., Acting Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Manning* at Mare Island, Cal., for duty during the summer cruise of that vessel in Alaskan waters. **Holt,** J. M., Passed Assistant Surgeon. Relieved from duty at the Columbia River Quarantine station and directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the Marine Hospital, for duty and assignment to quarters. **Knox,** Howard A., Assistant Surgeon. Granted leave of absence for a further period of one month from April 2, 1913, on account of sickness. **Kolb,** L., Assistant Surgeon. Relieved from duty at the Reedy Island Quarantine station and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Preble,** Paul, Passed Assistant Surgeon. Detailed to proceed to Buffalo, N. Y., for temporary duty at the Marine Hospital and for the examination of samples of lake water on behalf of the American Section of the International Joint Commission. **Reed,** Alfred C., Assistant Surgeon. Granted leave of absence for one month and twenty days from March 31, 1913. **Von Ezdorf,** R. H., Passed Assistant Surgeon. Detailed to attend the annual meeting of the Alabama State Medical Association, held in Mobile, April 15 to 18, 1913. **Watkins,** J. A., Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Bear* for duty during the summer cruise of that vessel in Alaskan waters, vice Assistant Surgeon N. D. Brecht. **Williams,** C. L., Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Tahoma* during the summer cruise of that vessel in Alaskan waters.

Resignation.

Resignation of Assistant Surgeon Alfred C. Reed accepted by the President to take effect May 20, 1913.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 19, 1913:

Betts, C. A., Lieutenant, Medical Reserve Corps. Arrived at his home on April 4th and will go on leave of absence until his retirement from the service. **Bosley,** J. R., Captain, Medical Corps. Returned to Fort H. G. Wright, N. Y., from duty with flood relief work, and left on April 17th on leave of absence. **Cole,** Clarence Le R., Captain, Medical Corps. Now on temporary duty at Fort Sam Houston, Texas, is relieved from further duty at Fort Leavenworth, Kansas, and with the Second Division will proceed to report to the Commanding Officer at Fort Sam Houston, Texas, for duty. **Collins,** C. C., Major, Medical Corps. Will proceed to the Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment. **Foster,** C. L., Captain, Medical Corps. Left Jefferson Barracks, Mo., on April 14th, on ten days' leave of absence. **Hanner,** John W., Captain, Medical Corps. Granted three months' leave of absence upon his arrival in the United States on or about May 15, 1913. **Jones,** E. C., Lieutenant, Medical Corps. Arrived in Washington, D. C., April 12th, to be examined for promotion; granted leave of absence for fifteen days on completion of examination. **La Garde,** L. A., Colonel, Medical Corps. Relieved from active duty on April 15th and will proceed to his home. **Perley,** H. O., Colonel, Medical Corps. Returned to duty on April 13th; granted leave of absence for one month and twenty-seven days. **Priest,** H., Lieutenant, Medical Reserve Corps. Arrived at his home on April 10th, and will go on leave of absence until his retirement from the service. **Register,** E. C., Lieutenant, Medical Corps. Arrived at Fort McPherson, Ga., on April 13th, from flood relief work. **Smith,** W. H., Captain, Medical Corps. Relieved from duty with the Twenty-seventh Infantry, Texas City, Texas, and assigned to duty with Field Hospital No. 3. **Willis,** J. M., Lieutenant, Medical Corps. Relieved from duty with the Twenty-eighth Infantry and ordered to duty with the Nineteenth Infantry, Galveston, Texas.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 19, 1913:

Allen, A. H., Passed Assistant Surgeon. Detached from the Atlantic Reserve Fleet and ordered to the *Connecticut*. **Dessez,** P. T., Passed Assistant Surgeon. Detached from the Navy Yard, Boston, and ordered to the *Tonopah*. **Huff,** E. P., Passed Assistant Surgeon. Detached from the *Florida* and ordered to the *Scorpion*. **Irvine,** W. L., Assistant Surgeon. Detached from the *Connecticut* and ordered to the Atlantic Reserve Fleet. **Phillips,** E. W., Assistant Surgeon. Detached from the *Minnesota* and ordered to the *Kansas*. **Streaten,** R. J., Passed Assistant Surgeon. Detached from the *Tonopah* and ordered to the *Florida*. **Valz,** E. V., Passed Assistant Surgeon. Detached from the *Kansas* and ordered to the *Minnesota*. **Walton,** D. C., Assistant Surgeon. Detached from the *Scorpion* and ordered to the *Pittsburgh*.

Births, Marriages, and Deaths.

Married.

Barnum—Teague.—In Boston, on Wednesday, April 16th, Dr. Francis T. Barnum and Miss Ida Etta Teague. **Boogher—Holliday.**—In St. Louis, Mo., on Saturday, April 12th, Dr. J. Leland Boogher and Mrs. A. M. Holliday. **Curley—Curran.**—In New York, on Tuesday, April 15th, Dr. W. H. Curley, of Bridgeport, Conn., and Miss Josephine Curran. **Doyle—Fair.**—In Natick, Mass., on Tuesday, April 8th, Dr. Thomas F. Doyle and Miss Nellie Fair. **Easton—Hays.**—In New York, on Wednesday, April 23d, Dr. Charles D. Easton, of Newport, R. I., and Miss Margaret B. Hays. **Gordon—Levy.**—In Philadelphia, on Tuesday, March 11th, Dr. Chester A. A. Gordon and Miss J. Beatrice Levy. **Hay—Austin.**—In Rosemont, Pa., on Saturday, April 12th, Dr. George Hay, of Johnstown, and Miss Eugenie Austin, of Oak Lane. **Jennings—Anderson.**—In Grosse Isle, Mich., on Saturday, April 19th, Dr. Alpheus Felch Jennings and Miss Catherine Anderson. **Van Riper—Dwight.**—In New York, on Tuesday, April 15th, Dr. Arthur Ward Van Riper, of Passaic, N. J., and Miss Daisy Dwight.

Died.

Alexander.—In Mysore, South India, on Sunday, April 13th, Dr. Clara J. Alexander, of Boston, Mass. **Collins.**—In Washington, D. C., on Friday, April 11th, Dr. John F. Collins, aged sixty-seven years. **Craig.**—In Columbia, Pa., on Tuesday, April 8th, Dr. John Jay Craig. **Doolittle.**—In Easton, Pa., on Saturday, April 12th, Dr. Egbert D. Doolittle, aged sixty-seven years. **Goodhart.**—In Philadelphia, on Wednesday, April 9th, Dr. Chester Goodhart, aged thirty years. **Gunby.**—In Crisfield, Md., on Thursday, April 10th, Dr. Hiram H. Gunby, aged sixty-one years. **Harris.**—In Baltimore, Md., on Tuesday, April 8th, Dr. James E. Harris. **McCartney.**—In Avon Park, Fla., on Friday, April 11th, Dr. Mary Elizabeth McCartney, of Rochester, N. Y., aged sixty-four years. **Rouse.**—In Buffalo, N. Y., on Wednesday, April 9th, Dr. Morris D. Rouse, aged seventy-five years. **Scott.**—In New Orleans, on Friday, April 11th, Dr. I. W. Scott, aged eighty-seven years. **Sprinkle.**—In Marion, Va., on Tuesday, April 8th, Dr. George W. Sprinkle, aged sixty-six years. **Van Brakle.**—In Forest Hills, N. Y., on Monday, April 14th, Dr. James Van Brakle, aged eighty-four years.

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HEMATURIA.*

A Study from the Practitioner's Standpoint.

By Victor Cox Pedersen, A. M., M. D.,

New York.

Hematuria or hematuresis may be briefly defined as blood in the urine or as blood associated with the act of urination in quantity sufficient to discolor the urine or be a factor on microscopical examination. It is, therefore, strictly speaking, a symptom, but one of such striking moment and of such far reaching possibilities for the patient that its cause and source must be settled without delay. Its significance is always extravasation of blood through intense congestion, erosion, or rupture of microscopic or macroscopic vessels somewhere in the urogenital tract whose focus and extent must be immediately investigated.

The varieties of hematuresis relate to the condition of the blood passed, the activity of the hemorrhage, the causes, the local origin, and the relation of the blood to the act of urination, which is, as explained later, initial, concurrent, or terminal.

For the purpose of this paper the term, initial hemorrhage, means one that either actually precedes the urine or appears only in the first flush of it. Concurrent hemorrhage, also called total, means that the blood is well mixed with all specimens of urine. Terminal bleeding means either that the urine is practically blood free and that the symptom occurs when the bladder is empty or that the last flush of urine brings the blood with it.

The condition of the blood may be macroscopic or microscopic in amount, recent and red or old and dark, fluid or clotted, or comprise only the coloring matter, in which case it is known as hemoglobinuria or hematinuria.

The activity of the bleeding may be acute, subacute, and chronic in development, scanty, moderate, or copious in amount, intermittent or remittent, and recurrent or persistent in course.

The causes fall into the commonplace classification of traumatism, genital disease, urinary disease, systemic infection, and parasites, particularly entozoa. This classification of the causes may be simple, but the designation of a definite etiology is often fraught with the utmost difficulty and uncertainty.

The local origin of hematuria may be at any histological point of the anatomical subdivisions of the urogenital tract, hence may be renal, ureteral, vesical, prostatic, or urethral. Here again the recognition of the precise bleeding point or tissue may sometimes defy our best efforts.

This paper intrinsically deals with blood in the urine from the standpoint of the general practitioner and will state, it is hoped, a few of the broad facts concerning this symptom.

The clinical diagnosis of hematuria includes, not only an exhaustion of all the time honored older means of recognition, but also a judicious application of cystoscopy, ureteral catheterization, urethrascopy, radiography, and any other means suggested by a given case. The laboratory diagnosis of hematuresis is an essential detail of this important topic, but space forbids more than mention of the fact that minute amounts of blood are detected only with the microscope or with such procedures as the guaiacum test (Almen's), liquor potassæ test (Heller's), and the spectroscope, as examples. Let us, therefore, rather consider laboratory investigation as slightly beyond the limits of this paper.

The clinical diagnosis of hematuria must embrace determination of the cause and the focal point of the bleeding, so far as practicable. The broader causes of urogenital hemorrhage are slightly the easier of these two questions, in that a carefully taken history will almost invariably give a direct or indirect "lead" to the answer. Remote or recent traumatism is usually obvious in itself and its sequels or definite in its history. Genital disease comprises the various infections, especially the gonococcal, yet even here the difficulties begin. Urinary disease is frequently still more uncertain. Systemic conditions such as malaria, scurvy, and hemophilia show hematuria in various association with the chills and are commonly very easy to recognize as a cause, just as are the exanthemata in childhood. Hematuria in natives and travelers through the tropics almost invariably suggests the entozoa causing filiariasis and similar entozoic conditions.

Each of these various factors will receive incidental attention as it comes up in the course of this paper. We are, therefore, directly involved with the main subject—the source of the hemorrhage in the several urogenital organs.

Renal hemorrhage always means nephritis, lithiasis, ulceration, especially tuberculous, neoplasm, or trauma. The nephritis may be acute, due to any of the well known causes of this condition. In delicate children a severe attack of any of the children's infectious diseases usually has hematuresis, which, although microscopic in degree as a rule, is not

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rarely macroscopic. The course of either condition should be known and followed. Similarly in adults, acute nephritis of both the infectious and idiopathic types may in its onset be hemorrhagic. The intoxication of the underlying disease is the agent at work.

Chronic nephritis may be a cause of hematuria more frequently than is commonly supposed, but almost invariably of the type which shows exacerbations and occurs either during the chronic nephritis of purely medical or essentially infective origin. Consonant with the character of the disease such hematuresis is apt to be prolonged and profuse and to appear *pari passu* with the relapses of the disease toward acute character. As a rule pain is absent, but it may be present, due to the congestion which precedes its appearance. Tenderness and enlargement of the kidney follow the same law as the pain. Activity in common experience increases the bleeding, while repose and inactivity may decrease it, but are more often without effect, as one would expect when viewing such a kidney in the hand after death. The urine of these cases is during the quiescent nonhemorrhagic intervals that of chronic nephritis with or without exudation or that of chronic infection with organisms more or less abundant. Thus one sees variations in the low specific gravity, number, character, and size of the casts and the quantity and type of albumin. In the active periods the bleeding usually masks all these findings. Cystoscopy reveals a normal bladder in the truly medical nephritides or changes in the ureteral mouths in the presence of infection. Thus some of these chronic cases pass into the category of surgical cases.

Congestion should be reckoned as nephritis for the purposes of this paper, and may be of hemorrhagic degree and of recurrent appearance such as is found in extreme displacement of the kidneys. Venostasis as in hydronephrosis and perhaps in advanced hepatic disease is another picture of congestion and may be hemorrhagic. Bangs (*Medical News*, February 11, 1905) reports a case of hydronephrosis in which bleeding was the diagnostic symptom. Varices of the kidney are usually congenital, occasionally acquired anatomical defects and self evidently fruitful causes of hemorrhage.

Lithiasis usually adds to the preexistent chronic infection and inflammation of the kidney, pelvis, and ureter, the traumatism due to the presence of the stone, hence bleeding usually follows attacks of pain indicating change in the position of the stone.

Tuberculosis of the kindey determines hematuresis as soon as ulceration sets in and is in fact the type *par excellence* of ulcer as a cause of this symptom. In the same category belongs neoplasm of the kidney with necrosis and erosion of bloodvessels; but the engorgement due to the infiltration of tuberculosis and new growth may also cause hemorrhage. It matters little whether the type of the tumor is hypernephroma, cancer, or sarcoma.

The nonoperative or medical causes of hematuresis embrace the various manifestations of acute and chronic nephritis; while the operative factors are lithiasis, tuberculosis, neoplasm, traumatism, and hydronephrosis. On the borderline are the congestive cases, especially those of movable kidney.

The diagnosis of the fact and focus of renal bleeding, with or without ureteral bleeding, or ureteral hemorrhage without kidney involvement, does not permit in the light of modern methods the application of any rules, respecting, for example, the character, quantity, and color of the blood. The absence of the following data on laboratory investigations is without value as a negative proof of renal hematuria. Their presence on the other hand is very frequently helpful. Such data are cylindroid clots pointing to the ureter as their source, clotted blood casts of the ureter of unmistakeable size, renal blood casts, and renal casts with densely adherent red cells.

Pain in the kidney zone without, before, during, or after the bleeding is not more than suggestive, because vesical conditions may so alter the course and calibre of a ureter as to excite referred pain in a normal kidney.

The diagnosis really depends on objective examination with cystoscopy, ureteral catheterization, and radiography. Urinary segregators are of doubtful reliability. Cystoscopy is competent to decide as a rule in a few moments whether the bladder or the ureter and kidney are the source of the blood. If all three are involved, as is sometimes true in tuberculosis, ureteral catheterization is unavoidable. Ureteral catheterization is also necessary to determine the source of small hemorrhage from the kidney with a normal bladder. If the quantity of blood is large and the bladder washed until the medium is clear, the blood is seen to spurt out of the ureter like smoke puffs. Ureteral as distinguished from renal bleeding might be diagnosticated by using a small catheter and taking specimens from the canal at four or five levels until clear urine from the pelvis is reached. If, however, the bleeding proceeds from the ureteral pelvis, such a procedure would fail in the presence of what would then be clinically renal hemorrhage, so that such a distinction would be of theoretical rather than practical importance.

Neoplasm as a source of renal hemorrhage requires the earliest possible recognition while the tumor is impalpable, insensitive, and nonadherent, because when it is palpable, tender, and fixed, it is commonly beyond operative intervention. Renal sarcoma occurs in childhood, carcinoma in midlife, and hypernephroma and the mixed neoplasm of Wilms at almost any age. Hemorrhage is least frequent with sarcoma. In the other neoplasms it is active, precipitate, and profuse, earlier from the renal pelvis than from the parenchyma, commonly increased by exercise and motion and unaffected by repose, with a urine devoid of nephritic elements and rarely containing tumor detritus. Ureteral colic due to clots is not the rule, and pain and discomfort are not present in the operable stage in any marked degree. Cystoscopically the mouth of the ureter is normal. The diagnosis should be made so early that there is no cachexia from hemorrhage and no rise in temperature or absorption from the cancer.

The importance of a complete diagnosis in renal hemorrhage is illustrated by the following case of hypernephroma, operation, and death nearly a year after I had examined it and made a diagnosis of syphilis of the bladder with hemorrhage, without, however, ureteral catheterism. Active antisyphilitic measures seemed to have stopped the hemorrhage and improved the urine and bladder, and the general health. After rather a long period of comfort the man disappeared from view and treatment, as do most syphilitics whenever their general condition is bettered. In due course the hemorrhages returned more or less incessantly, and in the care of a colleague after another diagnosis with ureteral catheterization, hypernephroma was determined and operated on. At this time the kidney showed enlargement, while at my investigation no focal kidney conditions were subjectively or objectively present. It is likely that if I had made a complete analysis of the case, as I should now do in a similar patient, I should have recognized the tumor in a far earlier and more operable condition than it was a year later. This incident carries its own lesson.

Renal lithiasis as a cause of hemorrhage should also be diagnosticated in its earliest possible degree —in the aseptic rather than the septic stage, as in the latter operative intervention is much less valuable. Unlike neoplasm, lithiasis may occur at any age, even in childhood, and is not uncommon in adolescents and midlife. Careful history usually records excess of crystals or the passage of gravel and calculi in the urine. The bleeding as a rule is not profuse, painless if without clots, painful if with clots, and excruciating if accompanying the passage of a stone down the ureter. Anything causing a stone to move in its bed in kidney or ureter will either excite or increase the blood, while rest in bed is usually followed by prompt and pronounced disappearance of at least macroscopic blood. When infection is added to the lithiasis, pain of more or less constant or remittent type appears, together with enlargement and tenderness of the kidney previously free from these signs. The urine is of the "attrition" type, due to the rubbing of the stone about in its bed and resulting in exfoliation of epithelium, increase and thickening of the mucus, the presence of pus in varying quantities, microscopic in the aseptic and macroscopic in the infected cases, and finally crystals due to those changes in the urine from which the stone originally arose. Thus it is sometimes possible from these crystals to suggest the character of the stone.

The diagnosis of the hematuria of renal lithiasis rests materially on radiography, which should never be omitted in doubtful cases, is advisable in all cases, and in expert hands rarely fails to give some result except in pure uric acid stones, and even in these, changes in the kidney shadow may be highly important.

The choice of operation for these cases is the period before infection sets in, hence the importance of early and thorough going diagnosis.

When the results of radiography are not consonant with clinical and cystoscopic indications, it is best to have another sitting. I recently reported a case of lithiasis of nearly two years' duration in which a first x ray examination was negative, while a second and third were positive and more and more conclusive of stones in the kidney, ureter, and bladder.

Renal tuberculosis with hematuria is being recognized more and more frequently through improved procedures in diagnosis. Bleeding may be an early and prominent symptom or appear after the establishment of pyuria, which is rather commonly the fact. The lesion, like tuberculosis elsewhere in the body, has little respect for age, but rather favors the earlier than later half of life. In quantity the blood is small and intermittent with long or short periods of absence, or copious and persistent with little or no remission. Either or both kidneys may be affected and are congested, palpable, and tender, and show more or less discomfort and pain, rather constant with exacerbations, especially after pyuria appears and during actual bleeding. The tubercles are usually in the walls of the pelvis of the ureter or on the surface of the papillæ of the kidney, projecting into it so that ulceration in eroding bloodvessels produces bleeding directly into the ureter with little or no signs of blood casts from the tubules. Another form, however, has the tubercles scattered along the depth of the tubules so that on gross examination they are not or at most very little in evidence. They may, nevertheless, cause bleeding by local hyperemia or ulceration into the tubules. These cases are difficult to diagnosticate after nephrectomy, excepting with full pathological analysis. The urine in tuberculosis of the kidney is of the desquamative type due to the chronicity and usually superficial character of the lesions, hence beside the blood the urine shows abundance of epithelium from the pelvis and the ureter with, sooner or later, pus containing altered epithelial cells as well as white blood cells. The one great diagnostic point is the discovery of the tubercle bacillus in the urine. The morphology must be proved by inoculation into the peritoneal cavity of guineapigs for death in a few weeks, usually from four to eight, or into the thigh for deposits of the disease in the lymphatic glands of the groin, which usually occurs in about fourteen days, so that a much earlier decision may, in this way, be reached.

As in the preceding causes of renal hematuria, the earlier the diagnosis is made the better, as at this stage there is very great value in the use of bacillus emulsion in ascending doses, beginning at 0.0001 gramme twice a week and increasing an equal fraction at each dose, until at the end of a year the patient is receiving large doses. No dose or rate of repetition must be followed which results in a reaction, as such overdose may not only hinder the progress, but, if marked, increase the susceptibility rather than the resistance of the patient. All known methods of hygienic treatment should be included in this management.

The significance of renal hemorrhage to the patient's life is illustrated by a case which I recently saw in consultation. The woman had been allowed to pass blood in her urine for nearly six weeks in noticeable and even large quantities before consenting to consult a surgeon. By this time she was very anemic and weak and not a good operative risk. Cystoscopy revealed jets of nearly pure blood from the right kidney every few seconds, so that in a brief period the bladder had to be washed and distended again. The left ureter was small and seemingly normal. Nephrectomy was undertaken as the one thing possible to save the woman, but her strength had so wasted that she died within ten hours of the operation. No obvious lesion was discovered on gross pathology, but tuberculosis was the final diagnosis reached. My own opinion was that it was a general tuberculous infection of the kidney, too severe and recent for the formation of tubercles. The case was in the hands of the surgeon too short a time for the guineapig and other tests of the urine for the bacilli.

Premature and promiscuous nephrectomy for tuberculosis seems no longer justifiable, except in the presence of persistent, dangerous hemorrhage and obvious failure of the expectant and bacterin management. A large number of urologists, however, believe in early operation. An essential part of the operation is the removal of the largest possible length of the ureter in the midst of abundant protection of the wound and thorough cauterization of the remaining stump in order to prevent focal inoculation of the raw surface.

Cystoscopy in hematuria due to tuberculosis of the kidney, even in the early cases, is characterized by unmistakable thickening in the wall of the ureter, whereby both occlusion and tortuosity occur, so that catheterism is difficult or impossible. The meatus is patent, inelastic, inactive, elevated, and hyperemic—"golf hole" ureter is the term applied to it. Almost always tubercles may be found in the cystoscopic field close to it, in various stages of development and relation.

The importance of early cystoscopy in suspected tuberculosis is shown by the following case of a young man in my hands, who noticed pyuria for three months and then pain, for which he consulted me. Cystoscopy showed a thickened, almost impassable, ureter, a "golf hole" retracted ureteral mouth, pearllike tubercles around it, and purulent urine emanating from it. Bacilli were in the urine. Benefit is being secured and I hope operation avoided by the Trudeau method, which is the patient's election of treatment rather than operation.

Hematuria of renal origin from causes other than those specified, may proceed from hydronephrosis, especially during the periods of acute urinary abstraction with circulatory interference; from movable kidney during the moments of extreme prolapse, also through circulatory effects such as kinking and pressure; from cystic kidney at the moment of rupture of multiple cysts into a common cavity with venostasis and bleeding, or at the moment of rupture of a large cyst into the pelvis with erosion of a bloodvessel. Careful physical examination and radiography commonly establish the diagnosis in hydronephrosis and movable kidney combined, obviously with attention to uranalysis, while sudden changes in the characteristics of a kidney enlargement, associated with previously unknown constituents in the urine, will suggest cysts and their rupture. Animal parasites, particularly *Ecchinococcus* and *Distoma hœmatobium* (bilharziriasis) in patients from parts of the globe where these diseases are frequent, are a potent cause of renal hemorrhage. Uranalysis will reveal the daughter cysts and the hooklets of ecchinococcus and the ova in bilharziriasis.

Ureteral hemorrhage is an undoubted entity, but is frequently diagnosticated only by its persistence after a nephrectomy. Its distinction from renal hemorrhage of the same side rests on careful ureteral catheterism at levels of every five centimetres or so with a catheter sufficiently small to allow the blood to escape around it and the untainted urine through it. If the urine is still bloody when the pelvis of the kidney is reached, gentle lavage should be performed until clear return fluid is obtained if possible. If soon after this the urine is again bloody, no differential diagnosis may be reached, as in that case the bleeding is either directly at the outlet of the pelvis or so high in the ureter as to backset into the pelvis or from the kidney itself. Radiography will distinguish lithiasis, and with the aid of argyrol or collargol may indicate kinks, strictures, points of pressure, deformity, and thickening—as bleeding from the ureter proceeds from the same general conditions as elsewhere in the urogenital tract, namely, the congestion of kinks, strictures, and pressure, the special infections such as tuberculosis, the common manifestations of lithiasis, and finally primary neoplasm.

Hematuresis due to vesical conditions means, as elsewhere in the urogenital tract, change in the mucosa always circulatory and not infrequently organic in character. The essential causes are the same as those previously enumerated for the kidney and ureter—namely, congestion, infectious and noninfectious inflammation, varicosities, lithiasis, papillomata, traumatism, chemical, thermal, and instrumental (usually synonymous with and therefore properly classified under simple inflammations), ulcers, simple, tuberculous, typhoid, and cancerous, rupture by traumatism or by pathological change, as in spinal disease, and finally retention of extreme degree, which, when suddenly relieved in its entirety, not uncommonly causes hemorrhage into the bladder. It is probable that this is also one mechanical explanation of hemorrhage in hydronephrosis which, when at its limit, may rapidly evacuate itself and hemorrhage ensue. The previous pressure on the walls produces paresis and partial occlusion, and when rapidly removed permits the inrush of blood to set up the hemorrhage in both bladder and hydronephrosis. A practical point, therefore, is never to draw off more than half the contents of a very full bladder at the first entrance, so as to avoid this purely mechanical condition. The remainder left in the bladder may be withdrawn after an hour or two without such accident.

Vesical hematuria possesses no definite symptom complex from which the diagnosis of cause may always be made minutely. On a broad basis, however, certain clinical facts are of help, especially the age of the patient, the presence and absence of pain, and the special features of urination. The matter of age involves the other two data completely.

Pain in infancy and childhood suggests lithiasis most commonly, and less commonly sarcoma of the bladder wall. Radiography and, under a general anesthetic, bimanual examination, and in older children cystoscopy are inevitable. Pain from adolescence to early midlife is most frequently seen in the acute cystitis of gonococcal, tuberculous, and typhoid infections, and much less frequently in stone and neoplasm. Pain in later midlife and the earlier advanced years is an indubitable herald of benign or malign neoplasm and early prostatism with stone; while the last condition is the one first to be thought of in late life. The pain is present before urination when the bladder as a whole is irritable, as in the infections and ulcers, and stone during agitation. It is manifest during urination in much the same circumstances, while terminal pain occurs when the bladder sinks down on abnormal contents or strains its diseased walls respectively, as in stone, ulcer, and neoplasm.

Hemorrhage from the bladder may or may not accompany the pain. The two symptoms occur together in varying degrees from time to time with all the usual causes enumerated, especially the infections, ulcers, stone, and neoplasm after even minute necrosis. Hemorrhage without pain, however, may occur in neoplasm and congestion.

The function of urination may be profoundly altered in the presence of vesical hematuresis, as nearly all the causes of the latter disturb the bladder in its continence and capacity sooner or later. Thus we see pollakiuria or great frequency of urination more or less in all forms of vesical disease, most particularly in tuberculosis, ulcer, neoplasm, and stone. The other conditions are a little more apt to pass into a period of relative inactivity, while these four are steadily progressive and always produce cystitis in a short time, and through their own pathological processes maintain such cystitis in a high degree of severity. Hence it follows that dysuria, strangury, and tenesmus commonly indicate the more serious vesical lesions.

Bimanual examination in children has already been spoken of, but is not of much service in adults, except in cancer of the prostate and sometimes of the bladder. Its chief function is to estimate the distention and thickness of the bladder walls.

Radiography, however, with or without distending the bladder with fluids opaque to the x ray is important.

Uranalysis and consideration of the hemorrhage itself is important. The bleeding is never initial, i. e., in the first glass only. It is invariably concurrent or total, well mixed with the urine, and most commonly of all, especially in early cases, terminal, appearing either with the last flush of urine or after it when the bladder is making a final effort at evacuation. Accompanying such bleeding, as previously stated, we always have more or less numerous symptoms of cystitis.

Cystoscopy is, after all, the last resort in cases of vesical hemorrhage. In the acute infections it is contraindicated until after subsidence has begun. It permits diagnosis of the bleeding points of varices and the various kinds of hyperemia, commonly of the actual presence of stone and its attrition type of cystitis, also of ulcers, tuberculosis, papilloma, and neoplasm, and frequently even of the exact site, extent, and nature of rupture of the bladder. In this connection be it noted that a large hemorrhage means extraperitoneal intravesical rupture, while a smaller hemorrhage means intraperitoneal extravesical rupture. A distinction between the two may be made with the aid of the catheter to see how much blood and urine are in the bladder and with rectal examination for fluctuation in the pelvic peritoneum.

Where a careful diagnosis of hematuria may lead is exemplified by the discovery of two stones in the bladder of an old man by cystoscopy and radiography. He gave a few symptoms, ascribed by his family physician to enlargement of the prostate, which on rectal examination and exploration of the bladder with the catheter was found to be obviosly hardly enlarged enough to account for his suffering. There had been one very slight attack of bleeding and no classical symptoms of stone. The cystoscope revealed two calculi about the size of birds' eggs, lying close together in the retroprostatic pouch in the midst of fairly normal mucous membrane. Litholapaxy relieved the disease. The patient is now being watched for changes in the prostate.

The importance of vesical hemorrhage is illustrated by the following case, referred to me a few days ago.

CASE. H. C. U., United States, white, forty years old, married, salesman, venereal disease denied. Sexual habit moderate. Had been bleeding off and on from the bladder for nearly four years; cause unknown; no emaciation, fever, or pyuria; bleeding excited by constipation, catharsis, and diarrhea; during attacks of blood urine always colored especially at the end of the function; no gravel or stones; pain in the penis occasional and sharp; frequency every four hours by day, every eight hours by night; urgency moderate and occasional both with and without the bleeding, likewise tenesmus; degree of hemorrhage constant for the past four years without great increase; amount a few drops after urination, never a glassful; persisted for a day, rarely more; recurred every four or five days each month, so that in each week he had blood for a day or so and in each month for a week or so; bleeding intermitted sometimes in a given day; effort to evacuate all urine brought blood exactly like constipation; riding in railway trains and automobiles did not provoke the bleeding.

Cystoscopy done in June, 1912, was said to have been negative, but cystoscopy done by the writer recently showed a large papilloma back of the right ureter slightly near the middle line and another larger papilloma on the left side completely hiding the left ureter and encroaching upon the trigonum and neck.

This patient should have been cystoscoped four years ago when the bleeding first began. The cystoscopy of June, 1912, must have for some reason failed of thoroughness and final diagnosis. These papillomata were the size of the end of the thumb and required three cystoscopic fields for their examination.

Prostatic and urethral hematuresis is always initial, occasionally concurrent, and rarely terminal. It is in suspected urethral cases that the Wolbarst five glass test is of particular merit unless the hemorrhage is copious enough to overcome the distinctive features of the test. The causes of these types of hemorrhage are exactly as elsewhere in the urogenital systems, except for the new element of congestion due to hepatic disease, abdominal tumor, extensive hemorrhoids, and urethral stricture. Blood is often seen in the products of prostatic massage, in the semen after intercourse or emissions, and at once suggests the prostate and the seminal vesicles as its source. Blood after an erection without intercourse or emission usually comes from a stricture, but may also proceed from the prostate by congestion. Blood following gentle instrumentation denotes dilatation of a stricture or irritation of granulations or even papillomata of the urethra. If the results of animal experimentation may be applied to man in their entirety, hematuresis due to such drugs as turpentine and cantharides and possibly hexamethylenamine is seated rather in the bladder than in the kidneys or urethra. Acute posterior gonococcal urethritis frequently causes terminal bleeding, occasionally of copious degree.

Tuberculosis of the urogenital tract is so common a condition that the picture of its bleeding should be fairly definite. It is, sooner or later, a constant symptom, particularly as the case gets older, because then the erosions of the tubercles appear. The quantity of blood lost is rarely as free or sudden as in neoplasm, because in the latter the process extends oftener to the depth of larger vessels than does tuberculosis as a rule. Its onset is usually a few terminal drops, almost always accompanied with varying degrees and relations of pain, tenesmus, spasm, and strangury, all augmenting with the duration of the lesion and typical of tuberculous cystitis. Large clotted masses of blood within the bladder are very rare in tuberculosis. The clots are rather frequent and small, if present at all. While the bleeding as a symptom is constant in tuberculosis, sooner or later, the act of bleeding itself comes and goes, so that there may be longer or shorter periods without hemorrhage, during which, however, a highly irritable cystitis is present.

From what has been said in this contribution it is hoped that the great importance and the grave possibilities of even minute urogenital hemorrhage have been made clear. It is quite safe to say that no bleeding is so scanty, but that it merits immediate and prompt investigation, because it may be the earliest sign of conditions essentially progressive and incurable excepting with the aid of surgical intervention practically at the moment of the earliest possible diagnosis. Such intervention may be removal of the offending lesion or at least adequate and energetic, well balanced treatment. The rule to follow is, therefore, that given hemorrhage, it must be traced to its source and cause without delay.

45 WEST NINTH STREET.

SHOULDER AND ARM PARALYSIS OF POLIOMYELITIS.

Humeral Suspension from the Acromion by Interarticular Silk Ligaments.

By BERNARD BARTOW, M. D.,
Buffalo,
Clinical Professor, Orthopedic Surgery, University of Buffalo;
Orthopedic Surgeon, Children's Hospital.

Holding the humeral head in contact with the glenoid cavity by artificial suspension of the humerus from the acromion fulfills at once one of the chief indications in the treatment of the deltoid and arm type of residual paralysis. Arm weight, normally sustained by the shoulder muscles and capsular ligament, then becomes transferred to the scapula. This procedure removes the arm weight from the paralyzed muscles, thereby eliminating one of the main obstacles to improvement or recovery.

The plan proposes the insertion of specially prepared silk strands in tunnels drilled through the acromion and head of the humerus; these, tied on top of the acromion, hold the humeral head close to its articulation. The drag is at once removed from the deltoid muscle and joint capsule, as shown by obliteration of the depression below the acromion.

The effect of this procedure, after operative reaction has abated, is shown by the patient's ability to perform certain shoulder and arm movements through the agency of muscles moving the scapula. Muscles not involved by the primary attack, and others, in the shoulder girdle groups that were only partially paralyzed, are capable of effecting a very useful quality of movement in the shoulder and arm when scapular and humeral movements can be combined. A short period only of postoperative restraint is required before these voluntary efforts are effective in assisting to improve function in the limb. Associated muscles that have suffered depreciation from disuse quickly manifest improvement in vigor, and the entire limb soon responds to these stimuli. Use of the arm begins to increase as soon as such compensatory movements can be effected, and forearm groups, coincidentally or consecutively impaired with the shoulder muscles, are especially quick to exhibit the effect of motor impulses conveyed to the hand in this indirect way. The writer has recently carried the idea of artificial suspension of the limb a step farther in associated paralysis in the forearm and hand, by suspending the ulna to the humerus in a position of semiflexion, to remove weight from the forearm flexors. This modifies the "dangle arm." and places the hand in better position to perform movements transmitted from the shoulder. This

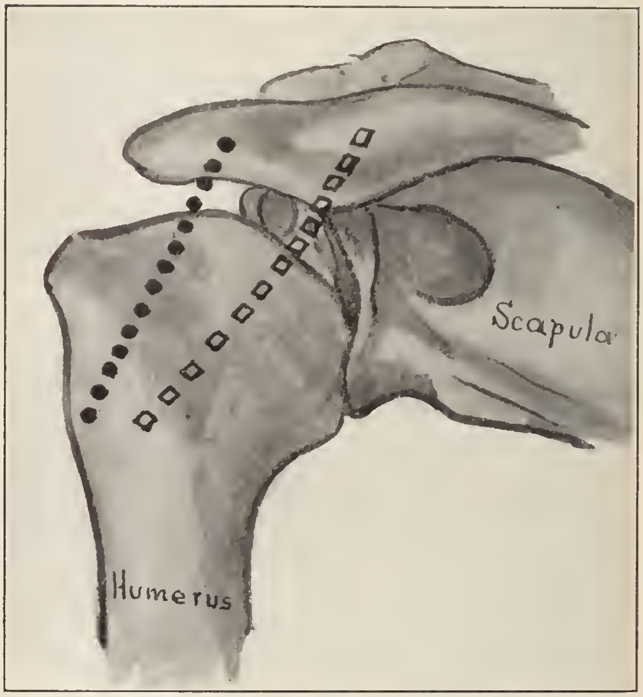


FIG. 1.—Diagrammatic posterolateral aspect of shoulder to show lines for inserting silk ligaments for suspension of humerus to acromion. Round dotted lines, tunnel through acromion and head of humerus to the anterolateral surface of greater tuberosity. Square dotted lines, parallel tunnel through bones to the posterolateral surface of greater tuberosity.

combination of arm and forearm suspension by silk ligaments is especially indicated when power in the biceps and brachialis anticus is inadequate for flexing the forearm.

An analysis of various methods of treatment, operative and mechanical, for deltoid paralysis, shows the main effort to be directed to relieving the paralyzed muscles and the capsule of the joint from arm weight. Some operative procedures contemplate transposition of an intact muscle supply to one of the paralyzed muscles, e. g., Hoffa's operation, by which a part of the trapezius is separated from its acromial attachment and fastened to the deltoid muscle.

The chief benefit from this operation depends on elevation of the head of the humerus into closer contact with the glenoid cavity, permitting the scapula and humerus to move in unison. Arthrodesis has been helpful in some cases by securing fibrous attachment of the head of the humerus to the glenoid cavity, so that both bones can move together.

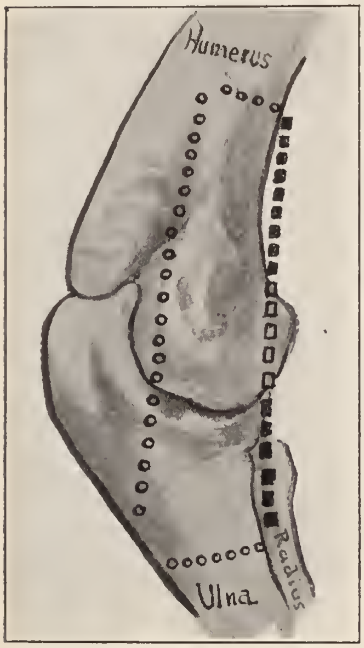


Fig. 2.—Diagrammatic posterolateral aspect of elbow; the ulna in semiflexion, showing lines for insertion of silk ligaments for suspension of ulna to humerus. Round dotted lines, tunnels through bones and location of silk strands. Square dotted lines, tunnel under soft tissues on anterior aspect of elbow, and location of ligament external to bones.

Extracapsular silk strands inserted periostially between the end of the humerus and the scapula hold up the humerus, diminish the drag from arm weight, and enable the arm to be moved by the scapular muscles. All of these procedures exert their beneficial effect largely by affording uninvolved and partly paralyzed muscles a better opportunity to move the arm in a compensatory manner.

Different mechanical devices employed in the treatment of deltoid paralysis aim to accomplish the same purpose. But their use is of questionable value if one may judge by results, and open to the disadvantages, first, of imposing the burden of the apparatus itself on already overweighted muscles: and, second, the apparatus restrains whatever there may be of motive power in accessory muscles that should be utilized to favor improvement in the paralyzed groups. The earlier months following the initial attack of poliomyelitis are generally devoted to some form of treatment of this character, supplemented by massage, electricity, etc. If one considers that arm weight as a factor in the deterioration of arm function becomes operative from the beginning of the attack, it is evident that a favorable period for aiding the disabled muscles is often lost by prolonged employment of what appears to be an ineffective method.

Operative procedures, such as have been mentioned, are usually adopted after an attempt to better conditions by the use of one or other of the mechanical methods. In long standing paralysis, when some form of operative has followed mechanical treatment, it is not unusual to observe that an operation to support the head of the humerus in better elevation is at once attended by a modification of arm disability. The inference is strong, therefore, that an earlier resort to such a method would have been of relatively great advantage to the patient.

It has been deemed inadvisable, however, to use operative methods, such as have been employed for residual paralysis, in the early months of its existence; or to employ them at the early age when paralysis often occurs. Some of these procedures are complicated and formidable for very young patients, and do not meet with ready acceptance by parents. Selected cases, offering only the best chance of success, are therefore generally treated by this plan. For these and other reasons that could be mentioned, it is desirable that a plan of operative treatment should be formulated, applicable to any age of the patient, and which may be employed at any reasonable time after residual paralysis has become established. It should effectively remove arm weight from the muscles and joint capsule, eliminate all restraints to possible voluntary arm movements, and not interfere with any recovering muscle groups, or hinder action in intact muscles which are available for effecting shoulder and arm movements. The term "operative" treatment is emphasized in this connection because, it is the belief of the writer, these indications cannot be fulfilled by any mechanical method or device that has, thus far, been used or suggested.

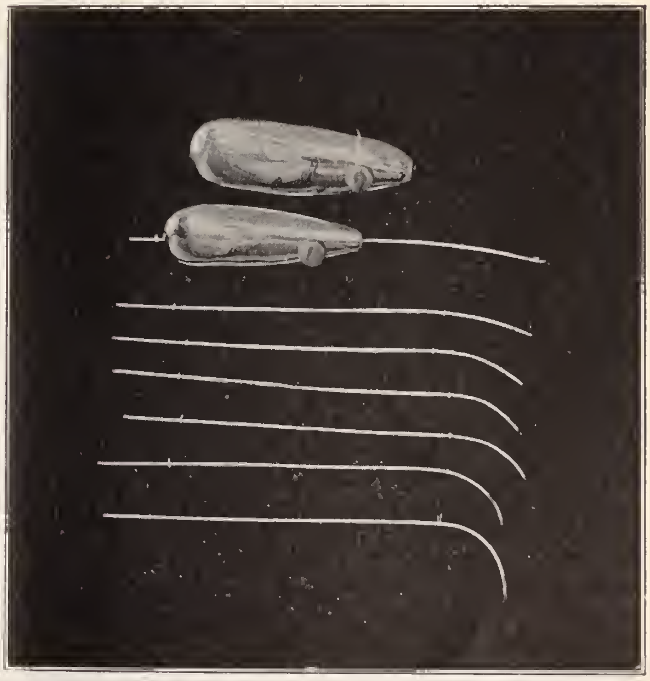


Fig. 3.—Drills for tunneling bones and soft parts for inserting silk ligaments in joints. Note adjustable handle secured in position by set screw. Drills have different curves at cutting ends; each has eye in point; the shaft is slightly oval to avoid turning in handle.

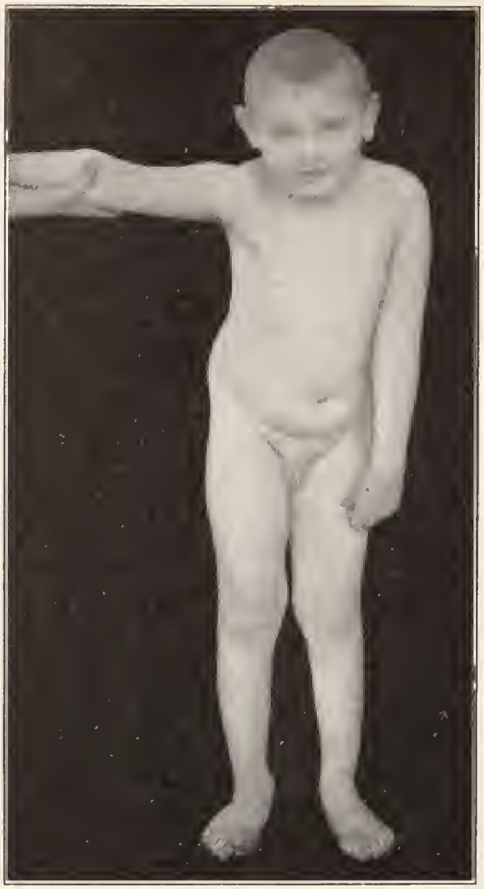


FIG. 4.—(Case I.) Showing silk ligament suspension of left humerus to acromion. Complete paralysis of left deltoid and partial paralysis of forearm and hand groups, "dangle arm" condition of limb. There was also extensive paralysis of thigh flexors, quadriceps, and hamstring muscles, and equinovalgus, in both limbs; duration, three and one half years.

An operation for the relief of this form of paralysis that complies with the requirements as stated was first proposed and performed by the writer about two years ago. This has since been abundantly verified and is briefly described as follows:

An incision, one inch long, is made on top of the acromion, beginning one half inch from its end; this extends to the bone along the line between the insertions of the trapezius and deltoid muscles. A suitable bone drill having an eye in its point (Fig. 3) is entered on the top of the acromion, one half inch from its tip, and pushed downward through the bone into the shoulder joint. The drill is next made to engage in the head of the humerus, on its external aspect, near the anatomical neck. It is pushed through the head of the humerus and greater tuberosity, to the base of the latter, emerging on its surface, external to the bicipital groove (Fig. 1). The drill is carried through the deltoid muscle to the skin, where a short incision is made, the muscle fibres also being separated for a short distance. Both ends of a piece of fine bronze wire are threaded into the drill eye, and on withdrawing the drill the wire is pulled through the bones, its loop and ends protruding. The drill is again inserted in the acromion, three fourths of an inch back of the first puncture, and a similar parallel tunnel made about three fourths of an inch at one side. The drill emerges in this instance on the posterior aspect of the greater tuberosity, is pushed through the deltoid and skin with the same detail, and a wire is drawn through the bones. Where the drills have penetrated the deltoid, a loop of wire is passed under that muscle, from puncture to puncture, using one of the curved drills for that purpose. A double strand of No. 14 or 16 paraffined silk tendon (prepared according to the formula of Lange) is attached to the wire loop and pulled through tunnel No. 1. The distal end is then dropped into the loop of wire passing under the deltoid, and pulled out through the opposite incision. Lastly the silk is pulled through tunnel No. 2, and the strands are tied separately on top of the acromion. The head of the humerus is pushed against the glenoid cavity, and the arm slightly abducted while the silk strands are being tied. The depression beneath the acromion at once disappears, and a moderate limitation of joint movement is secured. After suturing and dressing the incisions, the arm is bandaged to the side of the body with the forearm flexed, and is maintained in that position for about four weeks.

Reaction from the surgical trauma is slight and subsides in about ten days; all protection of the shoulder may be discarded by the fourth week. In the writer's case voluntary arm movements, such as could be effected by the scapular muscles, were then begun; the patients having been incapable of making such movements prior to the artificial suspension of the humerus. Three of the patients oper-

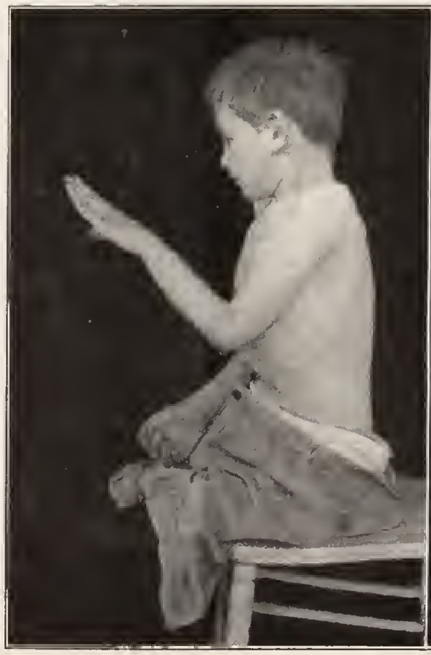


FIG. 5.—(Case I.) Forward movements of left arm which patient could make at two and one half and six months, respectively, after operation.

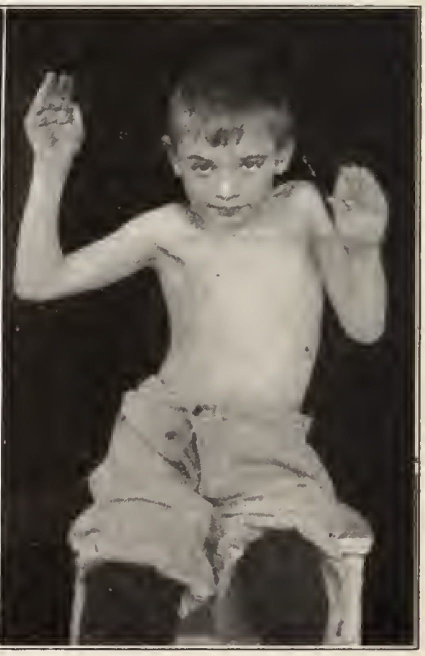


FIG. 6.—(Case I.) Lateral movement of arm patient was capable of making six months after operation.

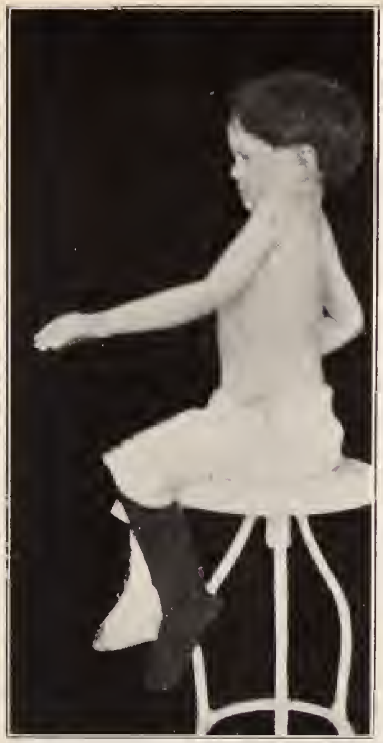


Fig. 7.—(Case II.) Increased arm extension, five months after operation.

ated upon by this method had preserved function in the forearm and hand groups amounting to about one tenth of the normal. Complete disinclination existed to voluntary use of the affected hand, and when attempted the well hand was always brought into requisition to assist. By the end of the second month following the shoulder operation, these patients showed marked improvement in the functioning of the forearm and hand. At that time also a slight amount of compensatory extension and abduction of the arm could be performed (Figs. 4, 5, and 6).

No especial developing treatment for the muscles was employed, but the children were encouraged to play with toys and make efforts such as would require the use of both hands. By this plan alone effective movements gradually returned in the forearm and hand, eventually becoming quite free and well controlled (Figs. 7, 8). When these patients occupied the recumbent position these movements were much better executed (Figs. 9, 10, 11).

Systematic use was made of that posture for voluntarily exercising muscles, with the result that a better quality of control was quickly secured. The entire neglect of all treatment for these patients during the long periods following the initial disease suggests the probability of a still greater amount of recovered function, had these measures been applied during the earlier months of disability.

The expediency of employing this operation at an early date for deltoid paralysis, that, by every sign, will be extensive, prolonged, and disabling, is suggested by the modifying effect that has been obtained by its use for these patients whose treatment had been greatly delayed, and whose disability was very great.

A time, after the initial attack, suitable for the employment of this method in e. g., the knee, would be "late" for its use in the shoulder.

Weight bearing can be postponed and joints protected in the lower extremities, for longer periods with relatively less damage to the muscles than in the shoulder type of paralysis. In the latter arm weight at once exerts a detrimental effect that is consecutive to the paralysis, from which the muscles cannot be adequately protected by splints, even when combined with massage, etc.

From the writer's observation of the effect of this operation in the shoulder, it appears practicable to make use of it for protecting the paralyzed muscles, as early as the second or third month after the primary disturbance.

Procedures of a character similar to that described for deltoid paralysis, have been adapted by the writer to paralytic conditions involving almost every large joint and nearly every variety of poliomyelitis paralysis. The insertion of silk ligaments for reinforcement of these flail and weak joint conditions, has now been performed by the writer and his associates in nearly one hundred joints.

Infection has not occurred in any instance, and the ligaments have universally remained in the tissues. Cases are now available for examination where silk ligaments have been imbedded in joints and bones for nearly two years without causing disturbance. In one instance, owing to slight irritation from the knot, the silk was withdrawn from an ankle, ten months after insertion. The fibrous bands that invested the silk had sufficient strength to hold the foot in good position for weight bearing. Quite recently a remodeling operation for deformity of the tarsus, necessitated the removal of a No. 18 silk ligament which had been inserted in the ankle and tarsus a year previously. The silk was withdrawn with ease, essentially unchanged, and the scar tissue surrounding it appeared capable of furnishing a good quality of resistance, notwithstanding the removal of the silk core.

It is certain that these strands placed aseptically in bones and joints, become invested with fibrous tissue, and are effective restraining bands where supplementary support is required. The silk becomes inert in the tissues inclosing it, and shows practically no tendency to cut its way out. It is interesting in this connection to have demonstrated

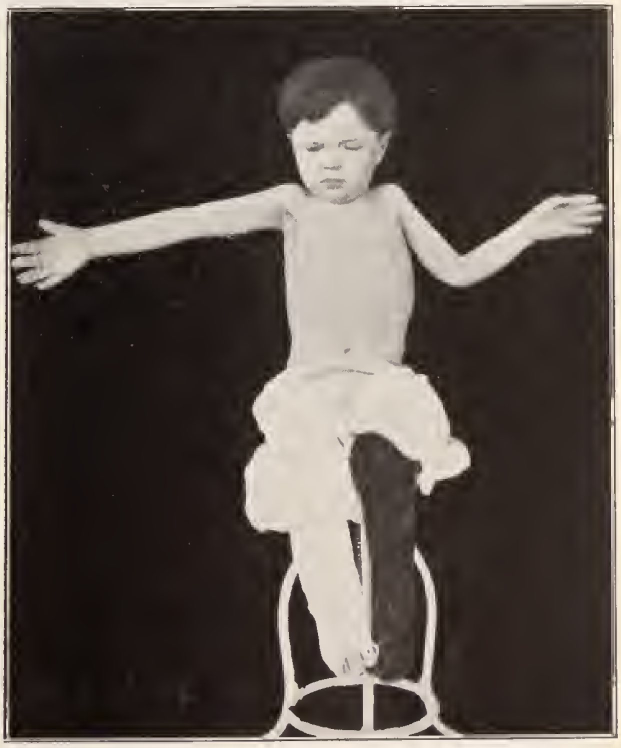


Fig. 8.—(Case II.) Amount of abduction movement developed five months after operation.

that the artificial ligament may, if desired, be removed after a number of months, leaving scar tissue which has formed around it to support the joint.

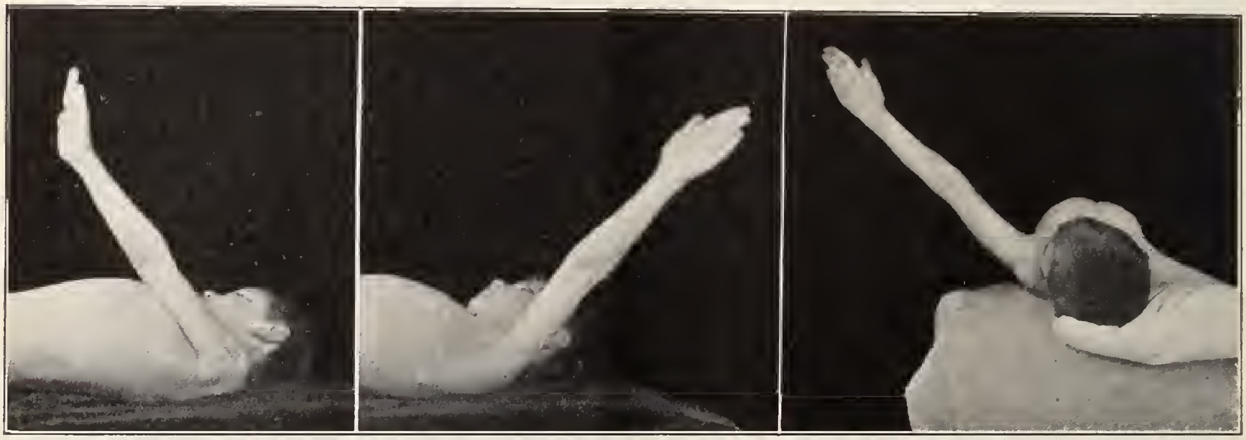
This knowledge removes apprehension of disturbance attending prolonged retention of silk ligaments in the tissues during their growth. The range and effectiveness of this procedure are increased by the knowledge that, if necessary, a joint may be additionally reinforced, after a suitable interval, without detriment to the benefits of a prior operation. It should be emphasized in this connection that joints are reinforced—not ankylosed; and that preservation of motion of any desired amount is easy of accomplishment.

The value of this plan of treatment for shoulder and arm paralysis, has been determined, not by the writer's cases alone, but also by those treated in the same manner by his associates; the total number at this time amounting to ten. Its freedom from interference with the processes making for recovery of the paralyzed muscles, its compliance with some of the chief requirements in treatment, its adaptability, and simplicity are some of its recommendations.

The suspension of the forearm in semiflexion, previously mentioned in this connection, has been performed only once by the writer, and in the following manner:

An incision, two inches long, is made midway on the back of the arm, beginning two and one half inches above the tip of the olecranon and reaching down to it. The fibres of the triceps muscle and tendon are separated, exposing the humerus for about one inch above the olecranon fossa (Fig. 2). The forearm is then flexed to a right angle and held in that position. With a nearly straight drill (Fig. 3) the humerus is penetrated about three fourths of an inch above the olecranon fossa, the drill being carried downward and forward, successively, through the shaft and trochlea of the humerus, elbow joint, floor of the greater sigmoid cavity of the ulna, and thence through the end of the ulna to its posterior surface. The drill emerges about at the apex of the triangular subcutaneous surface on the ulna—near the beginning of the posterior border of that bone. An incision is made through the skin at this site, two inches long and extending to the bone. The flexor digitorum muscle is separated from the ulna for a short distance, exposing its shaft, which is drilled through transversely from posterior to anterior surface. Loops of wire are pulled into these bone tunnels as the drill is withdrawn. At the place where the tunnel opens on the anterior of the ulna, the drill is pushed under the muscles close to the bone—tunneling under the soft tissues on the anterior surface of the ulna and humerus to a point opposite the first drill puncture in the humerus (Fig. 2). The muscle is there separated from the bone, so that a transverse tunnel may be drilled through the humerus from anterior to posterior surface. Wire loops are pulled into these tunnels when the drill is withdrawn.

The silk insert is placed first in the main tunnel extending through the elbow joint. The distal end is next drawn through the transverse tunnel in the ulna, and fastened by a hitch, so that it has a fixed bearing at that point. It is then pulled through the tunnel under the soft tissues; with the elbow flexed to the desired angle, the silk is drawn through the transverse tunnel in the humerus, and secured by a hitch; both free ends are then brought together and tied near the first puncture in the humerus (Fig. 2).



Figs. 9, 10, 11.—(Case I.) Extension and abduction movements which patient could make lying on back, and which could not be done before operation. These movements are used as exercises for development of arm muscles and range action.

The incisions being sutured and dressed, the forearm should be carried in a sling with the elbow supported by a light splint for about six weeks. Protection of the elbow in the flexed posture should be prolonged, corresponding to the degree of limitation most desirable in a given case. With much loss of power in the forearm flexors, a maintained angle of about eighty degrees flexion will probably be the most useful. Some of this will subsequently be lost owing to the weight of the forearm and its continuous downward pull.

The instruments (Fig. 3) used for making tunnels through the bones differ from ordinary bone drills, being much longer, and having different curves to adapt them to the line of direction. Because of their curves they cannot be freely rotated within the bones, but require a pushing effort combined with a slight rotary movement. Their length is about seven inches, and the diameter of the shaft about five thirty-seconds of an inch. The shaft slides through the handle to permit the latter to be adjusted at any distance from the cutting point, for the better control of movement and direction when in the tissues. The shaft of the drill and the lumen in the handle are oval, so that the handle cannot turn on the drill.

481 DELAWARE AVENUE.

ANOMALIES IN CARDIAC RHYTHM.*

A Study of Their Significance.

BY TASKER HOWARD, M. D.,
New York,
Assistant Physician, Long Island College Hospital; Physician, Polhemus Memorial Clinic.

It is only within comparatively recent years that the cardiac arrhythmias have been classified on a systematic scientific basis. Before that time an irregular pulse was an irregular pulse, and it passed as such with most clinicians. Since the introduction of methods by which it is possible to analyze the action of the heart into the actions of the various chambers of the heart, a great deal has been learned about cardiac arrhythmia. The first important step came through the use of the polygraph, with which the auricular action could be studied from the jugular tracing, timed and checked by the simultaneous record of ventricular action taken either from the apex of the heart itself or from some peripheral artery, as the carotid, brachial, or radial. Later, the information obtained by the polygraph was expanded and illuminated in several very important particulars by the introduction of tracings obtained through variations in the electric potentiality of the heart muscle, in rest and action, with Einthoven's string galvanometer. These instruments of precision will certainly not come into very general use, but there is no reason why we should not all benefit by the story they have to tell, so that, with the fingers and with the ear, we can recognize in the vast majority of cases what type of irregularity we are dealing with, and know something of what it portends.

The least significant type of cardiac irregularity, known as sinus arrhythmia, or youthful irregularity (Fig. 1), is actually a mere exaggeration of certain normal variations in the heart's rate. This is seen, for instance, in individuals in whom, with the varying phases of respiration, there is an alternate acceleration and slowing of the pulse rate. In some people this is so marked that even during ordinary quiet breathing there is a continual change in the pulse, giving rise to the impression of a very irregular action, but it will usually be noted that the changes correspond to definite periods of the respiratory cycle, the slowing of the pulse occurring during expiration, as a rule. This is followed during inspiration with a somewhat hurried action. Sometimes the opposite occurs. The changes are gradual rather than sudden, and it is usually the rate rather than the volume of the pulse that changes. A normal individual will often show this reaction when taking deep breaths, and it is easy to see that with a long, full inspiration, when a large amount of blood is aspirated into the chest cavity from the belly and from the large venous trunks of other nearby regions, necessitating compensatory vasomotor changes, and when the heart is acting under unusual conditions of intrathoracic pressure, there should be some variation in the heart's action. Swallowing, and certain peripheral stimuli, as irritation of the mucous membrane of the nasal septum, etc., will sometimes elicit sinus irregularities.

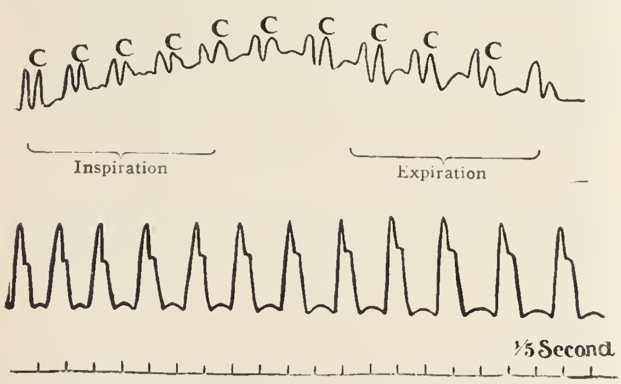


FIG. 1.—Sinus arrhythmia, showing variability of pulse with respiratory changes. Upper tracing; jugular, lower tracing brachial.

An analysis of tracings taken from such types of arrhythmia shows that each contraction originates in its normal position, in the sinus tissue near the mouths of the great veins, and spreads normally down through the auricles to the ventricles; in short, that the contractions are normal, merely varying in the time of their occurrence. That this variability in the time of occurrence is the result of purely nervous influences may be demonstrated by the administration of atropine, which, by paralyzing the vagus endings in the heart, causes the arrhythmia to disappear (Dehio). Thus a hypodermic injection of atropine is sometimes of considerable diagnostic aid. The administration of atropine as a therapeutic measure to control the arrhythmia is quite unnecessary, as the arrhythmia itself is of no moment. This type of irregularity is usually found in young, neurotic individuals who present other evidences of a nervous temperament and lively reflexes, and as an indication for treatment, it takes the same position as these other evidences. It sometimes occurs in the course of some acute infection, as grippe or pneumonia, but even then it signifies nervous instability rather than cardiac involvement, and should occasion no alarm (W. B. James). The heart itself requires no individual treatment, and, in fact, any emphasis on the irregularity or possible heart disease is distinctly harmful, as it is very apt to lead to morbid ideas and more pronounced nervous disturbances. If any treatment is indicated, sources of reflex irritation should be sought for and corrected, while the whole nervous tone should receive consideration.

The next type of irregularity to be considered is the extra systole (Fig. 2). This does indicate definate cardiac involvement, though by no means always irrevocable damage. Perhaps the commonest example of this phenomenon corresponds to what was at one time spoken of as the dropping of a beat. In feeling the pulse at the wrist it will be noticed that every once in a while there is a long pause, as though a heart beat had been omitted. If one listens carefully at the heart it will be observed that actually just the opposite has occurred. A premature beat has been thrown in shortly after the occurrence of a normal beat. The extra sound, or sounds, as it may be single or double, are thrown in so quickly after the normal sounds that it may be difficult to catch its significance, but when one is familiar with it, it is quite characteristic. The pulse wave of the extra beat may be so insignificant that it does not reach as far as the wrist, and in fact the contraction may be so weak that the aortic valve is not even opened. In this event, only one extra sound will be heard at the heart. The extra beat is usually followed by a compensatory pause that gives the long interval which was formerly supposed to indicate a skipped beat, and the next beat is often unusually violent, so that it may be felt by the patient as a thump in the chest. Sometimes a premature contraction occurs after each normal beat, and both can usually be felt at the wrist, giving the impression of a large beat and a small beat followed by a pause and then a repetition of this cycle. This is the familiar pulsus bigeminus (Fig. 3). The pulsus trigeminus is produced by the occurrence of two extra beats after every normal beat. These extra beats are shown by tracings to be explained by the fact that the cardiac contraction starts at some abnormal part of the heart, instead of in the sinus region where it should start. If the contraction starts in the ventricle the evidence of the preceding auricular contraction is lacking in the tracing. This is known as the ventricular extrasystole. It is the commonest variety, and it is in this form that the compensatory pause follows, as the ventricle having just contracted, refuses to respond to the aftercoming auricular beat and waits for the succeeding stimulus. It is therefore evident that an extrasystole indicates an overirritability of some part of the heart muscle (every part of the muscle being capable of originating a contraction if the stimulus is strong enough), but the cause of the overirritability and the immediate occasion of its manifestation are still matters of uncertainty. Clinically extrasystoles are most often met with in individuals whose myocardium is at least open to suspicion on other grounds as well, as in valvular disease and cardiac sclerosis, and it is reasonable to suppose that there may be structural changes in the heart which account for the irritability, and such changes are often found post mortem. In fact, some authors maintain that they never occur unless the heart muscle is damaged. Friedrich Mueller, who takes this position, makes the exception, however, of certain neurotic individuals who are prone to sudden and marked changes in blood pressure, believing that the extrasystoles may be thrown in during a sudden rise, perhaps as an additional effort to meet the extra demands upon the heart. On the other hand, extrasystoles certainly do occur at times in individuals with no suspicion of heart disease, and cases are recorded where they have occurred for many years without any other symptom. The most reasonable explanation for this is the presence of some insignificant, nonprogressive lesion in the myocardium, as a little scar left by some long forgotten or overlooked acute condition, or even some developmental defect. It is sometimes found possible to control this irregularity in apparently healthy hearts by removing such toxic causes as tobacco, tea, or coffee, and it seems fair to assume, for the present at least, that in these temporary cases, while it may be granted that the cause was operative on the heart muscle itself, there is no necessity for presupposing permanent organic change. As a diagnostic or prognostic feature, I believe this phenomenon is of very much less importance than other factors. Where other evidence of a damaged heart is lacking, and by this I mean not the mere presence of a murmur, but any reason to lead one to suspect some involvement of the myocardium, it should cause no anxiety. In the presence of an acute infection, or shortly after an acute infection, extrasystoles should obviously suggest involvement of the heart, while in the chronic states they are of

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*Read before the Brooklyn Medical Association, December 11, 1912.

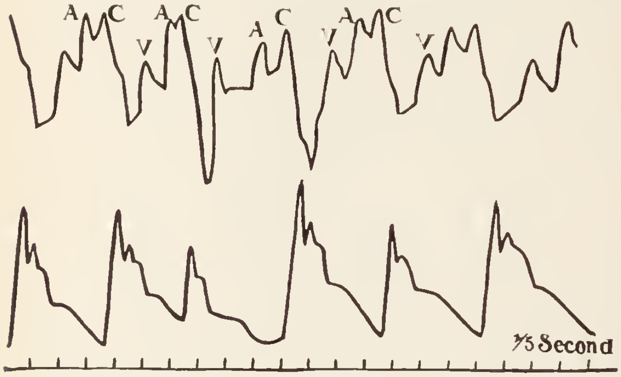


FIG. 2.—Extrasystole. The ventricle has contracted prematurely, but after the normally occurring auricular contraction. From an elderly woman with cardiosclerosis and mitral regurgitation, as the heat was beginning to fail. The extra systoles disappeared as the patient improved. In the jugular tracings the "a" wave is due to the auricular contraction and the "c" wave to the ventricular contraction, the "v" wave expressing the passive filling up of the vein after cardiac systole. Upper tracing, jugular; lower tracing, brachial.

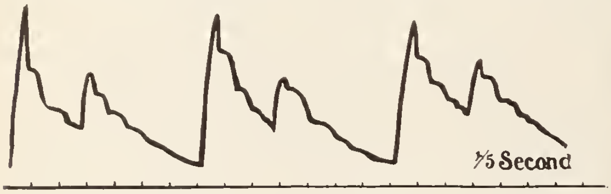


FIG. 3.—Pulsus bigeminus (brachial tracing). From a patient under full digitalis influence.

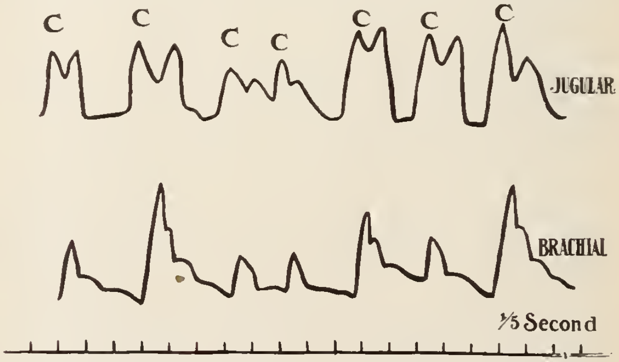


FIG. 4.—Auricular fibrillation. From a patient suffering with chronic nephritis, arteriosclerosis, and cardiosclerosis, the heart having dilated and compensation being broken. The patient died three days after the tracing was taken. (From the service of Dr. Frank E. West, Long Island College Hospital.)

subordinate significance, except in those cases where they are so frequent as to interfere with an adequate circulation.

The most serious form of arrhythmia has been known by many names, as absolute or perpetual arrhythmia, disorderly rhythm, delirium cordis, nodal rhythm, etc., (Fig. 4). It is readily recognized, as the beats follow each other in most haphazard fashion, large and small, long and short, all jumbled in together. The history of the study of this problem and its final solution forms an interesting chapter in medical investigation. Mackenzie thought he had solved the problem when he noted that the auricular waves were absent in the jugular tracings and put it down to paralysis of the auricles. Later he found that many of these hearts showed at autopsy a hypertrophy of the auricles, and as this was inconsistent with his theory of auricular paralysis, he evolved the ingenious hypothesis that auricles and ventricles were beating in unison as a result of an irritable auriculoventricular node (nodal rhythm). He thought that the contraction, starting between the auricles and ventricles, would reach them both at the same time, as it actually does when the node *is* the seat of origin of a contraction. There seemed much to support Mackenzie's theory, but it was finally disproved by Thomas Lewis and others, who showed largely by means of electrocardiographic records, that the condition is really one of auricular fibrillation. The incoordinated vermiform contractions of all the fibres of the auricles shower the ventricles with innumerable impulses to contract, and the ventricles obligingly respond to all that they can handle, contracting with all available force every time a strong enough impulse comes along. The rate is usually rapid and the sum of the contractions usually insufficient to meet the requirements of a normal circulation. The condition is found only in hearts with a damaged myocardium, and is seen most commonly in chronic valvular disease and myocarditis. A large proportion of cases of severe broken compensation present this picture. The condition is not infrequently temporary and it is not certain that it necessarily indicates a permanently damaged myocardium. I have seen auricular fibrillation come on during an attack of pneumonia and disappear completely with the subsidence of the acute infection, and it does not seem impossible that, the toxic cause having passed, such a heart might not ultimately regain its normal condition. However, it usually means serious permanent damage. The fibrillation is apt to recur, and even though it continues for years, as I have seen it do, any extra strain on the heart is apt to prove its fundamental weakness by causing a breakdown.

The chief importance of auricular fibrillation from a therapeutic standpoint is the remarkably beneficial effect which digitalis exerts in this condition. This is brought about largely through an inhibition of conductivity probably through vagal influence, so that many of the annoying stimuli are blocked at the auriculoventricular junction, and the ventricle is allowed to work at a much slower and therefore more effective rate. Furthermore, I see no reason for discarding the old teaching that with a slower, more forceful ventricular beat, the coronary circulation itself is improved by better filling of the arteries and more complete squeezing out of the veins, so that the myocardium is supplied with more nutriment and oxygen and is more thoroughly relieved of its waste products.

Heart block may or may not present an irregular pulse. Stokes-Adams syndrome, with its temporary or permanent bradycardia, and the associated syncope or epileptiform attacks, is comparatively easy of recognition (Fig. 5). The condition is at once suggested by the slow pulse and can be verified by inspection of the jugular, which is seen to be beating at a faster rate than are the arteries. Milder forms of the condition are sometimes difficult to identify without the aid of tracings, as where the ventricle lags behind the auricle with ever decreasing promptitude until it fails to respond to one auricular suggestion, when it will brace up and begin all over again, only to repeat the process (Fig. 6). Even here the diagnosis may often be made by careful inspection and palpation. Such conditions, when coming on spontaneously, are apt to progress to the severer forms, but not necessarily so. Partial block may be induced at times by large doses of digitalis, and Lewis has shown that asphyxia will produce heart block, which completely and permanently disappears with the recovery from asphyxia. Lesions of the central nervous system possibly rarely cause the condition. In short, while

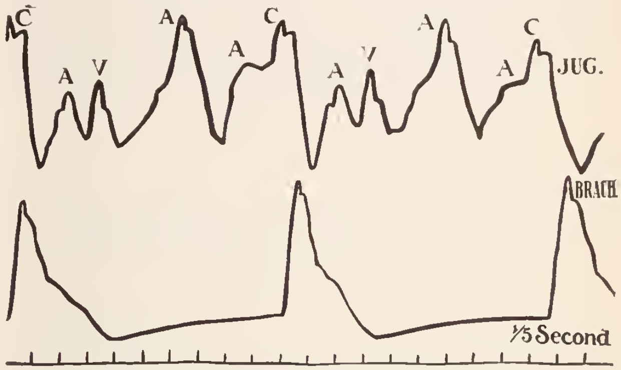


Fig. 5.—Partial heart block. Ventricular rate 26.51 a minute. Auricular rate 79.53 a minute. Man of forty-four years. Illness of three weeks' duration, characterized by intense vertigo and dyspnea on exertion. Patient also suffering from phthisis. Left the hospital and died three weeks later. (From the service of Dr. John A. McCorkle, Long Island College Hospital.)

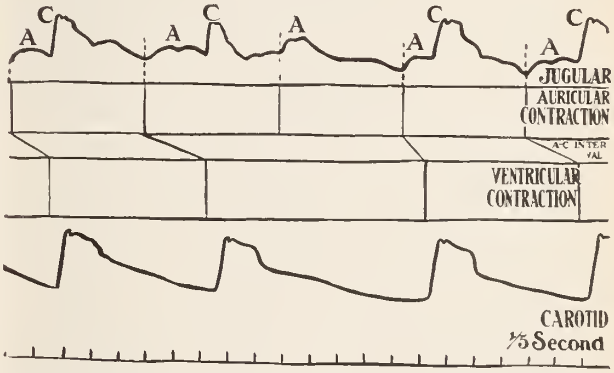


Fig. 6.—Partial heart block. From a Chinese sailor who could speak no English, and whose only complaint seemed to be a pain in the knee. The block disappeared after a few days' rest in bed and no evidence of cardiac trouble could then be observed. Wassermann reaction negative. (From the service of Dr. Gordon R. Hall, Long Island College Hospital.)

it nearly always indicates myocardial damage, it is quite possible that temporary toxic or other factors may at times be responsible for the block.

The pulsus alternans (Fig. 7) consists of a series of alternating large and small beats, the time being regular, which obviously should be distinguished from the pulsus bigeminus, where each beat is followed by a pause. It is due to an insufficiency of the contractile power of the heart and indicates fundamental heart weakness, except, perhaps, in the rapid action of paroxysmal tachycardia, where it often occurs, and in this case may be due to a disproportion between the excessive rate and the ability of the heart properly to respond (Hirschfelder).

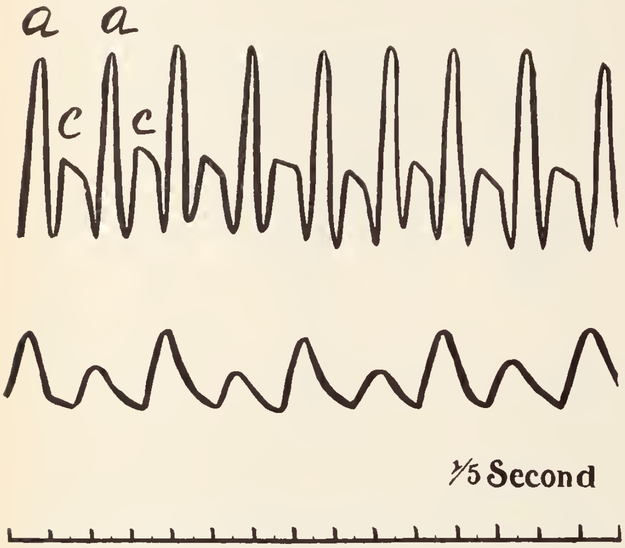


FIG. 7.—Pulsus alternans, from a case of paroxysmal tachycardia, taken during a paroxysm. Upper tracing, jugular; lower tracing brachial.

Paroxysmal tachycardia (Fig. 8) is still one of the mysteries. While we may not know what causes it or how to stop it, its recognition is of importance. Otherwise it is disquieting and puzzling to encounter a patient with a pulse of two hundred or more, who does not look sick and probably does not feel sick. The attack begins with absolute abruptness. the rate usually jumping to some multiple of the previous rate or nearly so. It usually lasts from a few minutes to a few hours and stops with the same abruptness with which it began. While the patient may be conscious of the rapid action and may be frightened, there is practically no discomfort, and the heart may show no other signs of disease. A prolonged attack, particularly where there is myocardial degeneration, may bring on the ordinary signs of heart failure and even death, but such occurrences are rare, and the attacks are apt to recur for years without any serious consequence, and may disappear altogether. However, a person subject to such attacks should certainly avoid any undue strain on the heart, as some change in the myocardium is not improbably present.

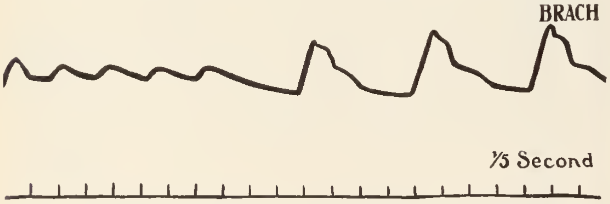


FIG. 8.—Paroxysmal tachycardia. Tracing shows the abrupt end of a paroxysm with the resumption of the normal rate, the pulse dropping from 177 to 78 a minute. The patient had been subject to such attacks for many years.

383 CLINTON STREET, BROOKLYN.

THE TRAVELS OF A NAIL.

By GEORGE ROSENBAUM, M. D.,
Philadelphia.

Many and varied in character are the objects that children swallow, and in the detection of these objects lies a strong claim for the efficiency and popularity of the x rays. The writer wishes to present the following case, which is of more than passing interest:

CASE. D. P., two and one half years of age, a small and poorly nourished child, swallowed a long wire nail on December 16, 1912. Shortly after this he vomited and the vomitus was tinged with blood. The mother gave the baby purgatives and tried the usual home remedies, but with no result. Two days later, after a dose of castor oil, the child suffered sever abdominal pain and became cyanotic for a short time.

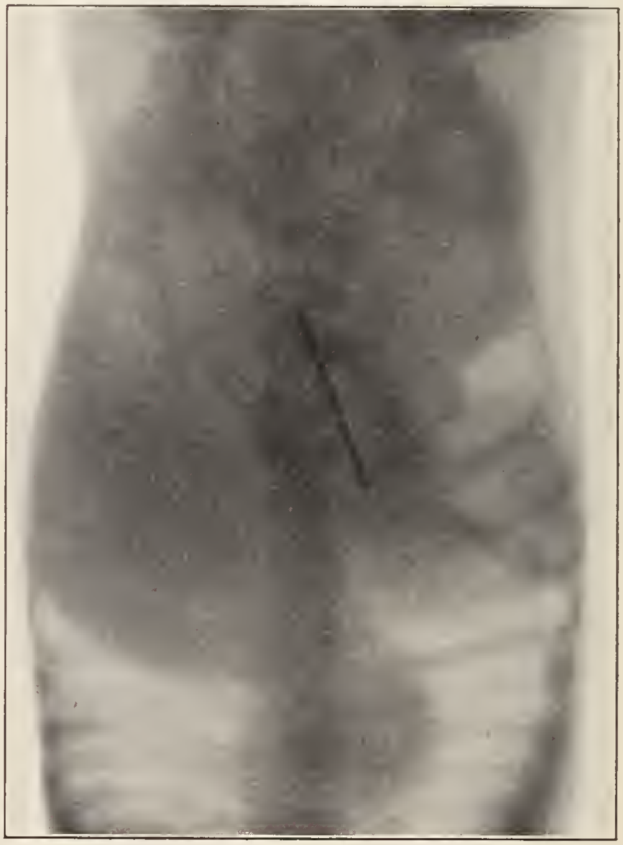


FIG. 1.—This was the first picture taken and shows the nail still in the stomach, four days after being swallowed. The point is toward the pylorus and the head to the fundus.

On December 20th, four days after deglutition of the nail, the child was brought to the hospital and referred to me for x ray pictures. The temperature was 99° F., pulse 116, and respirations 28. No tenderness or rigidity of abdomen on palpation.

A series of six pictures were taken, the first on Decem-

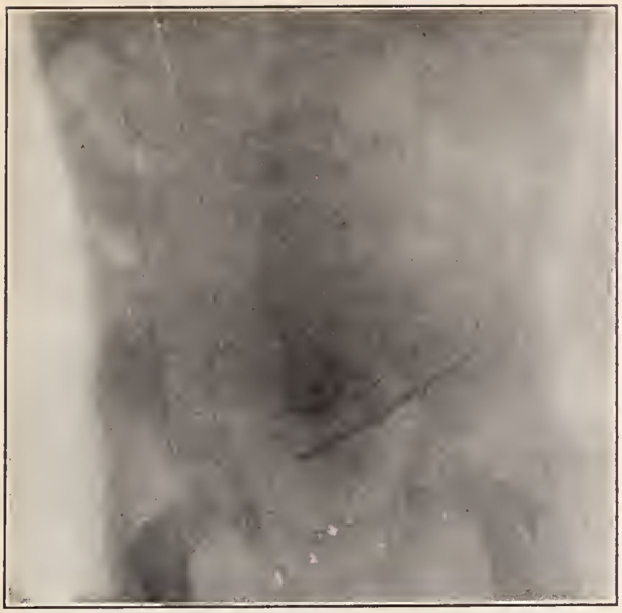


Fig. 2.—Taken December 26, 1912; shows the nail low down on the right side, in the cecum. The child had received small doses of bismuth subcarbonate for skiagraphic purposes. The small dark mass below the cardiac shadow shows the position of the stomach; the large dark mass in the pelvis outlines the rectum.

ber 20th and the last on December 29th; the day the nail was passed from the rectum.

All told, the nail was in the alimentary tract fourteen days. Four days it lodged in the stomach and six days were required to complete the journey through the small intestine, and the remaining four days for its passage through the large intestine.

The child had daily evacuations during this period, and, while it was quite restless during its stay in the ward, it was in no sense ill. The temperature never rose above normal. A few hours after the nail was passed the child was taken home.

Mount Sinai Hospital.

PARAURETHRÆ.

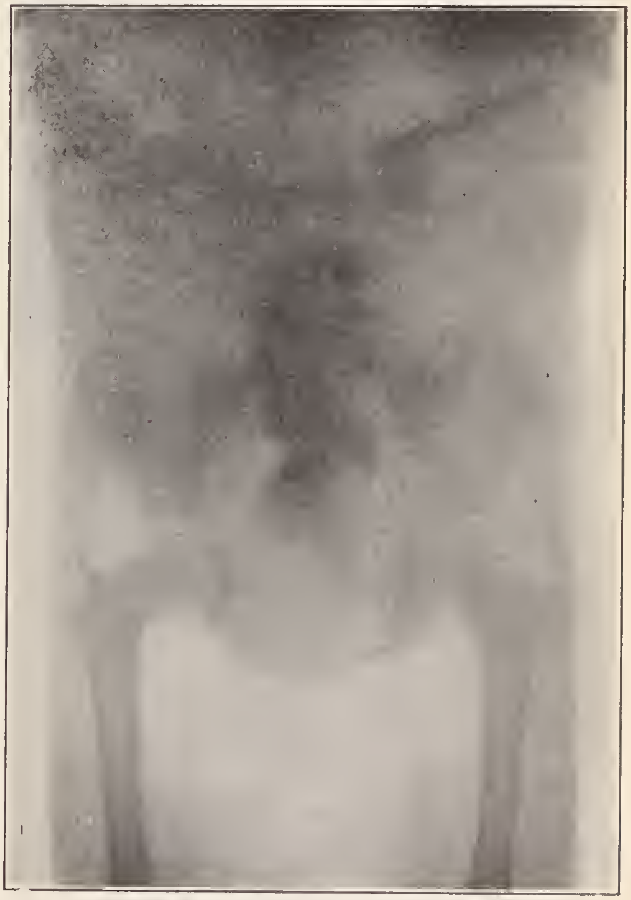
By J. Leon Herman, M. D.,
Philadelphia.

Congenital doubling of the male urethra does not occur in the absence of double penis. Double urethra in the female has been observed in association with double bladder by Pean, Wolfer, and Colzi, quoted by Lerche (1) and Schwartz (2), and Furst (3) reports a case of double female urethra unassociated with any malformation of the urinary bladder. The latter is the only instance of this abnormality in the literature, the authenticity of which has gone unchallenged. The possibility of such associated congenital abnormalities of the female bladder and urethra is explained by the common embryological origin of these structures from the allantocloacal portion of the fetus, any doubling of which, such as might be produced by the formation of a frontally placed fold, would lead to the condition above described. That portion of the male urethra between the internal vesical sphincter and the openings of the ejaculatory ducts, is derived from the corresponding fetal structures that produce the entire female urethra, with which this portion is therefore analogous. The remaining portion of the male urethra is derived from the genital tubercle in association with the development of the external genitalia (4). Reduplication of these two entirely distinct portions of the male urethra has never occurred unassociated with doubling of the penis.

Instances of double penis are, however, not uncommon in medical writings, and it is of interest to recall that the devotees of Priapus in Pompeii and Herculaneum have preserved images of this abnormality to us in their sculpturings and paintings (5). Bas reliefs in some of the old buildings of France are said to illustrate doubling and even tripling of the Phallic (6) emblem of a procreative deity.

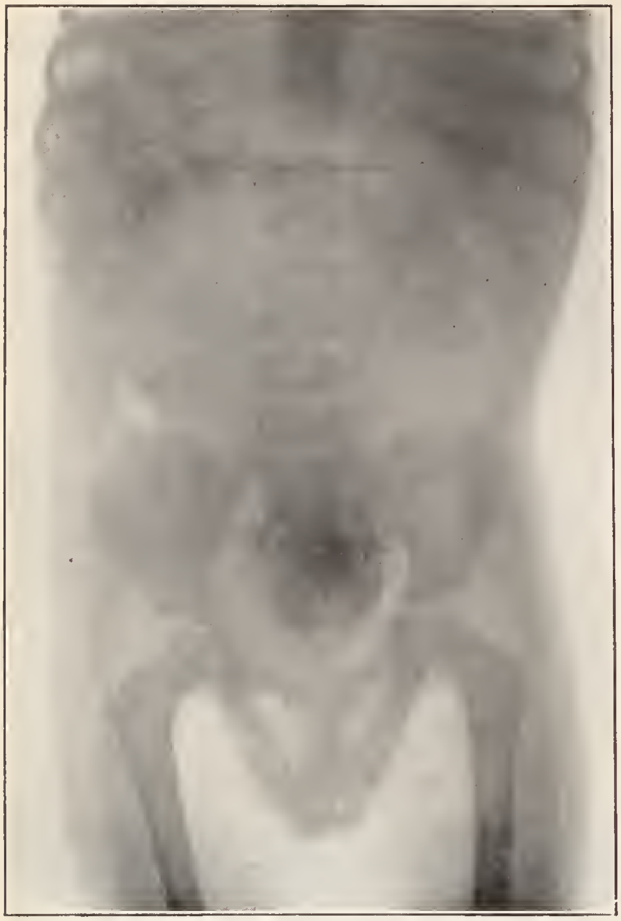
It is not uncommon to find blind accessory canals in the penis, and Casper (7), in considering the subject of double urethra, concludes that the cases so reported are merely instances of such canals or congenital fistulæ.

Himmel (8) holds the same opinion notwithstanding his observation of a case closely simulating a true double urethra. In Himmel's case, a sound was passed through the normal meatus into the opening of an abnormal canal which ran parallel with and above the urethra to the symphysis pubis. From the bladder another canal was found passing to the symphysis pubis and communicating with the former by a narrow opening. A fold in the region of the bladder neck caused the obstruction, and in a



Rosenbaum: Travels of a Nail.

Fig. 3.—Taken December 27th at 11 a. m.; shows the nail at the hepatic flexure of the colon, having ascended from the cecum in twenty-four hours.

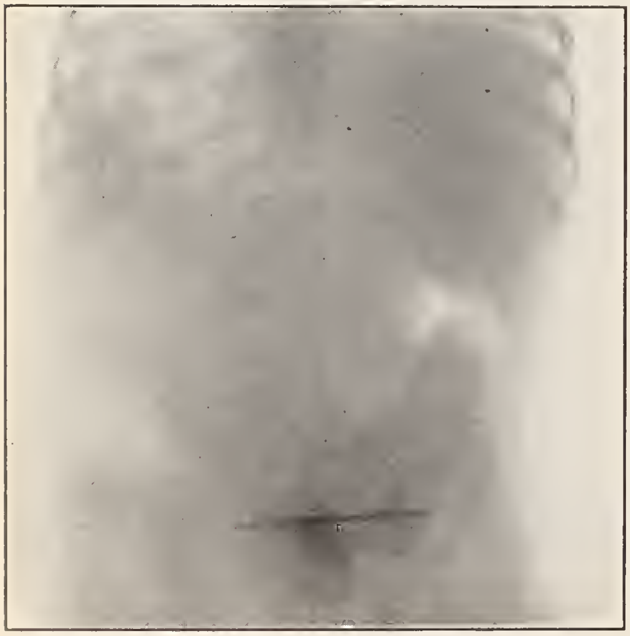


Rosenbaum: Travels of a Nail.

Fig. 4.—Taken also December 27th, but at 9 p. m.. In ten hours the nail had moved but a few inches from the hepatic flexure to the transverse colon.

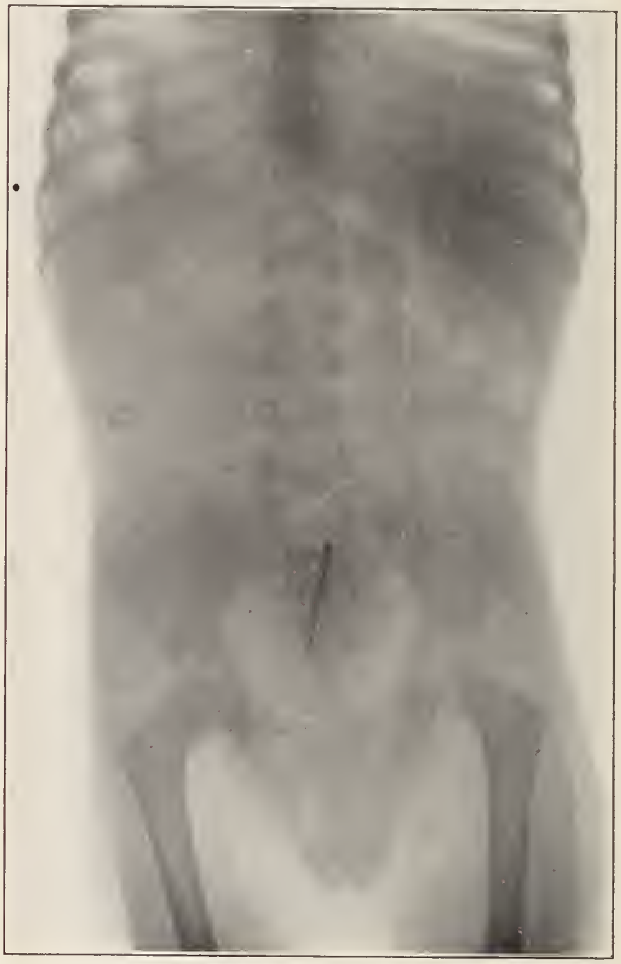
careful analysis of the case the author explains it on the theory of a congenital doubling of the allantois or the development of a frontally placed wall dividing this fetal structure. He does not look upon the malformation as a true *urethra duplex*. Vidal (9) subjects the reported cases to critical review and decides that doubling of the male urethra does not occur. Thiele (10) doubts the authenticity of von Cruveilheir's case (11) and suggests that the abnormal canal may have been a nonfunctioning dorsal vein. Kauffmann (12) considers these cases on the theory of congenital fistulæ and reviews at length the cases of Pribram, Luschka, Marchal, Picardat, and Perkowsky. The abnormal canals opened in these instances on the dorsum of the penis, either on the hind wall of the glans, or on the posterior third of the shaft. Luschka's case came to autopsy and is of especial interest. An accessory canal extended from the mid dorsum of the penis in the posterior third of its shaft, to a point two cm. anterior to the pubic arch. A glandular structure placed directly over the tunica albuginea on the dorsum of the organ, communicated with the canal by means of four ducts. The posterior end of the gland was connected with the anterior bladder wall by a stout elastic sheath running in front of the prostatic urethra. Luschka considers the gland to be a dislocated anterior lobe of the prostate gland, a view which Dollinger (13) seems to have confirmed.

In the cases of Pribram and Picardat, shred bearing fluid came from the canals during the ejacula-



Rosenbaum: Travels of a Nail.

Fig. 5.—Taken December 28th at 11 a. m.; shows the nail in the sigmoid.



Rosenbaum: Travels of a Nail.

Fig. 6.—Taken December 29th at noon; shows the nail in the rectum. It was passed a few hours later, imbedded in fecal matter, and was found to be 2¾ inches long.

tion of semen, although this fluid was not examined microscopically nor was any glandular tissue found to indicate its origin. Martin (14) reports a typical case of dorsal paraurethra through which a sound could be passed to the symphysis pubis. In the older literature we find cases of double urethra described by Andreas Vesalius and Hildanus, quoted by Stieda (15). A student of Padua is said by Vesalius to have had two channels opening on the glans penis, one serving to convey urine and the other semen. The author quotes an Arabian physician who observed a case of three canals, one serving to pass urine, a second semen, and the third prostatic fluid. Hildanus credits Nature with having given a boy of Cologne a double urethra, through both of which the "urine passed without difficulty." These cases cannot be considered double urethræ, and although they incite admiration of the acumen of observation of these seventeenth century physicians, they lack the evidence of precise methods of diagnosis, the urethroscope, cystoscope, etc., which the intervening centuries have given to surgery. Lejar's (16) collection of cases from the time of Aristotle adds nothing of value and is, in many instances, subject to the foregoing criticism. It is evident, as Stieda aptly remarks, how difficult it is properly to group the reported cases of accessory canals of the penis in view of the diverse opinions as to their origin and the incompleteness of study to which they, especially the older cases, have been subjected.

The subject is elucidated by considering all such channels as developmental errors, and if we accept the term paraurethræ as Pontoppidon (17) first suggested for these structures in the male, it must be done with the reservation that they are entirely different from the normally occurring paraurethral ducts of the female first described by Krause (18) in an anatomical consideration of the urethra, and later by Guerin (19) in relation to urethritis externa. Agreeing with Zuckerkandl (20), Stahr (21), and others in viewing these cases in the light of defective development, we cannot improve on the classification of Taruffi (22), who divides them into four groups, viz.:

1. Seminiferous canals. This rare type illustrated by the cases of Vesalius, Luschka, and probably also of Pribram and Picardat, is considered to be the result of abberration (congenital) of the ducts of the anterior lobe of the prostate gland.

2. Canals ending blindly. A. Opening on the surface of the penis. B. Opening into the urethra.

Group A. This group includes all accessory canals opening on the surface of the penis and with no urethral communication. They are often found with openings near the meatus and on the under surface in relation with hypospadias, more rarely on the dorsum. The latter is typically shown in a case recently reported by Hensel, which is similar to the one we describe.

Group B. Canals opening into the urethra but ending blindly in the periurethral tissue. The ducts of normal urethral glands are included in this group, but in addition to these, there occur others which are embryological defects.

3. Uriniferous canals. These are cases presenting accessory channels in free communication at variable points with the urethra and opening on the surface of the penis. Since true double urethra does not occur the case of Hildanus must be placed in this group. G. Marion (24) has recently reported a typical example.

4. Fistulæ, the result of cloacal defects. Bardeleben (25) has reported a series of cases to illustrate double urethra, but they are examples of congenital fistulæ, urethroperineal, vesicoperineal, etc., and should be considered as accessory canals resulting from cloacal defects rather than true examples of urethra duplex.

Canals opening on the surface of the penis, but ending blindly, are developmental defects probably in close embryological relationship if on the ventrum, with hypospadias, if on the dorsum with epispadias. The ventral canals may be explained by the formation of a horizontal fold dividing the primitive penile urethra. The defects on the dorsum of the organ of associated allantocloacal and external genital origin, as illustrated by the case of Himmel, admit of no satisfactory embryological explanation. Klebs, quoted by Kauffmann, advances the theory that dorsal channels are the remains of spontaneously healed epispadias formations leaving a mucous lined canal in the centre of a scar. Kauffmann and Stieda have analyzed a voluminous and contradictory literature of this subject and rightly conclude that any embryological explanation is to be viewed in the light of mere conjecture. Instances of dorsally placed accessory canals of the penis are rare in comparison with those ventrally placed. The cases above referred to are taken from the literature prior to 1905. Hensel (23) has recently described a case in which an abnormal canal opened on the glans penis directly above the normal meatus. The opening measured one half cm. in diameter and the canal measured eighteen cm. in length, and ended blindly under the symphysis pubis. There

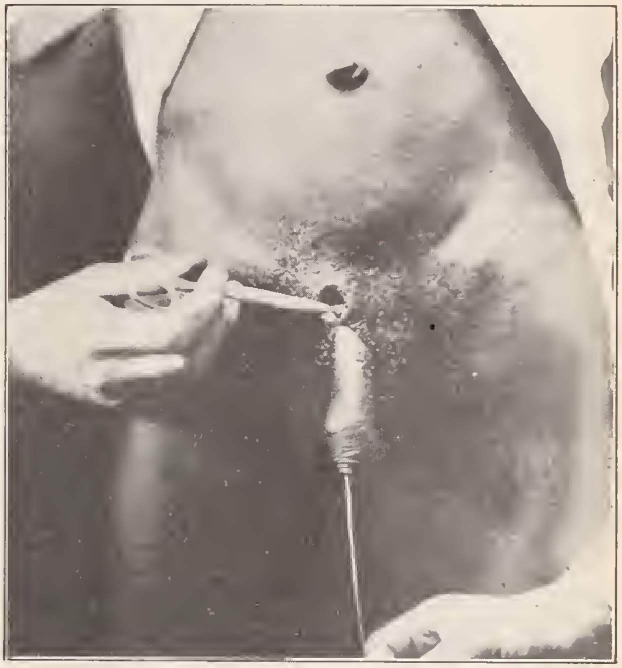


FIG. 1.—Showing congenital doubling of the male urethra.

was no urethral communication as determined by the injection of methylene blue and the passage of sounds. A complicating infection was destroyed by injections of silver nitrate solutions and the other states that radical treatment is entirely out of the question. The foregoing is very similar to a case which we report from the genitourinary dispensary of the Hospital of the University of Pennsylvania with the kind permission of Doctor Siter.

Case. A Jamaican negro, aged twenty-four years, came to the hospital in July, 1909. Examination showed the presence of a "double urethra." The accessory canal extended from a point in the glans penis just above the normal meatus, the two being separated by a very thin plate of tissue, to the mid point of the root of the penis, traversing the body of the organ diagonally, becoming more superficial posteriorly. An infection of the urethra (gonorrheal) yielded readily to treatment, but suffered repeated exacerbations from reinfection from the abnormal canal, which latter resisted all efforts to control. At the suggestion of Dr. Alexander Uhle, a special syringe was made with a cannula No. 7 F. and 18 cm. in length for the purpose of injecting the deeper parts of the canal. Various drugs were used regularly and over a long period of time, but without any improvement in the condition. After an absence of several months the patient returned in January, 1912, complaining of pain and swelling of the penis with discharge from the abnormal canal. Examination showed a cellulitis of the penis especially marked near the root associated with a right sided inguinal adenitis (nonsuppurating). Seropurulent gonococci laden discharge came from the "upper meatus." After several weeks of treatment with injections and local applications without any improvement, a cannula was passed into the canal and the latter opened over the symphysis pubis, cocaine anesthesia was used. (See Fig. 1.)

The canal was found under the deep layer of the superficial fascia (suspensory ligament) and passed downward in front of the symphysis and apparently ended blindly. A silkworm gut ligature was threaded into the cannula and the latter removed, leaving the ligature for drainage. This was in turn removed in five days. Through and through irrigations, first with emulsion of silver iodide five per cent. and later with solutions of protargol and silver nitrate in increasing strengths, controlled the infection, and the cellulitis and adenitis rapidly subsided. Four weeks after the operation, the patient had intercourse. At this time he was clinically well, and the drainage opening was practically healed. He remained free of symptoms and apparently well. We had intended making cystoscopic and urethroscopic examinations to determine the relationship of the canal to the bladder and urethra, but the patient unfortunately disappeared before this was considered advisable. Injections of colored fluids failed to show any communication between them. We did not find any tissue resembling glands (prostate) in the dissection, and the patient stated that he had never noticed any fluid coming from the upper opening, either on ejaculation or on urination. This is a case of unusually long paraurethral canal of uncertain embryological origin but one in which it is by no means justifiable to rule out the possibility of prostatic fistula.

TREATMENT.

Accessory canals of the penis, except fistulæ, the result of cloacal defects and urinary fistulæ of the penile urethra, as a rule demand no treatment if uncomplicated by a Neisserian or other infection. Infection of the urethra is usually, but not always, associated with infection of the abnormal canal and either may be the source of infection to the other. In considering the question of infection of paraurethræ and its treatment, Keyes (26), Swinburne (27), Churchman (28), and others advise against surgical measures on account of the danger of systemic gonorrhea. They suggest various antiseptic, astringent, and cauterizing drugs, but state that marked difficulty is experienced in destroying the infection by these measures. Perkowsky opened the canal widely in his case and sewed the skin edges to the edges of the mucosa with cauterization of a blind ending portion of the dorsal paraurethra. He reports a good result and makes no mention of systemic effects. Such a procedure as Perkowsky employed would have been manifestly impracticable in our case on account of the diagonal course of the canal.

We believe that the case of Perkowsky and our own are the only reported instances of the employment of surgical measures for the relief of infected dorsal paraurethræ and in each instance with a very favorable result.

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405 Roger Williams Building.

FIBROMYOMA UTERI.*

Occurrence; Complications; Necessity for Operation.

By William P. Healy, M. D.,
New York.

In selecting the topic of uterine fibromyomata I have been guided by the idea that the majority of my readers are engaged in active general practice and are not specialists, and it is my wish to bring out as vividly as I can the great frequency of fibroid tumors of the uterus. I am doing this in order to impress upon the physician in general practice the urgent necessity for adding a routine bimanual examination of the pelvic organs in women to his usual physical examination in these cases. By doing this two ends will be achieved, we recognize the presence of these benign growths frequently before any special symptoms or complications have developed, and we occasionally discover a carcinoma of the cervix in an early stage.

FREQUENCY.

Statistics on the probable occurrence of this disease are rather difficult to obtain. Efforts to collect reliable figures have usually been based upon the result of post mortem findings. While these figures vary greatly with different writers, they all indicate that uterine fibromyomata are exceedingly common. According to a number of these men whose individual estimates are based upon the result of autopsies, from fourteen to twenty per cent. of women over thirty-five years old have uterine fibromyomata.

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*Read before the Medical Association of the Greater City of New York, February 3, 1913.

Dr. Edward J. Ill has looked up this subject in various hospitals all over the world, and the number of fibroid tumors found on the post mortem table in women over thirty-five years old was between four and eight per cent. according to his statistics.

The census of 1910 for Greater New York gives us a population of 750,000 women between the ages of thirty and fifty-four years inclusive; taking the lowest estimate of four per cent. according to Doctor Ill's figures, we had in 1910 in Greater New York 30,000 women with fibroid tumors of the uterus, and in the borough of the Bronx there must be to-day about 4,000 cases.

AGE.

The average age at which patients present themselves for treatment in my experience is about thirty-seven years. Post mortem statistics tend to support the belief that the liability to fibromyomata increases markedly with advancing years. They are infrequent before the thirtieth year.

Clinical experience makes it evident that these growths tend to arise during the decline in sexual activity of the individual, at a time when childbearing is becoming infrequent. There is therefore a tendency on the part of investigators to ascribe an intimate association between the causes which determine the development of these tumors and the waning of the reproductive activity.

The majority of these women have had practically normal menstrual periods and seem to have enjoyed good health prior to the onset of the disease.

The number of children born to these women is much below the average. In a study of forty cases under my personal observation during the past year I found that thirty-one were married and that only seventeen of these thirty-one married women gave birth to full term children and that the total number of full term children in the seventeen families was only twenty-six. Five additional women became pregnant, but miscarried, making a total of twenty-two married women out of thirty-one marriages becoming pregnant, these pregnancies resulting in twenty-six full term children and forty miscarriages.

Eleven of these seventeen marriages were instances of one child sterility, that is having given birth to one full term child, these patients either subsequently miscarried or never became pregnant again.

It is thus evident that women with these growths are remarkably unproductive, the thirty-one marriages in this list resulting in the birth of but twenty-six children.

W. Roger Williams, in his book on uterine tumors, states that the proportion of myomatous women who are sterile has been estimated at over thirty per cent., whereas among married women of the general population only about ten per cent. are sterile.

He also says that "among the married, myomata are of more frequent occurrence in the sterile than in those who bear children." Then he asserts that a study of the question of marriage, fertility, etc., in myomatous women produces facts which demonstrate "that the suppression of maternity and diminution of the natural fertility, however caused, whether by celibacy, late marriage, artificially induced sterility, etc., are among the most important factors in the genesis of these tumors."

He believes that maternity and childbearing are the great enemies of myomata. The rationale of this seems to be that the nutrient material meant for the formation of a new individual, when not thus employed, so stimulates certain elements in the uterine musculature as to cause excessive local proliferations, which eventuate in myomata.

My personal opinion is that the facts do not support this theory; for example, Case VIII in my series. The patient, who was only thirty-two years old, and had large multiple fibromyomatous tumors, was the mother of three children and had in addition four miscarriages. My belief is that these women would have borne more children were it not for the presence of the tumors, and that the so called one child sterility is in most instances a result of changes in the endometrium caused by the presence of submucous or interstitial myomata.

SYMPTOMATOLOGY.

Hemorrhage, abdominal tumor, pain, disturbances of micturition are, in the order named, the chief symptoms presented by these patients.

COMPLICATIONS.

These are many and varied. First, in the uterus itself, we have all kinds and degrees of alteration in size and shape according to the number, location, and size of the growths. With small submucous or interstitial tumors we frequently find marked hypertrophy of the uterine musculature.

TUBAL COMPLICATIONS.

These consist of chronic inflammation with thickening of the tubes and occlusions of the fimbriated end, leading to the development of hydrosalpinx, hematosalpinx, or pyosalpinx, these conditions frequently being bilateral.

Of these tubal complications pyosalpinx is the most serious, not only in itself, but because it is often associated with degenerating necrotic fibromyomata, and in addition there has usually been considerable involvement of the neighboring intestines, omentum, and pelvic wall in exudate, and the formation of firm adhesions adding considerably to the danger of the operation.

The ovaries are always more or less diseased. The commonest lesion is probably chronic, cystic, and interstitial oophoritis, that is, the ovaries are two or three times the normal size and seem to contain numerous small follicles or cysts. Ovarian cysts of considerable size, single or bilateral, are also met with frequently.

PRESSURE COMPLICATIONS.

The importance of these, according to my experience, has been exaggerated. The patient may complain of a sense of weight and pressure in the pelvis, of frequent and painful micturition, or of retention of urine, and she is probably constipated, but, as regards any actual damage to the surrounding structures by these tumors, it never occurs unless there has been some inflammatory disturbance. As a matter of fact, we are more often amazed than otherwise by the lack of symptoms in the presence of a pelvis choked with fibromyomatous tumors, these patients frequently presenting themselves with symptoms of but few weeks' duration.

CONSTITUTIONAL COMPLICATIONS.

Considerably more than half the women who come under my observation with fibromyomatous tumors are below the average in general health. They tend to be pale, short of breath, nervous, suffering from indigestion, and a blood examination shows a varying degree of secondary anemia. They have headaches and cardiac palpitation and their general nutrition is considerably disturbed. Is this condition the outcome, as some writers think, of "a general toxemia caused by excrementitious products derived from the tumor, finding their way into the general circulation in quantities too great to be quickly eliminated?"

I do not think so. On the contrary, I believe it is more reasonable to regard the condition as a result of the constant drain on the patient's vitality brought about by the effort to replace the blood lost by hemorrhoge. For practically all the patients with cachexia, in the absence of inflammatory or other complications of the fibroids, have been suffering from more or less excessive bleeding.

CARDIAC COMPLICATIONS.

We hear and read a great deal to-day about the occurrence and importance of cardiac complication in cases of fibromyomatous disease. That pathological changes in the heart do occur in association with these tumors is certain, and that such changes when present are important and their recognition essential, must be admitted.

Is the percentage of cases with cardiac complications greater than in the same number of women without these tumors, and if so what is the nature of the cardiac lesion and the method of its production?

In order tô throw some light upon this question I have reviewed the cardiac findings in 100 cases from the gynecological ward of the Roosevelt Hospital, service of Dr. Howard C. Taylor. These cases have been selected without regard to the pathological condition for which they were under treatment, the only restriction being that of age, no patient having been selected who was under thirty years of age, in order to make them correspond as closely as possible with fibromyomatous cases in this particular.

The result is rather interesting. In the 100 cases there were twenty-two in which heart murmurs were recorded, all the others being definitely recorded as normal or negative. Of these twenty-two cases eleven were instances of fibromyoma uteri, and the total number of cases of fibroid tumors in the list was only nineteen. Thus we had eleven instances of heart murmurs in nineteen cases of fibromyoma uteri against eleven instances of heart murmurs in eighty-one other cases. This suggests that in a large series of cases heart murmurs would be four times more frequent in those with fibromyoma than in all other cases. The heart in six of the fibroid cases was enlarged and the murmurs were of the mitral regurgitant type.

In my own series of forty cases there were thirty-eight in which the cardiac condition was definitely noted, and twelve of these had systolic murmurs to the left of the sternum and loudest at the apex. In only three was the heart enlarged and the murmur transmitted into the axilla.

From the foregoing statements it seems to me that we are justified in saying that fibromyomata in a certain relatively large proportion of cases tend to disturb cardiac stability. As to the nature of the cardiac lesion, I believe it to be entirely myocardial, and I look upon it as a fibrosis or fatty degeneration due to the secondary anemia present. I believe that the condition, if not of too long standing, will entirely clear up with the removal of the tumors and the improvement of the patient's general health.

MALIGNANT CHANGES.

Cancer, as we all know, does not develop in or from fibroids; it may, however, develop from the mucous membrane of a uterus which contains fibromyomata, but there is no reason for assuming that either condition has any relationship with the other except that of coincidence. Kelly says that in 1,000 cases of myoma operated on in his clinic, there were twelve associated with cancer of the body of the uterus and sixteen with cancer of the cervix.

Sarcoma, however, does undoubtedly develop in fibromyomata and probably most of the cases of sarcoma of the body of the uterus have their origin in submucous or interstitial fibroids. Sarcoma, however, is exceedingly rare.

NECESSITY FOR OPERATION.

To-day, a physician in seeking advice on this question is confronted by two views: The one, radical in character, which states that these tumors though benign in their structure are malignant in their possibilities for trouble and in general should be removed promptly when recognized; the other, more conservative in tone, which takes the position that each individual case should be decided on its merits as regards the necessity for surgical interference.

The radical point of view regards every fibromyomatous growth of the uterus that can be recognized as a menace to the patient's health because of the numerous complications, immediate and remote, associated with these growths.

Although we have already shown that fibromyomata are exceedingly common, it is probable that not more than one in 2,000 patients with fibromyomata ever die as a result of the disease; at least this is the estimate of the older investigators who base their figures on the result of post mortem findings.

If we take the radical point of view and subject all the cases of fibromyomata coming under our observation to operation, regardless of the presence or absence of symptoms ascribable to the growth, we shall have to consider a mortality list of at least three per cent., which is about the minimum associated with abdominal operations under the very best conditions. We would then have instead of one patient in 2,000 dying as a result of the disease, three in 100 dying as a result of the operation.

Therefore, I take the position that the mere presence of a fibromyomatous tumor in the uterus is not in itself an indication for surgical intervention. This also seems to be the position taken by Dr. Howard Kelly, who states in his textbook that "the majority of myomatous uteri require no treatment whatever" and when the tumor "is not larger than a three or four months' pregnancy and produces no subjective symptoms, no treatment of any kind is called for."

What then constitutes an indication for operation Does the possibility of cardiac disease being caused by the presence of these growths compel us to advise our patients that an operation is essential? In my opinion this possibility is too remote to be of any importance. I do not believe that the presence of fibroids, large or small, in the uterus has any bearing whatever upon the development of cardiac complications unless they are associated with hemorrhage. If, however, as a result of the growth of these tumors hemorrhage sets in and tends to persist, then we have to consider a condition of secondary anemia, which I regard as the important etiological factor in the production of myocardial changes, leading to fibrous and fatty degeneration of the heart muscle and to a loss of tone and contractile power resulting finally in dilatation of the heart. Thus we do not operate for the tumor, but because the tumor is threatening serious disturbance to the patient's health by uterine hemorrhage.

Does the possibility of the development of sarcoma in these tumors need to alarm us? In my opinion it is too infrequent and rare an occurrence to be used as an argument for operation in an otherwise simple and uncomplicated case.

When, then, do we advise operation? I believe that to justify the removal of these tumors there must be some urgent indication in each case. We have already stated that the chief symptoms of these growths are hemorrhage, tumor, pain, and urinary disturbances.

Hemorrhage is the commonest symptom we have to deal with and to my mind severe, frequently repeated hemorrhage is a positive indication for operation regardless of the size of the growth or the age of the patient. Personally I regard it as unwise to wait until the hemorrhage has become severe or until the patient is suffering from a profound secondary anemia before operating. I believe that when we find the quantity of blood lost at each menstrual period is beginning to exceed a normal average, and we know that the patient has fibromyomatous tumors in her uterus, we should not delay, but should operate promptly.

Nor are we justified in postponing operation because a patient is approaching the climacteric, on the assumption that the symptoms may clear up, for clinical experience does not bear out this assumption.

Tumor is the second common symptom. A growth sufficiently large to be recognized by the patient usually causes so much distress of mind and anxiety as to make an operation for its removal justifiable, even in the absence of other symptoms. All submucous polypi which have been extruded into or through the cervical canal should be excised.

Pain is a relative indication for operation and is usually caused by inflammatory changes in the tubes and ovaries or by degenerative changes in the tumors themselves associated with pelvic peritonitis. Partial or complete invalidism often results and can be relieved only by operation. Frequently one finds an operation imperative because of inflammatory disturbances in the tubes and ovaries. the fibromyomata themselves not giving any trouble.

Disturbances of micturition, frequency, retention, or dysuria, may be present and so persistent and distressing as to make operative interference imperative.

Among other conditions likely to necessitate surgical intervention are *strangulation of a subperitoneal fibroid* from torsion of its pedicle; *tumors complicated by pregnancy,* in which the tumor is fixed in the pelvis in such a position as to interfere with the birth of the fetus. Here I believe that if there is any doubt in the mind of the surgeon regarding the feasibility of a myomectomy in the earlier months of the pregnancy, then the patient should be allowed to go to term, and if labor does not terminate normally (as a matter of experience most of them do) a Cæsarean section can then be done.

Occasionally one has to operate for a tumor which, though producing no subjective symptoms, is increasing rapidly in size as a result of cystic degeneration.

TYPE OF OPERATION.

Myomectomy is always the operation of choice if it can be reasonably carried out without too much mutilation of the uterus. The chief contraindication to myomectomy is the presence of pelvic inflammatory disease. When the conservative operation is not feasible, then a supravaginal hysteromyomectomy with the preservation of one or both ovaries, if possible, especially in patients under forty years of age, is the preferable operation.

In performing this operation the surgeon should not forget to cut open the excised tumor and examine the uterine canal for possible malignant changes before covering in the cervical stump. Any suspicion of malignancy in the growth or uterine mucous membrane requires the complete removal of the cervical stump. This is important, as we have already quoted Kelly's findings of twelve cases of cancer of the body of the uterus with fibromyoma.

CONCLUSIONS.

1. Uterine fibromyomata are very common.
2. Heart murmurs with slight hypertrophy seem to occur more often than in other conditions. The lesion is not endocardial, but myocardial.
3. Operation is not indicated unless the tumors are producing symptoms likely to interfere with the patient's health.

535 Park Avenue.

CARCINOMA OF THE STOMACH.

Its Early Diagnosis,

By John V. O'Connor, M. D.,
Woonsocket, R. I.

Much has been said regarding the diagnosis of carcinoma of the stomach, especially early diagnosis. While we realize that we are dealing with an incurable and almost always fatal disease, it should occur to us that an early diagnosis is necessary if we expect to render the unfortunate sufferer aid that is worth while. I have selected carcinoma of the stomach as my topic because, like many of the profession, I realize that a very late diagnosis is the rule. Now, how are we to make an early diagnosis of this terrible disease?

I hold that by a more critical examination of the patient and the use of laboratory methods at our command, we shall be successful in any number of cases that would otherwise escape early diagnosis. Too much stress cannot be laid upon the fact that we should, if possible, exclude carcinoma in all patients over thirty or thirty-five years, complaining of gastric disorder. There are no set symptoms, objective or subjective, by which we can make an early diagnosis of carcinoma of the stomach, and that reason alone should be sufficient to direct our attention to the laboratory. If, after exerting our best efforts, we find that we are in doubt, an exploratory operation should by all means be advised.

What is to be gained by this exploratory operation? It enables you, in most cases, to make your diagnosis, and should you fail to find carcinoma, your surgical interference is often rewarded by finding such conditions as gastric or duodenal ulcer, gallstones, etc. Should any of these be present, I know of no better treatment than the surgical. Exploratory incision, properly performed, does no harm, and if further operation is not necessary, it will often serve as a guide to proper medical treatment. We are all familiar with the symptoms by which a diagnosis of ulcer, neurosis, gastritis, etc., is made. We know also, that many times these various diseases are quite typical of the symptoms noted, and we do not hesitate to make a positive diagnosis. There is no denying that the symptoms of the foregoing diseases, and many others, often closely simulate those of early carcinoma of the stomach. It is indeed a simple matter to make a diagnosis of carcinoma of the stomach when the patient presenting himself looks cachectic, gives a history of having lost thirty or forty pounds in a few months, and has a tumor almost large enough to see. These are the cases that require no effort to make a diagnosis, and surely confer no credit.

Case. Mr. J. came to consult me about his condition, July 15, 1911. He had previously consulted two physicians and seemed much disappointed because he was not well. One of the physicians informed him that he suffered from intestinal indigestion, while the other diagnosticated his case as nervous indigestion.

I had known the gentleman for many years, always as a thin individual. When I saw him on the date mentioned, he did not seem to have changed much, and I confess that he did not look as if he had a malignant tumor. He stated that on the night of February 11, 1911, he was seized with a violent pain in the stomach, lasting for about ten minutes, followed by nausea lasting about an hour. He had never suffered from stomach trouble before and could not attribute the attack to anything he had eaten. After this attack, he consulted his physician, took treatment, and, as he said, felt better for a short time. His appetite seemed to improve and the nausea became less. After about three weeks he consulted another physician, received another treatment, and again felt better for a short time. He continued, however, as a patient of the second physician, for about two months, when he stopped treatment. He came to me in July, stating that he had vomited a few times, but that the vomiting was induced by putting his finger down his throat. He had never noticed any traces of blood in the vomitus, and was greatly relieved after vomiting. From the onset of his trouble pain had rarely been present, but nausea had been almost constant. He stated that his appetite was poor, but that the food partaken of did not cause any particular distress. He was very nervous, and for a few weeks had been unable to sleep at night, owing to attacks of cardiac palpitation. He was constipated, but had always been so. During the three weeks previous to his visit to my office, he had lost strength rapidly, which he attributed to his nervous condition.

Physical examination was not critical because it was not necessary. Palpation over the region of the umbilicus revealed a large, hard mass, movable with respiration, and painful under deep pressure. Auscultatory percussion showed the stomach to be enlarged. The stomach was dilated with sodium bicarbonate and tartaric acid, and this confirmed my findings previously made by auscultatory percussion. After expelling large quantities of gas from his stomach, the patient vomited about thirty-two ounces. Upon standing this was quite characteristic of gastric dilatation, being made up of three distinct layers. Further examination was unnecessary, and the patient insisted upon knowing the diagnosis. He was informed of his condition, but was evidently skeptical of the diagnosis, for after leaving the office he consulted another physician.

That was the last I saw of my patient. About two weeks later I learned that he had been operated upon, but did not survive the operation, the extent of which I do not know.

The history of the case just mentioned is certainly not typical of carcinoma of the stomach. The patient did not appear to be in the advanced stage of carcinoma. Up to the day he came to my office, he had followed his occupation as a real estate broker. To me he appeared to be a neurasthenic, and before my examination of his abdomen, I considered him such.

I do not maintain that much could have been done had the case been diagnosticated five months before. I do say, however, that there is a tendency among the profession to make a diagnosis of indigestion or some other condition, without first trying to satisfy themselves that something more serious does not exist. I think that if there were more early cases submitted for operation, the mortality following the operation for carcinoma of the stomach would be lessened, especially in those cases of slow growth.

When the tendency toward making a too rapid and careless diagnosis no longer exists or is greatly diminished, we can look forward to a lower mortality following such operations as pylorectomy, partial or complete gastrectomy.

65 Main Street.

THE INTERNAL TREATMENT OF NEPHRITIC DISEASES.*

By Professor Dr. H. Strauss,
Berlin, Germany.

To what extent practical therapy is influenced by theoretical research may be perceived plainly in the study of the internal treatment of renal diseases, if the progress of the two last decades is taken into consideration. Scientific research has overthrown many old conceptions, but also has confirmed many of the old principles by establishing for the physician a better method of therapy. Above all, the research of the two last decades has given to us a better understanding of two processes within the body, namely, uremia and dropsy. Our knowledge of these processes has been deepened and extended. The progress attained has been won solely by the fact that we have observed metabolism during the different kinds of nephritis in their different stages. Although the secretion of albumin formerly was considered the main point, we now consider the retentions of paramount importance, at least where uremia and dropsy are concerned. The former process would present a clearer, more sharply defined clinical aspect if we judged its details better. However, that is by no means the case; at present there exists a wide divergence about the term, uremia. While some authors apply it to the so called "convulsive uremia" only, others desire to extend the term much further by using it also in the subacute and subchronic degeneration of the mind and body forces, such as we often observe during the last stages of renal insufficiency of the surgical form. It is a well known fact that there exist different theories about the pathogenesis of uremia, two of which, at least, are in antithesis, namely, the theory of the cerebral edema, represented by the Traube theory, and, second, the theory of autointoxication, as presented by Frerichs and others. Personally, I adhere to the theory of autointoxication, especially in cases of interstitial nephritis, i. e., to the theory of retention, about which I published a monograph more than ten years ago. My researches of that period showed that the amount of noncoagulating nitrogen, which could be filtrated and which I called "residue" nitrogen, in cases of chronic interstitial nephritis, sometimes amounted to 200 to 300 mgm. in 100 c. c. of serum. In healthy persons only about thirty mgm. of residue nitrogen was found in the same amount of blood serum. In parenchymatous nephritis the conditions are sometimes different; in such forms of the disease, however, the simultaneous appearance of dropsy should be taken into consideration, which acts as a diluent of toxic matters, and which, on account of this fact, is liable to conceal the retention present.

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*Based upon a lecture delivered at the German Medical Society of New York, October 14, 1912.

New researches by Hohlweg and by myself have given the same results, so I may assert safely that in a great many cases of uremia the retention of nitrogenous sediments of metabolism is the cause of the disease. We judge so from the fact that, while the residue nitrogen increases in amount, the indications of a coming uremia increase as well. I have shown lately, in agreement with Hohlweg, that the quantitative determination of residue nitrogen of the blood serum materially aids the prognosis, at least in the interstitial form of nephritis.

At present I attach no great value to the question, Which uremia cases are induced by a retention of nitrogenous sediments? because, as already mentioned, the definition of the disease is given differently by other authors.

If we assume that uremia in many cases is no more than an autointoxication by retention, we must arrive at the deduction that we should dilute the toxines and try to wash them out of the body. Furthermore, we should not allow any alimentation which could be considered as a cause of autointoxication, or we should reduce it to a minimum.

Concerning the latter point, we are, I am sorry to say, not yet in a position exactly to specify all the noxious albuminous foods which favor uremia. I may say, however, that the reasons for these allegations cannot be given in detail here; meat, especially, seems to be noxious, and I consider it right, therefore, to diminish the allowance of this food during the disease. However, until we are better informed about this question, I believe in a general diminution of albuminous alimentation, but up to such a degree only that the heart nourishment does not suffer. Chittenden, among other American researchers, has found that from fifty to sixty grammes of albumin per diem suffice. In cases where uremia seems imminent, some days should be observed every week, where only about one half of the above stated quantity of albumin is given.

Concerning the washing out of the body in order to prevent uremia, I should like to mention that dissenting voices have been heard against this procedure. Many authors, especially those who adhere to Oertel's theory, assert that the amount of liquids should be decreased in order to protect the weakened heart. I am unable to share these misgivings for the following reasons: In the first place. Oertel's theory has not been proved to be correct, while second, the idea of weakening the heart by allowing normal or more than normal quantities of liquid, is exaggerated. In proof, I refer to the many cases of diabetes insipidus, which, if they do not present a complicating feature in the shape of arteriosclerosis, hardly ever present any cardiac changes. That can be shown by measuring the pressure of the blood. A comparison with these cases seems justified, because the question arises, how the passage of large amounts of liquid acts upon the heart and the blood pressure. I should like to call attention to the fact that experiments have shown—I have made some of them myself—that these large amounts of liquid bring about scarcely any changes in blood pressure. However, even if heart and blood pressure should be encumbered by a normal or abnormal administration of liquids, it should be borne in mind that patients who suffer from heart and kidney diseases cannot be compared where this question is concerned. In diseases of the kidneys, the adequate supply of liquids has a plain purpose, namely, to free the body of toxines. In order to attain this end, it is permissible to accept some disadvantages of the method, especially if these disadvantages are not too pronounced.

Through the experiments of Eckehorn, Claus, Hanssen, and Gröndahl, it has been proved that an adequate exhibition of liquids aids in expelling the sediments of metabolism. I consider it, therefore, even now, much more desirable to combat the danger of poisoning than to prevent heart attacks. I should like to state emphatically, however, that an inundation, without limit, of the organism with liquids has never been recommended by me, neither have I ever failed to take into consideration the condition of the heart. I always have advised a normal supply of liquids, or a little more; for such cases only as, judging by experience, tend to incline toward retention, or where uremia seemed imminent. Beside these facts, I have always been a stout adherent of the principles of heart protection in cases where retention might be expected. However, it is true that I have recommended a protection of the heart only in cases where the organism is likely to derive profit; for instance, bodily quietude and keeping away from such stimulants as coffee, alcohol, tobacco, etc., and never have I recommended measures for the protection of the heart which were not able to render service to the sufferer. Among other measures, I count the increase of blood pressure, which, in agreement with such authors as Krehl, Romberg, and others. I consider a compensative measure, which should not be influenced in a one sided way. Like other authors, I think it fortunate that all drugs which possess the effect of diminishing the pressure of blood, can bring about such diminution in a weak manner only. A decrease of the blood pressure, it seems to me, can be attained in nephritic patients only by diminishing the cause of the increased blood pressure. That can be done in some cases only, by no means in many of them, chiefly by insisting upon quietude of the body and by eliminating alimentary stimulants. A bland diet, free from meat, will give the best results. During treatment I especially emphasize the eminent importance of good heart action, because the best prophylaxis lies in a properly working heart. Every unburdening of this organ which is carried out for purposes of cleansing the blood of nephritic patients without harming them, I consider to be the foremost endeavor of the treatment. This fact has been rather verified by modern research into metabolic processes against other points of view.

Against an abundant exhibition of liquids it has been urged that dropsy is favored by it. In going into this question, it is necessary to distinguish two different forms of dropsy, in nephritic patients: The first is caused by cardiac insufficiency, which I will call *Hydrops cardiacus*. The second form is the typical nephrogenic dropsy, such as is found in Bright's disease. Of the latter kind, are all those cases which do not show the well known favor for dependent parts, such as is seen in hydrops cardiacus. Furthermore, these cases are characterized by quick changes, which sometimes cannot be defined at all.

Nephrogenic dropsy is found in such cases only as produce a urine rich in albumin and other elements, and where the patients are conspicuously pale. Modern research has opened up new points of view for such typical cases of nephrogenic dropsy, chiefly by calling our attention, not alone to the urine but also to the chloride of sodium. As already mentioned, I recommended, ten years ago, food which contained as little salt as possible, beside advising a medicative stimulation of the elimination, by forbidding salt entirely for curing dropsy. I cannot dwell here upon the reasons which induced me at that time to take this step, because I stated them explicitly lately, during a lecure held at the Post-Graduate School, New York. However, I should like to mention that Widal and Javal, some time later, published the same idea, based, however, upon different experiments than those I had made. I do not intend to go into technical details of the alimentation poor in salt here, because I have published a pamphlet entitled *Practical Hints for an Alimentation Poor in Chlorides.* I will therefore only mention that in this kind of diet the amount of salt given in soup, bread, and meat has to be made a special point of attention.

In applying *strict* cures, i. e., cures in which the amount of salt should not exceed 2.5 grammes per diem, the milk allowed to the patient must also be taken into consideration, while saltless butter only should be allowed. *Medium strict* cures, in which up to five grammes of salt may be allowed per diem, do not require such far reaching restrictions. The elimination, or partial elimination, of salt from the diet, removes one of the chief causes of dropsy; in other words, the chain of dropsical proclivities is broken. If nephritic patients take too much sodium chloride, a severe local irritation of the kidneys may be the consequence. Therefore I have abstained from employing physiological salt solutions in such cases for many years. In employing drop clysmas, which I favor for uremic symptoms, I have used ordinary water only, while I make intravenous or hypodermic injections only by means of isotonic sugar solutions.

We possess for the *medicative* stimulation of salt elimination several excellent drugs. These remedies not alone induce a polyhyduria, but also a polychloriduria; their effect, therefore, consists in bringing about a hyperemia of the kidneys. This fact being established, stands in antithesis to the older views. We were inclined formerly to look for the point of attack of the above mentioned remedies within the epithelial cell. O. Loewi, having established these new facts, to a certain extent has dispelled the misgivings of anxious physicians, who formerly did not use their diuretics during acute irritations of the kidneys. Personally, I have never had any misgivings in prescribing such preparations during acute irritations of the kidneys, and I must say that I have never observed any bad effects through them.

In the question which we discuss here, it interests us also that small doses of digitalis possess a special effect upon the kidneys, besides being a cardiac tonic. For that reason it is advisable, as I have often found, to employ a preparation which is a combination of digitalis and theobromine, for the purpose of freeing the body from water.

It has been recommended from another standpoint, to free the body from salt in kidney diseases by other means; however, the method recommended is liable to give rise to misconceptions, and it must be stated therefore emphatically that the elimination of salt should be considered only as a means *to free the body from water*, and that the new method is not a panacea for every disease of the kidneys. In cases where the elimination of salt is also employed in cardiac dropsy, I should like to state that in its *strict* form it is indicated only where a maximal obstruction of the kidneys is present.

In slight cases, the above mentioned method should not go too far. The conditions in cardiac dropsy concerning the elimination of salt are entirely different from the cases of nephrogenic dropsy, even if it may be said that a decrease of salted foods is favorable, because it brings about a use of liquids.

As mentioned already, I should not like to recommend a decrease of liquids, if uremia was present or imminent, because combating this state seems more important to me than combating dropsy. We possess more effective remedies for treating the latter disease than for uremia. It is of importance, therefore. to combat uremia always as soon as possible, and intensively at that. On account of experiments and reflection. about which I have already reported, I am inclined, that is up to a certain degree, to consider dropsy as a state which may even show antiuremic properties. To a certain extent, the poisons are diluted by dropsy. In uremia *the amount* of toxines is not as dangerous as their degree of concentration, by which they irritate or paralyze the tissues. If drugs fail to help dropsy, there still remains puncture, by which we are able to draw out a lot of poison. *Cœteris paribus* I should prefer at all events, a humid uremia to a dry one.

Sudorific treatments, which formerly possessed a great reputation in combating uremia and dropsy, have lost a great deal of their prestige through late researches. Other authors, as well as I, have found by experiment that the blood cleansing properties of sudorific treatments in kidney diseases do not amount to very much. There exist certain cases. however, in which such treatments are worth trying, especially if it is certain that the cardiac functions are good. In such cases, I would suggest that during perspiration, or afterward, a good deal of liquid is administered. Hot tea is the best medium for such purposes, because it possesses diaphoretic properties at the same time. I do not contend that sudorific treatments cause an *inspissation* of the blood; I believe, however, that they temporarily only free the tissues from water. I should like to recommend, therefore, an abundant *exhibition* of liquids, while the treatment is going on. It does not seem absolutely sure to me that sudorific treatments favor the formation of uremia, as is asserted by Professor von Leube and others.

Even less trustworthy than these sweating measures are those which expel the water by means of the intestine. There are certainly some special cases where the intestine is useful for the elimination of the water. That fact has been established by experiments in cases of uremic ulcers of the large intestines, by pathological anatomists.

Besides studying the interrupted metabolism in kidney diseases, we also have learned some new features *by purely clinical experiments.* The question of *orthotic puberty albuminuria*, for instance, has been closely studied, with the result that the *constitutional* forms, which formerly had been neglected a little, in favor of the *postinfectious* forms, now have received treatment. The diagnosis of the two different forms is not always easy, but when the correct form of the disease has been recognized, its therapy is of especial value, for the reason that the method of general tonics, which was used, often stands in antithesis to the principles of carefulness, which up to now were practised in cases of albuminuria. For a number of cases, at least, a progress can be recorded, where the physicodietetic methods for the purposes of strengthening the body had been employed to a larger extent than we should have ventured ten years ago.

A new method has been recommended lately for combating the symptoms of albuminuria itself, i. e., that of neutralizing or alkalinizing the urine, as done by Höslin. It is true that his method fails to do good in a large number of cases. Personally I have observed only one pronounced success in a true case of albuminuria, in which few elements were present. In this case the disease was considered to be a late stage of a postscarlatinal attack. At present, therefore, there has not yet come the time for a far reaching optimism in this field, even through operative measures, such as Edebohl's method and the excision of the suppurating core of the tonsils.

In most cases there certainly has not yet been found a remedy which would eliminate the disease as a whole. However, the progress in combating nephritis, so far attained, can be certainly hailed with joy. Recent experiments also have improved the method of prophylaxis in nephritic cases, and I do not boast in contending that the knowledge acquired during the last two decades has given us the possibility of prolonging the lives of many nephritic patients, and of palliating subjective symptoms much more than formerly. Even small progress in the therapy of so grave a disease must be welcomed.

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CHRONIC NEPHRITIS.

With Special Reference to Anemia.

BY GILBERT PARKER, M. B.,
Burin North, Newfoundland.

I shall deal with the subject only in so far as it is demonstrated in the following case. I may say that the patient lives in a little village, called St. Lawrence, where there is no physician, and where I occasionally make a visit, only when sent for.

CASE. C. B., male, aged forty-one years, white; father dead from heart disease at age of seventy years; mother dead from old age; sisters, none; brothers, two alive, one well, one insane.

Personal history.—Patient had always resided in Newfoundland. Was a fish trader by occupation and had always been noted for great strength and endurance. Past illnesses were whooping cough and measles when a child and typhoid fever when a youth.

Present illness began three years ago. As usual in the fall of the year he went into the woods to cut fire wood and "stuff" for fish flakes. He did not remember being exposed any more than usual, but he got the usual number of wettings, and spent a good deal of time in wet clothes. About a week afterward, when he had come out of the woods, he felt a sharp pain in the groin, which did not radiate, and about the same time he began to feel unwell. There was nothing definite, but just a feeling of something being wrong. About six weeks passed in this way, during which time, as he said, "he felt not too sick to prevent him working and not too well either." He then began to swell, at first in the hands, and this was twelve months before reaching the maximum, during which time ankles, legs, and finally his whole body became involved in a general dropsy.

During this time he received treatment very spasmodically, owing to many reasons, chief of which was his place of residence, and in consequence he received no benefit. After this, he became bedridden and remained so for two months, during which period I saw him for the first time, as I happened to be passing through the place. He was then tremendously swollen. There was considerable fluid in the peritoneal cavity. I punctured the swollen tissues in many places and gave the proper treatment and directions for diet, etc. His appearance, I remember, was that of great anemia and the blood stain on a piece of white cotton was by comparison with my own, of about sixty per cent. hemoglobin. There was that peculiar yellowish white pallor and flabbiness of the face which is often so marked. The visible mucous membranes were extremely pale, and the urine, which was greatly diminished in amount, was loaded with albumin. His appetite remained good during the two months of his stay in bed and he felt first rate apart from the discomfort due to the swelling.

Three weeks after I saw him, he got up and was quite improved; but the improvement was short lived, as there was no direct supervision of his case and treatment by correspondence was unsatisfactory. He then did the common thing among his kind, namely, sent away for a "treatment." This treatment was in two parts. There was first guaranteed that the dropsy would be removed and then there would follow a tonic to restore the health. The first was accomplished in six weeks by what must have been a very powerful diuretic, which induced the production of enormous quantities of urine. I had hesitated to stimulate the kidneys freely, fearing to make them balk. The patient and his foreign advisor had no such fears.

The second part of the treatment, as is usual, was a miserable failure. The patient meanwhile discarded his immense clothes and began going about again. The swelling never returned. He was unable to work, but walked about a little. Only occasionally did swelling appear about the ankles. He had great shortness of breath and tired very easily.

I saw him again about six months after the anasarca had been removed. As always, the anemic appearance struck one first. The urine was still very full of albumin, but he passed a very normal amount daily. His appetite was good, and he was exceedingly fond of vegetables, especially cabbage and turnip. He seldom had meat, but usually grouse in season. One thing he craved for and would not give up, was a little salt cod fish boiled for breakfast every day.

The diet of the common people about here consists chiefly of bread, tea, and molasses. Some homes now use a good deal of oleomargarin. These things are all some people have now all through the year. Salt cod fish is often boiled for breakfast. Almost every man is a fisherman, and the codfish is the chief fish caught. Vegetables, mostly brought from Prince Edward Island, are now being used during the winter months, but chiefly for the midday meal on Sunday. Fresh meat was a few years ago a very scarce food, but now is becoming more plentiful, although the humbler folk consider it a great luxury. There are no meat shops or itinerant meat vendors. Milk cannot be obtained at all in many villages and in most places is scarce.

To resume the history, the patient's craving for vegetables was very marked. When he could obtain a small amount of milk daily, he usually diluted it freely with Vichy water. His heart was subjectively and objectively normal and his blood pressure low. I tried every measure, hygienic, dietetic, and medicinal, to combat the anemia, but unsuccessfully.

Coming to the bleeding, this began when he first became sick three years ago, and as far as I can gather, it was for epistaxis that he first consulted a physician, who found the albumin in his urine. He would feel a tight sensation across the bridge of the nose and upper part of the face, and then hemorrhage would follow, lasting for a few hours. The blood would come quite freely. Pressure and syringing with hot water always controlled it. This would recur about every two months. During the last year epistaxis occurred every six weeks and lasted longer each time. Small breaks in the skin and cuts also bled freely.

In September of this year, he was picking his teeth one day and the gums became bruised and bled steadily for three days. At no time were there any subcutaneous hemorrhage, nor macroscopic blood in urine or feces.

On December 5th he was suffering great pain from some decayed teeth and from an abscess which developed in the face below the outer end of the left eye. There were two teeth extracted, the first right lower molar and the second upper right molar. The sockets and gums oozed freely until December 11th, when he became very weak and alarmed and sent for me. I got there about eight hours later at 5 p. m. His appearance was ghastly. He was extremely pale and very apprehensive, propped up high in bed, and almost afraid to speak for fear of dislodging clots which almost filled his mouth. He had not slept much for three nights, had eaten nothing, but had taken a lot of cold liquids. His pulse, though regular, was very small, fast, and easily compressed. The rate was 148. He complained of great faintness and was in bed with some of his clothes on and his head high. I lowered his head and raised the foot of the bed to help overcome his giddiness. Then he got a hypodermic injection of morphine, grain one quarter. I then examined his mouth. One large clot, about the size of a man's thumb, protruded from each socket. When these were removed the bleeding recommenced and after syringing with hot water and drying out as well as possible, I plugged each hole with absorbent cotton saturated with epinephrin chloride, one to 1,000. A piece of cork between the jaws kept the plugs in firmly. After about five minutes I removed these and substituted others soaked in a similar solution. I then gave him a hypodermic injection of a well known English preparation of ergot and twenty grains of calcium lactate by the mouth. He went asleep until 10 p. m., and when he awoke was already feeling much better. His pulse was 136 and felt improved. He then got one quart of normal saline per rectum and another powder of the calcium, after which he slept until 5 a. m., when I removed the plugs from both sockets and found them perfectly dry. However, I repeated the medication as before. The abscess in the face, referred to above, had been lanced and was almost well. The patient's wife, while washing his face, loosened the scab and bleeding at once commenced, which was controlled by a pad and pressure, with difficulty.

At the same time the right nostril began to ooze and the blood appeared freely. This was stopped by inserting a cotton plug saturated with the suprarenal solution and pressing from without. I was obliged to leave at 5 p. m. on the 12th, and there had been no bleeding during the day, although I removed the plugs from the mouth. He said he felt better than he had for weeks, was taking some nourishment, and constantly calling for milk or water; in other words, fluids. During the day he received calcium lactate twenty grains, every two hours.

December 13th, I heard from the patient and bleeding had not returned. December 15th, the patient had another slight hemorrhage from one tooth, which his friends were unable to check. He was also taken with a spasm, which, from their description, must have been a convulsion, and died suddenly.

This case simply illustrates the severe degree to which anemia in nephritis may proceed. The viscosity of the blood was practically nil, and the bloodvessel tone must have been of a very low order. The blood stains on white cloths were extremely pale. Doubtless the two factors, namely, injured and permeable vessel walls of poor tone and loss of clotting power in the blood itself, each participated largely in the production of hemorrhage. There is no history whatever of a bleeding family. A short time ago, a young woman, not of a bleeder family, here, had a tooth extracted which bled freely, though intermittently, for a week. Everything was tried to arrest the bleeding, and success was at last accomplished only by a thorough cauterization of the socket and the sides of the gums with a red hot iron. There was not the slightest recurrence.

EDEMA OF THE GLOTTIS

Associated with Epilepsy.

By G. Kirby Collier, M. D.,
Sonyea, N. Y.,
First Assistant Physician, Craig Colony for Epileptics.

Pulmonary edema, accompanying serial epilepsy, status epilepticus, and even single seizures, is frequently met with, but the case herewith cited, in which edema of the glottis occurred, is so unusual that it was thought to be worthy of being reported.

The mechanical theory, in explanation of pulmonary edema, can be readily accepted in cases of epilepsy where there is a marked increase of capillary tension produced by an excess of blood from the right heart. This was clearly demonstrated by Welch. In Osler's *Modern Medicine,* page 633, mention is made of edematous laryngitis "occurring in persons of neurotic temperament," and that heredity plays a part is recalled by the following quotation from Osler, who, in 1888, reported a series of cases with heredity features. He says: "The peculiarity transmitted must be either a morbid susceptibility of tissue or inherited peculiarity of metabolism or both."

The infectious and the noninfectious forms are seen, also the secondary forms, due to tuberculosis, syphilis, carcinoma, typhoid fever, scarlet fever, measles, and smallpox, and those following valvular disease of the heart and nephritis. The case I wish to report is as follows:

Case. R. L., aged twelve years, was admitted to the Craig Colony in April, 1912. Father was alcoholic and died of tuberculosis. Mother living and well. Both parents were twenty-two years of age at time of patient's birth, patient being the first child. Following the birth of this child, mother had two miscarriages. Delivery is said to have been normal.

Patient made good progress as a child, and was supposedly normal until seven years of age, when he was noticed to be forgetful and very nervous.

In December, 1910, he was sent to an institution for the feeble minded owing to his progressive mental failure and inability of mother properly to care for him. The first epileptic seizure was reported when patient was eleven years of age. The seizures were mild at first, but later became more severe in character.

On admission to the colony, he was found to be a poorly nourished boy of a Binet age of three years (actual age, twelve years). Scars over frontal and occipital scalp as result of seizures. Prominent scapulæ and thin walled chest. Examination of the heart and lungs was negative. No enlarged glands. Superficial and deep reflexes were normal. Examination of urine was negative.

In November, 1912, typhoid fever developed; and ran a course of about seven weeks, during which the patient had intestinal hemorrhages. He made a good recovery and had been up and about the wards, and allowed a regular diet for some weeks. Decubitus ulcers, which had developed during his typhoid condition had entirely healed. Patient was very active, having occasional seizures and periods of mild irritability.

On the evening preceding his death, it was noticed that patient was snoring very loudly, and examination of chest was made, but nothing abnormal was found. Efforts were made to examine throat, but owing to lack of cooperation of patient, this was very unsatisfactory. He was up two or three times during the night, and early on the morning of his death, February 11, 1913, he had two grand mal seizures, from which he did not recover very promptly, and the physician was called. Patient was found to be having considerable difficulty in breathing, congestion of face and neck being quite marked.

Expiratory efforts were made with difficulty, and only a small amount of air was entering the lungs. Efforts were made toward giving patient relief, yet intubation was not successful, owing to the severe edema, which could be easily felt by the examining finger. Tracheotomy was decided upon, but patient's death occurred before this could be done. Autopsy was performed and the diagnosis was confirmed.

The unusual features of this case are the glottic edema occurring with epilepsy, and the rapidity of its course.

Craig Colony.

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Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Closed April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Answers due not later than May 15th.)

CXXXV.—How do you treat burns? (Answer due not later than June 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXII was awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appears below.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

By James J. Walsh, M. D.,
Scranton, Pa.

In probably no other condition is an indirect method of treatment so frequently necessary as in chronic bronchitis of mid life. Careful examination (including laboratory methods) not infrequently determines that the bronchial disease is superimposed upon some other condition of ill health. Occupation, mode of life, and habits at times are of no little importance as predispositions, or at least aggravate the disease. Especially in the middle aged are we liable to find associated with it derangements of the kidneys and the circulatory system, and so called chronic rheumatism and gouty diathesis.

For cases of chronic bronchitis presenting such underlying complications as the foregoing the primary mode of treatment is obvious. Living or working in damp or dusty surroundings, high living, and alcoholism should be promptly interdicted.

The cardiovascular renal apparatus is usually worthy of not a little attention. For cases showing any kidney deficiency I usually prescribe a course of salines or an occasional blue pill and tincture of ferric chloride, from five to ten minims three times a day, or Basham's mixture, from one to four drachms three times a day. Blood pressure and auscultatory sounds are the best indications for treatment directed toward derangements of the circulatory apparatus. With enfeebled cardiac sounds or lowered blood pressure I find digitalis, five drops of the tincture, three times daily, a valuable adjunct to the direct treatment for bronchitis. Chronic pulmonary congestion, usually indicated by accentuation of the pulmonic second sound is best relieved by small doses of salines frequently repeated and nitroglycerin, 1/100 grain three or four times daily.

Of course, in all cases the bowels should be kept free and open with salines or some mild laxative. Certain cases undoubtedly call for some regulation of the diet tending toward forced nourishment. For this purpose I remain unconvinced that we have yet anything better than good fresh milk and eggs. Milk in the quantity of from three to four pints, with from two to six raw eggs taken throughout the day, in addition to regular nourishing meals, will increase the general resistance wonderfully.

Generally speaking, nothing is so liable to beget failure or even harm as the promiscuous exhibitions of intended remedies to allay the cough. Much of the cough in chronic bronchitis is nonproductive and entirely unnecessary. This can be controlled without the aid of drugs if the patient has intelligence enough to understand that nonproductive coughing is usually unnecessary and with a little effort and practice can easily be suppressed. I usually depend upon drugs stimulant in character to rid the lungs of secretion, relieve congestion, and improve the respiration and nervous system. Though a somewhat inelegant mixture, I find such a prescription as the following usually very serviceable:

℞ Ammonii chloridi, } ....āā ʒii;
Pancreatini, ... }
Spiritus ammoniæ aromatici, } ....āā ʒiv;
Tincturæ nucis vomicæ, ... }
Spiritus glyceralis nitratis, ...♏xxv;
Elixir calisayæ, q. s. ad. ....℥iii.
M. Sig.: Teaspoonful in water three or four times daily.

Ammonium carbonate, five grains to a dose, greatly increases the expectorant powers of the prescription. Ammonium chloride, or any expectorants, should not be continued beyond a stage where the secretions are sufficiently fluid and easily expectorated. Profuse liquid secretions may require moderate doses of belladonna, with which I usually combine one thirtieth of a grain of strychnine. In excessive secretion the following prescription seems to o goo in some cases:

℞ Olei caryophyli, } ....āā ʒii;
Spiritus ammoniæ aromatici, }
Misturæ glycyrrizæ compositæ, q. s. ....℥iii.
M. Sig.: Teaspoonful after meals.

For cases with thick tenacious sputum, or when the sputum tends to be purulent in character or loaded with such organisms as the staphylococcus, streptococcus or pneumococcus, as shown by the microscope, I think the most valuable drug we possess is creosote. Only under such indications as given above is creosote necessary, and its administration is never required over long periods of time. The dose should be one drop three times a day, increasing one drop daily until ten or more drops to the dose are being administered. Most success in prescribing this drug depends upon having pure beechwood creosote thoroughly dissolved in one quarter to one half a glass of water as hot as can be swallowed without scalding. By following this plan very little stomach discomfiture will be encountered.

Balsamics I rarely resort to, but have found that sandalwood oil and terpinol seems to be of much benefit in some cases where the secretion tends to be persistently scanty. I prescribe them in average doses of five to ten minims or grains, in capsules. For cases complicated by asthma or emphysema I like to add physostigma to the regular treatment; about one eighth of a grain of the extract to a dose.

I do not believe much in inhalations, but some patients undoubtedly derive benefit from this form of treatment, and they may exert no little influence as stimulants to the mucous membrane and may limit the growth of organisms. I use them only when other methods of treatment seem inefficient. A stimulant inhalation for use in the nebulizer to be used several times daily is the following:

℞ Menthol, ...gr. x;
Oil of eucalyptus, ...ʒi;
Oil of tar, ...ʒii;
Liquid petrolatum, ...℥i.

Medicated steam inhalations, if used at all, should be taken at least three times daily. A good combination for this purpose is the following, one or two drachms of which is added to boiling water in an ordinary or croup kettle, the patient inhaling as much of the steam as is possible for twenty to thirty minutes.

℞ Compound tincture of benzoin, ...℥i;
Menthol oil of eucalpytus, } ....āā ʒiv.
Creosote, ... }

Terpine hydrate and rectified oil of turpentine in large doses are the best internal drugs for fetid bronchitis or bronchiectasis.

To practically all of my patients with chronic bronchitis I administer iodine and arsenic. The iodine is given as an inunction, to avoid disturbing the stomach, or in the form of potassium or sodium iodide or the syrup of the iodide of iron, all in moderate doses. I think a general tonic is valuable, especially as the patients improve, and in those patients who require forced nourishment. For this purpose I use such drugs as pepsin, hydrochloric and phosphoric acids, strychnine, arsenic, and sometimes iron.

I have given both heterogeneous and autogenous vaccines, but am not impressed much with the results in any cases with this form of treatment. I have had better results with treatment along the lines of the autotheraphy of Duncan.

Following a line of treatment such as stated, I very seldom am obliged to resort to such sedatives as codeine or heroin, but I recognize the fact that they are occasionally necessary and valuable for coughing which is persistent, aggravating, and racking, and which cannot be controlled otherwise.

Finally, of course, we all know that many patients derive no benefit from any treatment unless it is combined with a change of climate. To this class belong those who have enough time and money to desire some such directions; also those victims of the strenuous life—misers of time who will not pay sufficient attention to treatment otherwise; cases of periodic seasonal bronchitis (winter cough, etc.), and cases complicated by persistent profuse or scanty secretion, or organic disease of the lungs or heart. On the whole, a warm, moist, equable climate is to be desired, such as Southern California, Florida, or the Riviera. For cases with profuse expectoration a high dry climate is preferable, but great altitude is contraindicated in the presence of such complications as feeble circulation, cardiac or renal disease, asthma, emphysema, and bronchiectasis or for patients generally enfeebled. The seashore or a sea voyage is best for cases with scanty expectoration.

Dr. A. J. Zuckerman, of New York, states:

In considering the treatment of obstinate chronic bronchitis in the middle aged it is of prime importance to determine whether we are dealing with a primary or secondary bronchitis and, if the latter, the underlying cause. This is best ascertained by a systematic examination of the respiratory, circulatory, and urinary systems for any constitutional affection. It is beyond the scope of this paper to enter into a detailed discussion of the various causes of this disease; confining such to the mere mention of the most important factors in the discussion of the treatment. Although one of the least satisfactory of diseases to treat, it is just these cases where if a careful study and observation are made, and when judiciously managed, that we frequently get the most surprising results.

The treatment divides itself into a consideration of hygienic, dietetic and medicinal measures. The hygienic treatment of these cases plays a most important rôle. As much outdoor life should be indulged in as possible. Many of these patients, either because of their occupation or fear of cold air in the winter, lead entirely too much of an indoor life. To attempt to relieve them by drugs alone not only fails but is injurious. In bad weather, however, they should remain indoors as much as possible. Woolen underwear should at all times be worn next the skin. The feet should be kept dry, and in winter patients should wear thick soled shoes to prevent chilling, as after long standing on a stone walk. They should guard against exposure to extreme cold, dampness, and sudden changes of temperature. When possible, a change of climate, especially in winter, is most desirable. Patients with profuse expectoration are generally most benefited by a dry warm climate, such as that of New Mexico, California, and Egypt, whereas if there is little expectoration a moist warm climate, such as that of Florida, the West Indies, or Algiers is preferable.

Every possible precaution should be taken to prevent repeated acute attacks. Any abnormality in the rhinopharyngeal tract predisposing to such attacks should receive prompt attention. Proper attention should be given to the activity of the skin, bowels, and kidneys, to prevent the accumulation of waste substances and their deleterious effect upon the general system and the respiratory mucous membrane. Laborious occupations or those exposing to dust or irritating vapors must be abandoned.

There are no restrictions to be placed on the diet in the way of any particular food, but all excesses should be avoided. Alcohol, excepting for those who are used to it (when the quantity allowed should be limited) is better omitted, and any excess is injurious. The evening meal should be eaten no later than six p. m., and it should be light. Meat should be used once a day, and that only at noontime. In cases of malnutrition forced feeding and a properly selected hematinic are most beneficial.

I have had occasion to observe several patients in whom there were no physical signs of tuberculosis and no rise of temperature, while repeated examination of the sputum was negative; yet these patients did not come up to the average physique, and they were greatly benefited by taking between four and six eggs daily and plenty of milk independently of their meals.

The medicinal treatment consists of measures (A) to improve the general health, (B) to correct the underlying cause, and (C) to improve the bronchial mucous membrane, thus lessening cough and expectoration.

A. The general health should be improved by measures indicated in each individual case. An anemic condition requires a properly selected hematinic; a chronic gastric catarrh, the necessary gastric remedies and a restricted diet; and a neurotic state, hydrotherapeutic measures, the abstinence from all cerebral excitants, and an evenly regulated life. Walking several miles daily is beneficial in an all around way. A hot bath once or twice a week and a cold shower bath every morning, provided good reaction is obtained, are excellent.

B. The treatment of chronic bronchitis associated with chronic pulmonary affections does not differ materially from the management of the latter cases, and therefore will not be considered separately. The specific bronchitis of chronic pulmonary tuberculosis requires overfeeding, plenty of fresh air, and rest.

In cardiac insufficiency we have a congestion of the bronchial mucous membrane, with the resultant chronic catarrhal state. Digitalis acts here almost as a specific. Twenty minims of the tincture, three or four times a day to begin with, and then reducing the dose to ten minims three times a day, with rest in bed and a semisolid diet, will relieve the cough remarkably in some of the advanced cases of cardiac insufficiency. Ten minims of the tincture three times a day, and a not necessarily strict rest, will suffice in the lesser forms of cardiac disturbance. The digitalis must be continued in small doses for a month or two, possibly with an intermission of several days in between. Afterward a course of it now and then, particularly when there is evidence of failing compensation, is necessary. The sleeplessness of advanced cardiac disease must be combated by either a dose of compound spirit of ether or paraldehyde, and when these fail morphine sulphate (one fourth grain) is imperative; to be stopped just as soon as improvement is manifested. Later the addition of a tonic is valuable. The official elixir of iron, quinine, and strychnine is excellent, the strychnine acting as a cardiac tonic and the iron and quinine as hematinics.

In chronic nephritis we frequently have a bronchitis of toxic origin, the toxines acting upon the respiratory tract and its cerebral centres. We always have more or less circulatory changes complicating the renal affection, and we have to treat them accordingly. A well regulated life, avoiding excess in food, the absolute abstinence from all alcoholic beverages, a normal bowel movement daily, and special attention to the skin by a daily warm bath and the administration of a suitable tonic, such as Basham's mixture, constitute in the main the general management of these cases. In those requiring additional direct measures, care should be taken to select those drugs which do not irritate the kidneys.

Gout is a recognized cause of bronchitis and it is best met by a well regulated life, the abstinence from "elixirs of life," and internally potassium iodide, ten grains three times a day, either alone or in combination with wine of colchicum. Chronic bronchitis of luetic origin requires a thorough course of mercury and potassium iodide.

C. The management of primary chronic bronchitis, and as an adjunct in the secondary form, by direct measures is far from satisfactory. The large number of drugs recommended is alone sufficient proof of our helplessness. At the outset it is well to remember that a good many of these cases have structural changes of the bronchial mucous membrane beyond a state of repair. The specialized ciliated epithelium has either been replaced by one of inferior grade, such as the columnar, or there is a hypertropic condition of the mucous membrane, or even more frequently of the interstitial structure, with its resultant changes of the normal lining. To give drugs in such a condition with the object of cure is readily seen to be fallacious. The most we can do is to ameliorate; cure resting only with the prevention of repeated acute attacks and arresting the structural changes. In spite of the difficulties enumerated, a good deal may be accomplished by the judicious administration of drugs. Routine treatment is not only unscientific but is the surest method to fail. For the cough with abundant expectoration, I have found terebene, minims v to x in capsule, four times daily a most efficient remedy. Creosote, in doses of three to five minims, is at times equally satisfactory, lessening the cough and diminishing the expectoration. Guaiacol carbonate, its derivative, though less active, I frequently prefer because of its easier administration and its less irritating effect upon the stomach. A favorite prescription of mine in these cases is the following:

℞ Codeine sulphate,	grs. iii-vi;
Strychnine sulphate,	gr. ⅗;
Guaiacol carbonate, Terpin hydrate,	āā ʒi.

M. Divide in capsulas xxiv.
Sig.: One capsule four times a day.

The oils of copaiba, sandalwood, and tar are often valuable additional remedies. Five minims each of the oils of sandalwood and tar, in capsule, every four hours is at times a useful combination.

Inhalations as an addition to the internal treatment, or as a substitute when the latter irritates the stomach, constitute a valuable measure. Creosote, terebene, or eucalyptus, ten to twenty minims, or compound tincture of benzoin, half an ounce, may be added to a pitcherful of boiling water; the patient covering head and pitcher with a towel, and inhaling the vapor for ten or fifteen minutes at a time. A combination of two or more of these, and the addition of ten to fifteen drops of chloroform is sometimes to be preferred when the cough is distressing. The following is a good formula:

℞ Creasoti, Terebeni,	āā ʒiss;
Spiritus chloroformi,	ʒiv;
Tincturæ benzoini compositæ, q. s. ad	℥ii.

M. Sig.: For external use add one teaspoonful to a quart of boiling water and inhale steam three or four times daily.

When there is little or no secretion, or when the secretion is thick and brought up with difficulty, potassium iodide will render an excellent service. It is most efficient in small doses, three to five grains three times a day, and it is contraindicated in cases of bronchorrhea.

When the cough is not due to a profuse secretion, but to excessive irritability of the bronchial mucous membrane, some sedative will have to be resorted to, such as diluted, hydrocyanic acid, tincture of hyoscyamus, or spirit of chloroform, and when these are insufficient, codeine or heroin are the drugs of choice. I usually employ a combination of these, as in the following:

℞ Acidi hydrocyanici diluti,	♏xv;
Tincturæ opii camphoratæ, Tincturæ hyoscyami,	āā ʒiv;
Syrupi tolutani,	ʒvi;
Aquæ, q. s. ad.	℥ii.

M. Sig.: One or two teaspoonfuls every four hours.

℞ Codeinæ sulphatis,	gr. iv;
Spiritus camphoræ,	ʒi;
Spiritus chloroformi,	ʒii;
Syrupi tolutani, q. s. ad	℥ii.

M. Sig.: One teaspoonful every four hours.

When any of the opium derivatives are necessary as little as is found to suffice should be used. Due care should be taken not to interfere with necessary cough, and all sedatives should be withdrawn when found practical.

The cough is frequently a disturbing feature at night or in the early morning hours. In the great majority of instances it is not a persistent annoyance, but occurs with acute exacerbations or, quite as frequently, I think, with some general disturbance, such as gastric or nervous irritation, which will usually be found to last a week or more. With due attention to the disturbing factor, some one of the following measures, or a combination of them, has proved useful in my hands; a hot glass of milk, a mustard plaster to the back of the chest until sufficient counterirritation is produced; a teaspoonful of the following mixture in a tablespoonful of hot water:

℞ Sodii bicarbonati,	ʒiiiss;
Sodii chloridi,	℥i;
Spiritus chloroformi,	ʒiss;
Liquoris anisati, q. s. ad	℥ii.

M.

Or, when there is profuse secretion the application of several dry cups over the bases of the lungs posteriorly may be of service, and should this fail a quarter or half a gain of codeine sulphate will be found beneficial. With profuse secretion tincture of belladonna, from ten to fifteen minims, every four hours until the desired effect is produced or toxic manifestations are evident, is to be preferred.

Above all, it is important to remember that we are treating a patient, and not a disease; that success lies more with hygienic measures and improvement of the general health than with drugs, and that the old adage "Prevention is better than cure" can find no more useful application.

(*To be continued.*)

Therapeutic Notes.

Treatment of Scabies.—Brocq, in *Quinzaine thérapeutique* for December 25, 1912, states that the first step in the treatment of this condition should be a bath in sulphur water, during the entire duration of which—about fifteen minutes—the body should be vigorously cleansed with soap. This is to be followed by a rubbing with flannel of all areas where burrows are visible, in order to lay these open. The body should then be covered with the following ointment:

℞ Potassii carbonatis, ...gr. xv (1 gramme);
Sulphuris præcipitati, ...gr. xlv (3 grammes);
Adipis benzoinati, ...ʒiii (12 grammes).
M. ft. unguentum.

Twenty-four hours later, a starch bath should be administered, and in order to relieve the skin irritation which may appear, the following preparation applied:

℞ Amyli,..............
Zinci oxidi, ...
Adipis lanæ hydrosi,
Petrolati, ... } ....āā ʒii (8 grammes).
M. ft. unguentum.

This ointment should be used until the skin has regained its normal appearance.

In patients with unusually delicate skins, or in children, the following curative preparation is to be substituted for that already referred to:

℞ Balsami peruviani,
Sulphuris, ... } .....āā gr. lxxv (5 grammes);
Zinci oxidi, ...℥ss (15 grammes);
Adipis lanæ hydrosi,
Petrolati, ... } ....āā ʒvi (25 grammes).
M. ft. unguentum.

This should be rubbed in for three or four consecutive days. If the skin is irritated, starch baths are to be administered.

Thorough disinfection of the patient's clothing is, of course, to be insisted on in every case.

Removal of Warts.—Mantelin, in *Quinzaine thérapeutique* for December 25, 1912, is credited with the following formula for a collodion preparation to be applied to warts:

℞ Chlorali hydrati,
Acidi acetici,.... } ....āā ʒiss (6 grammes);
Acidi salicylici,
Aetheris, ... } ....āā ʒi (4 grammes);
Collodii, ...℥ss (15 grammes).
Misce.

Treatment of Insomnia.—Sir James Sawyer, in the recently issued second edition of his little book, entitled "*Insomnia: Its Causes and Treatment,*" states that while a hypnotic should be prescribed only when this is unavoidable, removal of the cause being an all important measure, in the more severe forms of psychic insomnia, the prompt use of a hypnotic will soon restore to the brain the power of sleeping, without further aid from drugs.

Potassium bromide, given in doses of thirty to sixty grains (two to four grammes), dissolved in water, is the best drug for well nourished patients and in the mild cases generally.

Opium may be given when pain prevents sleep, but is contraindicated in bronchitis and renal disease, and is unsuitable for habitual cases. In severe psychic cases it may act well, thus prescribed:

℞ Opii, ...gr. ss (0.03 gramme);
Saponis, ...gr. ii (0.12 gramme).
M. ft. in pilulam no. i.
Sig.: One or two to be taken at bedtime.

Hydrated chloral is very frequently used, but has various well known disadvantages. A combination of hypnotics sometimes acts more successfully than any taken singly. Thus, chloral and bromides may be given together, or both may be combined with opium:

℞ Tincturæ opii, ...♏v-x (0.3-0.6 c. c.);
Potassii bromidi, ...gr. x-xx (0.6-1.3 grammes);
Chlorali hydrati, ...gr. v (0.3 gramme);
Syrupi, ...ʒss (2 c. c.);
Aquæ menthæ piperitæ,......q. s. ad. ℥iss (45 c. c.).
M. ft. haustus.
Sig.: To be taken at bedtime.

In insomnia complicating heart disease, Hale White advises the use of twenty-five grains (1.6 gramme) of chloroformamide, dissolved by stirring in one ounce of brandy, with water added to taste, taken about one hour before bedtime. This drug possesses, however, a disagreeable taste.

Sulphonmethane and sulphonethylmethane are active hypnotics, though unsafe in the presence of renal disease. Neither should be given for more than a few nights consecutively. Sodium bicarbonate, from twenty to thirty grains (1.3 to two grammes) should be given during the day in this period.

Paraldehyde, given emulsified with yolk of egg, and diethylbarbituric acid, cautiously administered in cachets or in pills with syrup of glucose as excipient, in doses of three to fifteen grains, are other good hypnotics.

In the toxic insomnia of gout or chronic renal disease, with a high tension pulse, the following combination is useful:

℞ Magnesii sulphatis effervescentis, ℥ss (15 grammes);
Potassii et sodii tartratis, ...℥i (30 grammes);
Acidi citrici, ...gr. xl (2.6 grammes);
Acidi tartarici, ...gr. l (3.3 grammes);
Sodii bicarbonatis, ...gr. C (6.6 grammes);
Sacchari, ...gr. xxx (2 grammes).
M. ft. pulvis. Sig.: One or two teaspoonfuls to be taken in half a tumblerful of water every morning before breakfast.

In toxic insomnia due to habitual constipation and undue fecal retention, the cure of the latter must be aimed at. If laxative drugs are required, the following will prove useful:

℞ Aloes, ...
Extracti glycyrrhizæ,
Extracti taraxaci, . .
Saponis mollis, ... } ..singulorum partes æquales.
Solve in aqua, et calore lente inspisse; deinde divide in pilulas, pondere 2½ gr.
Sig.: One or two pills to be taken at bedtime.

Senile insomnia is very obstinate. Often the bromides, with full doses of hops or of henbane, afford the most efficient and least harmful medicinal means of relief. Arterial gymnastics may be indicated.

Treatment of Seborrhea of the Lid Margins.—Roemer, as recorded in the recently issued translation of his "Textbook of Ophthalmology," states that while seborrhea of the lid margins follows an extremely chronic course and usually persists in a slight degree throughout life, it can be ameliorated and often overcome for a long time by proper treatment. Such general conditions as anemia and scrofulosis should be corrected first; then the patient should be impressed with the importance of cleansing the lid margins night and morning. Before retiring an ointment should be applied to the cleansed and dried margins. Yellow ointment is often too irritating; sometimes the simple boric acid ointment is sufficient. Another that may be prescribed is the following:

℞ Sulphuris præcipitati, ...gr. xv (1 gramme);
Vel Resorcinalis, ...gr. viiss (0.5 gramme);
Zinci oxidi, }
Amyli, ... }................āā ʒiiss (10 grammes);
Petrolati, ...ʒv (20 grammes).
M. ft. unguentum.

Where the scales are adherent one may, with due care, employ a sharp spoon for the first thorough cleansing. Any coexisting chronic conjunctival catarrh must, of course, receive appropriate treatment.

Treatment of Hemorrhoids.—E. Barié, in *Paris médical* for February 8, 1913, is credited with the following ointment for hemorrhoids:

℞ Extracti belladonnæ }
foliorum, ... } ..āā gr. viiss (0.5 gramme);
Tincturæ opii, ... }
Potassii iodidi. ....ʒss (2 grammes);
Extracti krameriæ, ...ʒi (4 grammes);
Petrolati. ....℥i (30 grammes).
M. ft. unguentum.
Sig.: Apply morning and evening.

Treatment of Local Reaction Succeeding Intramuscular Salvarsan Injection.—J. E. R. McDonagh, in his monograph on *Salvarsan in Syphilis and Allied Diseases,* states that the swelling which sometimes results from intramuscular salvarsan injections is a toxic edema, and as a rule is not painful. Under no circumstances should it be opened, unless an obvious abscess forms, when acute pain is noted. Alternate hot and cold applications give the most relief, and when the patient is up and about a belladonna plaster helps to diminish the pain and increases absorption. The redness which appears with the swelling is analogous to that met with in urticaria, and quickly disappears if the following lotion be applied:

℞ Plumbi subacetatis, ...gr. x (0.6 gramme);
Aquæ ammoniæ fortioris, ...♏v (0.3 c. c.);
Alcoholis, ...ʒi (4 c. c.);
Liquoris alumini acetatis (N. F.),....ʒiii (12 c. c.);
Aquæ, q. s. ad..........................℥i (30 c. c.).
M. ft. lotio.

Treatment of Landry's Syndrome.—Pic, Bonnamour, and Blanc-Perducet, in *Lyon médical* for January 26, 1913, report a case presenting most of the symptomatic manifestations of Landry's paralysis, including marked ascending paresis of the extremities, paralysis of the velum palati, dysphagia, diplopia, slight nystagmus, and later facial paralysis, in which injections of strychnine sulphate in full doses gave unexpectedly good results. Two subcutaneous injections of 0.005 gramme (1/10 grain) each were given on twelve successive days, with the result that paralysis in the palate, facial muscles, and limbs—especially the upper extremities—disappeared with considerable rapidity. After cessation of the strychnine injections because of restlessness and twitchings, improvement of power and coordination in the limbs also came to a standstill, notwithstanding electricity and massage. Finally, systematic motor reeducation was undertaken, much as in tabes dorsalis, with the result that three months and a half after admission the patient could walk fairly well, atrophy had largely disappeared, and musclesense was restored. The authors conclude that after the acute stage is over no measure is as effective in these cases as motor reeducation.

Treatment of Leprosy.—Jeanselme, at a meeting of the Société française de dermatologie et de syphiligraphie (*Presse médicale,* March 12, 1913), stated that he had had good results in leprosy with intramuscular injections of the following mixture:

℞ Oil of chaulmoogra, ...ʒv (20 grammes);
Guaiacol, ...gr. xv (1 gramme);
Camphor, ...gr. viiss (0.5 gramme);
Liquid petrolatum, ...ʒv (20 grammes).
Fiat mistura.

The chaulmoogra oil should first be washed with alcohol and filtered through cotton. The other ingredients are then added, the preparation sterilized at 110° C., and sealed in 5 c. c. ampoules. The product is a homogeneous fluid which remains clear indefinitely. Injections of it do not cause much pain.

Treatment of Acute Pharyngitis.—A writer in *Pediatrics* for January, 1913, emphasizes the fact that in the local treatment of this affection the remedies that do harm are numerous. In the early stages—during the first five days—all astringents, however mild, are contraindicated. The thoughtless prescription of ferric chloride is to be deprecated. After the early stage is passed, should the tissues seem boggy and the circulation sluggish, a twenty per cent. silver nitrate solution may be applied with a swab and washed off with salt solution. The early local treatment should be simply detergent and antiseptic. Infants may be given a weak solution of sodium bicarbonate and salt to drink; a purge should also be administered, and due attention paid to the diet. In older children, gargles of salt, soda and boric acid are rather useful, but with these, as with older patients, the best mode of cleaning the pharynx is the douche, the patient's head being allowed to hang over the edge of a bed or table, and a warm solution run in a gentle stream into the wide open mouth from a fountain syringe. This should be done from two to eight times a day, or even oftener. The outflow from the mouth should be disinfected.

The general treatment in acute pharyngitis should be "sustaining." Possible renal irritation should be borne in mind, and no food allowed that may tax the kidneys. A milk diet with suitable stimulation is usually indicated. For fever, cold baths, the cold pack, or cold affusions may be employed, not so much for antipyresis as for nervous stimulation. All cases should be isolated.

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THE TUBERCULINLIKE ACTION OF ANTITYPHOID VACCINE.

In our issue of April 5th we called attention to Vincent's observation that his antityphoid vaccine acted like tuberculin in stimulating latent or quiescent lesions into the active stage. We urged that until the facts are published impartially, the medical profession should hold the matter of compulsory vaccination in civil life *sub judice*. On behalf of the War Department, Lieutenant Colonel J. R. Kean, of the Medical Corps, in a letter to the editor (see our issue of April 19th, page 848), expressed the belief that our interpretation of Vincent and Combe's observations, suggesting dangers that we deemed entitled to attention, was not justified; adducing as main evidence the vast experience on record in the office of the Surgeon General of the Army, which covers more than one hundred thousand immunizations.

In defense of our position we may submit that the surgeon general's own Annual Report for 1911 contains testimony which tends to convince us that our plea for prudence in the prophylactic use of antityphoid vaccine in civil practice is well grounded. The report states:

> In one case only does the reaction merit special comment. The man was stationed at Fort Casey (Register No. 2250), and on March 30, 1911, he received the first dose of vaccine, a severe reaction developing, which necessitated his admission to the post hospital. He had chills, a temperature of over 103° F., sweats, and great prostration. After four days he had apparently recovered entirely and was returned to duty, but after a week he again had chills, fever, cough, and night sweats, and a small amount of mucopurulent expectoration. At this time the physical examination showed dullness at the right apex and a few moist râles over both apices, and a diagnosis of pulmonary tuberculosis was made. This case indicates that the injunction in the circular of instructions against the vaccination of any but healthy persons should be constantly borne in mind.

Again, we might suggest that the physical examination to which recruits are submitted and the out of door life soldiers lead place them in a far more advantageous position for the nondevelopment of tuberculosis than do the occupations and sanitary conditions of large cities to which the inhabitants of such great centres are subjected. The injunction to vaccinate none but the "perfectly healthy and free from fever at the time," while it might apply to soldiers who are under constant supervision, would prove inadequate in civil practice, where the vaccinated would, in practically every instance, be newcomers. Again, does tuberculosis in its incipient form always give rise to fever or to detectable signs? We do not inveigh against antityphoid vaccination in the army, especially when the fact is borne in mind that typhoid fever is the scourge of camp life, and, in the presence of the skill and care of which our troops are the beneficiaries at the hands of their medical officers, but we do hold that in civil life the conditions are such as to inspire the need of greater reserve. This attitude imposes itself forcibly when Vincent's statement that severe reactions are very rare unless tuberculosis is present, is brought face to face with the fact that English and American observers have reported as much as from two to four per cent. of severe reactions, while the general mortality of typhoid fever in the United States is 29.5 per 100,000 (*Mortality Statistics, 1909*, p. 30), or less than one thirtieth of one per cent. In other words, to protect thirty individuals in 100,000 from death from typhoid fever by vaccination we would have to expose 2,000 to 4,000 of them to the possibility of stimulating into activity dormant or latent tuberculosis! While the latter disease would doubtless develop in but a small proportion of those exposed, the fact remains that great prudence is in order when the use of antityphoid vaccine in civil life—which includes a multitude of overworked and underfed individuals who labor in sweatshops, mills, and other foci of tuberculous infection—is advocated, even though the question of its adoption in the United States Army is no longer *sub judice*.

MINING DISASTERS.

The appalling tragedy which occurred last week in the Finleyville, Pa., coal mine recalls vividly that at the joint session of the American Economic Association with the American Association for Labor Legislation, in which safety and health in the mining industry was discussed, Dr. John R. Haynes demonstrated that national regulation in European coal mines had enormously reduced the fatality percentage in the last fifteen years; whereas in these United States during the same period the rate had steadily increased. Moreover, the death rate in various States had varied tremendously from 2.25 in Illinois to twenty-one out of every 1,000 miners, for the year 1907, in Colorado; this latter proportion being more than twenty times the fatality rate for Belgium or France. State regulation of mining having failed in the past, Doctor Haynes considers that there is no likelihood of improvement in the future. "Under State regulations during the last twenty years 30,000 coal miners have been killed and 80,000 seriously injured. We kill every year more than all the rest of the world beside. Both common sense and humanity demand that the federal government safeguard the life of the miner as it has in recent years safeguarded the life of the railroad worker."

Dr. J. A. Holmes, director of the United States Bureau of Mines, has found among the possible death dealing agencies: The character of the explosives used in certain mines; the excess in quantity of the explosives which may ordinarily be used with safety in the presence of dust and gas; the quality of the gas and its dangerous percentages; the nature, extent, and insulation of electric currents used; the kind and condition of the miners' lamps; probable underground fissures, determinable by the study of strata from which gas may burst out as it did in the case of the Finleyville disaster.

Of peculiar interest also to physicians is the character and the relative amount of the dust in mines. Though miners suffer greatly from anthracosis, they are strangely enough less prone to tuberculosis than any other class of men—even than bankers and the clergy. Stone cutters, for example, have a forty-five per cent. tuberculosis mortality; while miners (according to Hoffman) have but a six per cent. mortality from this disease. But the observation obtains only of "wet" mining; and several reasons have been forthcoming (none of them quite conclusive) for this comparative immunity, that miners are picked men to begin with, their work precluding all of poor constitution; that there is an antiseptic property, inimical to the tubercle bacillus, in the coal dust; that in "wet" mining the point of saturation is so nearly reached as to make impossible the desiccation and the dissemination through the atmosphere of tubercle bacilli.

But dry mining is an altogether different state of things; here the tuberculosis mortality is high, as it is in all dust evolving occupations. In England the mortality is very high for miners of tin, copper, and lead; while coal miners show varying rates—but all low—in different coal fields. In the South African gold fields there has been a dreadful mortality due to the lack of precautions against dust dissemination. Wherefore, to the end that dry mining should be converted, by means of jets and sprays, into wet mining, the Transvaal Chambers of Mines some years ago invited an exhibition in which, among other machines, were demonstrated the water drill of Leyner and the Britten apparatus—which latter, while laying the dust—we may add—disposes also of the nitrous fumes generated in the blasting.

THE ABUSE OF MORPHINE AND COCAINE.

According to Martin Gilbert and Murray Galt Motter the use of cocaine and morphine in the United States is out of all proportion to the actual needs for these drugs. Their researches concerning the laws and regulations in force in the United States relating to the possession, use, sale, and manufacture of poisons and habit forming drugs have been embodied in a special report (*Public Health Bulletin* No. 56) by the surgeon general of the Public Health Service. From this we learn that there has been an annual importation of over 400,000 pounds of opium for the past ten years. Of this total 300,000 is manufactured into morphine, and more than three fourths of the morphine is used by the victims of that habit. Cocaine, which should be only in the hands of doctors and dentists and never prescribed by the latter, is consumed illegitimately at the rate of over 150,000 ounces every year.

Of course the importation of these drugs is under federal control at its initial entry into the United States, but as each State has its own laws controlling the manufacture and sale of drugs within its own borders, the government is powerless to deal with the situation, deplorable as it is. There is an extraordinary lack of conformity in the laws controlling narcotics enacted by each State. Thus, it is possible to buy large quantities in a State which has lax laws and to carry it for consumption into a State practising rigid restrictions, with absolute impunity. In no State has the legislation intended to abolish the drug habit kept pace with the increase of the drug victims. Thus the President (S. Document No. 736, 61st Congress) says: "The enormous misuse of opium and other habit forming drugs in the United States may be attributed to several causes: Carelessness or ignorance on the part of the people; to ineffectiveness of State laws, as well as the inability of the States with good laws to protect themselves against the clandestine introduction of the drugs from neighboring or distant States, and therefore in a larger sense to the lack of control by the federal government of the importation, manufacture, and interstate traffic in them."

When we consider that Austria-Hungary, with less than half our population, consumes annually less than one hundredth the amount of opium we use; that Germany, with 60,000,000 inhabitants, uses only about one twenty-fifth as much as we do; that in Italy, with 33,000,000 inhabitants, the annual consumption of opium is about 6,000 pounds in comparison with our 400,000 pounds, we must realize that matters affecting the health of the nation at large should be controlled by laws made by Congress and executed by federal authority instead of individual States.

INTRAVENOUS INJECTION OF NEOSALVARSAN IN CONCENTRATED SOLUTION.

Recent experiences have shown the advisability, in the intravenous administration of salvarsan, of employing freshly distilled and sterilized water for the preparation of the solutions to be injected. Another necessary precaution has been that of using normal saline solution, in order to avoid destruction of the corpuscles by laking when the fluid is introduced. In view of the fact that the sodium chloride used and the lead, lime, and other bodies that may be present in the distilled water itself have been considered responsible for some of the untoward phenomena closely following salvarsan (or neosalvarsan) injections, Revaut has adopted the plan of administering neosalvarsan in the smallest possible quantity of distilled water, thus doing away with both the sodium chloride and, in large measure, the harmful constituents of distilled water.

In a recent communication on this subject Revaut (*Presse médicale,* April 2, 1913) states that he has recently been injecting as much as 0.9 gramme of neosalvarsan dissolved in only eight or ten cubic centimetres of distilled water. With this procedure, the neosalvarsan itself supplies the required isotonicity with the blood. Distilled water prepared several weeks before and kept in ampoules of the highest quality glass can be used directly without causing any systemic reaction. The solution is prepared after the constricting band has been applied to the patient's arm and the skin cleansed with alcohol. The drug is merely dropped into the water, and the solution drawn up into the glass syringe through a special glass tube containing a small wad of cotton, for purposes of filtration. The needle is then adapted to the syringe, air driven out, and the injection at once given. All rubber tubing is thus eliminated and a more strict asepsis rendered possible. The whole procedure of preparation and injection occupies only two minutes. The author has given 420 such injections without the least untoward result.

SEWAGE DISPOSAL OF GREATER NEW YORK.

The sewage disposal of the Greater City of New York has become so vital a question, that it should be solved immediately and the preparatory work already done brought to a practical culmination. To study the subject as a whole, a commission was appointed some time ago which has published several reports. The latest of these is a critical review of the projects. These may be divided into four schemes: The first scheme refers to a system of land sewage, that is to say, broad irrigation and intermittent filtration. Such a plan would necessitate the acquisition of a large area of land. The best example of this system is the Berlin farm, which is the largest of its kind in Europe and continues to do good work. But in New York such a farm would necessarily have to be so colossal that the physical conditions for perfect operation would not be invariably favorable. It would necessitate 150 square miles of land, which would bring with it a great outlay. The second scheme refers to filtration of the sewage through biological filters—a method introduced by the Massachusetts Board of Health and exemplified by the irrigation plant at Barren Island. The aftereffects of the evaporation of the immense amount of foul liquid is very obnoxious, however, and this, together with the cost, makes it nearly prohibitive for such a large city as New York. The third scheme treats of the disposal of sewage by chemicophysical methods at various points of the outfall with ultimate disposal of partially purified liquid into the nearest water courses. Finally, the fourth scheme refers to the conveyance of a large part of the sewage out to the Atlantic Ocean to an island situated north of Sandy Hook, at a distance of about four miles from Coney Island, the sewage requiring under these conditions a minimum of treatment. To give an idea of the outlay necessary we may mention that the cost of a single one of these four plans varies between $100,000,000 and $200,000,000.

PAROVARIAN CYST IN A CHILD.

Frederick Deane, a visiting surgeon to the Barbados General Hospital, reports in the *Lancet* for March 29, 1913, the case of an eight year old girl who presented a rapidly growing tumor in the region of the umbilicus, which was declared by several physicians to be due to worms. On opening the abdomen in the middle line, he found a thin walled cyst distended almost to bursting. He tapped this and delivered the sac, finding the pedicle adherent to the uterine appendages on the left side in the vicinity of the parovarium. The child sat up in bed the next day and subsequently made an uninterrupted recovery.

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Obituary.

CHARLES H. KNIGHT, M. D.,

of New York.

Dr. Charles H. Knight, the well known laryngologist, died on April 29th at his home, 55 East Ninety-third Street. He was born in Easthampton, Mass., in 1849, and made his preliminary studies at Williston Seminary and at Williams College. After a four years' course, he graduated at the College of Physicians and Surgeons, in New York, where he has since practised. Doctor Knight was professor of laryngology in the Cornell Medical School and a director and surgeon of the Manhattan Eye, Ear, and Throat Hospital. He was an authoritative writer on laryngology and author of several medical works, and was also a contributor to the NEW YORK MEDICAL JOURNAL. He was greatly esteemed by his friends and fellow practitioners.

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News Items.

Changes of Address.—Dr. Louis L. Hoff, from Springfield, Mass., to Rooms 207-209 Phœnix Building, Holyoke, Mass.

$200,000 for Cancer Research.—Under the will of Henry Rutherford, who died in New York on February 25th, the Rockefeller Institute for Medical Research will receive $200,000, which is to be used, according to the terms of the will, "to investigate into the causes and nature of cancer and methods of its prevention and treatment."

Jubilee Meeting of the Medicolegal Society.—A special programme has been prepared for the May meeting of this society, to be held at the Waldorf-Astoria on the evening of the 21st, to celebrate the thirtieth anniversary of the founding of the *Medicolegal Journal*. Dr. T. D. Crothers, president of the society, will be present and receive the contributions of the members.

Honors for New York Physicians.—Dr. Alexis Carrel and Dr. H. Noguchi, of the Rockefeller Institute for Medical Research, Dr. Herman M. Biggs and Dr. William H. Park, of the Department of Health, and Dr. John W. Brannan, president of the board of trustees of Bellevue and allied hospitals, have been made knights of the Royal Order of Isabella the Catholic by King Alfonso of Spain.

Civil Service Examinations in Philadelphia.—Among the positions for which the Civil Service Commission of the City of Philadelphia will hold examinations on May 26th, are the following: Head Nurse, Philadelphia General Hospital, salary $300 to $600 a year; head nurse, Public Health and Charities Department, salary, $300 to $600 a year; medical inspector of schools, women only, salary $600 a year; assistant physician, resident, salary $600 to $900 a year; assistant physician, resident, $600 to $1,000 a year.

Medical Club of Philadelphia Gives Reception to Judges.—More than five hundred members of the medical profession attended a reception given by the Medical Club of Philadelphia to eminent jurists of the city, on the evening of April 25th. Addresses were made by several guests of honor expressing their appreciation of the honor shown them. Dr. James M. Anders read a memorial of the late Dr. Roland G. Curtin, who was once president of the club.

Alabama State Medical Association.—At the annual meeting of this association, held in Mobile last week, Dr. R. S. Hill, of Montgomery, was elected president to succeed Dr. Harry T. Inge, of Mobile; Dr. Hugh W. Blair, of Sheffield, vice-president; Dr. F. A. Webb, of Calvert, junior vice-president. Dr. J. Norman Baker, of Montgomery, was reelected secretary, and Dr. Henry G. Perry, of Greensboro, treasurer. Montgomery was selected as the next meeting place.

Meetings of Philadelphia Medical Societies to be Held during the Coming Week.—Monday, May 5th, Academy of Surgery and the Philadelphia Clinical Association; Tuesday, May 6th, Wills Hospital Ophthalmic Society; Wednesday, May 7th, Directors of the Physicians' Motor Club, and the College of Physicians; Thursday, May 8th, Polyclinic Ophthalmic Society, Pathological Society, and the Obstetrical Society; Friday, May 9th, Northern Medical Association and the Psychiatric Society.

Medical Society of the State of New York.—The 107th annual meeting of this society was held in Rochester on April 29th and 30th and May 1st, under the presidency of Dr. John F. W. Whitbeck. This is the first time in its history that the organization has not met in Albany. Officers were elected as follows: President, Dr. William Francis Campbell, of Brooklyn; first vice-president, Dr. W. Stanton Gleason, of Newburgh; second vice-president, Dr. G. F. Blauvelt, of Nyack; third vice-president, Dr. Myron B. Palmer, of Rochester; treasurer, Dr. Alexander Lambert, of New York, reelected; secretary, Dr. Wisner R. Townsend, of New York, reelected.

German Measles in New York.—A report issued by the Department of Health of the City of New York shows that during the past three months there has been a marked increase in the number of cases of German measles reported to the department. During the first quarter of 1913, 965 cases were reported in Manhattan, 609 in Brooklyn, and 233 in the Bronx, while during the entire year of 1912, 697 cases were reported in Manhattan, 633 in Brooklyn, and 182 in the Bronx. Previous to 1904, German measles was not a reportable disease, for the reason that, although contagious and frequently attended by a well marked eruption, the disease never resulted in death.

Medical Society of the State of California.—At the forty-third annual meeting of this society, held in Oakland on April 15th, 16th, and 17th, under the presidency of Dr. O. D. Hamlin, the following officers were elected: President, Dr. Fitch C. E. Mathieson, of Pasadena; first vice-president, Dr. Barton J. Powell, of Stockton; second vice-president, Dr. George Rucker, of Riverside; secretary, Dr. Philip Mills Jones, of San Francisco, reelected; councillor for the second district (reelected), Dr. George H. Kress, Los Angeles; councillor for the sixth district (reelected), Dr. C. E. Kenyon, San Francisco; councillor for the eighth district (reelected), Dr. James H. Parkinson, Sacramento; councillor-at-large, Dr. O. D. Hamlin, Oakland. Committees were also named. Next year's meeting will be held in Santa Barbara.

Postgraduate Course in Medicine at McGill University.—Announcement is made by the medical faculty of McGill University that courses in medicine have been arranged for graduate students, between May 26th and June 20th, at the Montreal General and the Royal Victoria Hospitals, and in the laboratories of the Medical School. These courses are optional and independent and are open to graduates of all medical schools in good standing. They include work in clinical surgery, operative surgery, clinical medicine, ophthalmology, otology, laryngology, rhinology, otolaryngology, orthopedic surgery, genitourinary surgery, pathology, gross pathology, radiography, and electricity, pediatrics, and immunity. The number of students in the course in immunity will be limited to six. All postgraduate students are required to register with the Registrar of the Medical Faculty, to whom application should be made for further particulars regarding the course.

Dartmouth College Abandons Its Medical Course.—It is reported that after the graduation in 1914 of the present junior class of the medical department of Dartmouth College, Hanover, N. H., the college will cease to grant the degree of M. D. According to present plans, the first two years of the course in medicine will be given in a department which leads to the degree of B. S., and it is intended that those who do this work successfully will be able to enter upon third year work in medicine in any medical college. It is said that this action on the part of the trustees was rendered necessary by the lack of clinical material, due probably to the isolated position of the college. The Dartmouth Medical School was established in 1798, the fourth in the United States. The one hundred and seventeenth graduation exercises were held on April 25th, ten degrees being conferred.

Medical Alumni Dine.—The annual dinner of the Society of the Alumni of the Medical Department of the University of Pennsylvania was held in the Bellevue-Stratford Hotel, Philadelphia, on the evening of April 18th Dr. William Pepper was toastmaster, and among the speakers were Dr. Richard C. Cabot, of Boston, Dr. S. Weir Mitchell, Dr. Lewis H. Taylor, and Dr. John G. Clark. Previous to the dinner a short business meeting was held, and the following officers elected to serve for the ensuing year: President, Dr. John B. Deaver; vice-presidents, Dr. John K. Mitchell, Dr. Richard C. Norris, and Dr. S. McC. Hamill, of Philadelphia, Dr. Lewis H. Taylor, of Wilkes-Barre, Dr. Casper W. Sharples, of Seattle, Wash., Dr. Walter R. Wieser, of Springfield, Mass., and Dr. Alexander R. Craig, of Chicago; historian, Dr. William Pepper; secretary and treasurer, Dr. G. Morris Piersol.

Hospital Saturday and Sunday Association.—This association has apportioned $105,000 among forty-six non-municipal hospitals in New York, the largest amount by $10,000 ever collected by the association during the thirty-four years of its history. The distribution was based on the number of treatments given to the poor, regardless of race or creed, for which the hospital received no payment either from the patient or from the city. The Montefiore Home received the largest amount of any one institution, $10,500, with a record of 166,036 free treatments. The largest appropriation to a general hospital was $9,129.42, which was given to Mount Sinai Hospital, for 108,943 free treatments. Of special hospitals, the Orthopedic gave the greatest number of free treatments, receiving $4,629.57. St. Mary's Free Hospital for Women and Children received the largest appropriation for this class of hospitals, having a record of 50,333 free treatments, and its share of the total amount is $22,376.

American Gastroenterological Association.—The sixteenth annual meeting of this association will be held in Washington, D. C., on May 5th and 6th, with headquarters at the New Willard Hotel. An excellent programme has been arranged, which will include the following papers: President's address, by Dr. J. Kaufmann, on the Rôle which Functional Disorders Play in the Pathology of the Stomach; Beneficial Effect of Duodenal Alimentation in Cirrhosis of the Liver, by Dr. Max Einhorn; Bacteriology of the Duodenum, by Dr. Arthur F. Chace and Dr. Ward J. MacNeal; Frequency of the Transition of Ulcer of the Stomach into Cancer, by Dr. J. Friedenwald; Clinical Study of the Relation between Gastric Ulcer and Gastric Cancer, by Dr. Frank Smithies; Lymphedema, by Dr. A. L. Benedict; Esophageal Symptoms in Gastric Disease, and Employment of Carmin in Gastrointestinal Diagnosis, by Dr. Seymour Basch; Hyperthyroidosis of Intestinal Origin, and Abdominal Endoscopy, by Dr. J. C. Hemmeter; Early Diagnosis of Cancer of the Esophagus, by Dr. Willy Meyer; Section of the Diaphragm as an Aid in the Exposure of the Thoracic Aorta, by Dr. F. Murphy; Cecum Mobile, by Dr. L. Kast; Polyadenoma Gastrica, by Dr. Jesse S. Myer; Chronic Stenosing Gastritis, by Dr. H. W. Soper; Fluoroscopic Examination versus Clinical Methods in the Diagnosis of Gastric Diseases, by Dr. John Dudley Dunham; X Ray Method in Diagnosis of Gastric and Duodenal Ulcer, by Dr. Franklin W. White and Dr. Ariel W. George; Visualization of Obscure Lesions of the Gastrointestinal Tract by Means of the Röntgen Rays, by Dr. A. Holding; Gastrointestinal Stasis, by Dr. J. A. Lichty. Dr. Franklin W. White, 322 Marlborough Street, Boston, is secretary and treasurer of the association.

Cautions Concerning Cancer Patients.—The Cancer Commission of the Medical Society of the State of Pennsylvania has formulated a series of "cancer axioms," which emphasize the importance of early diagnosis and prompt action on the part of physicians in cases of cancer. These axioms are as follows: 1. Cancer in its early stages is always a purely local disease, permanently curable by complete removal. 2. If you wait to see what develops the cancer may spread beyond hope of cure. 3. Pain and cachexia are not signs of cancer. They are signs only of impending death. Early warning signals of cancer are: 1. Of the breast,—any lump. In a woman over thirty-five it is cancer in 90 per cent. of cases. 2. Of the uterus,—(a) any irregular bleeding; (b) change from an ordinary type of menstruation to a profuse type after thirty-five; (c) onset of a discharge; (d) change from a simple discharge to one that is more profuse, more irritating and fouler. 3. Of the skin, lip, or mouth,—(a) any sore that will not heal; (b) any wart or mole that increases in size or begins to bleed. 4. Of the alimentary canal,—(a) "indigestion" that will not promptly yield to proper treatment; (b) onset of colicky pains or intractable constipation in an individual over thirty-five. Practitioners should make an early diagnosis and act at once.

Personal.—Dr. L. H. Baekeland, of New York, has been selected by the Chicago Section of the American Chemical Society as the recipient of the Willard Gibbs medal, founded by William A. Converse, and the award will be made at the May meeting of the society. The first award of this medal was made in 1911 to Professor Svante Arrhenius, director of the Nobel Institute, Stockholm, and in 1912 it was awarded to Professor Theodore W. Richards, of Harvard University.

Dr. Harold Williams, dean of the medical and dental departments of Tufts College, Boston, has tendered his resignation, to take effect at the close of the present academic year. Doctor Williams was dean of the medical department for nearly fifteen years. In accepting his resignation, the trustees of the college have requested Doctor Williams to allow his name to remain on the faculty list as professor of the theory and practice of medicine and dean of the medical and dental schools, emeritus.

Dr. A. J. Chalmers, of Ceylon, has been appointed director of the Wellcome Research Laboratories at Khartoum, to succeed Dr. Andrew Balfour, who has resigned to become director of the Wellcome Bureau of Scientific Research in London. Doctor Chalmers is best known for his work on the etiology of pellagra.

Professor M. Ficker, assistant professor of hygiene and bacteriology at the University of Berlin, has been given leave of absence for one year, to take charge of the bacteriological institute at Sao Paulo, Brazil, at the request of the Brazilian government.

In Memory of the Late Dr. John S. Billings.—A meeting was held in the New York Public Library on the afternoon of April 25th to do honor to the memory of Dr. John Shaw Billings, who died on March 11th. Many distinguished men were present, who spoke in terms of praise of Doctor Billings as a leader in medical science and in the organizing of medical knowledge, a bibliographer and librarian unsurpassed in the classification of knowledge, and a man of indefatigable energy. John L. Cadwalader, president of the New York Public Library, was in the chair, and with him on the platform were the Right Rev. David H. Greer, bishop of New York; Dr. S. Weir Mitchell, Sir William Osler, regius professor of medicine at Oxford University, Dr. William H. Welch, of the Johns Hopkins Medical College, Andrew Carnegie, Richard R. Bowker, editor of *The Library Journal;* Frederick R. Halsey, George L. Rives, Edward Shelton, George P. Smith, and Frederick R. Sturges, trustees of the Public Library; Edwin H. Anderson, its acting director; E. G. Kennedy, Phœnix D. Ingraham, and Major Henry L. Higginson, of Boston. In the audience were Dr. Abram Jacobi, Dr. Hurd, of Johns Hopkins University, Admiral Alfred T. Mahan, and Dr. George F. Kunz. The first address was delivered by Dr. S. Weir Mitchell, who told of the services rendered by Doctor Billings during the Civil War. Sir William Osler was the next speaker and he said he brought officially the tribute of respect of the Bibliographical Society of England, of which he was president, to the memory of Doctor Billings and his great work

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

March 1, 1913.

Etiology and Therapy of Osteomalacia and Rhachitis.—S. Stocker found that softening of the bones, similar to that of osteomalacia and rhachitis, could be induced in large animals, such as calves, by the transplantation of ovaries and testicles from other animals into the preperitoneal tissues. Such transplantations succeed under suitable precautions, and the glands continue to secrete in their new locations. The active principle of the secretion of the sexual glands influences the metabolism in such a way that the bones remain soft, i. e., the process of ossification is inhibited. The change in the bone thus induced corresponds to that met with in rhachitis and osteomalacia; hence these diseases may be a consequence of the excessive secretion of the germinal glands, or of a portion of them.

March 15, 1913.

The Recognition and Importance of Arrhythmia.—R. Staehelin divides arrhythmia into five different forms: 1. Respiratory arrhythmia, which may be produced in healthy persons by deep breathing and has no pathological importance. 2. The extrasystole, which is the most common form and varies greatly in importance. It is met with in many men throughout life without indicating that the heart is particularly weak or in danger. It is to a certain degree a physiological phenomenon of old age. Whether it may arise from purely nervous causes or not is uncertain. Certain poisons produce it with more or less regularity, especially coffee and tobacco. There are persons in whom one cup of strong coffee, or a single cigar, suffices to excite extrasystole. Digitalis may do the same. Its importance is much more serious when it appears in the course of infectious diseases; the seriousness is greatest in pneumonia, least in influenza. Finally, it is a regular accompaniment of myocarditis and degeneration of the myocardium. 3. From disturbances of conduction, including complete dissociation of the activity of the auricle and ventricle, a condition long known as the Adams-Stokes syndrome, and partial dissociation of the same. These conditions pass over into each other not infrequently. 4. Arrhythmia perpetua, so named because of the constantly fluctuating rhythm without regularity, and because, as a rule, when it has once started it does not stop. It is usually met with in the last stages of heart disease. 5. The pulsus alternans, which is not arrhythmia in a strict sense, the strength of the ventricular contraction varying in such a way that each alternate contraction is weaker than the preceding, while each alternate pulse wave is small. This is particularly common in the final stages of chronic nephritis, and always has a very grave prognosis.

March 22, 1913.

A Case of Mamilla on the Thigh of a Man.—Rudolf Dietschy reports finding a small mamilla on the thigh of a young man, twenty years old, and gives a brief account of other cases collated from German literature.

March 29, 1913.

The New Method of Checking Hemorrhage and of Treating Wounds with Coagulin Kocher-Fonio.—Anton Fonio asserts to have extracted the constituents of the blood of mammals which accelerate and strengthen the coagulation of the blood, and has named the preparation coagulin Kocher-Fonio. With this he says that the hemorrhage in very bloody operations can be immediately arrested, and that secondary hemorrhages can be guarded against.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

February 6, 1913.

Significance and Accomplishment of Prophylaxis and Early Treatment of Diphtheria.—W. Braun asserts that the serum treatment has a decided value only in the first thirty hours after the beginning of diphtheria. Therefore in doubtful cases we must not wait for the result of a bacteriological examination. The public should be enlightened on this point by lectures, the daily press, etc. All persons who come in contact or are liable to come in contact with the infected person, especially the members of the family, should receive a prophylactic dose of 600 to 1,000 units. The protective action lasts with almost absolute certainty about three weeks and then gradually declines. For the purpose of organizing the fight against diphtheria the medical and civic authorities should cooperate.

Human Trypanosomiasis with Symptoms of Sleeping Sickness.—H. Werner reports the clinical course, findings in the blood, lumbar puncture. and autopsy of a man affected with *Trypanosoma rhodesiense.* Of particular interest were the pronounced symptoms of sleeping sickness, which, according to Sanderson. should have been absent in this type of trypanosoma. Also a marked swelling of the glands shortly before death. an absolute resistance to atoxyl, antimony, and potassium tartrate, and a complete disappearance of the trypanosomes from the peripheral blood eighteen hours before death, which is accounted for by the ante mortem carbon dioxide intoxication of the blood. No eosinophiles were present. A positive result of the phase 1 reaction of the lumbar puncture pointed to an existing pathological change in the central nervous system.

Diagnosis of Bronchial Stenosis.—D. Jacobson says a slowly forming bronchial stenosis brings about changes which give characteristic shadows in the Röntgen pictures. The most noticeable and constant symptom is the inspiratory displacement of the heart and mediastinum to the affected side of the chest the expiration permitting the heart and mediastinum to return to the usual position. This is a compensatory phase in which that portion of the lung attached to the stenosed bronchus cannot expand sufficiently, while the lung on the affected side fills with air in a proportionately greater degree.

Difficult Differential Diagnosis in Gynecology.—A. Sippel strongly advises the use of narcosis and high pelvic position in the examination of difficult gynecological cases.

February 13, 1913.

Development of the Adrenal Cortex.—M. Landau finds that in the human subject the cortex of the adrenals, like the cerebral cortex, shows a greater number of fissures, and deeper fissures, than in the lower animals. The fissures are the result of a more rapid growth in the first half of fetal life and the deeper furrowing in the second half. It is noteworthy that in the arrested development of the brain a hypoplasia of the adrenal cortex is also noticed.

Further Examinations on the Basis of Abderhalden's Dialysis Experiments.—A. Fauser's results, in examinations made by him, were to the effect that in the majority of the cases of dementia præcox, especially in the hebephrenic type, an imperfect functionating of the reproductive organs has to be accepted, while in the catatonic excitement stage imperfect functionating of the thyroid is evident. In luetic and metaluetic psychoses the entrance of brain material, foreign to the blood, into the circulation seems to have occurred.

Benzol Treatment of Leuchemia.—S. Wachtel states that in cases where benzol is well borne, it produces a retrogression of the leucocytosis, and cites an instance where a reduction of the leucocytes, from 182,000 to 8,000, took place. At the same time the spleen decreased markedly in size, the temperature became normal, and the general condition improved. Leuchemia cannot, however, be said to be cured by benzol.

Action of Luminal.—E. Hartung found that in ordinary insomnia a dose of 0.1 to 0.3 gramme, and in the excitement stage of mania and schizophrenia a dose up to 0.7 gramme, of luminal gave satisfactory results. As it is free from harmful side actions, he believes it can be used advantageously as a substitute for veronal, sulphonal, and scopolamine.

Eventratio diaphragmatica.—K. Motzfeld describes the autopsy of a woman, forty-one years old, in whom eventratio diaphragmatica (protrusion of the abdominal viscera into the thorax) had occurred as a result of relaxation of the diaphragm. During life, a markedly high position of the left side of the diaphragm could be made out. Microscopically the diaphragm showed fatty degeneration. Complete atrophy of the left phrenic nerve was found; but whether this bore an etiological relation to the eventration, or whether the latter was to be considered a congenital malformation could not be decided. A review of similar cases in the literature closes the article.

February 20, 1913.

Pharmacological Principles of Bromide Therapy in Genuine Epilepsy.—H. von Wyss contends that the beneficial action of bromides in epileptics is in all probability due to a low chlorine supply. The smallest dose necessary for the more or less complete suppression of the attacks is the right one. In a patient with well regulated life, and with strict supervision of the sodium chloride intake, this is between two and three grammes. A diet poor in salt, but not salt free, should be given. A large dose of sodium chloride is capable of producing an epileptic seizure in an individual who, in regard to the attack, is just on the threshold of functional activity.

Making Tuberculous Foci Nonpoisonous by Röntgen Rays.—H. Iselin states that the increase in body weight and improvement in the general condition and the local diseased area in patients under treatment for local tuberculosis foci by the Röntgen rays indicates the removal of the poison. How this is accomplished—whether destruction of the tubercle bacilli takes place, whether the toxines produced by the tuberculous process are destroyed or neutralized, or whether antibodies are formed—is a mooted question.

Acute Syphilitic Inflammation of the Kidney in the Early Stage (Nephritis syphilitica acuta præcox).—E. Hoffmann found that in rare cases of syphilitic infection there may occur, simultaneously with the roseola, or even before its appearance, the symptom complex of the severest nephritis, such as very marked albuminuria and widespread edema. The symptoms may develop gradually or very rapidly. In the catheterized urine the spirochetes are found. The cure of the syphilitic nephritis, which may be superimposed upon an already impaired kidney and is characterized by a specific alteration of the glomeruli, is best accomplished by a carefully combined mercury salvarsan course of treatment.

February 27, 1913.

The Influence of Iodine Medication on the Sputum Phagocytosis of the Tubercle Bacilli.—D. Rothschild asserts that the potassium iodide catarrh which follows the administration of the drug in tuberculous patients often permits the finding of the bacillus in cases in which it could not be produced previously. The bacilli are then usually intracellular. This evidently increased phagocytosis, whether the result of iodine treatment or not, appears usually in clinically favorable cases. Good results have been obtained with a combination treatment of iodine and tuberculin.

Combined Salvarsan Mercury Treatment of Lues.—G. Stümpke believes that the superiority of the combined treatment by salvarsan and mercury is being shown day by day. Further, that the intravenous and intramuscular injection of salvarsan in the same individual seems to be more efficacious than the single method. In thirty-five out of fifty-one cases in the primary stage with a negative Wassermann reaction, the appearance of the secondary symptoms was delayed for a period of three months, time thus being given for clinical observations. In the treatment of tuberculous syphilitics this combined method has given good results.

Experimental and Clinical Actions of Hormonal.—P. Sackur says that the albumin free Zuelzer's hormonal seems to be devoid of pressure diminishing action when at least fifteen minutes is taken to inject the twenty c. c. of the original bottle very slowly. The stimulating peristaltic action of the hormonal, which in the rabbit is very evident, but hardly present in the cat or dog, has given excellent results in many cases of paralytic ileus, postoperative paresis, and simple atonic constipation. The drug should not be given in cases of mechanical obstruction of the bowel. In cases of this kind there occurred severe diarrhea (after operative removal of the obstruction) as an after action of the hormonal.

ZENTRALBLATT FÜR CHIRURGIE.

March 15, 1913.

Joint Anesthesia.—Carl Deutschländer finds that the direct injection of anesthetic solutions into the cavity of the joint is of little use for the production of satisfactory anesthesia for long operations, unless the blood is first expelled. If the blood is not expelled the synovial membrane absorbs the anesthetic so rapidly that its effect is soon lost. He employs Bier's method of vein anesthesia for rendering the joint bloodless. The bandage must be applied accurately, for its inefficent action brings disappointment. The injection is then made into the joint, not into the synovial membrane. In a large joint two injections are made at different points. If the synovial membrane is destroyed to such an extent that it cannot absorb the anesthetic, little if any anesthesia will be produced; therefore this method should not be tried when the interior of the joint has been totally destroyed. The method is not applicable to joints like the hip and shoulder, from which the blood cannot be effectually expelled. The skin has to be anesthetized separately.

Are Wound Infection and Long Continued Constriction Contraindications to the Suture of Arteries?—Wilhelm Danielsen reports a case in which a boy, sixteen years old, received a stab wound in the shoulder. The wound was infected, and a rubber tube had been twisted, for some five hours, about the shoulder to arrest the bleeding from the axillary artery. The arm was livid and cold. In spite of these conditions the artery was sutured with a good result, the arm being saved.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

March 15, 1913.

A Case of Anemic Infarct of the Small Intestine.—W. R. Meyer reports a case of this unusual condition occurring in a man of seventy. The arteries of the intestine showed an old obliterating endarteritis that had caused an acute thrombosis. The veins likewise showed a similar condition. As a result of both the venous and arterial thrombosis an enemic infarct had resulted.

March 31, 1913.

The Excretion of Hemoglobin by the Kidneys.—Ribbert, on further investigation, reiterates his opinions as stated on previous occasions. He holds to the view that in normal or only slightly changed kidneys the hemoglobin is excreted solely through the glomeruli. If, however, the organ has undergone marked changes, some hemoglobin may pass through the epithelium of the tubules.

LYON MÉDICAL.

March 23, 1913.

Iron Content of the Viscera in Various Pathological Conditions.—J. Chalier, L. Nové-Josserand, and Boulud found, by macroscopical chemical methods, that in pernicious anemia there is a constant and marked siderosis or deposit of iron in the spleen and liver. In pulmonary tuberculosis siderosis is constant in the spleen, but very slight or absent in the liver, even though the latter is cirrhotic. In nontuberculous cirrhosis there is siderosis in both spleen and liver, usually predominating in the latter. In cardiac and renal affections the spleen is usually, and the liver always, free from iron pigment. In general, the spleen and liver are the chief organs showing siderosis, though sometimes the pancreas, thyroid, and lymphatic glands also contain iron pigment. The condition of the liver tissue does not govern the degree of siderosis in this organ, for there occur cirrhoses without iron pigmentation, and on the other hand, cases of pernicious anemia with marked hepatic siderosis, but undegenerated liver tissue. The authors believe visceral siderosis to be always of hemolytic origin. That this hemolysis takes place primarily in the spleen is indicated not only by the fact that the iron deposits are frequently limited to this organ, but by experiments in dogs injected with toluylene diamine, in which, upon comparative examination of blood serum obtained from the splenic vein, splenic artery, and jugular or femoral vein, hemoglobinemia, whenever present, was found always far greater in the serum from the splenic vein than in the other specimens.

PRESSE MÉDICALE.

April 2, 1913.

Technic of Intramuscular Injections of Salvarsan in Syphilis.—F. Balzer has witnessed no serious untoward effects from intramuscular injections of neosalvarsan in oily suspension, and believes this method as safe for general use as similar injections of calomel or metallic mercury. To minimize pain the amount to be injected—generally 0.3 gramme—is administered in two places. The first two injections are given in the lumbar region, just above the iliac crest, the second injection being made one and a half or two centimetres above the first. The patient lying on a bed in the prone position, with the arms extended, he is told to contract the dorsolumbar muscles, when, after due cleansing of the skin with alcohol, the needle is inserted perpendicularly at the most salient point of the muscles, to about one half the depth (thickness) of the latter. A small wad of cotton is introduced into the butt end of the needle to detect any escape of blood, owing to vascular injury, and if none appears, the sterile syringe barrel, into which the oily suspension has just been poured from its ampoule, adapted to the needle, and the injection made. Upon quickly withdrawing the needle, pressure is made over the puncture and a small piece of diachylon plaster applied. Five or six injections can be given in each dorsolumbar region; when the buttock is used, its upper and outer segment should be selected. The amount of oil injected at each sitting is only one cubic centimetre---one half at each injection. The pain is scarcely ever sufficient to deter patients from returning for regular weekly treatment. From four to six injections of 0.3 gramme are generally sufficient. Balzer does not approve of ascending doses except where there is urgency. Mercury is then given, followed by two series of three or four neosalvarsan injections in the first year after the beginning of treatment. Additional series should be given in the succeeding three years.

Congenital Esophageal Stenosis.—Guisez reports four cases of this nature, all in male subjects and all with the stenosis at the level of the cardia. The treatment consisted in relieving the esophagitis.

then dilating the contracted portion, and usually performing esophagotomy or circular electrolysis.

April 5, 1913.

503 Cases of Spinal Anesthesia by Jonnesco's Method.—Dimitrion and Saghinesco report results obtained with stovaine-strychnine anesthesia in a Rumanian military hospital. Most of the cases were operated in for hernia, hydrocele, or varicocele; only two cases of high (dorsal) anesthesia are included. The authors advise the use of a relatively narrow needle, not exceeding five to six centimetres in length. The technic they followed was exactly that of Jonnesco, though the dose of stovaine was in some cases reduced from 0.04 to 0.03 gramme, with resulting equally satisfactory anesthesia. The authors assert that idiosyncrasy plays no part in spinal anesthesia; all failures are due to faulty technic. Where anesthesia is incomplete, the authors send the patient back to bed and do not operate until from three to five days later, when the anesthesia invariably proves satisfactory. Where anesthesia fails to appear in ten minutes, a second puncture is made. The stovaine used is secured in ampoules, and has been previously purified. With this preparation untoward aftereffects are reduced to a minimum. Headache occurs in only one fifth of the cases, and is so mild as to require no analgesic, while fever and epigastric pain are rare. No late complications have been noted. The authors are enthusiastic concerning the future of spinal anesthesia.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

March, 1913.

Considerations on the Treatment of Syphilis with Ehrlich's Remedy.—Dind studied the cerebrospinal fluid obtained through 135 lumbar punctures in 115 syphilitic patients, and found that, while during the early portion of the primary stage no abnormalities are present, the pressure of the fluid and lymphocyte count show changes, sometimes very marked, in the preroseolic period and, especially, in the early secondary period. These in reality correspond to a meningoencephalitis, and are sometimes accompanied by significant symptoms of nervous involvement, such as headache, vertigo, hyperacusia or hypoacusia, and evidences of paresis or paralysis of the oculomotor or facial nerves. In the late secondary, tertiary, and quaternary periods the diffuse meningoencephalitic phenomena become attenuated and a tendency to localization of the disease is observed. From seven cases, in each of which two or more lumbar punctures were practised, before and after repeated salvarsan injections, the author concludes that the nervous condition is probably favorably influenced by this remedy. The so called "neurorecurrences" are looked upon by Dind as evidences of diffuse or localized syphilitic meningitis, rather than of the action of salvarsan. These disturbances can be cured or improved provided they are detected early, through close observation of the patient, including the cerebrospinal fluid, and combated promptly and persistently. Dind has given altogether 1,800 injections of salvarsan in 650 patients, and has seen more or less serious untoward effects in only three instances. He lays stress mainly on gastrointestinal disturbances and erythematous rashes among the unfavorable symptoms arising from salvarsan idiosyncrasy, and also states that nervous and cardiovascular disease need not be invariably considered a contraindication to salvarsan treatment.

An Early Sign of Pericarditis.—G. Turrettini calls attention to the abnormally sharp, ringing character of the second heart sound at the pulmonic area occurring as a precursor of pericardial friction in affections such as acute rheumatism or Bright's disease complicated with pericarditis. This sign was first referred to in 1894 by Josserand, but escaped general notice. Turrettini observed it in two cases, one due to Bright's disease and the other to advanced tuberculosis with pneumothorax, and in each instance diagnosticated pericarditis correctly before the friction rub had appeared. Two other patients, in whom pericarditis arose by transmission of the infective agent from the pleura through the lymphatics, did not present the sign. Josserand's original explanation of the sharpened second pulmonic sound, viz., that the sound originates from closure of the valve leaflets owing to inflammation at the infundibulum of the pulmonary artery, seems plausible. The sign may prove of value, not only in permitting of earlier treatment of a beginning pericarditis, but also in assisting the physician to determine the portal of entry of infection into the pericardium.

Clinical Value of Much's Method of Staining Tubercle Bacilli in Sputum.—A. Cramer, from a review of the work already done by various authors, believes it justifiable to conclude that the granulations of Much and the "splitter" of Spengler are similar forms of the tuberculous virus which appear whenever the medium becomes unfavorable to the development of the tubercle bacillus. Under these conditions the bacilli disintegrate and the resulting granulations can be stained by Much's modified Gram method. In a comparative study of the Much and Ziehl procedures in about fifty cases of lung tuberculosis, the latter method was found in fifteen cases to show a larger number of bacilli than the former. In some other cases the Much examination proved wholly negative, though the Ziehl showed bacilli, while in a second series of examinations fifteen cases were noted in which the Much gave positive results, though the Ziehl was repeatedly negative. Material from each of these last fifteen cases was injected into guineapigs, and seven of the animals subsequently showed no sign of tuberculosis. In spite of great care and repeated filtration there were noted in some of the preparations granules so similar to those described by Much that they were taken by the author to be tuberculous virus, though the negative guineapig inoculations indicated that they were merely particles of the staining agent. For this reason Cramer believes the Much procedure unreliable, and useful only to confirm the clinical and other experimental findings. The mere presence of granulations does not in itself prove the existence of tuberculosis.

Case of Acute Tobacco Poisoning.—G. Fulpins reports the case of a boy, fourteen years of age, in whom an enema consisting of only five grammes of rather mild tobacco, macerated in 500 c. c. of water, brought about immediate epigastric pain, followed by vomiting, collapse, and convulsions. Recovery followed.

ROUSSKY VRATCH.

February 23, 1913.

Some Clinical Misunderstandings in the Employment of Antipyretics. The Action of Sodium Salicylate on the Heart.—P. J. Bovisoff calls attention to the fact that, contrary to the generally accepted opinion, antipyrine and salicylates are not cardiac depressants. His experiments on the isolated heart of a cat showed that quinine is a distinct cardiac depressant, and that antipyrine has a very slight action on the heart, while sodium salicylate is really a heart stimulant. The collapse observed after the administration of large doses of antipyrine and salicylates is caused, not by the action on the heart, but on the vasomotor nerves, diminishing the vascular tonus and thus lowering the blood pressure. The effect is on the temperature, which after the administration of quinine is lowered gradually by the depression of heat production, while with antipyrine and salicylates the temperature drops suddenly, owing to increased heat radiation through the dilated capillaries. It is this lowering of the temperature and the resulting depression of the nervous system that determine the collapse. The practical conclusion reached by the author is that these drugs should be administered in small doses, frequently repeated, so as to avoid a rapid reduction of temperature.

Clinical Observations on the Action of Gonococcic Vaccine in Chronic Gonorrheal Arthritis.—W. P. Semenoff employed polyvalent gonococcic bacterins in six cases of gonorrheal rheumatism with excellent results. He regards this bacterin as a specific and maintains that in case a local reaction is not obtained the arthritis is not gonorrheal. The pain is stopped and the temperature is lowered to normal by the bacterin, and in some cases there is an increase of the urethral discharge. Of the unpleasant effects of the treatment he mentions diarrhea. For a complete cure from eight to twenty injections of 0.2 to 0.8 c. c. each are necessary. They are made at first every four to six days and then every six or seven days.

Hemolytic Properties of the Diphtheria Bacillus.—V. S. Veseloff reports in a preliminary communication his observations on the hemolytic properties of the diphtheria bacillus when grown in bouillon. The hemolytic principle is a constant biological character. It is destroyed by from 50 to 55° C. for ten to fifteen minutes. In addition to the hemolytic principles, he found in the bouillon culture principles which inhibit hemolysis and which seem to have a connection with the toxigenic properties of the diphtheria bacillus.

BRITISH MEDICAL JOURNAL.

April 12, 1913.

Rheumatoid Arthritis.—James Barr scouts the ideas that this condition is due to the action of either bacteria or their toxines, or of the toxines developed in the intestine as a result of stasis. He believes that the proximate cause is a mild, chronic acidosis, which extracts the lime salts from the fibrous tissue, muscles, nerves, cartilages, and bones. The disease is a general one, and the apparent localization is due to the structure of the joints and their liability to injury. The extraction of lime salts from fibrous tissue causes it to swell and its vascularity to increase; loss of lime salts causes irritable weakness of the muscles; they waste, contract readily, cramp occurs frequently, the deep reflexes are exaggerated and rhythmic tremor may arise. Neuralgic pains result from the extraction of some of the very small amount of lime present in nervous tissue. With the continued absorption of the lime the periarticular tissues swell, and there is effusion into the joints, the cartilages soon become involved, and this is followed by thinning and erosion. The facts that the disease is present chiefly among the poorer classes, and in the female sex between the ages of fifteen and thirty-five years, lend support to this view, for in these there is a deficiency of calcium intake and during the active menstrual period there is a tendency to an increased calcium metabolism, often associated with some thyroid disturbance. The relative absence of calcium and potassium in the food of the poorer classes leads to a deficient motility of the stomach, and this, in turn, results in a dilated stomach and obstinate constipation with acid fermentation.

The Various Forms of Fibrositis and Their Treatment.—Arthur P. Luff finds the employment of ionization with iodine ions one of the most useful measures, combined, of course, with the other well known general modes of treatment. He and a number of his colleagues have used fibrolysin in this disease and in others of a similar nature in eighty-three cases. In eighteen of these the drug had to be discontinued, owing to the fact that the injections caused rise of temperature, malaise, nausea, headaches, and in some cases palpitation, vertigo, and tendency to syncope. Of the sixty-five cases in which the patients had the full course of forty injections, no good whatever resulted in forty-six, or seventy-one per cent.; in eleven, or seventeen per cent., there was some improvement; and in the remaining eight cases, or twelve per cent., there was permanent cure. He believes that it is of very limited use.

A Study of the Types of Organism in a Series of Bone and Joint Tuberculosis of Children.—John Fraser made both cultural and biological tests of the nature of the bacilli grown from tissue obtained at operation in seventy cases of bone or joint tuberculosis occurring in children under twelve years of age. In forty-one of the cases the bacillus was of bovine type; in twenty-six, human; and in the remaining three both types were found. Of the children under three years of age, twenty-three were infected by the bovine bacillus, while only five had the human type. Above this age the distribution was almost equal for the two types. Taking food supply and history into consideration, it was found that in twenty-one instances of a family history of tuberculosis fifteen, or seventy-one per cent., of the cases in children were due to the human bacillus. In fifty-two cases there was no family history of tuberculosis, and of these, forty-three children were infected by the bovine type of organism. Only nine, or seventeen per cent., of this latter group had the human bacillus. Of twenty-five of the children brought up solely on human milk only six were infected with the bovine bacillus, as against nineteen with the human variety. Out of a total of forty-one fed on cow's milk, thirty-seven infections were of the bovine type and only four of the human.

LANCET.

April 12, 1913.

The Effect of General Contraction of the Peripheral Bloodvessels upon Mouse Cancers.—Charles Walker and Harold Whittingham call attention to the fact that the injection of various compounds of metals intravenously into mice causes, in every case, a marked general vasoconstriction. Further, it is known that the vessels in the mouse cancers, particularly in those which are grafted, contain no vasomotor nerves and are very thin walled. From these facts the authors thought that the action of these preparations might be due to some extent to mechanical factors, and not to any selective action of the metals. Trying a preparation of ergot (ernutin) and one of pituitary in two series of mice, and at the same time running controls, the authors saw a number of tumors retrogress, and the pathological lesions found in each instance were quite similar to those seen after the use of one of the toxic metallic preparations—that is, chiefly local hemorrhages in the tumor substance, with necrosis. They believe that these experiments confirm their hypothesis with regard to the probable mechanical action of the substances used by Wassermann and Neuberg. It is also suggested that the increased circulation through the tumors, as a result of the passive dilatation of the vessels, is, in part at least, the cause of the apparent selective action of the toxic substance used; for this is brought to the tumor in greater amount relatively than to the rest of the body tissues, and is there fixed.

A Series of 236 Cases of Total Enucleation of the Prostate Performed during the Two Years 1911-12.—P. J. Freyer gives brief records of the results of a few of these, including one patient who regained control of his bladder after twenty-four years of exclusive catheter life. In the 236 operations there were only eleven deaths, or 4.66 per cent. Adding the present series to his previous operations, Freyer reports on a total of 1,036 total enucleations of the prostate, in men ranging in age from forty-nine to ninety years. The glands removed weighed from one half ounce to seventeen ounces, the average being about two and three quarter ounces. Most of the patients were in bad health at the time of the operation and some were actually moribund; yet the mortality for the entire series was only 5.5 per cent. The remaining patients, 979 in all, got completely well with a single exception, in which the patient failed to regain the power of voluntary micturition.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

March 1, 1913.

Intestinal Parasites in Costa Rica.—S. C. Jamison presents a report based on the examination of 210 patients at Port Limon. Of the 169 cases, or nearly eighty per cent., that were positive for some intestinal parasite, the majority were in negroes, the remainder comprising mainly native Costa Ricans, with a few foreign whites. Trichuris was found to constitute by far the most extensive infection, and the author is certain that this infection gives rise to symptoms by causing anemia of a marked, though very seldom severe, grade. Hemoglobin estimations were made in the majority of cases. The lassitude, headache, and vague intestinal symptoms often complained of are to be attributed to trichuris infection. Of the few English and Americans examined, those harboring this parasite had all been in the country for a period exceeding one year. Necator and ascaris were found not to occur as frequently as in many parts of the United States. Mixed infection, however, appeared to be more common (fifty-nine cases). Necator and trichuris were present together thirty-two times; ascaris and trichuris four times; necator and oxyuris twice; necator, ascaris, and trichuris nine times. The presence of one parasite seemed in no way to affect the others.

March 15, 1913.

Apparent Cures in Sleeping Sickness.—Mercier Gamble treated forty-one unselected cases of trypanosomiasis in the Portuguese Congo with not less than one hundred grains of atoxyl, administered subcutaneously in the forearms, usually in four grain doses. Nineteen of the patients are now alive and well, from three and a half to four years after the course of treatment. The method referred to requiring much time, however, the author has since October, 1910, given, as a rule, seven and one half grains of atoxyl twice weekly by intramuscular injection. Of a group of thirty-two patients who commenced treatment in that year, twenty-one are in good health.

Contribution to the Study of Bilharziasis.—Ivo Bandi's observations supported the opinion of Looss that schistosomum ova with terminal spines and those with lateral spines belong to the same species, which may become localized in either the bladder or the intestine or both.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 17, 1913.

Hand Lesions Following Injuries of the Upper Extremities.—C. Hermann Bucholz considers the questions how to prevent and how to cure the disablement of the hand which is apt to follow a Colles's fracture. He names as causes: 1. The primary injury; 2. the hemorrhage; 3, the forcible reduction of the fragments; 4, the faulty application of splints and dressings; 5, too long duration of treatment: 6. an ill judged aftertreatment. As to the primary injury, little is said except that the danger of a secondary affection of the hand does not seem to be proportional to the injury to the bones. The hemorrhage he thinks important, as its absorption is slow, inhibited to a certain extent by preventing muscular action, and may set up an inflammation that results in a formation of fibrous tissue with secondary retraction and atrophy of muscles, tendon sheaths, ligaments, and capsules. Functional cure does not depend upon the exact reduction alone. Harm may be done in the reduction, and this danger is increased when forcible reduction is made several days or weeks after the injury. All splinting does some harm, and this should be made as little as possible. By splints the speed of the absorption of the hemorrhage is diminished, the circulation is decreased, the nutrition is interfered with to some extent, and the muscles and joints are deprived of the beneficial effect of functional stimulation. Hence, their unnecessarily long use is apt to increase the stiffness of the joints and the retraction of the muscles, rendering aftertreatment longer and the final result poorer. The technic of the treatment Bucholz employs is as follows: After the reduction of the fragments the arm and hand are put on a Schede's splint in palmar and ulnar fixation. On the following day the dressing is removed, but the hand is not lifted from the splint, which lies, with the hand on it, on a table, or on the operator's knee. While one hand of the operator holds the patient's wrist tightly, but without hurting it, the other hand gives a number of soft, stroking manipulations over the muscles of the forearm as far as can be reached over the back of the hand. Then the dressing is reapplied. On the next day the same treatment is given, adding a few passive movements of the fingers. When the splint is correctly applied the fingers are allowed free play. The stroking is given more vigorously and kneading manipulations are added. A few movements of the wrist are made as early as the fourth day. If done with sufficient care this does not cause pain, and loosening of the fragments is hardly possible when the wrist is held firmly on the splint. Such treatment is to be given for a few minutes every day, or at least every second day; increasing each time the amount and number of the motions. When the hand is already impaired, a good functional result can be obtained in the milder cases by a persistent use of baking, proper massage, and active and passive exercises; in the severe cases the hand will remain more or less crippled.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 19, 1913.

Systematic Exercises in Postoperative Treatment.—Eugene H. Pool sets forth clearly the value of systematic exercises in postoperative cases, their trial, by the writer, in a number of cases seeming to support the theory that their use results in an improvement in the general circulation, the functions of the body being better performed. The patients feel better, muscular weakness and atrophy are lessened, and after getting up exertion is less fatiguing and return to normal more rapid. The two objections, possible interference with the repair of the wound and danger of embolism and thrombosis, may be disregarded provided proper exercises are selected and intelligent instruction is given the patient; there is reason to believe that the exercises may prove a prophylactic against these complications. It is important that the postoperative exercises should be systemized, and, while general exercises may be prescribed for certain conditions, personal supervision is essential in every case.

The Bacteriology and Bacteriotherapy of Renal Calculus and Its Sequels.—A. P. Ohlmacher emphasizes the importance of routine bacteriological analysis of all cases of renal calculus and the associated pyuria and bacterinuria. It is suggested that therapeutic immunization with autogenous bacterial vaccines should be tried in all nonoperative cases of calculous, pyuria, and bacterinuria for the relief of bladder irritability and impaired general health, and in cases in which operation has been done when these symptoms are unduly prolonged.

Tubal Reimplantation; a New Conservative Operation for Sterilization of Women.—George De Tarnowsky describes the technic of this operation and lays special emphasis on two points, the invagination of the tubal stump in order to obtain seroserous coaptation, and the eversion of the cut tube as it emerges from the tunnel on the posterior uterine wall, obliterating raw surfaces which might aid in the formation of adhesions. Reconstruction of the tubes, if occasion demands and the patient wishes to become pregnant again, would consist in resecting the invaginated portion of the uterine stumps, removing the tubes from their artificial canal, and reuniting the ends, mucosa to mucosa, with very fine interrupted catgut sutures.

MEDICAL RECORD.

April 19, 1913.

Primary Splenomegaly of the Gaucher Type; Report of a Successful Splenectomy.—William A. Downes reports a case of primary splenomegaly of the Gaucher type in order to call attention, in brief, to the clinical manifestations of this rare but extremely interesting condition, and to record the second successfully operated case in this country, which, with Erdmann's case, the first successfully operated case in America, brings the total number of operated cases up to seven, there having been, of this number, five recoveries and two deaths. The most prominent feature of the histological picture in the writer's case was an extensive, uniform, diffuse endothelial hyperplasia, the endothelial cells resembling those seen in the so called "large celled hyperplasia" of lymph sinus endothelium, and forming a solid mass or sheet lying sometimes within the sinuses but mostly between them. The cells were large and nearly spherical, having a relatively large amount of faintly acid staining, homogeneous cytoplasm, and relatively small oval, vesicular, or smooth staining nuclei. The cell borders are faint and in the more solid masses indistinguishable. Where the cells are within the sinuses they often lie loose, with the blood cells between them. Although the sinuses are compressed by these cell masses, they are still patent, and contain red blood cells—occasionally nucleated, numerous cells resembling large lymphocytes, and relatively numerous polymorphonuclear leucocytes, mostly neutrophile. Although the sinus epithelium is hypertrophic, it is not actively proliferating. The pulp cords are almost obliterated, being represented by narrow bands of lymphocytes which separate the groups of endothelial cells. The lymph follicles are normal, though few and small, and from their distribution and size apparently represent the darker points seen in the gross examination. The trabeculæ are not apparently thickened.

A Method of Classification, Diagnosis, and Therapy of Kidney Disorders, Based on Func-

tional Testing.—Herbert E. Barigh reviews the theories and classification of kidney disorders from the time of Richard Bright, who first, in 1836, pointed out the connection between anatomical changes in the kidneys and the presence of albuminuria and dropsy (the same views being held by Henle, Virchow, Ludwig, Traube, Cohnheim, and Klebs); touching on the theories of Weigert, Ludwig, Bowman, and Heidenhain, and finally showing that no theory previously advanced would explain all the facts. The modern view of the normal functionating of the kidney, according to the writer, consists of at least three processes, simple filtration (chiefly in the glomerulus and dependent upon blood pressure and the chemical composition of the blood), osmosis, and synthesis or secretion (chiefly in the tubules). In addition to the two groups, dropsical and nondropsical nephritis, Widal proposed a third, which he called the "azotemic" or uremic type. By experimental pathology it was found that different drugs, administered to healthy animals, cause injury to different parts of the kidney structure. The same substances were next administered to nephritic animals, and the elimination time noted. These experiments were then repeated with the human subject, both healthy and nephritic, and it was found that lactose elimination is delayed in those conditions corresponding with experimental nephritis of the cantharides type, but not in other types. Similarly, potassium iodide and sodium chloride are delayed in clinical conditions resembling the experimental nephritis of the sublimate types, but in no other. Urea is delayed only in those conditions where there is a tendency to uremia; so there is added another, called the mixed type. By this classification albumin and casts lose their value as diagnostic signs, as they may be present in every type of renal disorder. In their place a series of signs is presented, possessing true diagnostic meaning and value. Circulatory troubles are peculiar to and diagnostic of vascular nephritis; anasarca and diminished capacity for salt excretion are peculiar to the tubular type; repugnance for meat, albuminuric retinitis, and increase of nonprotein nitrogen in the blood are peculiar to the uremic type. In addition, functional tests may be used.

A New Treatment for Acute Gonorrhea.—O. L. Mulot reports good results from the use of a five per cent. solution of iodine in oil as a urethral injection, three times daily, until the discharge ceases. If the discharge reappears, the iodine is used once daily and is supplemented with a sulphocarbolate of zinc injection, twice a day. The writer believes this treatment applicable also to streptococcus and staphylococcus infections of the urethra. The best results from this treatment will be obtained if the physician will administer the iodine injections personally. In chronic cases the posterior urethra is involved, including the seminal ducts, the prostate, seminal vesicles, etc., about the end of the third week. Here, after an intelligent massage of the parts, and these washed out by micturition, an injection of iodine will do good, but will not yield such prompt results as are obtained in the acute cases.

AMERICAN MEDICINE.

March, 1913.

Treatment of Fibroid Tumors, with Report of Seven Hundred Cases.—Ellice McDonald, after a careful study and consideration of 700 cases of fibroid tumor, concludes that fibroids do not retrograde on the establishment of the menopause, but, on the contrary, increasing age augments the danger from these growths. Before the fortieth year the danger of malignancy is slight; after this each year increases the danger. Early removal of fibroids is indicated when of sufficient size to produce symptoms and patients seek advice, by reason of the sarcomatous changes, carcinomatous associations, and other degenerations of uterine fibromyomata. Small uncomplicated fibroids in young women do not require early treatment. A thorough pathological examinations of all fibroids should be made for evidences of malignancy. Adenoma and sarcoma should be looked for in all fibromata, at the time of operation. To those tumors which are necrotic, cystic, or both, particular study should be given, as among those are found the largest proportion of malignant changes. As in a large percentage of cases there are inflammatory changes in the Fallopian tubes and appendix, these should be examined at the time of operation and removed, if diseased.

Diagnosis of Early Pregnancy.—Ellice McDonald insists that the diagnosis of early pregnancy must depend on no one sign, but upon the conjoined evidence of all signs. After the third month the congestive signs of flush of the vagina offer reliable evidence, but before the ninth week they are of no great use. The diagnosis of early pregnancy must form the changes in the uterus occasioned by the growing ovum—irregular enlargement, symmetrical or otherwise, intermittent contractions, Hegar's sign (compressibility of the isthmus), and the writer's sign (flexibility of the isthmus or hinge sign of pregnancy). From these last two signs of compressibility and flexibility of the isthmus, with enlargement and irregular contraction, a positive diagnosis may be made within ten days after the missed menstruation and will increase the ease of positive diagnosis later on.

Puerperal Infection from the Gonococcus.—Ellice McDonald insists that the treatment of the form of puerperal infection must be largely in the line of prophylaxis. The specific vaginitis is always present before the advent of labor, and proper measures should be used against it. This is best done by douches before labor. The douche was formerly looked upon as worthless since the organisms increased markedly after its use. This happened when bichloride of mercury and formalin were used, but it has since been proved that dissolved in water these antiseptics are useless in the presence of organic tissue (skin, mucous membrane, blood serum, pus, etc.), being therefore only irritants, not antiseptics. With the new efficient coal tar derivative germicides this is not true. The writer suggests chlormatakresol, a powerful germicide only slightly affected by the presence of albuminous fluids, harmless to the vaginal mucosa, and nontoxic. Local treatment causes irritation and may provoke premature labor. The labor is conducted with as little traumatism and as few examinations as possible. The douches are continued and longer rest in bed is enjoined. If abscesses develop they must be opened as soon as discovered and treated locally.

Comparative Value of the Different Physical Signs in Incipient Pulmonary Tuberculosis.—Robert Abrahams asserts that the increased whispered sound is of the greatest value in the diagnosis of incipient tuberculosis, as it is the one reliable, suggestive, and decisive sign of beginning tuberculosis in the lower lobes. Râles, moist, dry, or musical are suggestive of early tuberculosis in an apex, but of little or no value around the borders of the lower lobes; especially is this true of moist râles which are normal to most persons in that position and the presence of which is probably due to the neglect of deep breathing. If râles are difficult to make out over the apices, the stethoscope placed over the acromion processes will bring them out with distinctness and definition, if present. Diminished breathing is an important sign, but is not met with as frequently as the textbooks would have us believe. Exaggerated or harsh breathing is not a sign of early tuberculosis of the lung over which it is heard, but is compensatory in character, and the tuberculosis should be sought at the corresponding point in the opposite lung.

Cure of Leprosy an Established Fact.—E. S. Goodhue boldly asserts that in the large number of incipient cases where the disease is localized (peripheral or neural), any treatment that will remove the circumscribed area or focus of infection, without opening up channels for metastatic dissemination, will effect a cure in from six to twelve months' time. The initial focus may remain localized for a time, extending from a few months to years, or even a lifetime.

Pregnancy with Hydramnion.—S. J. Druskin concludes that an absence of positive signs of pregnancy should not exclude the diagnosis of pregnancy, as in hydramnion the fetal heart sounds are often absent and the fetus can be palpated only with difficulty. The x ray picture is here valueless and may be misleading, because it has been shown experimentally that amniotic fluid is opaque to the x ray. The acetone test is of positive value in doubtful cases of pregnancy. Pituitary extract (one c. c., hypodermically), when combined with a Voorhees bag, is useful for the induction of premature labor. Atony and hemorrhage are prevented by the use of pituitrin.

JOURNAL OF INFECTIOUS DISEASES.

March, 1913.

Fusiform Bacilli Associated with Various Pathological Processes.—Dick calls attention to the fact that the fusiform bacilli found in connection with ulceromembranous anginas, ulcerative stomatitis, and noma may also be found in other parts of the body. He reports three cases of meningitis in which the fusiform bacilli were found, three cases of lung infection, and one case of peritonitis following an endometritis. The importance of these bacilli in causing the pathological processes must remain an open question. The negative results of all attempts to demonstrate pathogenic powers for animals suggest that the organism may have been present only as a secondary invader, as other organisms were found in all cases.

Studies on the Virus of Hog Cholera.—King, Baeslack, and Hoffman report that the examination of the blood of forty hogs which were suffering from cholera revealed the presence of a spirochete. All specimens of blood from these animals, during the height of the disease, contained characteristic granules, although without cultures with which to innoculate susceptible animals, it is impossible at this time definitely to ascribe to the spirochete under observation any pathogenic properties or etiological significance. Nevertheless, careful consideration should be given to the results, which are consistent and uniform throughout, and which, in some particulars, strongly suggest the relationship of this spirochete to hog cholera as a causative factor.

Tuberculosis of the Stomach with Extensive Tuberculous Lymphangitis.—Dewey reports a case and gives a review of the literature on the subject, particularly in relation to the lymphatic supply of the stomach. Although in the author's case a direct infection of the gastric mucosa cannot be excluded absolutely, the ensemble of the conditions in this case, the fact of the general tendency of tuberculous processes to spread along lymph channels, and conclusions drawn from the literature lead one to assume the lymphogenous nature of the infection, not only in this case, but in the larger number of cases of tuberculosis of the stomach.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

March, 1913.

Epinephrine.—H. McGuigan and H. T. Mostrom state as a result of their experimental work that there is nothing to indicate that the rapid fall of pressure which may follow clamping of the adrenal veins is due to a decreased epinephrine content of the blood, though by a suitable method—that of Popielski—a continuous secretion on the part of the adrenal glands can be demonstrated. The authors present evidence to show that the glands exert more than one function and that the substances essential for the maintenance of these functions are oxidized with different velocities.

Peripheral Action of Certain Drugs with Especial Reference to the Lungs.—D. E. Jackson was able to show conclusively that epinephrin produces a prompt dilatation of the bronchioles where these are contracted; this effect is wholly independent of the rise of blood pressure produced by epinephrine. Moderate quantities of atropine do not paralyze the bronchodilator nerve endings. Injection of a small dose of pilocarpine into the spine of a dog with vagosympathetic nerves cut, produces a slight bronchoconstriction which is soon followed by a moderate but usually prolonged dilatation; this latter change does not occur if the adrenals have been previously excised or clamped off, and may therefore be ascribed to stimulation of these glands by an increased secretion of epinephrine. Several alkaloids, including quinine, cause bronchoconstriction, apparently by a direct muscular action. Nicotine causes, after brief initial constriction, a dilatation which appears to be due to an increased secretion of epinephrin caused by the nicotine.

Resistance of Spirochetes in Cultures to Chemical and Physical Agents.—J. Bronfenbrenner and H. Noguchi tested the action of various antiseptics, as well as salvarsan and neosalvarsan, on living spirochetes, contrasting the effects of the agents used with those produced on *Bacterium coli*. The minimal concentration of chemicals required to kill *Treponema pallidum* of a heavy type was, of mercury bichloride, one to 200,000; arsenic trioxide, one to 30,000; tricresol, one to 500; phenol, one to 200; sodium hydroxide, 1/30 normal; hydrochloric acid, 1/300 normal; salvarsan, one to 1,000; neosalvarsan, about the same as salvarsan. Alcohol in ten per cent. strength did not sterilize the spirochetes. Minute quantities of the antiseptics, far below the sterilizing point, were found to stimulate markedly the growth of spirochetes. In general, the toxic effect of the chemicals was twenty to 100 times greater against the spirochetes than against the colon bacillus. The toxic effects of salvarsan were found to be increased from two to five times in the presence of liver and especially blood enzymes. Spirochetes suspended in physiological salt solution are sterilized at 45° C. in from seven to ten minutes.

LONG ISLAND MEDICAL JOURNAL.

April, 1913.

Ligaments of the Patella.—James P. Warbasse says that it is neither true that the patella is wholly a sesamoid bone nor that the tendon of the quadriceps is wholly inserted into the bone. A portion of the tendon is inserted into the upper part of the patella, but the most important part of the tendinous terminations of the muscles pass in front and to the sides of the patella, to be attached below the knee joint. Beneath the fascia lata there is a layer of tendon which passes in front of the patella, below which is a deeper prepatellar tendon which is directly continuous with the terminal tendon of the rectus femoris. and into which there are inserted also fibres from the vasti. The fascia lata also serves to some extent as part of the insertion of these three muscles. The portion of the quadriceps tendon lying in front of the patella carries fibres directly from the rectus and vasti. It is inseparably united with the periosteum. Below, the ligamentum patellæ rises from it. Laterally it is closely adherent to the fascia lata. This double ligament connects the sides of the patella with the head of the tibia and the fibula and with the tubercle of the tibia. It transmits the pull of the three great extensors around and independent of the intervention of the patella. In repairing after fracture of the patella the suture of these ligaments is the main feature of the operation.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

March, 1913.

Medical Treatment of Gastric and Duodenal Ulcer.—L. M. Gompertz, upon reaching a diagnosis of ulcer, insists on absolute rest in bed and, in the acute cases, allows no food by mouth for five to seven days, sometimes longer. Morphine is given hypodermically until hemorrhage has positively ceased, an ice pack placed on the abdomen, and, if necessary, the bowels moved by an enema. In the absence of hemorrhage, hot applications may be made, a saline purgative administered, and later thirty grain doses of bismuth subnitrate given, in conjunction with seven and one half grain doses of magnesium hydrogen dioxide (twenty-five per cent.), three times daily. Small quantities of boiled water may be required to insure retention of these drugs. For nutritive purposes the author institutes immediate rectal feeding with a solution of dextrose, which, he has observed, is absorbed almost *in toto*. One half litre of a ten per cent. solution of dextrose in normal saline solution is introduced into the rectum at body temperature every six hours, by means of a rectal feeding apparatus which permits of applying the Murphy drop principle. The apparatus consists of an inverted vacuum bottle, fitted with outlets, a soft rubber dispensing tube, and, connected with a gauze glass, a drop chamber, together with devices for controlling the flow of solution. The latter is placed in the receptacle at boiling temperature and delivered at body temperature. By this plan the patient can be supplied with over 700 calories daily. As soon as the condition permits, oral feeding should be resumed, beginning with albumin water. Then well cooked and strained oatmeal gruel or thick barley soup is given, and finally other thick soups and boiled, scraped meats.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

March, 1913.

Abdominal Cæsarean Section in Eclampsia and Central Placenta prævia.—Espy M. Williams calls attention to the fact that tentative treatment is falling into disrepute, and that the majority of pracitioners evacuate the uterus as soon as the first convulsion occurs and, if possible, even in the preeclamptic stage. It is with this idea of promptly emptying the uterus that the writer reports two cases as examples of the quickest, easiest, and safest method. The writer uses the high incision, and partially delivers the uterus from the abdomen sufficiently to give access to the base of the broad ligaments that rubber covered stomach clamps may be slipped over each one, not closed, but in readiness for closure should hemorrhage necessitate it. In closing the uterine wound he uses four layers of sutures; the first (doubled No. 2 plain gut) takes up the muscles down to, but not through, the mucous membrane; no knot is tied in the end of this, but it is brought directly back, taking up the muscle alone, in the second layer; the third layer is of linen and takes up muscle and peritoneum; and the fourth, of linen, is of a Lembert type, and brings the peritoneal coats into apposition. The mucous lining must not be included in the first layer of sutures, as union is impossible between cut muscle and an inverted mucosa, and, moreover, a ruptured scar in subsequent pregnancies is avoided. To diminish the chances of infection, the cervix is not dilated from above to provide for drainage, nor is any drain inserted. If ergot is given just before opening the abdomen it will facilitate the post partum uterine contraction. In central placenta prævia the writer advises delivery by Cæsarean section, because it is more rapidly done and the shock and dose of an anesthetic are less, the opportunities for asepsis greater, and hemorrhage is better controlled, since the uterus may be removed if reasonable attempts at hemostasis have failed. In any case, the uterus should be emptied as soon as the condition is recognized, no matter what stage of pregnancy is present, unless the patient is willing to take the risk of delay for the sake of the child, in which event the pregnancy may be allowed to go on as far as the eighth month, when Cæsarean section should be done.

Residual Urine in Old Men.—S. P. Delaup considers age, feebleness, and an enlarged prostate as common, if not invariable, accompaniments of this condition, but the true cause, in his opinion, is a deficiency of effort on the part of the patient, which may be due to laziness, impatience, or indifference. As to treatment, the writer advises those having residual urine to pass the urine in the usual way, wait a minute or two and then try again, practising this as frequently as possible, till only a small quantity can be squeezed out—say, half an ounce. Reaching this point, twice or thrice daily may suffice, the two most important times being before going to bed and on rising in the morning, when it may be advisable at first to make three, or even more, efforts, so as thoroughly to empty the bladder. This treatment is applicable to and likely to be successful only in early cases, those in which residual urine is not more than a few ounces and there is no atony of the bladder. The treatment should be begun early.

PENNSYLVANIA MEDICAL JOURNAL.

March, 1913.

Pituitary Body in Disease; Method and Results of Surgical Intervention.—Charles H. Frazier describes a method of approach to the pituitary which consists in the reflection of a flap from the frontal bone. The incisions are made through the eyebrow, below and within the hair line above, and are connected by a vertical median incision. The supraorbital ridge and part of the orbital roof are removed *en bloc*, later to be replaced. The remainder of the orbital roof is rongeured away down to the optic foramen. The frontal lobe of the brain is elevated, the contents of the orbit are depressed, and the region of the pituitary is thus exposed to view and is easy of access. The operation is not bloody and the cosmetic result is very satisfactory.

Treatment of Flat Foot.—De Forest P. Willard says that the arches of the foot are maintained, in great part, by the slinglike action of the peroneal and tibial muscles. Any weakness of the tibials on the inner side, or overaction of the peroneals, will cause the foot to evert when the body weight is placed upon it. This throws the line of weight bearing inward and increases the strain upon the supporting muscles. As the tibials stretch, the strain is thrown on the plantar fascia and the ligaments of the tarsal joints, which gradually give way and the normal arch disappears. During the earlier stages when there is muscular strain with little or no displacement much can be done. The essence of the treatment is: 1. To strengthen the weakened muscles. This can be done by regular exercises which the patient can carry out at home, but which must be done faithfully if success is to be obtained. 2. To allow the foot to assume its normal position. This is to be accomplished by the elimination of faulty footwear. 3. To relieve the strain on the muscles by throwing the line of weight on the outside of the foot and to support the arch until the muscles are ready to take up their full work. This is accomplished by the adjustment of a proper shoe. Such a shoe should be straight on the inner side, have a rounded toe, a low, broad heel, extended forward on the inner side, a broad stiff shank, and the counter should be extended to the anterior portion of the arch. In some cases it may be necessary to add a wedge of leather, from one to five eighths of an inch thick, at the inner border, which tapers gradually as it approaches the outer side of the shoe. In the advanced cases it may be advisable to place pads under the instep, supporting partially the tarsal arch. Willard unreservedly condemns the common detached arch support which can be purchased everywhere, and says that it not only does no good, but greatly increases the suffering of the patient, while injuring the foot materially.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held at the New York Academy of Medicine, February 4, 1913.

The President, Dr. Smith Ely Jelliffe, in the Chair.

Tumor of the Base of the Brain Immediately behind the Pituitary Body.—Dr. H. Climenko reported the case of a girl, nine and a half years old, who first came under observation November 10, 1912. For the past twelve months she had suffered from unusual thirst and occasional vomiting, and about six weeks ago ptosis of the right eyelid was noticed. Two days later a similar condition developed on the left side, and she began to suffer from intense headaches and profuse vomiting. Examination by Dr. Climenko showed that all the tendon reflexes were increased, but there were no Babinski sign, no clonus, and no sensory disturbances. There was complete bitemporal hemianopsia, with pallor of the optic discs. There was complete ophthalmoplegia of the left eye, and the right eyeball was drawn outward. Both pupils were widely dilated and failed to react to light and accommodation. With these symptoms, the following possibilities as to diagnosis were thought of: 1. A toxic neuritis of the ocular and optic nerves. 2. An empyema of the body of the sphenoid. 3. An encephalitis of specific origin. 4. Tumor. The patient was admitted to the Mount Sinai Hospital, where she was seen by Dr. I. Abrahamson. The blood and spinal fluid were examined with negative results as to the Wassermann test. An x ray examination showed a marked depression of the middle fossa of the skull, presenting a troughlike appearance, while the posterior clinoid process was pushed forward, narrowing the upper part of the sella turcica. With these findings, the diagnosis of a tumor of the base of the brain was established. This patient, Dr. Clemenko said, was at present in the Neurological Hospital on Blackwell's Island. For the past few weeks the headaches and vomiting had disappeared completely, but the child was extremely emaciated and totally blind.

Dr. I. Abrahamson said the case was first looked upon as one of toxic ophthalmoplegia, with beginning atrophy of the discs. A little later, when the atropine had worn off, it was noted that the pupils remained widely dilated, did not contract to light, etc., and they then knew that they were dealing with a condition directly involving the nerves themselves. The x ray cleared up the diagnosis, revealing a tumor behind the sella turcica.

A Case for Diagnosis.—Dr. Climenko presented a woman, forty-six years old, who was first seen six years ago, when she gave the history of recurring attacks of loss of power in the right arm, increasing in frequency and duration during the previous two years. Physical examination revealed a hypertrophy of all the muscles of the right upper extremity. The reflexes were unchanged; there were no sensory disturbances; no change in the electrical reactions. There was diminution of the gross motor power in the arm, and inability to execute the finer movements (picking up a pin; threading a needle, etc.), with the right hand. No other symptoms were present. Six years later, when the patient again consulted Dr. Climenko, an examination showed enormous hypertrophy of all the muscles of the right upper extremity, but particularly of the flexors of the forearm. The electrical tests showed a normal nerve reaction, but a remarkable increased excitability to both galvanic and faradic currents, without any qualitative change. There were myotonic contractions of the biceps at each attempt to flex the forearm, either actively or passively. Direct myotonic irritability was increased, and fibrillary twitchings were present in the flexors of the forearm. There was marked weakness of the entire right upper extremity, and inability to use the hand.

Dr. Abrahamson said this case seemed to him to be unique. It was apparently an unusual type of syringomyelia, with the involvement of two distinct cord areas, producing both a myotonia and a macrosomia. There was also a slight enlargement of the right face, the right side of the forehead being more prominent than the left. F. Hochwart many years ago had called attention to a syringomelia with intentional spasms; but here distinct myotonia was absent.

Air in the Ventricles of the Brain Following a Fracture of the Skull.—Dr. W. H. Luckett reported this case. The patient was a machinist, forty-seven years old, who was admitted to the Harlem Hospital November 24, 1912, after being struck by a trolley car. The diagnosis of fracture of the skull was made and was confirmed by two x ray plates by Dr. W. H. Stewart, and the patient was prepared for immediate operation; but the symptoms cleared up so rapidly that it was decided to wait. In less than a fortnight the patient insisted on leaving the hospital and one week later was readmitted with the history that two days previously he had had a severe headache, with occasional vomiting. Up to that time he had been reading the papers daily, although he was dull and listless and would not converse with anyone and took no notice of his surroundings. For the past few days he had not replied when spoken to, although he understood what was said to him. Two days after his readmission to the hospital the patient was examined by Dr. William M. Leszynsky. At this time the man was conscious; he answered questions and obeyed commands intelligently; but cerebration was slow, and he was inclined to lapse from time to time into a condition of mental confusion. There was no aphasia; no disturbance of speech; no astereognosis; no tremor of tongue or hands. The pupils were normal and reacted equally; facial innervation and mobility of the tongue normal; no tenderness on percussion over skull; no rigidity of neck; upper extremities normal. The lower extremities showed no paresis or rigidity, but were resistive to examination. Both knee jerks, and especially the right, were increased. Diagnosis, increased intracranial pressure; probably abscess. A blood count, made on December 15, showed 15,900 leucocytes, with eighty-six per cent. of polymorphonuclears and eight per cent. of lymphocytes. On the same day an ophthalmascopic examination, made by Dr. M. Cohen, showed that the external ocular muscles of both eyes were normal, while there was a slight subconjunctival hemorrhage in the right temporal quadrant. In the right fundus the veins were enlarged and tortuous, with the central vein markedly dilated over the disc and also at the exit from the nerve. The arteries were slightly contracted, and the disc borders were indistinct, from marked edema. In the left fundus also the veins were greatly dilated, the arteries contracted, and the disc borders indistinct, while there was a suspicion of retinal hemorrhage. Diagnosis, bilateral optic neuritis indicative of intracranial pressure. A second series of x ray pictures, taken by Dr. Stewart, showed that the cerebral ventricles were enormously dilated, probably with either air or gas, and, the patient apparently getting worse, a right sided subtemporal decompression was done by Dr. Luckett on December 16. Upon exposure, the dura did not bulge and was not particularly tense. No fluid escaped on incision of the dura and pia; a slight meningitis was noted. A needle was then passed into the anterior horn of the lateral ventricle, and the removal of the trocar was followed by two or three quick spits of air and fluid, and then clear cerebrospinal fluid to the amount of eight c. c. Because of the presence of meningitis and the large quantity of fluid and the presence of air in the ventricles, it was determined to drain the latter; and a suboccipital operation then performed. The bone was exceedingly thin. The dura was incised, and then the pia into the cisterna magna, and immediately there escaped considerable clear fluid, generously admixed with bubbles of air. A small piece of twisted rubber tissue was inserted as a drain. The patient did well until the fourth day after the operation, when his temperature suddenly went up to 107° F. and he died. At the autopsy air was shown to be present in the ventricles when they were incised with the brain submerged in a vessel of water. There was a lacerated wound of the base of the right frontal lobe just beneath the right anterior horn and just over the fracture in the orbital plate which communicated with the frontal sinus. It was subsequently learned that air was probably forced up through the fracture in the frontal sinus into the ventricles during an attack of sneezing. In connection with the case, Dr. Luckett exhibited a number of radiographs demonstrating the presence of the air in the ventricles of the brain.

Dr. William M. Leszynsky said that the x ray plates in this case showed a very unique picture; unlike anything, so far as he knew, that had ever been recorded.

Some Anomalous Tremors.—The President, Dr. Smith Ely Jelliffe, showed two patients to illustrate some anomalous types of tremors. The first was a woman, twenty-nine years old, with a tremor of the left hand which was continuous during the day, disappearing during sleep. The tremor had come on gradually about seven months previously. Its rate was from five to six to the second, and had little intention quality. There was also a slight inequality in the pupils, but no modification of the reflexes. The eye grounds were normal. The second patient, a woman, thirty-four years old, had a tremor which began fourteen years previously in a manner very similar to that illustrated in the first case. It began in one hand and gradually became generalized, until now it involved almost the entire body. There was marked stiffness and a tendency to retropulsion at times. There were no palsies or sensory changes, except that the sole of the left foot showed a slight diminution to light touch. All the reflexes were fairly active; there was no distinct Babinski sign. The eyes showed a slight inequality of the pupils, as in the first case, and a very distinct pallor of the temporal side of both discs. The fields were normal; there was no nystagmus. There were no speech defects. The patient had gradually lost weight, but there was no appreciable diminution in muscular power.

Dr. B. Sachs said he regarded the first case as one of paralysis agitans and the second a multiple sclerosis. The first case he thought was absolutely typical of paralysis agitans; there was no other type of tremor that it could be mistaken for, and the only one that could be at all compared to it was an occasional function tremor. He recalled one such instance where the husband had paralysis agitans and a very similar functional tremor developed in the wife. In the case shown by Dr. Jelliffe the woman had the facies of paralysis agitans, and had no symptoms which would lead one to think of any other diagnosis. As to her age, that would not necessarily militate against the diagnosis, as paralysis agitans might have its onset in early life. The speaker said that in his book he had recorded a case of paralysis agitans in a young man coming on about the age of eighteen or twenty; in that case all the symptoms of a disseminated sclerosis developed eventually, although at their onset they were quite characteristic of paralysis agitans. As to the second case, he thought there was no doubt that it was an example of multiple sclerosis. The woman had a tremor which became worse on exertion, and she had just a slight tremor —an unconscious tremor we might call it—of the head and neck muscles, which we did not see in paralysis agitans. This was very significant of multiple sclerosis. She also had pallor of the optic discs and some monotony of speech.

Dr. Abrahamson said that in cases like that of the second patient we probably had to deal with a diffuse lesion in the mid brain, in the nucleus ruber, and the crus, and very likely with involvement of the rubrospinal system.

Dr. J. **Ramsay Hunt** said that on passive motion in Dr. Jelliffe's first case, there could be elicited a slight interrupted rigidity of the muscles. This was a phenomenon to which Dr. Moyer had applied the name of the "cogwheel" symptom of paralysis agitans, and in early cases the speaker thought it was of distinct value. As to the second case, he thought a positive diagnosis could not be made. That offered by Dr. Sachs would be a probable working one; at the same time he himself was inclined to regard it as a case of progressive degeneration, perhaps, as Dr. Abrahamson had suggested, in the pyramidal tracts.

Dr. **Leszynsky** said the unusual factor in the first case was the age of the patient. The character of the tremor was not at all unusual, as he could recall perhaps half a dozen cases where it was unilateral, being confined to one hand for many months. When the patient's attention was directed to the opposite hand, the tremor on the affected side increased, which was quite characteristic in paralysis agitans. In the second case he did not think much stress could be laid upon the pallor of the discs, as ophthalmologists frequently differed in their view of its significance—whether it was pathological or physiological. In this instance there was apparently no disturbance of the field of vision. Personally, he would favor the diagnosis of paralysis agitans.

Dr. **Edward D. Fisher** said he had seen a case very similar to the first one shown by Dr. Jelliffe, where there was evidently a lesion in the crural tract, but in that case the tremor was constant and increased on motion. The second case he would be inclined to look upon as a paralysis agitans rather than a multiple sclerosis.

Dr. B. **Onuf** suggested that in the second case there might be a diffuse brain sclerosis instead of a multiple sclerosis.

Dr. L. **Pierce Clark** said the two cases shown by Dr. Jelliffe impressed him very much as they had Dr. Sachs, and for the same reason. He was surprised to hear from the discussion that paralysis agitans should be looked upon as such an entity, and he thought it was rather premature to insist upon an anatomical basis for that disease. The tests in the first case showed that there was a distinct alteration of the vibrations to the intention type of tremor, and he believed his was a case of paralysis agitans, while the second was one of disseminated sclerosis. He had seen a case of paralysis at the Vanderbilt Clinic in a man, twenty-nine years old, although he looked older on account of the mask like expression of the face which was customarily found among patients of this class.

Dr. **Sachs** said he had never seen a rapid tremor that he could account for by any mid brain lesion.

Dr. **Jelliffe**, in closing, said he felt justified in inferring that both these cases were of a similar type, and that the first represented the beginning stage of what might ultimately develop into the condition of the second. He was inclined to believe that in both instances the process was one of multiple sclerosis, but one which was localized at first and primarily in the mid brain structures. Here we had mid brain, or paralysis agitans, types of multiple sclerosis, the multiple sclerotic area involving those pathways which in the more recent works on this subject were referred to as being involved in paralysis agitans. As to the character of the tremor, at least three definite types of tremor originating in the mid brain structure, depending on the point of interruption of the mechanism, were to be distinguished. These were the athetoid, the paralysis agitans like, and the intentional tremor. From the more recent studies of this subject we were able to say in just what portion of the arc the mechanism was interrupted. In both cases he had shown the tremor was like that of paralysis agitans. The presence of vasomotor signs indicated possibly the implication of the thalamus, while the eye signs pointed to lesions located near the red nucleus.

Address of the Retiring President.—Dr. L. **Pierce Clark**, in retiring from the presidency, briefly sketched the work of the society during the past two years and emphasized the importance of giving more attention in the future to the beginning neuroses and psychoneuroses, the milder forms of the frankly established insanities. He also suggested that the case presentations be made more thorough, and that some provision be made, if possible, for those members who were interested to look over the clinical material before the general discussion was called for in open meeting.

A Summary of the Origins, Transformations and Present Day Trends of the Paranoia Concept.—Dr. **Smith Ely Jelliffe** made this the subject of his presidential address. After referring to the antiquity of the term paranoia, which was even prehippocratic, he rapidly sketched the varying concepts of the condition from the time of Celsus and Aretæus, through the long periods of the medicine of the monasteries, the later work of Plater, Vogel, Plocquet, Pinel, and Heinroth (1808), where one found the first approach of that century old discussion, the chief reverberations of which still lingered in our present day psychiatry. The concepts given in the textbook of Krafft-Ebing represented the full bloom of the paranoid period, and his picture was all too recent to need much elaboration. The speaker then referred to the more recent work by Kraepelin and Freud, and expressed the hope that his review of the subject would serve to orient the present traveler as to the drift of opinion to-day relative to the paranoia question. It was almost trite to say that with each new generation, newer methods of solving old problems arose, and that refinements in methods of analysis with sounder syntheses resulted. Old lines faded away, new boundaries were run, and radical rearrangements were everywhere apparent. This was as it should be; it was an indication of healthy mental activity, and in no field of psychiatry was this forward push more apparent than in the consideration of the paranoia domain. Seen from one point of view, the trend of development seemed to be tending toward an elimination of the concept entirely. Like the famous snakes in Ireland—so with paranoia; one might almost say that "there were none." On the other hand, another present day trend pointed in the direction of the unravelling of some most fascinating and highly important mental mechanisms which played a large rôle in the psychopathology of everyday life. The paranoid character, if he might so call it, promised to offer a clue to the further elucidation of many important situations, not only of mental pathology, but of many so called normal reactions.

Letters to the Editor.

THE RELATIONS OF TONE AND COLOR.

7 West Madison Street, Chicago, *April 16, 1913.*

To the Editor:

On page 56 of the Journal, January 4, 1913, is reproduced a question and answer from the *Ladies' Home Journal* for January, 1913, to the effect that the distinguished pianist, Josef Hofmann, says that there is no relation between tone and color. That in your opinion settles it. Had the erstwhile blind pianist, known in my youth as Blind Tom, been asked what, if any, were the relations between blue and green and yellow he surely would have answered that there was no relation. For Tom born blind could never have had any appreciation of any color although he had a certain musical sense that Hofmann lacks; and Josef has no knowledge of or appreciation for any relation between tone and color, having never sensed any such relations. Nevertheless it is true that there is some relation, for I myself sitting at ease with my eyes closed at a comfortable distance from well played stringed instruments do experience the sensation of seeing colors with the varying tones. What one has sensed one is warranted in believing exists.

We all, or nearly all of us, have appreciated the relation between taste and smell and sight. The same object may cause nausea whether tasted or smelled or seen. Some are color blind, very few have any control over or pleasure from the sense of smell, and a differential sense of taste is rarely found. Hearing, like sight, is generally a utility sense, and as one may see perfectly and yet be color blind so one may have perfect hearing and have no sense of harmony.

It is hardly safe to say a thing is *not* just because we have not sensed it.

John Ridlon, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Die Pathologie und Therapie der plötzlich das Leben gefährdenden Krankheitszustände. Von Sanitätsrat Dr. Richard Lenzmann, prakt. Arzt und Oberarzt am Diakonenkrankenhause zu Duisburg. Dritte, sorgfältig durchgearbeitete und vielfach vermehrte Auflage. Jena: Gustav Fischer, 1913. Pp. xvii-664.

The fact that a book of some 650 pages appears in a third edition and that it has been translated into three foreign languages is sufficient to indicate that there is a demand for it. The author presents, more or less briefly, those conditions which may lead to the sudden death of an individual. The subject matter is divided into numerous sections that deal with such conditions as are manifested in the different systems of the body. Lesions of the brain and cord are discussed first. Then are reviewed those of the respiratory, the circulatory, the intestinal, and the urinary tracts. The last two portions deal respectively with abnormal conditions during pregnancy, delivery, and the puerperium, and with sudden death due to poisoning. This book is interesting and full of information, but just what the advantage of this method of presentation is over the teaching of medicine in the usual textbooks is not clear. Practically any disease may terminate suddenly, so that such a happening does not help in determining what the preexisting disturbance may have been. For purposes of reference, however, to explain the way in which the death of an individual had taken place, this volume would be useful.

Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung (mit Ausschluss der Tuberkulose). Herausgegeben von Professor Dr. L. Brauer, ärztlichen Direktor des Allgemeinen Krankenhauses Hamburg-Eppendorf. Redaktion: Für die Originale, Dr. H. Schottmüller und Dr. H. Much. Für die Ergebnisse, Professor Dr. H. Lüdke. I. Band, 2 Heft. Würzburg: Curt Kabitzsch, 1913. Pp. 230-446.

Of the various original articles here presented, one by Abderhalden takes up very extensively the recognition of foreign substances in the blood by means of dialysis, and of optical reactions and the application of these methods in pathology. Leschke contributes to the serological diagnosis of tumors. He reviews the work done with complement fixation and reports experiments of his own. He finds that all sera from normal individuals can dissolve cancer cells to a greater or less degree. He notes, however, that it is impossible to draw a line between the minimum solution of cells by tumor sera and the maximum produced by sera from other diseases. He feels, though, that it is not impossible, that, by means of improved technic, this method may become of practical value. Hässner contributes a paper on the regeneration of renal epithelium in diphtheria, while Römer devotes thirty-four pages to a presentation of bacteremia in abortions and its general significance. Lüdke reviews mixed and secondary infections, and Uffenheimer and Awerbuch give a critical résumé of 276 articles dealing with anaphylaxis in acute exanthematous diseases, and with special reference to the action of pepton. All of the contributions are interesting and of distinct value.

Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Für Aerzte und Studierende. Von Dr. Bandelier und Dr. Roepke. Siebente, gänzlich umgearbeitete Auflage. Mit einem Vorwort von Wirkl. Geh. Rat Prof. Dr. R. Koch, Exzellenz. Mit 25 Temperaturkurven auf 7 lithographischen Tafeln, 2 farbigen lithographischen Tafeln und 5 Textabbildungen. Würzburg: Curt Kabitzsch, 1913. Pp. xii-330.

In these days when tuberculosis is the question of the hour such a book as this is a very valuable production. The diagnosis of this disease in its early stages is always a matter of difficulty as far as physical signs are concerned. Consequently it is necessary to employ methods that, on account of the delicacy of the reactions, are correspondingly difficult to interpret. The first part, therefore, of this volume is devoted to a clear and comprehensive discussion of the theories of the tuberculin reaction and the factors concerned in its action. There is given in detail the technic to be employed in administering the various cutaneous tests in which tuberculin is used. The question of the specific therapy receives the important consideration that it deserves. The underlying factors of the tuberculin treatment and the technic are given, and then follows a very complete review of the various forms of tuberculous products, twelve in all, employed in causing an active immunization. A brief discussion of four substances used in passive immunization and in vaccination is followed by a chapter devoted to the indications for the employment of tuberculin. The closing chapter gives a complete summary of the facts previously given. In its three hundred pages, this book has much that is important and useful.

Die Erkrankungen des weiblichen Genitales in Beziehung zur inneren Medizin. Von Priv. Doz. Dr. A. Blau, Priv. Doz. Dr. R. Th. Jaschke, Prof. Dr. Fr. Kermauner, et al. Redigiert von Prof. Dr. L. von Frankl-Hochwart, Hofrat Prof. C. von Noorden, und Geh. Medizinalrat Prof. Dr. A. von Strümpell. II. Band: Akute Infektionskrankheiten, Schwangerschaftstoxikosen, Eklampsie, Sepsis, Hautkrankheiten, Asthenie, Enteroptose, Metastasen der Tumoren, Nervenkrankheiten. Mit 7 Abbildungen. Wien und Leipzig: Alfred Hölder, 1913. Pp. xix-988.

To attempt to give a detailed review of a volume of nearly a thousand pages would require more space than can be granted. That it is a part of the Nothnagel *System of Medizin* is in itself sufficient recommendation. This second volume deals with the acute infectious diseases, the toxemias of pregnancy, eclampsia, sepsis, diseases of the skin, asthenia, enteroptosis, tumor metastasis, and nervous diseases. Considerable space is given to a presentation of the relation of septic conditions to internal medicine. Although one appreciates in a general way the effect of local conditions on the body as a whole, it is not until one reads such an article as this that the correlation of all parts appears clearly. The matter of metastasis in malignant disease is very carefully and exhaustively considered. The various forms of growths are reviewed, the methods of metastasis and the clinical manifestations are discussed. Space is also given to the appearance of metastatic growths of the genitals, from those originating in other parts of the body. Concerning eclampsia, Neu, the author of the chapter, believes that there can be no doubt that it is an intoxication arising from placental abnormalities. This volume is of distinct value.

Pocken und Vaccinationslehre. Von Dr. G. Jochmann, Professor an der Universität in Berlin. Mit 20 Abbildungen im Text und 6 Tafeln. Wien und Leipzig: Alfred Hölder, 1913. Pp. iv-297.

This interesting volume of Nothnagel's *System of Medizin* takes up in detail two very important subjects, smallpox and vaccinia. Starting with a brief history of smallpox, the etiology, clinical appearances, both usual and abnormal, and the pathological lesions are dealt with. Diagnosis, prognosis, prophylaxis, and treatment are satisfactorily discussed. Under the heading of prognosis the statement is made that if the mortality at present from smallpox were the same as in the eighteenth century, 160,000 people would die each year in Germany. The actual condition, however, is that for the past ten years the average number of deaths per annum has been thirty-eight. To vaccination more attention is given than to smallpox itself. The discovery and the dissemination of the method are reviewed, and the ways of obtaining the virus are presented. The technic is described in full, as well as the appearances of the eruption and the various forms of possible contamination. The chapter dealing with the results of vaccination from a statistical point of view is an extremely valuable one. No person, except the most blinded partisan, could fail to be impressed by the figures and tables shown. The subsequent chapter dealing with the antivaccinationists is short but very good. Their arguments, or at least claims, are taken up briefly, and quietly but thoroughly disposed of. The list of ills that are alleged to follow vaccination is truly marvellous, everything from growing hoofs and a tail to a general degeneration of the human race.

Meetings of Local Medical Societies.

MONDAY, *May 5th.*—Clinical Society of the New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club.

TUESDAY, *May 6th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Long Island Medical Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity; Amsterdam Medical Society; Lockport Academy of Medicine; Hudson County, N. J., Medical Association; Bridgeport, Conn., Medical Association.

WEDNESDAY, *May 7th.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association; Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn (annual); Bronx Medical Association; Schenectady Academy of Medicine; Elmira Academy of Medicine.

THURSDAY, *May 8th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; West Side Clinical Society; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown, N. Y.; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua.

FRIDAY, *May 9th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-internes of the German Hospital; Saratoga Springs Medical Society (annual).

SATURDAY, *May 10th.*—Therapeutic Club, New York.

Official News.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 26, 1913:

Ames, M. H., Passed Assistant Surgeon. From waiting orders to duty at the Navy Yard, Boston, Mass. **Bass**, J. A., Assistant Surgeon. Detached from duty at the Naval Hospital, Canacao, P. I., and ordered home to await orders. **Bishop**, L. W., Surgeon. Detached from the *New Jersey* and ordered home to await orders. Thomas, G. E., Assistant Surgeon. Detached from the *Helena* and ordered home to await orders. **Tompkins**, J. A., Assistant Surgeon, Medical Reserve Corps. Detached from the Navy Recruiting Station, New York, and ordered to the Navy Recruiting Station, Buffalo, N. Y.. **Wilson**, H. D., Surgeon. Detached from the Navy Recruiting Station, Buffalo, N. Y., and ordered to the *New Jersey.*

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 26, 1913:

Bushnell, G. E., Colonel. Left Fort Bayard, N. M., on April 15th, on ten days' leave of absence, with permission to apply for twenty days' extension. **Chase**, A. M., First Lieutenant, Medical Reserve Corps. Left Fort Dade, Fla., on April 17th, for his home, and honorably discharged from the Service after five months' leave. **Denton**, W., First Lieutenant. Detached from duty at Fort Sam Houston, Texas, and ordered to Leon Springs, Texas, for detached service. **Farrow**, E. J., First Lieutenant, Medical Reserve Corps. Ordered to Fort Dade, Fla., for temporary duty. **Ingalls**, R. E., First Lieutenant. Left Fort Ward, Wash., on April 15th, for Fort Liscum, Alaska, and other posts in Alaska. **Powell**, W. A., Captain, Medical Corps. Left Presidio of San Francisco, Cal., on April 18th, for Yosemite National Park, Cal., for duty during the season. **Siler**, J. F., Captain, Medical Corps. Left New York, N. Y., on April 14th, for Spartanburg, S. C., for duty with the field party of the Thompson-McFadden Pellagra Commission. **Stephenson**, William, Colonel. Left Governor's Island, N. Y., on April 21st, for Chicago, for duty as chief surgeon of the Central Department.

Births, Marriages, and Deaths.

Born.

Anspach.—In Philadelphia, on Monday, April 14th, to Dr. and Mrs. Brooke M. Anspach, a daughter. **Hull.**—In Bremerton, Wash., on Monday, April 14th, to Passed Assistant Surgeon Harry F. Hull, United States Navy, and Mrs. Hull, a son.

Married.

Curtin—Quinn.—In Waltham, Mass., on Wednesday, April 23d, Dr. John J. Curtin and Miss Katherine Gertrude Quinn. **Dever—Cullen.**—In Hazelton, Pa., on Tuesday, April 22d, Dr. Neil J. Dever, of Freeland, and Miss Gertrude Cullen. **Hurtt—Barber.**—In Mifflinburg, Pa., on Thursday, April 17th, Dr. Harry Hurtt, of Washington, D. C., and Miss Mary Harris Barber. **Manges—Bosley.**—In Baltimore, on Saturday, April 19th, Dr. Willis F. Manges, of Philadelphia, and Miss Marie Elise Bosley. **Simon—Webster.**—In Malden, Mass., on Thursday, April 17th, Dr. Harold F. Simon, of Winchester, and Miss Lillian M. Webster. **Spellman—Hanger.**—In Cincinnati, Ohio, on Saturday, April 19th, Dr. John Spellman and Miss Kitty Hanger.

Died.

Ball.—In Beloit, Wis., on Friday, April 18th, Dr. Samuel Ball, aged seventy-two years. **Campbell.**—In Jamaica, N. Y., on Friday, April 18th, Dr. Robert Campbell, aged sixty-two years. **Capron.**—In Albany, N. Y., on Tuesday, April 22d, Dr. Arthur S. Capron, aged sixty-three years. **Carney.**—In Brooklyn, on Tuesday, April 22d, Dr. James Lester Carney, aged sixty-three years. **Fox.**—In Hartford, Conn., on Thursday, April 17th, Dr. Charles James Fox, aged fifty-nine years. **Hart.**—In Wu Ho, China, on Monday, April 14th, Dr. Edgerton H. Hart, of Toronto, Canada. **Johnson.**—In Watertown, N. Y., on Wednesday, April 16th, Dr. Parley Hall Johnson, of Adams, aged seventy-four years **Kissel.**—In Brooklyn, on Saturday, April 19th, Dr. Jacob Kissel, aged thirty years. **Koons.**—In South Orange, N. J., on Monday, April 221st, Dr. Oscar H. Koons, of Brooklyn, N. Y., aged sixty years. **Maclean.**—In Spencerville, Ontario, on Wednesday, April 16th, Dr. S. C. Maclean, aged sixty-six years. **Mulhern.**—In Greenfield, Iowa, on Saturday, April 19th, Dr. Thomas W. Mulhern, aged seventy years. **Preston.**—In Chester, Pa., on Monday, April 21st, Dr. Frederick L. Preston. **Putman.**—In Bridgeton, N. J., on Monday, April 14th, Dr. Joseph H. Putman, aged eighty years. **Richards.**—In Trenton, N. J., on Tuesday, April 22d, Dr. Owen B. Richards, aged seventy-five years. **Sherwin.**—In Woodstock, Vt., on Thursday, April 17th, Dr. Orlando W. Sherwin, aged seventy-six years. **Small.**—In Eastport, Me., on Sunday, April 20th, Dr. Edward M. Small, aged sixty-six years. **Sutton.**—In Bath, N. Y., on Friday, April 25th, Dr. Orlando Webb Sutton. **Swango.**—In Toliver, Ky., on Sunday, April 20th, Dr. William Swango. **Thompson.**—In Bridgeport, Conn., on Friday, April 18th, Harriet Adaline Thompson. **Treuholtz.**—In Fort Bayard, N. M., on Tuesday, April 15th, Captain Clarence A. Treuholtz, Medical Corps of the United States Army. **Van Deinse.**—In New York, on Tuesday, April 22d, Dr. William F. Van Deinse. **Whitman.**—In St. Paul, Minn., on Sunday, April 20th, Dr. Alvah F. Whitman, aged eighty-one years. **Yingling.**—In Baltimore, on Monday, April 14th, Dr. Joel Yingling, aged sixty-five years.

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Original Communications.

INSANE AND MENTALLY DEFECTIVE ALIENS ARRIVING AT THE PORT OF NEW YORK.

BY GEORGE W. STONER, M. D., SC. D.,
New York,
Senior Surgeon, United States Public Health Service; Chief Medical Officer, Immigration Station, Ellis Island.

That the people of the State of New York and of the whole country are seriously interested in the question of immigration, and especially in the results of the medical examination of arriving aliens at the chief port of entry, goes without saying.

Of the many American citizens, native, as well as naturalized, who visit Ellis Island for one purpose or another a considerable number call at the medical office. Among the latter there are not infrequently medical men, general practitioners as well as specialists from different parts of the country as well as from New York State and city, and when these professional brethren remain long enough to witness the work and note the results accomplished, not only on the line of primary medical inspection but also in the medical examination rooms and in the Immigrant Hospital, the expressions and comments of such visitors are usually very complimentary to the medical officers thus engaged.

Of course on busy days when there are five thousand or more aliens, and even on ordinary days when there are only three thousand or a less number presented for examination, the visitors, even the laymen, recognize the fact that the volume of the work is greatly out of proportion to the number of men available for its performance. They all join with us in the opinion that the results might be improved, that among the thousands arriving every day there are probably many more physically and mentally diseased or defective persons than can possibly be detected by the necessarily hurried examination that must be given to most of them, on the line, while hundreds are turned aside every day, for secondary examination, and many are sent to the hospital for further observation. The bulk of the aliens must be disposed of by the commissioner of immigration on the day of arrival so as to guard against an overwhelming congestion, and steadily moving lines of primary medical inspection are necessary as a preliminary to that end.

Attention has often been invited to these matters. Recommendations are continually being made for an increase in the corps of medical officers of the United States Public Health Service so as to make available for Ellis Island duty an additional number of such officers; which, as already indicated, is the best practical solution of the problem.

It may be all right, with a good end in view, to invite the attention of the people of the State and the country at large to the enormous expenditure of $8,000,000 a year for the maintenance of 32,000 inmates of the New York State hospitals for the insane; to the forty-eight per cent. of this great cost chargeable to the flood of foreign insane; that forty-eight per cent. of the patients in the said hospitals are alien immigrants, whereas in the State at large only thirty per cent. of the population are foreign born; that the city contains only forty per cent. foreign born persons; and then to these percentages ascribe the annual outlay of $3,500,000 for the care and maintenance of the immigrant insane and, consistently (?) probably also make chargeable to the immigrant forty-eight per cent. of the $60,000,000 expended in the construction of fourteen State hospitals.

To the general proposition that in the interest of all the people in this country improvement should be effected in our immigration laws there will probably be no dissenting voice. We are all agreed that better facilities—additional and larger examination rooms and detention halls—should be provided, and that the number of medical officers of the United States Public Health Service should be largely increased. But when an assertion is made and attempted to prove by statistics, that the expense of $3,500,000 a year to the State of New York is due to the lack of competent medical officers at Ellis Island, it may be well to look into the matter a little further.

During the year 1911, if I am correctly informed, the total number of persons admitted to the New York State hospitals for the insane contained only eighteen per cent. foreign born. This is a great reduction from forty-eight per cent., and much better indeed than the standard set forth by a recent critic when he said "if these foreign born people were of normal quality, if they were the kind of material that we want for the building up of this country, they would not show an insane percentage of more than thirty throughout the State." Some people seem to be dissatisfied because the immigration service which was formerly under the supervision of the State is now and for many years has been wholly under the control of the federal government.

It is said that efforts have been made to correct

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this error, that the State has repeatedly asked permission to inspect incoming shiploads and has offered the federal government to supply alienists to examine immigrants, knowing that the one immigrant hospital for the insane at Washington is wholly unable to train a sufficient number of alienists, but that the government has decried its legal ability to accept such offer; that several years ago the State of New York established a bureau for the purpose of supervising the deportation of foreign born persons who, if insane within three years after their arrival in this country, are deportable under federal law, but that the authorities at Ellis Island "would not permit the bureau's representatives on the government reservation except as a courtesy." So much for the contention of one side. But now let us have the other side.

Pursuant to State law (act approved, Albany, 1904) the New York State Commission in Lunacy appointed a subordinate board of alienists composed of three medical men of the State, each one of whom was supposed to be extraordinarily well qualified for the purpose of detecting or pointing out not only the insane but all mental defectives on board the ships arriving at Quarantine, at the entrance of the harbor where the State is in full control, or at Ellis Island where the federal government has jurisdiction.

At Quarantine, where the State has full control and jurisdiction, there was, so far as can be learned, nothing to hinder the board or the different members of the board in the performance of the official duties for which they were appointed, and while the State board as such could have no official status at Ellis Island (federal reservation), the members of the board were not only heartily welcomed, personally and professionally, but each one of them by direction of the department in Washington was, under date of March 28, 1906, officially invited by the chief medical officer to witness the medical examination of immigrants at Ellis Island, to see how all the medical work was being performed, and if they had any reason to think that any immigrant who had been passed was insane, they were especially invited to call attention to the case, and the immigrant would be detained for further examination.

There seems to be no record at Quarantine of any duty performed there by the State board of alienists, and at Ellis Island, after different members of the board had been in attendance for a considerable period without calling attention to any cases, they were very free in expressing themselves to the effect that everything seemed to be going on very well. Nevertheless, Ellis Island was favored with their company or with one or another of the members of the board for a period of several years, notwithstanding the fact that at Quarantine the State has complete jurisdiction and where, unhampered by federal regulations, they might have spotted or tried to tag for the information of the medical officers at Ellis Island all the insane and mentally defective aliens on the arriving ships, and possibly by this means valuable assistance might have been rendered.

Among the officers of the United States Public Health Service on duty at Ellis Island charged under the law with the responsibility of examining as to their physical and mental condition all arriving aliens, there are always a number of medical men who have not only qualified for their appointment by passing the rigid competitive examination prescribed by the government in all branches of medical science, but who have given much attention to and have had special experience in mental disease work in connection with their service in hospitals for the insane, not only in Washington, but also in State insane asylums in different parts of the United States. A large proportion of the doctors on duty at Ellis Island have had such experience. It is only fair to state. however, that it is possible for some men to acquire as high a degree of ability or practical efficiency by one or two years' experience at Ellis Island as can be reached by some others through a much longer period of residence in an insane hospital. In this connection it is interesting to note that while State or local physicians are occasionally appointed as acting assistant surgeons in the United States Public Health Service for duty in connection with the examination of arriving aliens, commissioned medical officers of this service are often called for to aid in State or municipal work. There are at present several commissioned medical officers serving in such capacity. Two years ago one was loaned to the State of New York, that is to say, he was granted a prolonged leave of absence for the sole purpose of enabling him to accept an appointment in the State service. After serving a very short time as a member of the State Board of Alienists he was made chairman of that body. This action on the part of the State authorities was in itself quite a compliment to the federal service and a recognition of the qualifications of the officer concerned. But it is especially interesting to note in this connection that while the said officer is professionally well qualified, much if not most of the valuable experience that made him eligible for such position was acquired during his periods of duty at stations of the United States Public Health Service and particularly at Ellis Island. The State Board of Alienists was established by law in 1904 (laws of New York, Chap. 326). The law referred to was entitled, "An act to amend the insanity law providing for the examination of immigrants at the port of New York to ascertain their mental condition," and reads as follows:

> Section I. Article one of chapter five hundred and forty-five of the laws of eighteen hundred and ninety-six, entitled "An act in relation to the insane, constituting chapter twenty-eight of the general laws," is hereby amended by adding at the end thereof a new section to be known as section eighteen and to read as follows:
>
> 18. Board of alienists for examination of insane, idiotic, imbecile, and epileptic immigrants; powers and duties.—A board of alienists for the examination of insane, idiotic, imbecile, and epileptic immigrants is hereby established. Such board shall consist of a chief examiner and two assistant examiners, to be appointed by the commission in lunacy. The chief examiner shall be a reputable physician, a graduate of an incorporated medical college, of at least ten years' actual experience in the practice of his profession, and of at least five years' experience in the care and treatment of the committed insane. The two assistant examiners shall be reputable physicians, graduates of an incorporated medical college, of at least three years' actual experience in the practice of their profession, and of at least one year's experience in the care and treatment of

> the committed insane. The chief examiner shall receive an annual salary of five thousand dollars, and each assistant shall receive an annual salary of three thousand dollars.[1] . . . Arrangements shall be made by the commission in lunacy for the proper accommodation of such board either with the board of commissioners of quarantine at the port of New York or with the proper authorities of the United States having control of the inspection and examination of immigrants at such port. Such board shall inspect and examine all immigrants coming into this country at the port of New York for the purpose of ascertaining whether any of them be insane, idiotic, imbecile, or epileptic. The board shall notify the proper authorities of the United States having control of the enforcement of the immigration laws at such port, of such immigrants as are found to be insane, idiotic, imbecile, or epileptic, and shall arrange for their deportation in accordance with the provisions of such laws. . . . The duties hereby imposed upon such board shall be performed under the supervision of the commission in lunacy, and in accordance with rules adopted by it. The commission may impose such other duties on such board as it may deem necessary and proper for carrying out the general purposes and intent of this section. The commission may employ such other persons as they deem necessary for the purpose of carrying into effect the provisions of this section.

During the last session of the legislature the name of the State Commission in Lunacy itself was changed to the State Hospital Commission, and the name of the State Board of Alienists has been changed to the Bureau of Deportation.

Considerable criticism has been directed against the federal government for not as the critics would have it, more willingly helping the State authorities in the matter of enforcing the federal law providing for the deportation of all foreign born persons who develop insanity within three years after their arrival in this country. "This law," they say, "is not enforced to any extent at present because the State has no official status at Ellis Island."

As a matter of fact, the federal government has made great effort to aid the State authorities in the enforcement of the law with respect to aliens who have become insane or public charges in State or local institutions from causes existing prior to landing.

A few years ago, at great expense, officers of the Immigration Service were sent all over the United States for the purpose of visiting State institutions and acquainting the superintendents or officers in charge with the provisions of the law in relation to the deportation of aliens who have become public charges. Only a small proportion of the foreign born inmates of insane asylums were found to be deportable under the law, for the reason that the vast majority of such inmates did not become public charges within three years after the date of their entry into the United States.

According to the report of the Commission in Lunacy for the year 1910, forty-three per cent. of the foreign born committed to the State hospitals for the insane that year had been residents in this country from three to nineteen years, and forty-four per cent. were in the United States twenty years and over before they were committed. Only thirteen per cent. came within the three year limit. But to effect deportation under federal law of even this small percentage it must first be shown that the aliens are insane and public charges from causes existing prior to landing. It is gratifying to note, however, that the principal steamship lines have voluntarily agreed, under certain conditions and in the interest of the State, to receive on board their ships and return to the country whence they came a certain number or class of insane aliens regardless of the length of time that has elapsed since they arrived in this country, thus waiving for the time being their right under existing law to refuse to furnish transportation for any lunatics who have been in this country more than three years. And now, it would seem, the critics are willing to concede that insanity among landed aliens is sometimes due to causes arising subsequent to landing; that "in many of the defectives the mental taint did not become evident until two or three years after they landed," and hence the inability to detect such cases on arrival or determine any abnormal mental condition calling for certification.

In this connection it is interesting to quote from a remarkably instructive and comprehensive address delivered by Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital, Poughkeepsie, New York, president of the American Medicopsychological Association, at the Denver meeting in June, 1911: "On October 1, 1910," he says, "there were in the various institutions of the State (New York) 32,657 insane. In 1890 there were in the almshouses and hospitals but 16,008. We thus see that there was a recorded increase of 104 per cent. in the insane population during the twenty years mentioned, while the general population increased by fifty-two per cent. during the same period. The recent investigations of Doctor Searcy show similar results in the South. In Alabama the increase in admissions to hospitals for the insane during the past ten years was forty-five per cent., while during the same time the population of the State increased by sixteen per cent."

"Wherever careful investigations have been made," says Doctor Pilgrim, "similar conditions have been shown to exist throughout the civilized countries of the world. I think, therefore, that it is time for us to acknowledge that insanity is increasing much faster than the general population, and that we have been mistaken in attributing the apparent increase solely to the better appreciation of institutional care and the resultant accumulation of cases."

But is it not more than possible that improved methods of examination for commitment or less rigid requirements for admission contributed something toward increasing the number admitted to the hospitals? Quoting from Doctor Stedman, he says: "An inquiry instituted by the Massachusetts Board of Insanity in 1904 showed that 685 physicians of that commonwealth had treated 2,428 cases of mental disease during that year and that only fifty-five per cent. had been committed to hospitals for the insane, while the remaining forty-five per cent. had been treated at home, or at least outside of institutions for the insane." The report does not say how many of them were aliens or how many native born. Is it not a fact that many aliens or foreign born persons, and the children of the foreign born, knock at the doors, so to speak, of public institutions on the slightest provocation, while the

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[1] Subsequently increased to $5,000.

American or the children of the American avoid the public institution so far as they can? Witness the case of the young man (Geib), the pampered son of a rich mother and of a father himself a physician and alienist of an adjoining State, who only after killing his victim in cold blood was pronounced insane, although the father said he had known for a number of years that the boy was all wrong. Now, how long would an immigrant boy of this mental type probably run at large? Or, on the other hand, how many youths of similar type are now parading the avenues or hanging about the street corners of New York city or, if of the more affluent class, probably entertaining or furnishing amusement for some delectable company on a roof garden?

Aliens who become insane or public charges within three years after arrival may be deported without much trouble or expense to the State. But if the date of their admission to State hospitals varies from one to twenty years after landing, as for example in the year 1910, and if eighty-seven per cent. are not committed until after the first three year period, then only thirteen per cent. are deportable under existing federal law; nor would it be entirely fair to charge against the efficiency of the medical examination the higher percentage of the foreigners admitted to State hospitals.

It is proper to say that the State board referred to soon began to exercise its functions by reporting to the commissioner of Immigration all the public charge aliens the different members of the board could find in State or local institutions who were deportable under the law, and they now have to their credit a large number of such deportations.

In this way a duty well worth while and of great value is now being rendered to the State. But why, some one has asked, was this matter allowed to lie dormant so long? The federal law was enacted in 1882, whereas the State board was not appointed or did not become actively engaged in the work until 1905 or 1906. And it was just about this time, too, that because of the heavy immigration, and the relatively large number of inferior persons among the arriving aliens, that the number of federal medical officers on Ellis Island duty was increased and the facilities for performing their duty improved to such an extent that a larger proportion actually and relatively of all manner of physically or mentally diseased or defective aliens began to be detected and certified on arrival than was the case before that time; hence not so many deportable aliens are now being landed, and of necessity a less number become public charges in State hospitals; and, because of the same agencies continually at work and the further improvements soon to be effected, it is reasonable to expect that the number will be still further reduced as time goes on.

That many insane and mentally defective persons can be detected on arrival is shown by the number which have been, and are continually being, certified at Ellis Island. Many of the mentally defectives are of a type seldom seen in hospitals for the insane, and are more difficult to detect on primary inspection than are some forms of insanity.

A more careful inquiry into matters pertaining to the medical office or the Immigration Service proper at Ellis Island would probably convince any fairminded person that remarkably good work is being done there, in behalf of the immigrant as well as for the good of the State, but, as before stated, all agree that the space now occupied as medical examination rooms should be largely increased, that the number of medical officers should be at least doubled, and that a sufficient force of interpreters should be employed to meet all requirements; also that in the question of deportation no limit as to length of residence in this country should apply to any defective or otherwise excludable unnaturalized immigrant.

The law requires that the physical and mental examination of all arriving aliens shall be made by medical officers of the United States Public Health Service, and this service is a bureau of the Treasury Department. It is therefore up to this department to furnish the necessary number of medical officers, provided always that the necessary appropriations are available.

The interpreters are officials of the Immigration Service proper. The Immigration Service is in the Department of Commerce and Labor. It would therefore seem to be to the advantage of all concerned if a sufficient number of interpreters were employed by this department to meet all requirements, and surely the needs of the medical office in this respect ought to be regarded as of first importance.

PRELIMINARY REPORT ON THE DIAGNOSIS OF POSTPYLORIC (DUODENAL) ULCER BY MEANS OF SERIAL RADIOGRAPHY.*

By LEWIS GREGORY COLE, M. D.,
New York.

The frequency with which postpyloric (duodenal) ulcers occur, unrecognized by clinicians and even by surgeons at the time of operation, is one of the marvels of the present medical age. The clinical and surgical aspects of this subject have been carefully considered by Wier, Moynihan, Codman, Mayo-Robson, the Mayo brothers, and others; but the radiological contributions have been rather inconclusive, and are limited to those by Bier, Kreuzfuchs, Strauss, and Ashbury (gastric and duodenal ulcers). Two methods have been employed by these observers. One depends on the contention that bismuth will adhere to the surface of an ulcer, or become incarcerated in its crater. But the failure to differentiate these "flecks" of bismuth from normal retention in the cap, and the fact that they occur very infrequently, are the weak points in this procedure. The second method is the study of symptom complices, which, as the name suggests, are only groups of symptoms, recognized by radiography or fluoroscopy.

The method to be described herein depends on recognizing the actual deformity of the gut, caused by the induration or cicatricial contraction surrounding an ulcer. Before one attempts to make a diagnosis of postpyloric (duodenal) ulcer by this method of examination he must thoroughly comprehend the normal aspects of the cap (pilleus ventriculi), and the various nonpathological conditions which influence its appearance, as observed by serial radiography.[1]

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*Read before the Syracuse Academy of Medicine, April 5, 1913.

The differentiation of postpyloric (duodenal) ulcer from prepyloric (gastric) ulcer and carcinoma, and the differential points between ulcer and gallbladder infection have been previously described.[2] Subsequent observations in pursuance of this and other diagnostic points will be communicated within the next month. They will include the physiology of the pylorus as observed radiographically, particularly the absence of a periodical relaxation and contraction of the pylorus, independent of peristalsis, the reservoir function of the cap (pilleus ventriculi), and the periodical propulsive peristalsis of the descending and horizontal duodenum. A careful study of the pathology of chronic duodenal ulcer, as described by Moynihan or Codman, is essential to its radiographic diagnosis. Of the pathological findings which they report, the following are especially important radiographically:

1. Ninety-five per cent. of duodenal ulcers occur in the first or ascending portion of the duodenum (cap).
2. The crater of the ulcer is usually about one centimetre in diameter, and surrounded by an area of induration, similar to a furuncle.
3. There are usually cicatricial contractions, resulting in a formidable narrowing of the lumen of the gut.
4. Healed ulcers result in a restoration of the mucosa, but a destruction of the muscular coat, which is replaced by connective tissue. The serous coat may or may not show evidence of adhesions.

It is obvious, from a comparative study of the normal cap and the pathological findings of duodenal ulcer, that induration and cicatricial contraction could not exist, without distorting the symmetry of the lumen of the cap. By means of serial radiography it has therefore been possible to reveal all of the usual pathological findings reported by Moynihan or Codman, the radiographic indications of which will be described and illustrated in a more comprehensive article on this subject, now in preparation. The same means frequently afford evidence of less extensive lesions, corresponding with the pathological findings of healed duodenal ulcer described by Codman.

The distortion of the cap (pilleus ventriculi) by chronic ulcer may be and must be differentiated from

1. Incomplete filling of the cap caused by
    a. Pylorospasm.
    b. Overactive peristalsis of the descending duodenum.
    c. Gastric ptosis with tortion on the gastrohepatic ligament.
2. Spasmodic contraction of the cap, due to irritation at some distant point, such as appendicitis, kinks of the ileum, colon ptosis, renal calculus, etc.
3. Indentation in the cap from pressure of the descending duodenum, vessels in the gastrohepatic ligament, or the common bile duct.

The differentiation of postpyloric ulcer from adhesions of gallbladder origin is rather difficult, but some distinguishing characteristics have already been made, and more will be offered in the next communication. This differentiation is of more scientific interest than practical value, because if the lesion is sufficiently extensive, surgery is indicated in either case.

The negative or positive diagnosis of postpyloric ulcer by serial radiography is equally as accurate as the radiographic diagnosis of renal or ureteral calculus.

103 Park Avenue.

HIGH TENSION, HIGH FREQUENCY CURRENTS.*

Some of Their Uses in Therapeutics.

By J. Herman Branth, M. D.,
New York.

Textbooks teach and lead us to the way of *believing* in regard to cases of illness, but experience at the bedside teaches us to *know*. Many may believe that electricity has no remedial value, yet only those who *know* by study and experience can exercise judgment regarding the true value. It is true that there are many enthusiasts who overrate in a hobbylike method a remedial measure, be it electricity, hypodermic medication, surgery, hydropathy, dieting, exercise, or what not. Such is not the case with the writer, a general practitioner, a general observer; my observations are founded, not alone on textbook information, but also on personal experience which places me in the field of the *knowing* not only of the *believing*.

All those who have studied the science of electricity (as yet we are only on its threshold) *know* that electricity, principally high tension electricity, will urge metabolism into normal lines, and this will be the chief basis for my arguments. Let us first attempt to define high tension electricity. It is deemed that all currents which will leap through an air space or "gap" are high tension, whether these currents are produced by a static machine or a coil. A low tension current, say the commercial 110 or 220 volts, will be stopped by the thinnest sheet of paper or any poor conductor; not so with the high tension variety; in fact the higher the tension the more positive the transmission in a *straight* line, though Maxwell and Houston have asserted otherwise. Some years ago the speaker demonstrated that the extremely high tension current passes through every known insulator, either direct or by electric stress of opposite polarity, quantity also being obviously considered a factor. My colleague, Doctor DeKraft, shows this by cooking a potato or a piece of meat in the line of current passage. On the basis that high tension electricity in its passage would affect and correct metabolic disorders in an organ of the body (which was alluded to in an address by the writer some years ago) we applied it to glandular tumors of the neck with success. True, x rays were also used in some cases, but greater reliance was placed on the high tension, high frequency current.

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[1] *Archives of the Röntgen Ray*, April, 1912.

[2] *Archives of the Röntgen Ray*, October, 1912.

*Read before the Medical Association of the Greater City of New York, January 20, 1913.

All high frequency currents depend on a high tension current sent through a Leyden jar and on one or more spark gaps. I have attained a very high tension current by a Tesla coil step up transformer. This coil is an inverted coreless coil; the secondary inside, the primary outside. Without this arrangement it was impossible to avoid short circuit. This arrangement affords also an insight to understand the principle of induction, as air insulates the inner coil from the outer coil. By this means a very high voltage and very high frequency is attained, so high that it is above the nerve register; muscular contraction is thus avoided and the patient will stand the application. One of the wonders to us is the fact that the application of a high tension high frequency vacuum tube will give pain *only* when applied to a diseased part; not so on a healthy surface. When the patient approaches healthy conditions the tolerance grows in the same degree.

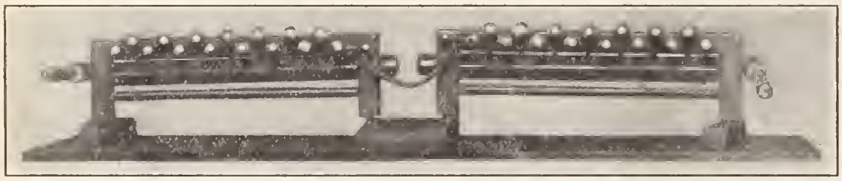

Fig.—The spark gap mechanism used by Doctor Branth for the production of high tension, high frequency currents.

The spark gap mechanism shown in the figure consists of a framework having one rigid bar carrying seven brass spheres of one half inch diameter. These spheres are mounted on insulation stems about one and one quarter inch apart. Parallel to this fixed row of spheres is an axle capable of rotation. This axle carries eight spheres similarly mounted, but so as to fit in between the spheres of the rigid bar above. By rotation of the lower axle its eight spheres can be turned either toward or away from the fixed spheres, thus lengthening or shortening the spark gaps. By shifting the connecting wires, any number of gaps can be chosen. With this mechanism a low x ray tube, backing up, say, a one half to one inch vacuum, may be changed into one backing up anywhere between four to six inches, or even more, and thus achieve the desired penetration. Without this multiple spark gap the tube will act just as soft as before. Now, in the treatment by high tension, high frequency currents of any degree of intensity of current can be achieved by including a greater or smaller number of spark gaps. The intensity can also be regulated to a degree by elongation of the individual spark gaps, which elongation is effected by rotating the axle carrying the lower row of spheres. The mechanism consists of two sets, one for each pole of machine. For x ray work, also, one set is used for each pole. Inverse current in x ray tube is evaded and the life of the tube is prolonged.

For high tension high frequency treatment the two sets are connected as in the figure. The machine's terminals must be drawn wide enough apart to drive the current through the spark gaps and avoid short circuit. A very great number of oscillations is thus achieved.

When a vacuum tube of a very high voltage apparatus is applied to the surface of the body, a pleasant warmth is felt, and the surface becomes red like a scarlet fever patch. This redness and warmth lasts about three hours. This redness is due to dilatation of the capillaries, more blood is attracted to that region, which, according to Metchnikoff, means increased phagocytosis, in other words, increased resistance to pathological intruders; at all events, let us call it increased vitality of the tissue cells. Now, what would happen, if this were a law, when the current is sent through an organ like the liver or kidney in subnormal condition? It would, to say the least, help or stimulate Nature to overcome abnormal conditions, be it hepatic cirrhosis or what not, if the vitality is not too exhausted to bar repair.

Again, what should follow applications of this current in arteriosclerosis, where the heart (not considering the direct influence of the hardened cardiac vessels) is tired out by constantly pushing the blood along the wirelike unyielding vessels, receiving less and less help from the growing inelasticity of the vessel walls? We should expect relief from a remedy acting like the high tension high frequency current by the bipolar method. On this hypothesis the patient, Mr. C., a retired hotelier, aged sixty-nine years, was sent to me by Doctor Schoenenberger. Mr. C. had chronic synovitis in both knee joints, also general arteriosclerosis. More than a year ago he was in the country for the summer, and had to be sent home owing to alarming cardiac symptoms. The foregoing line of treatment was instituted, and his general health is now as good as it can be for a man of his years, though the condition of his knees does not enable him to walk without crutches. He is now engaged in literary work. His mind is bright, his arms and hands are active, and when he sits at his desk few would suspect him of being sick or over fifty-five years old.

I would, however, express a word of caution here as to sending the current through the heart, not that the heat is too great, but the electric force might disturb the rhythm of a weak heart—it might stop the heart just like a very little force or blow will stop the pendulum of a clock, if the force is not parallel to the pendulum's movement.

When the x rays were discovered they were applied as a remedy for everything, which action at last earned discredit in many ways through careless and unscientific use. It should not be so with high tension high frequency currents, for they will not cure every disorder, but when intelligently used, like strychnine, arsenic, or any potent remedy, will act as a remedial measure in many disorders, and, let me say in parenthesis, often in disorders where we have no other remedy.

When combined with x ray treatment, the high tension high frequency current has given excellent results as demonstrable by the case of Mr. F., a college student, also by the case of Mrs. K., who suffered from a large glandular tumor of the neck. The tumor was the size of a potato, interfered somewhat in swallowing food, moved with the larynx; part of the tumor was under the sternum and could not be palpated. She has been under treatment since April, 1911, with a few short interruptions. She was unable to take the treatment in the usual way, fearing x ray burn. She is still taking treatment about once a week. She is almost well, for the tumor seems to have disappeared, only the shrunken thick wall of the capsule remaining.

Tumors of the female breast often yield to the combined treatment. It is well known that these tumors generally, probably always, become malignant. There are patients here who recovered under this form of treatment. The knife is not always a sure remedy. Some two years ago a woman, Mrs. H., was treated in this way by us; she had a small tumor in the left mamma. The case did not improve rapidly enough to satisfy her, and she sought surgical intervention, which led into general carcinoma by metastasis, and ended in death last fall. She was about thirty years old. X ray treatment alone and without high tension high frequency current for tumors of the breast, or for that matter in the case of any deep seated malignant tumor, has not met with success in our hands. The knife would furnish better results than x rays alone, but the knife should cut far into the sound surrounding tissue to make certain that no contaminated lymph gets into the outlying tissue, or there will surely be a recurrence. A woman upon whom we operated some seventeen years ago, removing a cancerous breast weighing nearly four pounds, has had no recurrence, as her son informed me of her well being only a short time ago. Dr. Willard Parker Worster assisted in that operation. The success attained by x rays in superficial cancer is indisputable.

To study and understand the action of high frequency currents let us learn from a comparative lesson from Nature. Suppose there is an inflammatory lesion, a cut, a carbuncle, pneumonia, etc. Nature always supplies fever heat in the process of repair. We observe that if the fever in pneumonia or typhoid infection, etc., suddenly drops, death is near, which means that Nature gives up her task of repair; it tells us that the phagocytes are unable to conquer the pathological condition.

Now we can demonstrate with our apparatus that a stream of electricity means also a stream of heat in the line we choose through the body. Doctor DeKraft proves this by cooking a line through a potato or a piece of meat. This process modified to a degree within physiological intensity, should be of remedial value even more so, when we know that the proper electrical current will promote in the body cells the throwing off of waste and the taking in of nourishment. Is it then too much to assert that heat and increased phagocytosis are not entitled to remedial value?

It is by no means our desire to replace internal or external medication by electricity; indeed, the two often fit like hand and glove. We have observed that vital metabolism is stimulated by electricity. On this proposition we have treated girls with amenorrhea successfully, where iron medication without electricity had no effect at all, the iron passing off by the black stools; but as soon as static electricity is added the stools become lighter in color and the blood becomes richer in hemaglobin. This principle holds good not only in iron medication, but also in the administration of mercury, arsenic, strychnine, etc. Only half doses should be given under these circumstances.

May we venture another argument regarding very high tension electricity. All kinds of electricity are the same sort of force; what variation exists is only of pressure (voltage) and of quantity of flow (ampèrage). Let us call the voltage latitude of register.

Our vocal cords have a certain register for sound production, which register is of higher pitch in the female. Our ear has a register of about 7,000 notes in the organs of Corti, which vibrate in sympathy with the vibrations of the membrana tympani. Below or above these sound vibrations we cannot hear anything, because outside of our ear's register. There are many sounds in Nature inaudible to us because of either higher or lower pitch. The lowest note our ear can perceive is the sound of the sixteen foot organ pipe, but there is an organ pipe thirty-two feet long, which is inaudible if sounded alone, yet if sounded with the sixteen foot pipe the latter note is intensified because the latter's sound wave moves parallel with one half of the sound wave of the longer pipe. May we now, after this illustration, make comparison with electricity. If we use the ordinary induced current with a Leyden jar of large size, the spark produces a painful sting because it is within the nerve's register. Then let us drive this same induced current through a step up transformer until it moves beyond the nerve register, we can get a current pressure which is quite bearable. This current reaches an immense voltage (pressure), but the output of the machine being always the same, we get a quantity (ampèrage) of inverse ratio with the voltage.

CASE REPORTS.

CASE I. Mr. A. J. P., aged fifty-nine years. Attorney. Given to alcoholic excesses. Liver enlarged, accumulation of large quantity of fluid in abdominal cavity from stasis in the portal vein. His physician in Yonkers tapped about three and one half gallons of fluid every twelve days. Uranalysis showed trace of albumin, a few granular casts and a few hyaline casts, otherwise normal. On October 2, 1911, patient was abstemious in alcoholic substances, emaciated, had yellowish sallow complexion. His voice sounded like that of a patient in last stage of phthisis, but percussion and auscultation did not disclose pulmonary lesions. He had pneumonia many years ago; no other disease. All told, he was tapped about seventeen times. The treatment instituted consisted of bitter tonics and high tension bipolar electricity. The intervals between tappings grew longer, and the quantity of fluid became smaller. In November he went to Florida, and then no more tapping was needed; his last tapping occurred November 5, 1911. He returned to New York in April, 1912, and intended to build up another fortune. He felt well and did the work of two persons in his office. He reported to me at short intervals, and I saw him last in the beginning of December, when he expressed the wish to be present at this meeting. At the end of December he contracted erysipelas and died December 30, 1912. Doctor Padgett, his physician, telephoned me that not a vestige of the hepatic trouble was observable

CASE II. Mrs. F., housewife, Italian, arrived in America in 1910. Her husband had preceded her. Subsequently her abdomen enlarged; pregnancy was suspected and arrangements were made for such event; at last, no child was found, and she was taken to Coney Island Hospital (near her home). No relief followed. She drifted into many hands, among them those of Doctor Samarelli, who opened her abdomen, finding the internal genital organs in good order. She was tapped every seven to eight days, each time anywhere from sixteen to twenty-six pints of fluid being removed. The liver was reduced in size and could not be palpated even after removal of fluid from abdominal cavity. The accumulation of fluid was due to obstruction in the portal circulation. Uranalysis disclosed no pathological condition of kidneys. We gave her simple tonics and high tension electricity as in Case I. I saw her last in her illness on May 11th, since which time she has been well.

CASE III. Mr. F., aged seventeen years, student at City College. Nine years ago was operated on for sarcoma of the left ilium by Doctor Thorner. He subsequently came under our observation, and x ray treatment was given with the result of recovery in one and one half year. Last year (1912) in February a painful tumor appeared over the left lower ribs (a recurrence of sarcoma). On June 13th he came to us for treatment. It was found also that he had a lateral curvature of the spine with rotation and deep depression of anterior and posterior of chest. He was still under treatment. The tumor was now very small, and not very painful. He had x ray treatment combined with bipolar high tension high frequency current, giving him relief much sooner than when he had only x ray treatment with the previous attack. But now came another result, which was not expected nor sought: His spinal curvature was reduced and the depressions of the chest came out. It was unbelievable that the x rays were a factor in this result, and it appeared that the high tension electric fluid, passing through the subnormally nourished tissues, urged metabolism toward normal activity, and repair was inaugurated. This looked like a profitable field for investigation. Doctor Ruppe, this patient's physician, endorsed this result.

Years ago I was, perhaps, the first to learn that by the interposition of a number of spark gaps an x ray tube of low vacuum could be induced to act like a hard tube and attain more penetration. Then it seemed that a force moving at a great velocity (and high tension electricity does this) is difficult to divert from the direct line, and if this is a fact, such currents would surely act on internal organs on the line of the current. The interposition of multiple spark gaps in high tension high frequency will also (as in x ray pratice) induce penetration. Several manufacturers have apparatus that will demonstrate these facts.

Now, anyone of pessimistic inclination may say that these cases might have been cured under any or no treatment; such a statement might and does touch the border of medical nihilism, which is a convenient resort of all who combat progress or anything new and unknown to them. The cases (except that of Mr. F., the college student) presented were on the down grade, with very little hope for rescue. Mr. P. had given away all his property, because his physician, Doctor Benedict, of Yonkers, had told him that there was no help for him and that he could not live long, and the patient prepared himself, so to speak, for the undertaker, with a courage and defiance of death which was admired, and which may be admitted as a factor in his recovery.

It should be borne in mind that we cannot truly *cure* a sickness; *Nature* does this; but in a disorder she may need help, and we as physicians should perform the duty of furnishing the *right* kind of help, the help that Nature needs. It is for this reason that stencil treatment, routine medicine, medical hobby treatment is ineffiecient. Every case needs close study, and who can do this better than an all around physician?

High tension electricity has a field for remedial application, especially as we can apply it locally to a part of the body, even to internal parts, which cannot always be done by internal medication. Suppose we give opium for a pain; the drug will have to course through all the bloodvessels and spend much of its force before it reaches the seat of disorder, not to speak of its secondary effects like arrest of secretions, constipation, etc. But no one should take this comparison as an assertion that opium and electricity are interchangeable as remedies, for they are not interchangeable. Each has a field for application.

183 WEST EIGHTY-SEVENTH STREET.

WHAT THE PRACTITIONER SHOULD KNOW OF THE WASSERMANN REACTION.

By GEORGE A. WYETH, M. D.,
New York.

It is sometimes urged that the Wassermann reaction is of little or doubtful value in determining the presence or absence of syphilis, and, in support of this opinion, attention is often called to the fact that from different laboratories may come contradictory reports on the same serum. The importance of this contention is more apparent than real, as the following paragraphs seek to show. And if some of the misconceptions regarding the Wassermann reaction can be cleared away this test will undoubtedly demonstrate its tremendous importance.

In the first place, it must be borne in mind that the Wassermann reaction is not a test for the presence or absence of the exciting cause of syphilis (*Spirochæta pallida*), but is a test for the *antibodies* of this cause. This is shown by the fact that the Wassermann reaction is seldom positive in a fresh case of syphilis until toward the end of the first month after infection, that is, until the antibodies have had time to form. Verification of the clinical diagnosis in the first few weeks, therefore, is better made by examining scrapings from the depths of the suspected lesion under dark field illumination for *Spirochæta pallida*. Mercury in any form should never be applied to a suspicious lesion until its exact nature is definitely determined, for though it generally heals the lesion, it masks the findings and often distorts the subsequent course of the disease. If *Spirochætæ pallidæ* are found in the chancre, the physician needs no further proof of the presence of syphilis, and should immediately institute the modern treatment of intravenous injections of neosalsarsan followed by mercury and *controlled* by the Wassermann reaction. In secondary, untreated tertiary, and florid hereditary syphilis and in paresis the percentage of positive reactions is very high, while in latent hereditary syphilis and in tabes dorsalis I have been unable to obtain a positive reaction from the blood in more than fifty per cent. of the cases. In treated tertiary cases the reaction varies greatly, depending upon the amount of treatment previously administered, the date of the last treatment, etc. In syphilis of the cerebrospinal axis, and particularly in tabes dorsalis, the cerebrospinal fluid should be examined, for a positive Wassermann reaction may be present in this fluid even though absent from the blood. In either case it is entirely without the scope of the general practitioner to perform the Wassermann reaction himself. So delicate and difficult is the technic that it should be entrusted only to the trained laboratory worker whose previous experience enables him intelligently to interpret the result. On the other hand, it sometimes falls to the lot of the practitioner to collect the blood or the cerebrospinal fluid, and for this the following specific directions are given.

By way of preliminary precautions, bear in mind that a positive Wassermann reaction may occur in recent malaria, yaws, and leprosy; that alcohol taken in "considerable quantities" may mask an otherwise positive Wassermann reaction by rendering it negative (Craig and Nichols, *Journal of the American Medical Association,* August 5, 1911); and that *antisyphilitic therapy,* when given in sufficient doses, generally renders the reaction negative, so that it is well to suspend all treatment for from three to six weeks before having the reaction made.

To draw the blood, select a salient superficial vein, preferably at the bend of the elbow. Cleanse the skin and let it dry. Puncture the vein through the skin with a *dry,* sterile needle, discard the first few drops and half fill a *dry,* sterile test tube of medium size. Allow no water to enter the tube, as it may interfere with the reaction. Keep in a cool place and send to the laboratory at earliest convenience.

To draw the cerebrospinal fluid, tap the subarachnoid space in the interval between the fourth and fifth lumbar vertebræ. A line between the highest points of the iliac crests passes across the spinous process of the fourth lumbar vertebra. With the patient leaning forward to widen this interval, enter the needle one half inch below and to the outer side of this spinous process, and pass it forward and inward for a depth of about three and a half inches. Sudden loss of tissue resistance indicates entrance into the subarachnoid space, whence a few cubic centimetres may be withdrawn. It must be handled with the same precautions as the blood.

In explanation of the contradictory reports which are sometimes obtained from different laboratories, the following, "in words of one syllable," is offered. Modifications of the original Wassermann reaction, which sacrifice scientific exactness to shortening and cheapening the process, undoubtedly are responsible for much of the lack of confidence with which the test is regarded in certain quarters; and I believe the vast majority of positive results in nonsyphilitic cases is due to faulty technic.

The reaction as performed in Professor Wassermann's laboratory to-day required five reagents.

1. Serum of patient, heated at 56° C. for one half hour.
2. Antigen—extract of luetic liver now recognized as superior.
3. Amboceptor—serum of rabbit which has been immunized against sheep corpuscles.
4. Complement—fresh serum of guineapig, diluted one to ten in salt solution.
5. Washed blood cells of sheep—solution of one to twenty in salt solution.

If sheep's blood corpuscles, amboceptor, and complement are placed in a test tube, after a short time the corpuscles are destroyed and the fluid becomes perfectly clear. This is known as hemolysis. A positive syphilitic serum contains the antibodies of syphilis. A negative does not. It has been found that if a *definite quantity* of positive serum (antibodies), antigen, and complement is placed in the water bath for one half hour at 37° C., the complement becomes used up or fixed so that it no longer remains free. If the same is done with a negative serum (no antibodies) this phenomenon does not occur; the complement remains free. This constitutes the first step of the Wassermann reaction. Tubes are then removed from the water bath, and *definite quantities* of amboceptor and sheep's blood are added and the tubes again placed in the bath. After a short while, if complement has remained free, it acts with the amboceptor and destroys the blood corpuscles, the liquid clears, and hemolysis is said to have taken place—a negative reaction. If the complement has not remained free, but was used up in the first step, hemolysis does not occur; the liquid remains cloudy—a positive reaction. Differences in degrees of cloudiness are designated weak or strong positive. If the liquid does not completely clear it is spoken of as "doubtful." This, in a word, is the theory of the Wassermann reaction, and the best results are to be had only by precision of method with closest attention to details. This begins with the preparation of the apparatus to be used and the preparation and control of the reagents. Thus, all pipettes, test tubes, flasks, etc. should be thoroughly cleansed, dried, and sterilized. Of the five reagents, a definite amount of serum and standardized solutions of complement and of blood cells are employed. Complement must be fresh, and the complement bearing serum of one guineapig may be more active than that of another. The remaining two reagents, amboceptor and antigen, are variable factors and must be used accordingly. It must be remembered that the Wassermann reaction is a quantitative as well as a qualitative examination, and an antigen that is used in too large a dose will itself cause an inhibition of hemolysis (cloudiness), even as an antigen used in too small a dose shows hemolysis (clearing) with a syphilitic serum. The specific dose must, therefore, be repeatedly determined. Amboceptor and complement bear a reciprocal working relation, and this relation must be determined each time a Wassermann reaction is made, for here again an excessive or insufficient quantity of either produce contradictory results.

From this meagre description it is apparent how readily discrepancies in results may be obtained unless a prescribed, *thoroughly controlled* form of technic is followed. This Professor Wassermann anticipated and provided for, and I believe that deviations from his technic—"short cuts" which omit the proper test of reagents—have brought unwarranted criticism on the original reaction.

A doubtful or positive reaction in a patient who has received treatment should be considered an indication for further treatment, even though clinical manifestations may have been absent for a considerable time. Nor should a negative reaction be valued as a cure unless it remains negative, with no clinical signs, for at least a year after discontinuance of treatment.

The treatment of syphilis is to-day no longer empirical, for along with modern methods of administration, we have a scientific and trustworthy means of regulating the treatment and controlling the disease, as well as a valuable aid in diagnosis. But in using this test its limitations must be borne in mind; nor should we forget that the question of proper control of the test at the time of making is equally as important as the result itself.

30 EAST FORTY-SECOND STREET.

PSYCHOGENIC PSYCHOSIS.*

BY NICHOLAS J. DYNAN, M.D.,
Washington, D. C.,
Senior Assisting Physician, Government Hospital for the Insane.

In our efforts to get a correct understanding of cases of mental disease,[1] we may consider each case from different viewpoints: First, the age at onset, as, in early life, characteristic of idiots, imbeciles, morons, constitutional inferiors, and psychopaths, etc.; or those at the other extreme of life, as the arteriosclerotic and senile disorders. Another group of mental disorders are understood by their relation to the neuroses or psychoneuroses, as epilepsy and hysteria. To the diagnosis of a third group we are led by the presence of coexisting neurological symptoms, as paralysis in the organic psychoses. Another group is characterized by fairly definite symptomatology and course, as manic depressive and paranoia, while a large group is characterized etiologically, as toxic, exhaustive, traumatic, psychogenic, etc.

In the last group I would draw attention to the psychogenic, or more accurately, *emotogenic* psychosis, cases of which have been catalogued under the diagnoses psychological depression, undifferentiated depression or excitement, acute confusional insanity, amentia, hysteria, psychopathy, criminal insanity, degenerative psychosis, prison psychosis, atypical precox, etc.

While under this etiological nosology, such headings as "prison psychosis," etc., may be useful as indicating the place of origin, we get a sufficiently accurate survey merely from a knowledge of the emotogenic factor.

ETIOLOGY: PREDISPOSITION AND EMOTION.

Predisposition is characterized by autochthonous mood changes or changeability, irritability, mental instability, fatiguableness, and intolerance to alcohol. In short, this form of psychosis develops frequently on a basis of high grade imbecility, constitutional inferiority or psychopathy, or more rarely may develop in supposedly normal persons under unpleasant external influences, as undesirable environment. This fact has been recognized by the laity in some cases and utilized by them in the explanation of practically all cases of mental disease. It is our duty as psychiatrists to recognize the kernel of truth in the layman's view and sharply delimit its application in the psychoses.

In *King John*, act III, scene 4, Shakespeare ascribes to Constance on her son losing the throne:

> I am not mad; I would to heaven I were;
> For then 'tis like I should forget myself:
> O, if I could, what grief should I forget!
> Preach some philosophy to make me mad,
> And thou shalt be canoniz'd, cardinal;
> For, being not mad, but sensible of grief,
> My reasonable part produces reason
> How I may be deliver'd of these woes,
> And teaches me to kill or hang myself:
> If I were mad, I should forget my son;
> Or madly think a babe of clouts were he;
> I am not mad; too well, too well I feel
> The different plague of each calamity.
>
> . . . .
>
> But now will canker sorrow eat my bud,
> And chase the native beauty from his cheek.
>
> . . . .

Exciting emotion; anxiety. It would facilitate our understanding of psychiatry if for every mental disorder there was present a characteristic brain pathology, macroscopic or microscopic, but while such definite lesions are present, for instance, in paresis, they are notable by their absence with many other psychoses, and so we look for other genetic factors. In this psychosis particularly we must in the anamnesis always look for the affective exciting or genetic factor prior to the onset of the symptoms, such affects usually being for a definite cause and of an anxious, worrying, or brooding type.

Certain unpleasant facts, concepts, or ideas relative to the individual's condition of existence or status in life and with great emotional value by a mental defensive mechanism, can and do produce an altered condition of consciousness, wherein ordinary stimuli are ruled out, to which consciousness is "not at home," so to speak, the attention being inwardly misdirected and sometimes concentrated on the usually subconscious phantasmagoria. The stern realities and unpleasantnesses of life have nothing to allure the mind back in such psychogenic psychoses. On the contrary, the painful emotional association present with full consciousness is repulsive and, as might be expected, the patient remains passively or semivoluntarily for a long time disoriented—the correct comprehension of the interrelations of things lost, in this way evading or not fully perceiving the real unpleasant facts. In mental diseases occurring at times of disheartening emotional stress the emotional state and psychotic symptoms are often the result of the unpleasant conditions. In the prison psychoses the influence of unpleasant environment favors mental disorder, as there is no way of evading the unpleasant reality by physical absence, but there is a mental or psychogenic reaction for so doing—a submersion of the ego to the subconscious. "Stone walls do not a prison make nor iron bars a cage."

On account of prison walls, the desirable actions cannot be consummated as in freedom, and psychomotor inhibitions occur unpleasantly often—a summation of stimuli with headache, frontal region, where cerebral inhibition is supposed to occur. Mental conflicts and tangles ensue, subsequently physical clashes. The individual reaction (behavior) begins to assume a definite trend of symptoms.

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*Read before the Society of Nervous and Mental Diseases, January 16, 1913.

[1] Disease meaning alteration from the normal in tissue or its function or in both combined. Whether we include psychogenic psychosis as a disease depends on whether we include function in the definition of disease.

The onset of a psychogenic psychosis in freedom is an expression of failure of adaptability to the environment or to *some new and difficult problem of the environment,* and I have in mind the case of a woman who reacted by a depression on its becoming necessary to move from one location to another. Also another woman in whom developed a depressed anxious state on her daughter marrying a man whom the mother thought undesirable. Both recovered after brief periods. The usual formula of onset is an unpleasant affect followed by brooding, worry, or anxiety and a functional derangement of the mental reactions or adjustments, unpleasant dreams, hallucinations, and subconsciousness.

In the psychogenic psychoses occurring during imprisonment, in jails, reformatories, houses of correction, and penitentiaries, the usual onset is in the twenties or early thirties in recidivists, a term in the United States signifying an habitual criminal (it is assumed that the habitual criminal implies predisposition) who has served or is serving a second term in prison. He may be in isolation or mass confinement under great emotional tension, brooding or worrying. It is probable that a feeling of disgust when long continued is superseded by a defense mechanism of indifference, as though the patient asks himself, "What's the use?" and as a sequel dullness of the emotional response often ensues. In other cases the symptoms are exaggerations of the underlying personal temperament.

Symptoms begin with perplexity, anorexia, headache, or migraine, oversensitiveness, insomnia often due to emotional or complex disturbance, depression, suspicion, anxiety, restlessness, irritability, violence, fear of bodily injury or the termination of the patient's existence (which implies there might be a reason why it should be terminated).

In the stream of thought there are manifested unpleasant dreams at night, day dreams, sensory illusions, delusions based on or associated with hallucinations, and elaboration of these delusions to relate them to the environment; thus an effort at reasoning in a vicious circle is made. The delusions and their elaboration are prejudicial, wildly fantastic, or grandiose. They often represent subjective wish fulfillments, as the frequent delusion of innocence, the conviction that pardon or discharge has been granted, the elaboration of the criminal act as the fulfillment of a religious or divine will. Paranoid reactions occur with delusions against the warden, physician, and officials of the department of justice, and assertions are made that they, not the patient, are the real criminals. Catatonic states are manifested by some with repression of unpleasant ideas or complexes and a restricted persecutory delusional formation. The seclusive patients may have well developed day dreams and fantasies, which are not always evidenced. All through the stream of thought there occur points of contact with the affecting realities of the environment.

The behavior is changeable, its changes depending on environmental influences, and the prejudices toward the personnel of the prison or hospital or law officials are evidences of the patient's feeling toward the environment and hence the violence displayed toward them.

Orientation. The condition of consciousness shows impairment or disturbance such as clouding, hysteroid, twilight states, Ganser stupor, catatonic-like constraint, mutism, or negativism.

Intelligence defect is slight. Judgment and insight are impaired; the latter sometimes occurs, but not in all cases, the defect being manifested chiefly in the failure of insight into the erroneous ideas against those in personal charge of the patient. In a number antisocial prejudices become firm convictions.

Memory is good for incidents favorable to the patient and often errs by fabricating justifying circumstances. Mild impairment may be present, especially temporary or permanent haziness or amnesia for the unpleasant facts, as the crime, trial, and sentence—the result of a repressive mechanism. Paramnesia, consisting in peculiar, free fantasies or fabrications of a wish fulfilling character tend to square the patient with himself.

VARIETIES OF REACTIONS.

Some of the varieties of psychogenic reactions might be enumerated:

First, psychogenic depressions or excitements, often not recognized as such on account of the inadequate anamneses and the tendency on the part of the patient to repress the exciting factor from memory.

Second, acute hallucinatory melancholia (of Kirn).

Third, prison psychotic states with simulated symptoms (Siefert).

Fourth, precoxoid forms as (a) stuporous types with mutism or (b) excitements with fear occurring in mass imprisonment (Siefert).

Fifth, acute paranoid type with isolated hallucinations, irritability, depression, ideas of reference, and elaborations of day dreams of being abused. This occurs mostly in young criminals (Siefert).

Sixth, chronic paranoid degenerative types with hallucinations and frequent litigious propensities (Siefert).

Seventh, hysterial or hysteriform degenerative states with tantrums, convulsions, delirious confusional states, and Ganser twilight state (Siefert).

Eighth, pseudologia fantastica, fantastic degenerative forms, resembling some types of psychopathy in which endogenous mood fluctuations, autosuggestibility, lying, swindling, increased imaginative faculties, systematized delusions, or delirious states occur (Siefert).

Ninth, dementialike states after prolonged imprisonment for many years, manifested by refusal of the usual routine, capriciousness, and a stereotyped insistence on discharge (Siefert).

That these chronic states are based on emotion (e-motion, implying a tendency to motion in a certain direction, which is pleasant or away from what is painful or unpleasant—"the moving spirit") is attested by the lifelong convictions on political, religious, and many other activities, which depend on their emotional value for their consummation.

DIAGNOSIS.

The psychogenic psychoses are differentiated from others by the presence of an adequate affecting cause, by the fact that the environment frequently contains the cause and does not merely afford a background for the staging of the psychosis, as in other forms. In the stream of thought are found absurd interpretations of hypochondriacal sensations, physical explanatory deliria, self accusations and self mutilation, suicide being considered a way out of the difficulty. In the prison psychosis the associations of grandiose and persecutory ideas are frequent, the delusions being projected on the environment, but as a rule limited and not including fellow prisoners. Neologisms which develop are considered as characteristic abbreviations or transpositions of words relating to the emotional disturbance. It is probable that there is only little, if any actual organic change. In its relation to the other psychoses it finds a place closely related in its genesis to hysteria. Some of its symptoms resemble those present in constitutional inferiority and dementia præcox. In the latter the etiology is less definitely related to one affective event, but instead there is often found a long continued series of unpleasant and unsuccessful efforts at adaptation to the environment. In manic depressive, there is less causal relation found; the manic episode often has its onset under practically the same circumstances as its cure. These circumstances are frequently in the hospital for insane. It seems probable that with fuller anamneses a number of cases considered to be manic depressive would be found more closely related to psychogenic. The depression of involution can only rarely be mistaken on account of the circumstances attending its onset, the age, sex, etc.

The *course* is irregular, the duration varying from days, weeks, or months in the acute cases, to years or decades in the chronic cases. Speculating on the reasons why psychogenic disorders recover, while cases of dementia præcox containing many psychogenic symptoms fail to get well, it would seem that in the psychogenic cases recovery ensues more readily with change to a better environment, that is, the defense mechanism of the psychosis is no longer necessary. In the precox the individual make-up and recuperative power seem much more affected. It does not serve toward progress in the elucidation of the problem by citing or adding other unknown factors, as is done by inventing poisons or toxines in that disease to account for the chronicity, although it is understood that with emotive changes such as are present in precox, evidenced as symptoms of the emotional complex, there occur with these emotions at least quantitative changes in the secretions as excessive lacrymation with crying and other secretory and excretory disturbances attest. In conjunction with this, concerning precox the more numerous points of emotional conflict in the environment may prove to be factors which repel recovery.

If we may consider the psychosis as a protective reaction, the function of which is to spare the patient's feelings, we can readily see that the outlook for a prolonged course is greater where environmental conditions are unfavorable and tend to remain so. We may ask what has the environment to offer which would allure the patient's mind toward recovery of its normal function. When improvement occurs transiently, sufficiently long for the patient again to realize his unpleasant situation, the solace of the psychosis is again resorted to, thus presenting a remittent or intermittent type and in a measure enabling us to comprehend the intermittent autochthonous mood changes.

TREATMENT.

This requires the gentle assistance and direction of a thoughtful and more resourceful mind than that of the patient. The assistance of one who has ability to avoid or minimize the unsettling action of the ordinary shocks in every day life, especially those which relate to unpleasant emotional memories. The mode of life of those susceptible cases must be regulated; at least with proper advice the psychotic sequel may be avoided by eliminating the exciting, usually unpleasant factor. If the onset is in prison, isolation and solitary confinement should be minimized. Instead, such cases requiring isolation should be under observation in the psychopathic ward, which should be in every prison. Isolation continued for long periods with the resultant development of brooding, illusions, terrifying hallucinations, and unpleasant delusions, approaches closely to the "cruel and unusual punishment" forbidden by the Constitution. Like other diseases, if the cause is removed, cure will follow, and since it may be inexpedient to remove an unpleasant environment, we may obtain the same result by removing the patient therefrom. If the individual is still amenable to religious influence, have him daily emphasize that passage in the Lord's prayer which says, "Lead us not into temptation, but deliver us from evil." The accurate regulation of the patient's actions by the training to habits of correct behavior will prove the most effective psychotherapy and prophylaxis.

Following is a case illustrative of the acute hallucinatory type:

Case. G. W., aged thirty-one years, general court martial prisoner.

Family history.—In the ancestry it was noted the father died at the age of thirty-five years of alcoholism following business reverses. Mother was of a very nervous disposition and worried a great deal. Patient's brother was a nomad, chronic alcoholic, and ne'er-do-well. It was natural, therefore, to expect a predisposition to nervous or mental disease in the patient.

Personal history.—In his early life he acquired a common school education and won prizes for his school work. Had malaria at eighteen, gonorrhea at twenty-four, and appendicitis at twenty-five years. Habits regarding alcohol were temperate. Became interested in physics, particularly electricity, and studied kindred subjects which might be useful. For a time he worked at various occupations, had a roving disposition, and finally enlisted in the navy as electrician. He received an honorable discharge at the end of enlistment and reenlisted, became well qualified for his work, and an instructor. (The foregoing is to show the patient's status at his best.) He continued to study subjects which would result in his promotion and worked hard, as it was necessary that he assist in the care of his mother, and considered the possibility of establishing a home for himself and his intended wife. He had had an excellent record in the navy, was intrusted with the confidence of his officers; up to this time he had performed his duty and there was no question of his sanity. As an illustration of the extreme to which he went in keeping a promise of writing a monthly letter to a friend in one of the Island possessions,—he, on failing to do so, sent a cablegram instead, containing only the usual greetings, which cost him over $7. He promised friends Christmas presents from foreign countries where his ship touched and finding he had insufficient money to purchase presents, committed thefts in order to keep his promises.

Suspicion pointed toward him and investigation was made, resulting in his detention and court martial the following February.

Etiology.—On being arrested and having time for reflection his broodings while under arrest were, first, the peculiar and unusual condition in which he, as a chief petty officer, found himself—in irons; second, he was a disgrace to the service, his friends, and himself, had lost the confidence of the officers and disgraced the uniform—acted a fool; third, what would the sentence be—if found guilty of theft on each of the four specifications he would be reduced to the lowest rating, be imprisoned for four years at hard labor, and then dishonorably discharged; fourth, as he was the mainstay of the family, what would his mother, whom he had been supporting, do; fifth, what would his fiancee think?

Onset.—He became disgusted and didn't care whether they took him out and shot him. Anorexia developed—he tried to eat but couldn't; his "whole insides" felt nervous. It occurred to his mind that they were going to operate on him. His mind was confused and seemed in a kind of haze prior to the court martial. Later, while in the prison ship, malingering was considered by the physicians, also the possibility of the case being one of dementia præcox. Examination there showed him to be disoriented for place. He had transitory auditory hallucinations and unpleasant sensory illusions. Attention was diminished; thought retarded and markedly incoherent. Emotional blunting and indifference to his surroundings were present. He was very suspicious and distrustful of all about him; had a furtive, hunted manner and placed himself against the wall to avoid persons passing behind him. Physically, well nourished; heart rate increased to 86 a minute; no anesthesia or other abnormalities.

On admission to the Government Hospital for the Insane, he was afraid, restless, and allowed no one to pass behind him. Was well oriented for time, place, and persons. Stream of thought: He denied auditory, visual, or other hallucinations. He had difficulty in remembering dates and events, and at such times considered he had to bring up all the associations in order to get to the point. Emotionally, there was some depression and worry; he became easily lacrymose when questioned on the thefts. When informed, by the physician, of his four year sentence, he failed to display a proper emotional reaction and the emotional dulling was also evidenced when informed that his sentence had been remitted. As far as he was concerned, it made no difference whether he was kept here all his life. His apparent indifference continued after his transfer to the Government Hospital for the Insane. Ethical questions were answered well: To lie he considered worse than to steal on account of the greater trouble liable to ensue. Attention to events in his environment was fairly good; a given address was remembered approximately after eight minutes. He knew about current events, as the Mexican trouble, the work on the Panama Canal, and other public enterprises. Retention as of a short story was inaccurate. Memory of historical events learned in school was accurate, also of remote events as judged by his answers to questions on family and personal history.

Recent memory was good up to the time of the court martial, when it became hazy. He had amnesia regarding his trial, did not know what the charges against him were, what his sentence was, or whether he was sentenced. Amnesia was present for a few days after the trial. Inquired whether he had committed any serious offence since being transferred to the prison ship; of the court martial remembered only being before some officers, but was unable to say who they were or what they were talking about. It seemed one of them said patient had been talking to himself. He had felt unable to say what he wanted; his brain seemed slow and dull, though formerly active. He admitted trying to forget all the unpleasant "stuff," miscalled the name of the prison ship, and could not remember what happened other than having been worried and excited and unable to answer questions. He was unable to remember events occurring just prior to his coming to this hospital. Intelligence was commensurate with his education; he was able to describe the differences between certain animals and substances—water was H_2O in liquid form, ice was H_2O in solid form, caused by difference in temperature. He was able to incorporate given words in sentences. The meaning of proverbs was understood by him. Ordinary arithmetical calculations, including mensuration, were well done, and the inventors of gun powder, telescopes, steam engines, steamboats, cable, and telephone were given correctly.

After admission he had visual hallucinations, as of unfamiliar faces in corners or against the wall, animals as prehistoric mammoths and lizards, and again he seemed in a big shop and saw and heard pieces of machinery, as well as men who seemed to be talking. He did not believe anything he was told, for instance regarding his sentence and its having been remitted. If he had found he had a long sentence, he would have felt worse. It is probable that his apparent indifference resulted from a tendency to repression of the unpleasant circumstances. He did not remember how he came here nor who came with him. He was skeptical about believing things, as aviation meetings, etc., scheduled in the paper to occur. It seemed that his whole life was a delusion to him.

His plans for the future were to find work at his trade. When he found himself worrying he started to exercise or play games in order to occupy his mind, and gained better control of his mind. He increased nine pounds in weight and was discharged, recovered, after about four months.

It seems evident that since physical means could not be consummated to avoid the unpleasant situation by personal absence, he took refuge in a defective condition of consciousness—a confusional state with disorientation and incoherence, where the unpleasantnesses of real life were repressed from clear consciousness and replaced by hallucinations and transitory delusions bearing some relation to his former work. In this way his reaction is to a fairly definite etiology with characteristic symptoms, short course, and termination, ending in recovery conditioned by his removal from the causal environment.

The function of the psychosis, like the function of a dream, served to protect him from a painful reality by substituting a mental state (which seems from an observer's viewpoint less desirable) such as Shakespeare, the master delineator of the human emotions, would consider Constance to desire in her difficulty.

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EYE STRAIN SYMPTOMS IN GENERAL PRACTICE.*

By Isaac Hartshorne, M. D.,
New York,
Assistant Ophthalmic Surgeon, Manhattan Eye, Ear, and Throat Hospital; Clinical Assistant in Ophthalmology, Post-Graduate Medical School and Hospital.

The term, eye strain, is generally accepted to mean that varied and complex group of symptoms of malfunction resulting from errors of refraction and imbalance of ocular muscles. I wish to bring to your attention the reasons for eye strain, its indirect effect upon the function of other organs of the body, and its symptomatology.

Light is a form of energy considered as a phenomenon of wave motion, and revealed to us by its stimulation of the retina and the resulting sensation of vision. The smallest conceivable portion of light is called a ray. In nature all rays of light are given forth from a definite source, proceed in all directions, and are primarily divergent. This divergence of light rays is so slight after traversing twenty feet that the rays are then nearly parallel, and for practical purposes we consider all rays from a source more than twenty feet away as parallel, and rays from an object nearer than twenty feet as divergent.

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The combined convexity of the cornea and crystalline lens in the normal eye converges parallel rays of light to focus on the retina and so make distant vision distinct by producing a clear retinal image. Divergent rays, proceeding from a near object, are focused behind the retina of the normal resting eye, producing on the retina circles of diffusion instead of a clearly defined image. Here the focal point is brought forward to the retina by increasing the convexity of the crystalline lens, which process we call accommodation, and which is attained by the action of the ciliary muscle on the suspensory ligament of the lens and the elasticity of the lens itself.

In the hyperopic or far sighted eye, all natural rays are focused behind the retina, and this eye cannot see distinctly at any distance without using accommodation, and must accommodate still more for near objects. Hence, in the hyeropic eye the ciliary muscle is in practically constant contraction during waking hours.

The myopic eye is called near sighted, and cannot physiologically see any distant object clearly because parallel rays are focused in front of the retina and accommodative effort always brings forward the focal point, and cannot throw it backward. Proportionately less accommodation is required for near objects in myopia than in hyperopia, but, practically, many myopes hold close work nearer to the eyes than necessary for clear vision, and thus needlessly overwork the ciliary muscles.

Astigmatism is due to irregular curvature of the refractive media, chiefly the cornea. A large majority of patients have more or less astigmatism, and it is probably the greatest source of eye strain with which we have to deal. When astigmatism is present, rays of light do not focus in a point, but in a line, so that a round dot appears to be more or less oval. The diffusion circles thus produced are irregular in shape and extremely irritating to the retina itself, and also to the cerebral centres that endeavor to decipher the retinal impressions into what we call vision. The ciliary muscle probably tries by irregular contractions to make the retinal image more distinct, but in doing so is increasing its own fatigue, and when it fails the retinal irritation persists. The extrinsic muscles are also called upon to rotate the eyeball to bring the principal meridians of curvature into a position better adapted to clearer vision. Astigmatism is also a cause of head tilting for the same reason, and, according to Gould, it is in turn followed by a compensatory lateral curvature of the spine and in some cases by spasmodic torticollis.

In high errors of refraction the ciliary muscle soon tires of trying to overcome the defect, and the blurred images of irregular diffusion remain to irritate the retina. Low hyperopic errors are easily overcome by ciliary action, and in such cases the constant stimulation to see better, results in either muscular fatigue or hypertrophy, or both. Consequently, low errors are often more productive of malfunction than high ones, and because a patient can read 20/15 does not mean that he is therefore not suffering from eye strain. Since the myope cannot improve vision by ciliary effort, he receives on the retina the full effect of the irregular diffusion produced by whatever amount of astigmatism he may have. Because of the degree of irritation thus encountered, Gould believes low myopic astigmatism to be the greatest source of nervous disorder met in eye strain.

The effort to maintain binocular vision, in spite of differences in strength of the six muscles that together so balance each eye that images fall on corresponding retinal areas, frequently sends excessive nerve force to the weak muscles to equal the work done by the stronger ones. We recognize a fairly definite relation between convergence and accommodation, namely, a certain amount of accommodation excites a certain amount of convergence. A hyperope, therefore, who uses excessive accommodation for reading, also exercises more convergence than necessary, resulting in hypertrophy of the internal recti muscles at the expense of the external. And in myopia, proportionately less accommodation being needed for reading, we find a weak power of convergence and often a marked divergence. Yet our sense of fusion requires these weaker muscles to keep pace with the stronger in maintaining the single image.

It becomes evident, therefore, that the reasons for eye strain are hypertrophy, fatigue, and congestion of the ciliary muscles in their constant effort to produce clear vision; retinal irritation from circles of diffusion, made worse by irregularity in the presence of astigmatism; and extrinsic muscular hypertrophy and fatigue in the struggle to maintain binocular vision by proper balancing of the ocular muscles.

The indirect effect of eye strain upon the function of other organs of the body can best be suggested by a glance at the nerve elements involved in our ocular mechanism.

The retina in embryo is brain tissue—that is, the brain comes out to see. It is later so highly sensitized that it transmits by the optic nerve to the visual centres for interpretation the exact impressions made upon it through the refractive media of the eye. Hence, an irregularly diffused image on the retina is not simply a source of irritation to the retina itself, but is at the same time a direct irritant and cause of cerebral fatigue and, therefore, a hindrance to the function of the entire brain. Four of the twelve pairs of cranial nerves are devoted exclusively to ocular function. The third, fourth, and sixth pairs—joined by connecting branches from the sympathetic system—supply the extrinsic muscles. The ciliary muscle and iris are supplied by the short ciliary nerves from the lenticular ganglion, which has three roots—motor, sensory, and sympathetic.

For a muscle to do enough work to become hypertrophied or fatigued, requires an abnormal amount of motor nerve supply. Those people who have a superabundance of nerve force do not feel any effects from this kind of expenditure of energy; while in individuals endowed with only a limited amount of nerve force, an extravagance on the part of one organ means a lack of normal supply to, and consequent malfunction of some other organ. The fact that one fourth of all the cranial nerves are required to supply eye muscles shows both how much motor nerve energy is needed for normal ocular function, and also how great is the opportunity for a waste of nerve force when these muscles are overworked.

Retinal irritation from irregular diffusion and congestion of the ocular muscles are transmitted as sensations of pain by the trifacial nerve, and cause much headache. Doubtless most of us have experienced severe supraorbital pain on drinking ice water or eating ice cream too rapidly. This is simply an every day reflex similar to that which occurs from irritation of the sympathetic system in eye strain and the pain referred to some other part of the body.

Muscular fatigue results in variable distinctness of vision, which is blurred one minute and clear the next. The effort to supply power to the nerves of the tired ocular muscles is often productive of twitching of the eyelids and of the facial muscles, as seen in the various habit spasms. Some of the local symptoms of eye strain mentioned by Alger (1) are: "Screwing of the lids in myopia and astigmatism, . . . the elevation or depression of an eyebrow, . . . abnormal wrinkles, . . . constant blinking of the lids, . . . tilting of the head, . . . many chronic inflammatory conditions of lids and conjunctiva," enlarged pupils, and photophobia. The effects of eye strain are so varied that, while some patients show local inflammatory conditions and apparently no reflex irritation, others will appear to have no ocular abnormality, but present reflex disturbances which, by the process of exclusion of other organs and by the correction of the refractive error, may be classed as due to ocular difficulty.

Without attempting a differential diagnosis of the causes of headaches, my experience agrees with the quoted statement (2), "an ocular cause may be suspected in all headaches which occur regularly and get worse in the afternoon, which are increased by close work and relieved by rest and on holidays, or which occur only during certain occupations, like the theatre headache or that which comes from travelling on cars or sight seeing."

Many of the symptoms of fatigue, irritability, and nervousness that women suffer during the menopause are often really due to the sudden onset of presbyopia, and may be relieved by proper glasses.

Functional disease of the digestive tract, associated with long hours of close application and continuous nervous tension, and cases of diziness, nausea, vomiting, and so called bilious attacks are certainly often due to eye strain, as evidenced by the relief which glasses give.

Some cases of migraine, chorea, epilepsy, neurasthenia, and psychasthenia--all of which are due, at least in part, to an underlying nervous instability and some disorder of brain function—are often benefited by removing whatever irritation may be present from eye strain.

Not a few people, including some physicians, consider glasses a sign of deterioration, and express regret when a person feels the necessity of seeking ocular aid. Glasses are really a labor saving device to prevent or offset the disastrous results of eye strain.

Refraction is a scientific art and not an exact science. To obtain the best possible functional results, the hyperopic, myopic, or astigmatic errors should be estimated as closely as possible. Astigmatism, the most difficult part of refraction, should receive special attention, both in amount and axis of curvature. The axis of the cylinder used to correct astigmatism can in most cases be found within five degrees, and in some cases within one degree. When the axis is not closely located, either the diffusion circles are made more irregular than in the naked eye or the muscular fatigue is shifted from one point to another, since the extrinsic muscles try to rotate the eye to meet the axis given. All this requires training, care, patience, and consequent skill. Because a man owns a case of trial lenses and has had a course in some postgraduate school does not mean that he, therefore, knows how to "refract" to the best advantage of the patient. Refractionists who deny that they see results as herein suggested need a change in their refractive technic.

Lens grinding is an exact science, and the time will come when the profession will be as zealous for accuracy in optical production as we are becoming for purity in drugs. I made a contribution on this subject two years ago (3), and have at hand material, as yet unpublished, that will show that about fifty per cent. of oculists' prescriptions are not accurately filled. This percentage of error is absolutely unnecessary and can be practically removed by special effort on the part of the individual oculist in checking up the work sent out by the optician. The care in fitting the glasses to the patient, the efforts of the patient to keep them properly adjusted, and the modification of lenses to meet changes in refractive error as they occur, are equally important factors in the excellence of the results obtained. The power of suggestion probably plays a part with some patients in the benefit derived from glasses, but neither this nor a lack of sensitiveness on the part of the patient should ever be used as excuse for careless work.

Many men, both specialists and general practitioners, often forget, first, that putting out the fire does not rebuild the house, and that time and reconstruction are necessary to repair the damage done before the source of irritation is removed; second, that the house cannot be rebuilt as long as a smouldering persists in either attic or cellar. This latter dictum applies when one or two sources of trouble have been corrected, and another, perhaps remote, but possibly even more important disorder has been neglected. For example, in the past year and a half I have had three patients, similar in that each had gastroptosis and also eye strain. A proper abdominal belt and carefully fitted glasses relieved each of them of their symptoms, which the belt did not do and glasses alone would not have done. We are all familiar with conditions equally dependent upon the function of eyes, ears, nose, and throat, in which the care of one with the neglect of another is of only partial benefit to the patient.

When symptoms of malfunction of one organ or system persist after treatment of all obvious disorders, we have no right to lay it to nervousness or idiosyncrasy, or even call the condition obscure until the function of every other organ has been carefully tested and corrected. The constant use of the eyes during waking hours and the demand for, and frequently great waste of nerve force in their use, call for a careful ocular correction in all cases of any functional disorder possibly due to some reflex irritation or leakage of nerve force.

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105 WEST FORTIETH STREET.

INDICATIONS FOR OPERATION ON THE INFERIOR AND MIDDLE TURBINATES AND SEPTUM.

By I. GRUSHLAW, M. D.,
New York,
Visiting Otologist and Laryngologist, the People's Hospital; Adjunct Otologist and Laryngologist, Lebanon Hospital; Lecturer on Diseases of the Nose and Throat, New York Polyclinic.

Since rhinology has changed from a specialty of sprays and local applications into one of distinct surgery, it has become of great importance to the general practitioner to know when and how to operate. Patients who are sufferers from nasal trouble frequently consult their physicians as to the necessity of an operation, and if so advised, are anxious to know the kind of operation required.

A discussion of the general principles underlying it would therefore not be amiss, as even specialists do not always agree, and very often perform an extensive operation on the septum, where a small one on the turbinate would answer the purpose. There is no question that hundreds of turbinates have been removed and septa straightened that were entirely innocent, yet on the whole, the majority of cases need some sort of operative interference. If the physician but understood the principles, he could more intelligently advise the patient and agree with the specialist on the operation to be performed, and thus save a great deal of criticism.

There are two main indications for any operative interference on the turbinates and septum: 1. Nasal obstruction; 2, pressure of the turbinates on the septum and vice versa, giving rise to reflex symptoms. The first effect of nasal obstruction is mouth breathing with all its accompanying results; it need not even be absolute, for any slight obstruction may cause mouth breathing during sleep, because the effort is lacking to breathe through the nose.

It is surprising what a small space is necessary to enable one to breathe through the nose in the daytime, for many a patient whose nose was almost completely obstructed, was still able to breathe through it. That is why patients who breathe with their mouths closed during the day and open them from time to time only when there is not enough air coming through the nose, breathe with their mouths wide open when asleep, for they then lack the effort to keep it open; besides, the reclining position adds to the obstruction through the force of gravity.

The functions of the nose are to purify, moisten, and warm the inhaled air, but in mouth breathing the pharynx has to take its place, and not only does it improperly, but it also suffers by it, as by moistening the air it becomes dry.

Many patients are unaware that they are mouth breathers, and an easy way to elicit this information is to ask them if they feel dry on awakening.

Obstruction of the nose not only induces mouth breathing, but also catarrhal symptoms. This has been explained by Smith and others in the following way: Even normally the descent of the diaphragm during respiration causes negative pressure in the larynx and trachea. This is increased to a large extent by any obstruction in the nose and gives rise to congestion and excessive secretions.

Although the evil of mouth breathing is appreciated, it is the dropping, hawking, and choking that send the patient to his physician. All these symptoms are due to the catarrhal condition of the nose caused by the obstruction. Normally, the secretion in the nose is thin and serous and is usually absorbed, but in case of an obstruction, the discharge becomes excessive, thicker, and mucous or mucopurulent. Beside this, the obstruction causes retention of the secretions which become pasty in consistence.

Some patients complain of "dropping," especially when the posterior ends of the inferior tubinates are hypertrophied; it simply means that they feel the secretion, which has become excessive, coming down into the nasopharynx. In some cases, when it becomes pasty, the discharge sticks to the nasopharynx, hence the efforts of the patients to dislodge it from their throats. Sometimes their efforts are so violent, especially in the morning, that they are accompanied by vomiting. Choking is due to excessive secretion of mucus in the endoarytenoid space of the larynx due to the negative pressure induced by the obstruction in the nose. This state is generally evident in nervous patients, owing to their extreme sensitiveness, and many a case diagnosticated as globus hystericus, may be relieved by local treatment of the nose and throat.

The second indication, that of pressure, while not as frequently met with, is still of great importance. It gives rise to irritation which usually results in a catarrhal condition. Pressure of the septum on the middle turbinate causes a feeling of stuffiness and pressure in the nose. It may give rise to headache and such reflex symptoms as paroxysmal sneezing, neuralgia, etc.

SPECIAL INDICATION FOR THE REMOVAL OF THE INFERIOR TURBINATE:

This removal may be partial or turbinotomy, complete or turbinectomy.

1. When the bone is exceptionally large, even when the mucous membrane covering it is perfectly normal, a tubinotomy is indicated.

2. When the anterior end is hypertrophied, it is important to remove it, as it not only obstructs the air currents, and the smallest hypertrophy is sufficient to do this when situated anteriorly, but it may be sucked in during inspiration, against the septum, and completely close up the nose.

3. Hypertrophy of the posterior end causes accumulation of secretion in the nose, and if large may fill up the choanæ, producing complete obstruction, and causing a great deal of dropping. This can easily be diagnosticated, if on examination mucus is found on the floor of the nose.

4. When the lower border is hypertrophied and causes obstruction, or when it touches the floor.

5. When the inferior turbinate touches the septum and the septum is normal.

Turbinectomy is indicated in cases of malignancy, tuberculosis, or in a very narrow nose, where only complete removal will give relief.

Turbinotomy is to be preferred to turbinectomy, as there is always a chance for regeneration of the mucous membrane in the former.

The accusation that this operation produces a dry nose is not well founded, for, except in those having a tendency to rhinitis sicca, the dryness is but temporary. In cases of turbinectomy, the dryness cannot be helped, but when indicated it is the lesser evil, for it still can be relieved. In partial removal, permanent dryness should not exist, as there is generally a regeneration of the mucous membrane.

The many cases of rhinitis sicca that one sees after a turbinotomy are due to incomplete operation. I have seen such cases, where pieces of turbinates were left hanging after having been partially cut with the scissors; again when the obstruction was left posteriorly, and the secretion still retained in the nose became inspissated and when blown out forcibly had the shape of the posterior portion of the turbinate left.

SPECIAL INDICATIONS FOR REMOVAL OF THE MIDDLE TURBINATE:

1. When the anterior third is either hypertrophied or hyperplastic.

2. When the middle turbinate bone is enlarged, due either to cyst formation or to its being the seat of a cell or cells. When the bone is enlarged through the above mentioned causes, the walls may be extremely thin. I have removed the middle turbinate in a case where it was enormously enlarged, yet on cutting into it, I found the walls exceptionally thin.

3. When the posterior end is hypertrophied.

4. In cases where the enlarged middle turbinate causes pressure, giving rise to headache. The following case will illustrate:

CASE I. Mrs. S., aged twenty-five years, was referred to me by Doctor Buch. Patient complained of severe headaches, almost unbearable. A submucous resection had been performed, without any effect. On examination I found an enormously enlarged middle turbinate. A turbinectomy was suggested, to which she readily consented, although she had already undergone an extensive operation without any amelioration of her symptoms. After the middle turbinate, which was found cystic, was removed, her headache disappeared as if by magic.

5. In cases of paroxysmal sneezing, where the removal of the middle turbinate is followed by the most marvelous results.

These cases resemble hay fever, but they are not so severe, and may come on any time of the year. Every physician knows such patients, who at the slightest exposure or change of weather, are subject to sneezing, running, and obstruction of the nose.

The best palliative treatment in these cases is a spray of one to 5,000 of chromic acid, but as this destroys the sense of smell, it can be recommended only in those cases where it is already lost.

Turbinotomy, when the middle turbinates are enlarged, is the best treatment. Even the hay fever cases are very much relieved by the removal of the polypoid hypertrophy of the middle turbinate. Sometimes the relief is immediate, but usually it follows a few days later. On the other hand, an inferior turbinotomy is without effect. The following case will illustrate the effect of turbinotomy in paroxysmal sneezing:

CASE II. Miss K., aged twenty years, referred by Dr. S. R., had been suffering from attacks of paroxysmal sneezing since childhood, but otherwise enjoyed perfect health. On examination I found her middle turbinate slightly enlarged. The anterior ends were removed, and the patient has been perfectly well ever since.

6. In cases of eye strain, accompanied by headache, when the correction of the refractive error does not relieve, the middle turbinate if enlarged, should be removed, and usually the eye strain and headache disappear.

7. In asthma, when other causes, such as kidney disease, etc., are excluded, and the middle turbinate is enlarged, there is a distinct indication for its removal, for it may cure the patient, and will certainly relieve him somewhat by allowing him to breathe more freely through his nose.

I have personally seen two cases of absolute cure. One in a woman upon whom I operated ten years ago, the other, a furrier. Both had a turbinotomy performed and have been well ever since. Both cases were even relieved by the mere application of cocaine hydrochloride and epinephrin which showed them to be true cases of nasal asthma.

8. The middle turbinate is also removed as a first step in the operation on the ethmoid, sphenoid, and frontal sinus. When a patient is subject to frequent attacks of acute sinusitis of the frontal or the ethmoid bone, the removal of an enlarged middle turbinate by securing drainage will prevent it from becoming chronic.

Above all, a turbinectomy is indicated when the enlarged middle turbinate causes obstruction of breathing, and as it is in the way of the main current of air, it is more liable to do so than the inferior turbinate.

INDICATION FOR OPERATION ON THE SEPTUM:

The operations are either to correct a deflection or to remove a spur. Now, not every deflection should be corrected, nor should every spur be removed, for many deflections or spurs do not cause any symptoms whatsoever.

Before deciding to remove a spur, one should take into consideration its size, situation, whether it touches the turbinates, and the condition of the nose.

A small spur situated posteriorly may be left alone, as it will not obstruct breathing very much, for the air can still pass through above and below the spur; while the same spur anteriorly causes considerable obstruction and should be removed. A large spur, on the other hand, will obstruct breathing, whatever its situation. Again, a spur that could be left alone in a normal nose, would have to be removed in one filled with mucopurulent secretion, as otherwise thorough drainage is prevented. When a deflection or spur touches any of the turbinates, an irritation is produced, giving rise to catarrhal symptoms.

It requires a great deal of thought and consideration to decide whether to operate on the septum or on the turbinates. Yet, it only too often happens that a submucous operation is performed on a patient, when a small one on the turbinates would have answered the purpose, or what is still worse, no relief follows the extensive operation and a turbinotomy has to be performed after all.

In one of the cases, cited above, a submucous resection was performed instead of a turbinotomy, which would have relieved the headaches at once. On the other hand, I remember two patients who came to me with a history of having had the turbinates operated on several times without any relief, still complaining of obstruction and excessive secretion. After performing submucous resection, I was pleasantly surprised to find that the mucopurulent secretion had gradually disappeared and the inferior turbinates ceased to be congested and swollen. If a patient comes to us complaining of obstruction, and we find on examination that there is both a deflection of the septum and a swollen turbinate, if he gives us a history of short duration, it can hardly be due to the deflection which has probably existed since childhood, unless there is a history of recent traumatism. Again, if the obstruction is also on the concave side of the septum, or if it is alternating, there can be no question of the septum being at fault.

In conclusion, I would say that the septum should be left alone, unless there is a distinct indication for interference. This may be one of the following: To relieve obstruction in breathing; to secure drainage; to correct faulty speech, due to septile deformity; to enable us to introduce instruments for the treatment of catarrhal conditions of the ear. The literature on the subject being too voluminous, the mentioning of references has been purposely omitted.

1855 Seventh Avenue.

HOSPITAL PROPHYLAXIS.*

By L. Davis Frescoln, A. B., M. D.,
Philadelphia,
Late Chief Resident Physician, Episcopal Hospital.

The title of this article might otherwise be expressed as the principles of preventive medicine in institution management. A hospital has always been thought of as a stopping place that deals with serious bodily troubles. To the lay mind, especially to the uneducated, it brings up the odor of iodoform and visions of operations alone. A well appointed hospital of to-day need not and should not be repulsive; it should be found to be a quiet and clean institution especially equipped for handling various phases of disease, with trained personal attendants and visiting expert consultants; more than this, it must be the exponent of the most advanced medical thought pertaining to all bodily states.

To-day we hear much of prophylaxis, preventive medicine, immunity, hygiene, demography. These subjects have in the past been medical school and laboratory studies. They are now and must of necessity be practical every day matters for our attention and they are used and exemplified extensively in hospital practice. So we may consider prophylaxis in hospitals in its many phases well worthy of serious thought.

This is too broad a subject to handle in a single article, therefore only incidents will be touched upon that have come forcibly to the writer's attention in hospital work. If it is true, as it undoubtedly is, that the immortal ounce of prevention is so valuable in looking after the welfare of the health of the individual or a community, it is also true that this maxim applies emphatically in managing hordes of patients gathered together for treatment of a variety of maladies by workers exposed to these same maladies. In such a gathering care must be taken to prevent one patient's disease spreading to another at the same time as we treat that disease. Should a rapidly spreading contagion break out, if strict precautions are not taken to confine this, the invalids around are likely to fall easy victims to its devastation. Do not be sparing of isolation, fumigation of rooms with formaldehyde, and of taking advantage of culture and inoculation methods to prevent spread of the contagion.

In waiting upon invalids it must be so done as to get results without accidents. We shall see that all this is to be accomplished by proper experienced training of doctors, nurses, and orderlies, and untiring attention to details in assisting in the work of handling cases. Let us take a few examples of what has happened and what might happen to a healthy inmate or to a patient in the throes of sickness or to one convalescing from some recent illness. To begin with, a person in health feigning some disease should not be admitted to a general hospital; such a person and drug fiends are the ones liable to start trouble.

In going for a patient unless undue speed of the ambulance is regulated by competent employees, a person may receive in transportation a worse injury than that for which help was sent. Obviously this is true to a certain extent in all walks of life; we of this day are the heirs of an age and environment that claim their own percentage of unfortunate victims of unforeseen accidents. Yet it is recognized that splendid control over unnecessary mutilation is being accomplished by safety devices, improved apparatus in good working order, and trained help. There are very few accidents and diseased states recognized that cannot be handled on a well equipped autoambulance until the hospital is reached so as to make it necessary to save a few minutes' time by going at a speed dangerous to pedestrians and passengers alike. Again, sometimes extra risk of life is involved by the practice that should be discountenanced of taking an extra passenger just for the ride, and insurance companies lay emphasis on this point.

The receiving ward of a hospital should be well supplied with medical attendants and equipment. Here we should be prepared for emergency cases, and have order so established as not to have confusion when more than one patient is brought in at a time; this will prevent disorderly conduct and disorderly treatment, by which term is meant a form of treatment which after all is no treatment at all, in that the one pretending to treat gives for example a hypodermic injection to one patient, leaves this patient, and orders something for another without examining and without noting that it has been given and then leaving without following up either case to the ward so as to instruct what has been done. It is something of this sort no doubt that Dr. John B. Murphy refers to in his recent observations upon things that sometimes take place at hospitals. We cannot have perfection, but we wish to strive for ideals with what meagre money is allowed for use.

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*Read before the Philadelphia County Medical Society, January, 1913.

Every orderly and attendant of an institution should know how to carry a stretcher, how to handle a patient with a broken back, how to transfer a patient from one place to another without dropping or striking the patient, and how to prevent and extinguish an ordinary fire. Every doctor and nurse should know how much heat it takes to burn a patient and should avoid this, except when intentional, as in the use of the cautery. Every one connected with a hospital should persist in remembering that ether vapor, alcohol, and benzine are highly inflammable; that inflammable substances are constantly being handled. Every one within the walls of such institutions should never grow weary of hearing the oft repeated admonition that delirious patients are liable to jump out of the window if not restrained and carefully watched.

Many a can of ether and many a drop of chloroform might be saved, and what is more important, many an organ saved from insult by discountenancing the indiscriminate lavishing of these drugs. No doubt if there were some one or something to call the attention of the doctor to the possible preference of one anesthetic over another in a given case, an incipient tuberculosis might be saved from lighting up, a necrosis of the liver or a nephritis averted, and occasionally a life spared. Every patient should be properly prepared for operation except in emergencies; oxygen should be kept near at hand, anticipating trouble; the oxygen tank and emergency kit should be in good working order when called to a fire; an intubation set should be ready for use and not locked away where it cannot be found; the pulmotor, it may be remembered, may be of use in asphyxia.

All elevators should be in proper working order. Elevator inspectors are supposed to look after the proper handling of elevators; underwriters, of wiring and electrical connections; the hospital management, of the welfare of patients and cleanliness of the institution. The mistakes of the past should guard against trouble and exaggerated publicity (I do not mean timely caution) in the future.

What does the simple municipal regulation of reporting transmissible diseases mean? It means that if these cases in hospitals, as well as in private homes, are properly reported by postals provided for that purpose, the health authorities of the city will have a better chance to control these diseases. I think it advisable also to report cases of syphilis and gonorrhea, if done in the right way by initials, and in the confidence of a conscientious physician working in harmony with State prophylaxis of disease. In the same way the hospital has an excellent opportunity of keeping the coroner informed of cases of criminal abortion and the practice of midwifery so as to protect the worthy and correct the wrongdoers.

Let us now turn our attention to the matter of administering drugs, and I shall cite a few cases in this connection.

Some serious mistakes have happened, especially in large institutions, through disordered medicine closets, bottles not properly labelled, careless nurses, and lack of the special precaution of having all poisonous drugs kept in small, rough, colored bottles with distinct labels worked in the glass. What a pathetic picture to see a Socrates sent to the shades of death with his own bitter cup of hemlock! But think of the remorse when that fatal cup comes by the mistake of another! Some untimely accidents have no antidote; their only hope is the cup of prophylaxis, and remorse will prove no healing unction for the bitter sting.

There were once two tuberculous patients given each a drachm of spirit of nitroglycerin by mistake instead of a minim. The bottle was mistaken for one containing a solution, one drachm of which contained one minim of nitroglycerin. In a short time a unique picture of nitroglycerin poisoning was presented. There was retching, the face flushed greatly, and then turned pallid, violent cephalalgia and vertigo occurred with severe chills, perspiration, painful consciousness, small pulse becoming wiry and imperceptible; later retching, diarrhea, and unconsciousness. Fortunately, the mistake was early recognized and the doctor was soon called. The drug had been rather rapidly absorbed. Hyperdermic injections of digitalein, grain 1/40; atropine sulphate, grain 1/100; strychnine sulphate, grain 1/10, and whiskey were given; external heat was applied, salt solution administered, and in about one half hour reaction set in. The convalescence was slow, but both patients fortunately recovered. This upset should all have been avoided. Other errors that could have been avoided have been noted during a rather prolonged experience in hospitals.

On one occasion an irresponsible patient deliberately drank a cupful of bichloride of mercury solution, one to eight, that was recklessly left out of the closet. After washing out of the stomach, administering white of eggs and stimulants, and treating with mouthwashes, salts, etc., she was finally rescued; as a rule, the kidneys of these cases are liable to become inflamed. On another occasion the druggist made the error of putting up formaldehyde in a paraldehyde bottle. A patient received two drachms of this solution and then had to be treated for formaldehyde poisoning. These cases were seen a considerable time previous to this present year. To be sure, some fiends can stand enormous doses and sometimes require such of regularly used drugs, but none of the cases cited came under this category. Let it be said here that no hospital should ever be the breeder of drug fiends.

A hospital is essentially an educational institution. It should set a good example, even in such seemingly little matters as the use of individual drinking cups, the destructible sputum box, proper ventilation, rest, bathing, and order. Great opportunities for research investigation and for training of doctors and nurses and disciplining of patients lie within our reach. The modern trend of therapeutics is toward preventive medicine; why not show what we can do in details and also in large problems in the way of preventive methods of management? Harvard now has a professor of preventive medicine, our own Doctor Rosenau.

You know how many unpleasantries might be avoided in dealing with people in general! If families are notified, when possible, before death of the critical condition of their loved one, they will suffer less mental anguish and appreciate your efforts; if opportunity of offering the last religious rites is thought of, it too may bring comfort. If previously written permissions for anesthetizations, operations, autopsies, and the like are secured, it may save legal aftertrouble and distress. In short, anticipate the needs of the patient; practice the Golden Rule, as well as medicine.

One of the places well adapted for the use of prophylactic antityphoid bacteria is in a large hospital that handles cases of enteric fever. You offer the nurses and attendants handling the cases a preventive serum which has been found of use and at the same time not harmful. In the presence of contagion preventive doses of diphtheritic serum are administered; tetanus antitoxine and Pasteur virus are recommended to be given early when they can do real good; the former is given to dispensary patients having nail wounds or powder burns, the latter to patients bitten by an animal under strong suspicion of being mad, or one that responds to the laboratory tests for rabies. It may be noted here that in case of death all tetanus cases are to be reported to the coroner in this locality.

Vaccination against variola is dispensed unstintingly but carefully. Systematic regulations requiring proper ventilation, proper bathing, boiled water, pure foods, and graduated exercises all go to keep the institution as a whole in a state of less vulnerability than would otherwise exist. Points of seeming insignificance are to be borne in mind, such as the early outfitting with screens and killing of flies to prevent spreading of noxious diseases; removal of garbage and material upon which germs breed; regulation of visitors to prevent bringing in contagions; control over the house staff to get prompt, serious, and efficient service.

In a word, we must in this day face large problems of preventive medicine and surgery. We must, moreover, illustrate these up to date principles in the hospitals.

This is a wide, wide field and it is all of a gradual, natural development.

3304 Baring Street.

CARCINOMA OF A HYPERPLASTIC HYPOPHYSIS.

By John Funke, M. D.,
Atlanta, Ga.,
Professor of Pathology and Bacteriology, College of Physicians and Surgeons.

The advances of our knowledge of the structural alterations incident to pathological physiology or maladies in inducing cessation of function of the ductless glands, have brought into prominence among other organs the hypophysis cerebri, also called the pituitary gland because it was thought to throw pituita into the nostrils.

It occupies the sella turcica of the sphenoid bone, is ovoid, measures in its transverse diameter twelve mm., in its sagittal eight mm., and in its vertical five mm. A prolongation of the dura encloses the gland, except above where exists a small aperture for its connection with the infundibulum. It is composed of an anterior and posterior lobe, the former comprising the greater part of the organ, but differing in their origin and architecture.

The anterior lobe is encapsulated, is grayish red, and receives the infundibular process in the hilumlike depression on its posterior aspect. On either side of the median line, anteriorly, dense connective tissue marks the position of the bloodvessels. From the capsule delicate fibrous strands, containing the capillaries, invade the lobe and divide it into many alveoli which are occupied by cuboidal or polyedral epithelial cells, of which there are two types, the smaller, feebly staining chief cells, and the larger, deeply staining, chromophile cells. Sometimes these elements are so disposed as to line the alveoli, forming acini, the lumina of which occasionally contain a colloidal substance; sometimes the cells are found in all parts of the alveoli.

While the posterior lobe is developed from that part of the embryonic brain which afterward becomes the third ventricle, no elements are present which can be identified as nerve cells, but many have the appearance of neuroglia.

Lying between the two lobes is the pars intermedia which is formed by an epithelial stratum, a few cells deep, which bounds the interglandular cleft posteriorly. The layer of elements next to the lumen of the cleft has the appearance of ependymal cells.

The diseased hypophysis has been attacked during life by Sir Victor Horsley, Hochenegg, von Eiselsberg, and others, hoping by its removal to relieve human suffering. Hochenegg reports favorable results by the removal of the organ in cases of acromegaly.

The belief, at one time existing, that this disease was always associated with tumors of the pituitary gland received a shock, since twenty-seven or twenty-eight cases of acromegaly have been made known in which a tumor did not exist. That however, does not prove the innocence of the hypophysis in its relation to the disease, as it is now held that excessive functional activity of the gland may be responsible for acromegaly.

Case. J. M., male, colored, aged fifty years, was admitted to the Grady Hospital April 19, 1911, in an unconscious state, having been brought from the place of his employment, where according to his fellow workers he complained of a suddenly developing weakness which soon gave place to unconsciousness. From his coworkers it was also learned that he had been taking some drug in tablet form which led to a suspicion of fatal poisoning. From the dead man's daughter the following facts were elicited: Eleven years before the patient used to suffer from attacks of headache as often as once a week or once every ten days. Under the care of a physician he improved and had no further trouble until eight months previously when the headache recurred, attacking the patient more frequently and each attack lasting longer than at first. About three years before his death he suffered from a nasal discharge, the nature and details of which could not be learned. Two months before his exitus the nasal discharge recurred, being profuse and of a dark red color. About one month before April 20, 1911, he experienced difficulty in using his right leg. It required great effort to raise the limb from the floor. One month before his death he spoke of dimness of vision especially in his right eye; it appeared as though there were a growth in his eye. The patient became fatigued readily during the last two months of life; although there was no loss of weight nor any evidence of excessive deposits of fat. He had a good appetite and slept well.

It was not possible to make a physical examination even of the eye grounds. The taking of the tablets lent some weight to the suspicion of poisoning, but neither the gastric contents, the urine, nor the feces revealed anything to further the suspicion.

Autopsy. Body was that of a well developed and well nourished adult, colored male. Rigor mortis was broken easily. There was no external evidence of violence prior to death. Lips were rather large and protruding, but the degree was not unusual for a negro. The upper extremities did not reach below the middle of the thighs; no excessive subcutaneous fat.

The peritoneum was smooth and glistening, and the cavity contained a small amount of fluid. The left pleura was free from adhesions; the membrane was smooth and glistening; the cavity contained a small amount of fluid. The right pleura was universally adherent. The pericardium was smooth and glistening, and the cavity contained 10 c. c. of straw colored fluid.

The heart was large; the musculature bright red, fairly firm, and was not easily pinched through. The musculature measured 2 c. c. at its thickest point. The papillary muscles had somewhat flattened summits and presented yellowish gray, soft areas at a few points. The posterior mitral leaflet was somewhat thickened along the line of contact but the structure was pliable. The anterior leaflet on the ventricular aspect presented a few atheromatous patches. The aortic leaflets were slightly thickened but they were pliable and competent. The coronary arteries were thickened; the intima contained numerous elevated, yellow, rather soft patches. The lungs, thyroid, spleen, and adrenals showed no gross evidence of disease.

The left kidney showed fetal lobulation. The capsule was slightly adherent; the stripped surface was smooth and dark red; the organ was somewhat firmer than normal. The cortex was normal in width, dark red, and oozed blood. The medullary portion showed no macroscopic evidences of disease. The right kidney showed changes like that of its fellow. The bladder contained 300 c. c. of clear, straw colored urine. The mucous membrane was pale, but smooth and glistening. The middle lobe of the prostate was slightly enlarged. The internal meatus of the urethra was elevated. The stomach contained 200 c. c. of greenish black fluid; the mucous membrane was pale, somewhat irregular, and contained a few erosions. The submucosa was slightly thickened. The intestines showed nothing noteworthy. The liver was about normal in size but flabby. The external surface was smooth but presented a mottled appearance. Some areas were irregular in outline, yellowish gray, and rather soft; the greater part of the surface was reddish brown. The organ cut easily; the incised surfaces were somewhat blurred, reddish gray with yellowish mottling. The yellow gray areas were due to fatty infiltration. The pancreas showed nothing abnormal. The aorta, upon its intima, just above the bifurcation presented a few atheromatous patches.

The brain meninges were congested at some points, especially over the lesser brain. Just anterior to the pons and passing along the right side of the crus, between the temporal lobe and the optic tract as far as the optic chiasm, was a soft, reddish brown, almost structureless mass which had pushed the optic tract to the left of the median line. The mass did not penetrate the pons nor the cerebellum but was undoubtedly a part of the structure occupying the sella turcica, the hypophysis, which was clearly enlarged, measuring 2.3 by 1.2 cm. Although the mass arose from the pituitary, the contour of this organ could still with difficulty be outlined. The cut surfaces of the hypophysis were reddish brown with grayish mottling. The mass appeared to take its origin from the inferior and posterior aspect of the pituitary.

The sella turcica measured 4.5 cm. in the transverse and 4 cm. in the anteroposterior direction. The posterior wall of the sella turcica was wanting. There was a large communication between the sella turcica and the sphenoidal sinus.

Diagnosis: Tumor of hypophysis; slight chronic interstitial nephritis; chronic myocarditis; chronic adherent pleurisy; chronic gastritis; mild degree of arteriosclerosis. Histology: The sections from the tumor were alone of interest, hence the other will not be described. The sections from the tumor could be for convenience of description divided into four parts: 1. Glandlike tissue clearly from the hypophysis; 2, a partitionlike structure evidently pars intermedia; 3, tissue not unlike some seen in the central nervous system, undoubtedly the posterior lobe; 4, a neoplastic structure.

1. It was surrounded by a dense fibrous tissue band in which there were numerous cells some of which were polyblasts. From the capsule trabeculæ extended into the underlying structure and produced many alveoli, the walls of which were thin and contained delicate capillaries filled with red blood cells. The vascularity of this part was a conspicuous feature of the sections. Some of the alveoli were lined with cells so that these structures looked not unlike acini, but in the majority of instances the cells lay in the lumina of the alveoli. The cells were not all alike; some were large, measuring from thirty to forty microns and were polyedral in shape. The protoplasm of the cells was very granular and possessed a marked affinity for the picric acid. The nuclei had well defined walls measuring from six to ten microns, were composed of a rather loosely woven structure containing a small amount of chromatin, which was scattered throughout the nuclear substance. The smaller cells ranged from twenty-five to thirty-five microns in diameter. The protoplasm was finely granular, was transparent, feebly staining, selecting the picric acid with no great affinity. The nuclei were ovoidal, measuring from six to nine microns, had well defined walls, were vesicular, and contained a small amount of chromatin which was scattered throughout the nuclear substance. It was no difficult matter to distinguish between these two types of cells in section stained by hematoxylin and van Gieson's method, but the differentiation was not easy when counterstained with eosin. In most of the alveoli the large cells predominated; in a few the smaller cells were the more numerous. Few alveoli contained a hyaline acidophilic substance, and this was usually found in those alveoli lined with epithelial cells.

2. This part lay in contact with the second part which was composed mainly of dense, deeply staining fibrous tissue in which were several spaces lined with low columnar epithelial cells and filled with a homogenous, acid staining mass containing a few rather large polyedral cells, possessing ovoid rather deeply staining nuclei. Their protoplasm was fairly abundant, granular, and acid staining. These cells were identical with the small cells in the alveoli of the first part of the sections and with those lining the spaces in which the hyalin masses lay. One space was rather large, occupying nearly one half of the second part. The others were not over 100 microns in diameter. There were present a few spaces lined with low columnar epithelial cells, but containing no hyalin substance.

3. The third part of the sections was traversed by delicate, acid staining strands which apparently acted as a framework and in which were small capillaries. The strands supported cells and delicate fibrils. The latter stained poorly, were granular and intercommunicated. Many of the fibrils were cut transversely, producing a granular appearance here and there. The cells found among the fibrils were irregular in shape, varied in size, ranging from twenty to thirty microns; the nuclei of some were ovoidal, others were oat shaped, all were vesicular, and stained feebly. The protoplasm was finely granular, feebly acid staining, and varied in amount. From the margin of those cells delicate flagellalike filaments sprang and soon became lost in the adjacent tissue. The structure of these filaments was identical with the poorly staining fibrils already described. The second part separated the first and the third at one point, with the exception of which the first part surrounded the third.

4. The fourth part was made up of many alveoli which varied in shape and size; they did not show the uniformity in shape and size seen in the alveoli of the first part but they, too, were filled with cells which were polyedral and

varied in size. The nuclei of these cells were ovoid, well limited, contained considerable chromatin and stained rather intensely. The protoplasm was granular, fairly abundant, and stained rather deeply. The cells bore a feeble resemblance to the small cells in the alveoli of the first part of the sections. Sometimes they lined the spaces, but in the greater number of instances they were scattered indiscriminately throughout the alveoli. The stroma at some points was abundant, at others rather scanty; at all points it contained very few cells. The points containing an abundance of stroma contrasted this part strongly with that of the first part.

The stroma also contained the bloodvessels which were few in number, another marked contrasting feature with the vascularity of the first part. While these parts were mostly fairly well defined, there was one point in the sections at which it was impossible to distinguish between the first and fourth parts, one gradually merging into the other. The picture was so clear that one could not doubt that the fourth or neoplastic part sprang from the first.

The sections of the tissue comprising the mass along the optic tract were made up of structure identical with that of the anterior lobe of the pituary and of structure like that of the neoplastic part of the first section described. The study of the section left no doubt that the anterior lobe of the hypophysis in this case was considerably enlarged, for we found its substance beyond the bounds of the sella turcica.

It is probably beyond human possibility to determine whether the enlargement was due to a hypertrophy or hyperplasia, or whether we have to deal with an adenoma of the gland. If an adenoma is responsible for the increase in size, it is not possible by means of the microscope to distinguish between gland and tumor, but this fact can be ascertained, viz., that the tumor arose from that part of the structure occupying the normal position of the organ. My studies of the normal organ strongly incline me to view the enlargement as a hyperplasia. This term strictly means increased tissue, and many authors apply this term to those forms of hypertrophy in which the increased functional capacity is due to an increase in the number of parenchymal cells, in which case there must be an increase in the supporting structure; yet a histological picture of that kind does not always signify hypertrophy, and as an illustration one need but cite parenchymatous goitre.

This case was not studied during life, so that it is a difficult matter to deny that there existed a hyperpituitarism, for there is no means of determining whether overtension existed. The family could give no information whether or not the patient suffered with polyuria. Glycosuria, emaciation, obesity, imperfect development of organs were not present. With regard to the hypopituitarism, one can say that there was not present anorexia, insomnia, nor diminished growth; asthenia was manifested about one month before death; whether lowered tension was present during life no one knows. The absence of changes in the thyroid gland indicates persistence of function of the hypophysis.

When all phases of the case are considered, I am very much in favor of viewing the condition as an enlargement or hyperplasia of the pituitary gland, comparable to parenchymatous goitre, the hyperplasia having become carcinomatous.

I do not doubt that choked disc was present, although I have seen a case in which choked disc was absent, but in which there was displacement of the optic tract identical with the change that had taken place in the case here recorded. I have grave doubts whether the diagnosis of enlargement of the hypophysis could have been made in this case by the changes in the optic chiasm; the bitemporal hemianopsia, for the tract, especially the right, was also involved. The astute clinician might have taken the clue from the profuseness and the character of the nasal discharge, had the patient presented himself for treatment before the sudden onset of unconsciousness.

For the privilege of recording the case, I wish to express my gratitude to the authorities of the Grady Hospital of Atlanta, and to Doctor Strickler, under whose service the case was admitted.

CARNEGIE LABORATORY.

TUBERCULOSIS OF THE LIVER WITH JAUNDICE.

By LINDSAY S. MILNE, M. D.,
Kansas City, Mo.,
Professor of Medicine, University of Kansas.

Tuberculosis of the liver occurring in the course of general acute miliary tuberculosis, or secondary to tuberculous disease of the lungs or intestines, is by no means uncommon. It may indeed be very extensive, the liver being crowded with tubercles, yet only rarely is it in sufficient degree to be associated with jaundice. Still less common are those cases where the liver is the only, or the most affected organ.

This condition of jaundice produced by tuberculosis of the liver does, however, occasionally occur. The clinical picture seems to be fairly definite, and as it has received only very scant attention in the literature of tuberculosis, it may be of value to record the following two cases, in which there was severe jaundice and the liver was the seat of extensive tuberculosis. The physical signs which were manifested were chiefly referable to the liver, yet the true condition responsible for the jaundice was not recognized during life in either case.

CASE I occurred in a somewhat wasted but well developed man, aged fifty-eight years, who had come under observation for alcoholic peripheral neuritis. He presented no bone or joint conditions nor any other special lesion except a very slight enlargement of the liver, which could be faintly palpated 1.5 inch below the costal margin in the right midclavicular line. Four weeks before the date of his death his temperature began to rise to 101° F., and sometimes to 102° F. He became rapidly weaker, his gums became very spongy, and he had several attacks of epistaxis. His bowels became very loose and there was some slight melena. His case closely resembled typhoid and his abdomen slowly became distended by gas and was slightly rigid and tender. The Widal serum test was negative, but a positive von Pirquet tuberculin reaction was obtained. Eight days before death the liver was noticed to have become considerably larger, reaching down to 2.5 inches below the costal margin in the right midclavicular line. The spleen was apparently slightly enlarged, but as the abdomen was so distended with gas, its exact size was difficult to determine. At this date also jaundice developed and rapidly progressed in intensity. His blood count averaged about 14,000 leucocytes to the c. mm. during the last four weeks of his illness, seventy-five per cent. of those being polymorphonuclears. In the last eight days during the period he was jaundiced, the leucocytes numbered only 4,600 to the c. mm. The temperature continued swinging irregularly from 99° to 102° F. till the time of death. The pulse rate averaged from 90 to 100 a minute. He died in a very jaundiced and asthenic condition.

The autopsy showed the liver to be enormously enlarged (weight 2,950 grammes), and extending 12.5 cm. below the xiphoid cartilage. It was almost completely filled with miliary tubercles. On microscopical examination very little liver tissue could be found, as almost the entire liver seemed to be replaced by acute miliary tubercles. There was apparently no increase in fibrous tissue, and it did not seem to be a cirrhotic liver which had been tuberculous.

The spleen likewise was greatly enlarged, soft, dark in color, and weighing 825 grammes. Like the liver, it was crowded with acute tubercles, and there were numerous small hemorrhages. Its fibrous stroma also did not appear thickened. The kidneys both showed a rather large number of tubercles in the cortex. The peritoneum was not thickened nor tuberculous and its cavity contained only a very small amount of yellowish fluid. There was no tuberculosis in the mesenteric glands, intestines, bones, mastoids, lungs, pleura, brain, nor lymphatic glands anywhere, that could be determined. There were a few pleural adhesions at the apices of both lungs, but no fluid in either pleural cavity.

In this case the tuberculous process seemed to be uniformly acute. No old focus could be found, although it is hard to believe that such an extensive tuberculosis of the liver and spleen could arise without there having been some tuberculous mesenteric gland or intestinal ulceration. It was also remarkable that the tuberculous process in the liver and spleen were so widespread, yet apparently the lungs and other organs of the body were not affected.

Case II occurred in a man, aged forty-two years, who came into the hospital complaining of pain in the right side under the edge of the ribs, and sometimes referred to the back. He was considerably jaundiced, but no history could be obtained of when this had commenced. As he spoke no English, very little could be learned about him. He was born in Greece, and had lived there until fourteen months previously, at which time he arrived in the United States. He had been employed in railroad work in Louisiana and Texas. He could give no history of any previous illness, except that of a sabre cut over the right hip four years previously.

On physical examination, there was slight general emaciation. He was considerably jaundiced. Over the posterior part of the right hip there was a scar about six inches in length, the lower part of which extended into a sinus, which discharged a small amount of thin pus, and which, on probing, seemed to end blindly. It had no apparent connection with the underlying bones or joints. The hip and sacroiliac joints did not seem to be involved. His vertebral column did not seem to show any special change. The abdomen was slightly prominent. There were no distended veins on the surface of the abdomen or thorax, and no ascites. The upper part of the abdomen was tender on palpation. The liver was considerably enlarged. Its upper border was at the fourth rib in the right midclavicular line. The lower border, which was readily palpable, extended three inches below the costal margin in the right midclavicular line. The spleen was also slightly enlarged. Its anterior border extended as far forward as the anterior axillary line. The lower border could be palpated one quarter inch below the costal margin. The stomach was not dilated, nor was the large intestine in any part.

The heart was not dilated. There were no cardiac murmurs. The sounds were short, sharp, and not reduplicated. The pulse was regular, small in volume, averaging from 90 to 100 a minute, and of low tension. He had no dyspnea, cyanosis, nor cough. The chest was slightly superresonant throughout. There were no dull areas on percussion. The breath sounds showed no abnormality on auscultation, except some slight prolongation of expiration. There were no crepitations in any part of the chest.

The urine was acid, specific gravity 1.030, and contained a considerable amount of urates, but no albumin, sugar, nor casts. There was a small deposit of pus cells and a few bladder epithelial cells. The urine contained no blood, and no tubercle bacilli could be demonstrated.

The blood count showed 10,000 leucocytes to the c. mm., polymorphonuclears, 85 per cent. and hemoglobin, 90 per cent.

The temperature varied daily from 89° to 101° F., being at its maximum in the afternoon.

The case was considered to be one of obstructive jaundice from gallstones with cholecystitis. Laparotomy was performed five days after his admission to the hospital. The liver was found to be markedly enlarged and rather firm. Its surface was smooth and appeared congested, but otherwise was reported as showing no other change. There were some adhesions at the hilus of the liver. The gallbladder was imbedded in adhesions and could not be distinguished. No stones were found in any part of the biliary system. Nothing was done at the operation, except to free some of the adhesions along the upper part of the bile duct. The jaundice markedly lessened after the operation, and his general condition greatly improved.

During the following fortnight, the temperature did not rise above 100° F., and for the next four months continued almost normal, the jaundice at this time not being very marked. Four months after the operation, jaundice again became very marked. The temperature began to intermit daily between normal and 102.5° F. The patient began to cough considerably. The sputum was viscid and mucopurulent, but contained no tubercle bacilli, demonstrable either by staining or inoculation methods. There was no blood in the sputum at any time. At the apices of both lungs there was marked dullness as low as the second interspace anteriorly. Posteriorly, also there was dullness, at both apices and in both interscapular regions, extending as low down on the left side as the angle of the scapula. Over these dull areas there were faint bronchial breathing and numerous fine crepitations, and the vocal resonance was also considerably increased. A few crepitations could also be heard at the end of inspiration over the bases of both lungs.

The abdomen remained slightly distended, but no ascites developed. There was no diarrhea or melena at any time. The jaundice increased markedly in the next two months. Patient became very emaciated and died in an extremely asthenic condition seven months after the onset of the present symptoms.

At autopsy, the body was that of a large, emaciated man, 125 pounds in weight. The abdomen was slightly distended. On being opened, the liver was found very markedly enlarged. This enlargement was chiefly of the left lobe. The right lobe was shrunk, and about the size of a small hen's egg.

The gallbladder was somewhat distended, and both it and the bile duct contained blackish, viscid, almost inspissated bile. The surface of the liver was smooth, and no tubercle could be made out on its surface. The entire liver, on section, was found to be crowded with small caseous tuberculous foci. The right lobe contained numerous, fairly large, caseous masses, resembling somewhat the substance of a sebaceous cyst. There were extensive adhesions on the under surface of the liver and around the bile duct. The stomach was not dilated. The intestines were somewhat atrophied. There were no peritoneal adhesions except in the upper part of the abdomen. The omentum was contracted and drawn up to the inferior margin of the stomach. There were no ulcerations in any part of the small or large intestine. The mesenteric glands were enlarged, some of them considerably, but on section they did not appear to be caseous. Both kidneys were slightly enlarged. On the surface of both there were several small cysts. The cortex was slightly reduced in thickness, congested, and somewhat fatty. The left adrenal gland was enlarged and contained a large, whitish, firm, yellowish mass of old caseous material. The right adrenal gland was smaller than the left, and adherent to the liver. In the anterior border of the upper pole there was a caseous focus similar to what was found in the right adrenal. The spleen was considerably enlarged. Its surface was smooth and showed no evidence of tubercle. On section, the interior of the spleen was found to be crowded with small, caseous, tuberculous foci.

The prostate was not enlarged and showed no evidence of tuberculosis. The urinary bladder showed no special change.

The pericardium was not adherent. The heart was somewhat atrophied. The valves showed no abnormality. Both pleuræ were obliterated by dense adhesions. In the upper lobe of the right lung there were extensive patches of tuberculous bronchopneumonia. In the upper lobe, and to a less extent in the lower lobe, many of the bronchopneumonic patches had broken down into small acute phthisical cavities. In the left lung there was a similar condition, with a fairly large acute cavity in the upper outer portion of the lower lobe. The bronchial glands on both sides showed extensive chronic caseous tuberculosis. The larynx and tonsils did not seem to be involved.

On microscopical examination, the liver and spleen were found to be crowded with caseous tuberculous areas from which tubercle bacilli could readily be demonstrated, and which were surrounded by numerous giant cells. All the mesenteric glands examined contained foci of subacute or chronic tubercle. The condition of the lungs was also definitely tuberculous.

The oldest focus in the body was apparently in the adrenals. The condition in the mesenteric glands was not recent, but did not seem to be of especially old standing. The involvement of the liver and spleen appeared to be of older date than the condition of the lungs, in which organs the tuberculous process seemed to be particularly acute.

Both of these cases presented much the same train of symptoms, although the first was much more acute. In each there was marked jaundice. The temperature and general condition was obviously tuberculous. The liver was particularly involved. In the first case the liver and spleen seemed to be the only two organs affected. In the second the disease was more widespread and much less acute, but in this case also the most extensive disease was jaundice of the liver and spleen. As the spleen and liver in both cases were apparently equally involved and the disease process so uniformly distributed in these organs, it appeared as if the infection originally was disseminated from some tuberculous focus in the mesenteric glands. In the first case, however, the mesenteric glands did not show any gross old standing disease. In the second these glands were tuberculous, but in this case also the process was not particularly advanced. In view of the extraordinary frequency of tuberculosis of the mesenteric glands without any extension to the liver, it is difficult to understand the factors which determine the widespread involvement of the liver and spleen in some cases. The same conditions, however, may be found in the relation of infection of the bronchial glands to pulmonary tuberculosis. The intestines in both cases showed no evidences of any ulceration, either old or recent. In the second case, what seemed to be the oldest focus was situated in the adrenals.

Similar cases have been described and numerous types of tuberculosis of the liver have been elaborated, particularly by French writers (5, 6). They vary as regards the duration of the disease. The history in practically all of them seems to begin with epigastric pain. The temperature is irregular. Very often the symptoms are very closely related to typhoid fever. The liver becomes enlarged, and toward the end jaundice usually develops. In some cases this process is very acute, and in others it is more chronic and the patient may remain jaundiced for a considerable time.

The relationship of tuberculosis to cirrhosis of the liver has been extensively discussed. Undoubtedly these two diseases not uncommonly coexist. In the cirrhotic liver, tuberculosis does seem to be specially liable to develop. Some authorities have also maintained that in such cases the cirrhotic process may be the result of tuberculosis. In the present two cases, however, there was no histological evidence of any coexisting cirrhosis.

These two cases may then be added to the literature on tuberculosis of the liver, on which subject, although not altogether scanty, it is somewhat indefinite. Although the present cases and most of those recorded seem to have produced a fairly distinct clinical picture, the diagnosis has generally been confused, and cases have been considered as pylephlebitis, cholecystitis, gallstones, or cirrhosis of the liver, and the true condition has been disclosed only at autopsy.

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Ninth Street and Grand Avenue.

THE DUODENAL TUBE.

Its Value as a Diagnostic and Therapeutic Agent.

By Louis A. Doroff, M. D.,
Chelsea, Mass.

At about the same time in January, 1910, Dr. M. Gross and Dr. M. Einhorn, working independently, published articles in which they described a tube for obtaining the duodenal secretion in man. This apparatus being in reality an elongated stomach tube with a perforated metal ball at the end, differed in certain physical respects, but practically gave similar results. Patients were first given a glass of milk and water, and then one hour later the tube to swallow. While lying on the right side, in the course of time, the end of the tube with the metal ball would pass through the pylorus opening into the duodenum and the secretion was therein obtained. Patients experienced very little difficulty in swallowing the tube and comparatively little discomfort afterward.

This method opened up a new field, and much was expected of it in exploring and diagnosticating conditions of the duodenum, gallbladder, liver, pancreas, etc., and, perchance, in throwing new light upon the subject of diabetes mellitus. Although considerable work by a number of investigators has failed to realize such optimistic hopes, yet the use of the apparatus has not proved entirely unavailing.

At the time Gross and Einhorn first described their respective tubes, the writer was house physician at the Montefiore Home and Hospital, New York, and at the suggestion of Dr. S. Wachsmann, medical director, began to experiment with both of these tubes. Owing to the fact that more satisfactory results were obtained, he preferred the Gross tube, and used it exclusively. It soon became evident that with a little practice and patience, it was quite a simple procedure to obtain the duodenal secretion, which was done successfully in twenty-nine cases.

The amount usually obtained varied from ten to thirty-five c. c. at one sitting, but the chief objection was the fact that operation consumed from three quarters of an hour to one and one half hours before the secretion was obtained, so, in order to hasten the passage of the tube through the pylorus, a certain amount of success was obtained by placing the patient in the Trendelenburg position whereby the duodenal secretion was elicited within from twenty to thirty minutes. The reason for this was probably the fact that when in this position, the tube by gravity naturally comes in contact with the lesser curvature of the stomach, and has a shorter route to travel in order to reach the ploric opening.

It is not the purpose of this paper to describe the methods employed in obtaining the secretion, nor the tests pursued in making the chemical findings, as several articles which have already been published completely cover that subject as far as present knowledge is concerned. The object is to combine what facts have resulted from the successful use of the duodenal tube, so that its diagnostic and therapeutic value may be brought to the attention of the general practitioner, especially to men interested in gastrointestinal disease.

During the past three years, there have been a number of men who have helped to give the duodenal tube a wider range of usefulness, and when it is considered that the subject is yet in its infancy, there is indeed high hope of great possibilities in the future.

Naturally the first line of investigation led to the use of the tube as a catheter to obtain the duodenal secretion, which consists of a mixture of the bile, secretion of the glands of Lieberkühn and Brunner, and that of the pancreas with some admixture of the gastric chyme, especially at the first portion of the duodenum near the pylorus. A smaller duodenal tube has been devised by Hess, of New York, for obtaining the secretion in infants. The color ranges from golden yellow to greenish yellow or even dark green, depending upon the amount of bile present. The fluid may be clear, turbid, cloudy, or even milky, and the reaction usually weakly alkaline or neutral, although it may vary from strongly alkaline to strongly acid.

Although the chemical examinations assist in differentiating decreased and increased acidity and catarrhal icterus, the duodenal tube has done very little for diagnosis, considering the large field.

DIFFERENTIATION OF DUODENAL AND PYLORIC STENOSIS.

This is usually difficult clinically. The causes are numerous, such as tumors, adhesions, spasms, ulcers, etc.; however, by means of the duodenal tube it can be readily done. Gross states that not only can he tell whether there is pyloric or duodenal obstacle, but he can also locate it, and gain information concerning the stenosis.

DIAGNOSIS OF DUODENAL ULCER.

In a number of cases of suspected duodenal ulcer, by means of his tube, Gross has found macroscopically visible blood particles floating on the duodenal contents. In addition, patients experience a slight susceptibility at the place where the tube rests in the duodenum, because blowing into the tube is felt, but not painfully.

In combination with fluoroscopy and infusions of bismuth, local diagnosis of ulcer has been made by Skinner.

DUODENITIS.

This can be diagnosticated by Gross through changes in the chemical nature of the secretion.

Therapeutically, the application of the duodenal tube has given much more encouraging results with fine possibilities of even greater strides in the future.

TRANSDUODENAL LAVAGE.

This is of considerable value in the removal of toxines produced in the course of fermentation and putrefaction. After the tube is safely lodged in the duodenum, lavage can be effected with the patient in either the sitting or recumbent posture by simply pouring fluid into the glass funnel attached to the outer end of the tube. Jutte states that this method will aid digestion and assimilation, and bring about improvement or recovery in such diseases as bronchial asthma, gout, rheumatism, arthritis deformans, toxic albuminuria, constipation, etc.

Duodenal lavage has been used by Gross successfully in the treatment of chronic duodenal catarrh with the aid of Carlsbad water. A solution of Epsom salts passed through the tube into the duodenum causes prompt evacuation of the bowels.

DUODENAL ALIMENTATION.

This is of great value in the treatment of gastric and duodenal ulcers. The food, which usually consists of a mixture of milk, lactose, and raw egg, is administered at body temperature, like the food normally entering the duodenum from the stomach. Also, the duodenum not accustomed to variations of temperature either too high or too low, would show resentment by symptoms of shock. The food should be given in small quantities (three ounces) every two or three hours, then gradually increasing the amounts until ten ounces are given at a single feeding. It should be administered slowly, as too rapid an entrance into the duodenum will cause flatulence. After heating the mixture, it should be strained.

This method should be instituted in all cases of ulcer where ordinary medical means have failed, and where the general condition of the patient has become worse through rectal feeding.

The advantages of duodenal feeding over rectal are: 1. The tube can be retained in the digestive tract for ten or twelve days without discomfort. 2. The rectum and colon are organs primarily for the expulsion of feces, and some absorption of remaining liquids, whereas the duodenum is an organ where the most important digestive juices are secreted. 3. In the colon we have the last part of the intestinal tract, while the duodenum is the principal section of the digestive apparatus.

In addition to keeping the patient on sufficient nourishment, this procedure puts the stomach at rest in ulcer, and allows healing to take place. Einhorn, and Morgan, of Washington, have been very successful with duodenal alimentation in ulcer, and Einhorn states that even in gastrectasia and gastroptosis beneficial results were obtained, inasmuch as there were reduction in the size and changes in the position of the stomach.

INTRODUCTION AND LOCAL APPLICATION OF REMEDIES.

Einhorn has used argyrol by painting the part of the tube where it rested upon the ulcer with a nearly insoluble form and has had good results.

H. G. Beck has found this method most efficacious for the treatment of amebic dysentery with ipecac. Larger doses can be given without any bad effects.

In ulcus ventriculi, Gross has had successful results with bismuth solutions.

STERILIZATION OF THE INTESTINES BY OXYGEN.

The duodenal tube has introduced an excellent way of cleansing the intestinal tract. A current of oxygen is slowly passed through the tube. The usual amount varies from two to four litres, and one hour afterward, the gas escapes from the anus. It was shown that oxygen acts as an intestinal antiseptic, and that excessive bacterial proliferation could be restricted by introducing nascent oxygen into the small intestine. Fermentative and putrefactive dyspepsias as well as catarrhal conditions are favorably influenced by the insufflation, as oxygen exerts a directly inhibitive effect upon pathogenic bacteria. Very satisfactory results have been obtained with this procedure by Schmidt, of Leipzig, and Gross, of New York.

Other therapeutic uses of the tube are for the removal of gas in severe cases of gastric and intestinal flatulency, and in the treatment of diabetes mellitus. Since theoretical grounds favor the possible improvement in diabetes mellitus by means of pancreatic extract, it seems plausible that the duodenal secretion obtained from a normal healthy individual by means of the tube could be given to patients suffering with this disease, either directly through the duodenal tube or by means of keratin capsules, which would prevent disintegration and digestion in the stomach. Following along such ideas, the writer pursued this method in four patients who were on the usual antidiabetic diet, making quantitative sugar analyses daily, but he was compelled to discontinue this line of investigation after several weeks, owing to circumstances which removed the patients from his observation. In that short period of time, the results, although promising, did not lead to any definite conclusions.

From what has been stated, it is very evident that there is still a large field of unexplored facts in gastroenterology, and it appears that the duodenal tube, although still in the hands of but few specialists, has proved that it has filled a long felt want, and it may, in time, become a part of the diagnostic armamentarium of the general practitioner.

202 CHESTNUT STREET.

BIOSTATISTICS OF THE JEWISH RACE.

Pertaining Especially to Immunity and Susceptibility.

By LESTER LEVYN, M. D.,
Buffalo, N. Y.

The relative immunity to many contagious and infectious diseases and susceptibility to certain other afflictions (principally of a neurotic origin) possessed by the Jewish race, present a field of study of a most interesting nature. The immunity can be traced as far back as the Talmudic periods, and well proved facts and statistics give evidence of its survival to-day. Why should the Jew, physically inferior to his Christian brethren, ward off with more potent factors the onslaught of disease and emerge from the conflict with a lesser mortality? Let us for a moment make a brief anthropological study of the Jew. His average height is 162.1 cm., span of arms 169.1 cm., girth around the chest about 81 cm., making him the narrowest and the shortest of races. The skulls are chiefly brachycephalic, probably attributable to cerebral development. There is no race that appears less strong and none than can so well resist misfortune. The reason for this is that in soul as well as in body, morally as well as physically, the Jew is the product of a selection that has lasted two thousand years, and has been the most severe and most painful which living beings have ever had to endure. In appearance, notably in the large Jewries of the east, he is small, puny, sickly, pale, and shrunken, yet under this frail exterior is hidden an intense vitality. "The Jew may be likened to those lean actresses, the Rachels and Sarahs who spit blood, and seem to have but a spark of life left, yet who when they have stepped upon the stage put forth indomitable strength and courage." Taking into consideration then the mode of life to which the race was so long subjected it is not strange that it should present peculiarities to the physiologist and statistician.

The first thing to attract our attention is the fact that the longevity of the Jew is greater than that of any other race. This is so well established that in certain countries, America for instance, the Jews are regarded by life insurance companies as especially desirable clients. Almost anywhere, particularly in those countries where the laws are not such as to render existence intolerable to them, the average duration of life among the Jews is considerably higher than that of adherents of other religions and faiths. This does not apply solely to countries where the Jews are largely of the well to do classes, but as well to the poor Jews of Germany, Hungary, England, and Rumania. The United States census report states his "expectation of life" to be fifty-seven years, while that of his Christian brother is but forty-one years. The difference is visibly one of distinction.

We should not be justified, however, in regarding this superiority as a racial phenomenon of a purely physiological nature. It is doubtless due in large part to the difference in customs, to the family spirit of the Jews, to their devotion as parents, to the care of the mother for her children; and also to the chastity in the marriage relations; to the prescriptions of the law, and to the consideration and respect shown by the husband for the health of his wife. Much of the racial relative immunity to various diseases may be directly attributed to a strict adherence to the laws governing the Jewish faith, which embody rigid aphorisms on bodily and dietary cleanliness. Many of the fundamental laws of Judaism have for a nucleus hygienic principles. The early Rabbinical teachings forbade eating the flesh of an animal that had taken poison, or the eating of meat and fish together, or drinking water left uncovered over night. The danger of drinking water at the beginning of the seasons was taught the people. In times of plague the Rabbis advised the necessity of remaining at home and avoiding the society of men. It was forbidden to touch during a meal parts of the body where perspiration was profuse, to eat from unclean vessels or with dirty hands, or to eat hearty meals before retiring. It is thereby seen that the Torah wished to make of Israel a people that should be healthy and holy, *sanus et sanctus*.

The laws concerning the preparation and selection of all flesh for food, scorned and ridiculed for many generations, are now regarded as important factors in the eradication of disease. In the slaughter houses the methods employed by the shochets in the selection of animals for consumption are worthy of mention. No animals are considered fit for food which show but the slightest evidences of illness or whose bodies in any way are wounded or injured. Such animals are branded unclean and therefore unfit for food. True, the sacrifice of such animals creates a monetary loss, but any sacrifice conducive to an increased resistance to disease and prolongation of life is one which the public will gladly suffer.

In enumerating the various diseases to which the race is comparatively and relatively immune, that which stands preeminently foremost on the list is tuberculosis. Unfortunately, advancing civilization with its congestion of population and subsequent increase in Ghetto life is tending to diminish the extent of this immunity. Doctor Behrend says: "The comparative immunity from the tuberculous diathesis has been recognized by all physicians whose special experience entitles them to express an opinion." Despite the horrible Ghetto environment statistics evidence a lesser extent of the disease than among other races, while in the better classes of Jews, not restricted by Ghetto life, they are but rarely victims of the disease. Many factors peculiar to the race are instrumental to the production of this immunity. Lombroso considers the immunity to be in large part attributable to the fact that the vocations of the Jews require little or no exposure. Another important cause is the cleanliness of the housewives. Instead of resorting to extensive use of the dusting brush they utilize damp cloths in wiping all surfaces, by this means raising less dust and diminishing the risk of inhaling tubercle bacilli. Lastly, but of vast significance, is the fact that the body vitality is not diminished by excessive alcoholic indulgences.

The liability of the race to pneumonic infection is less than that of other races. Reasons for this are that their occupational pursuits are largely of a confining nature, and do not necessitate exposure to the vicissitudes of the weather. Of greater moment is the fact of the race being nonalcoholic.

Smallpox also has a less marked affiliation for the race. This malady attacks the Jew far less frequently than the nonJew. During the epidemic of smallpox in 1900-1903 it is remarkable to note that the race was virtually free from its ravages. The urgency and necessity for vaccination have always held sway among the Jews, they being strong supporters of the efficacy of vaccination, and the promptness with which they accede to it has established this freedom.

The existence of typhoid fever is somewhat less among the Jews than among other races and the death rate from that disease is lower among them. For a period of six years in the city of New York the typhoid mortality rate was as follows:

Germans, 28.01; Italians, 26.16; Irish, 25.56; English, 19.77; French, 18.29; Bohemians, 18.04; Armenians (white), 17.40; Hungarians (mostly Jews), 12.36; Russians and Poles (mostly Jews), 9.19.

The racial resistance to intestinal disorders is far greater than that of other peoples. In the city of New York in the most densely populated Jewish settlement, where eighty per cent. of the inhabitants are of that faith, an analysis of the statistics of the department of health shows that for a period of ten years diphtheria and croup killed five per 100,000 less than among the Christian race. Bearing in mind the low mortality of urban Jews, remembering the admirable conditions for the spread of infection prevalent in the East Side, knowing the congestion, the poverty, the miserably ventilated sweat shops, the never ceasing toiling, can we place belief other than in their wonderful powers of resistance!

The low mortality is not confined to the adults of the race, but applies to the infants as well. The enjoyment of a lower infant mortality is traceable to the deeper devotion bestowed in the children by parents, and the fact that weakened vitality due to alcohol and lues is not inherited. The precocity of the Jewish mind and the rapidity of mental growth are also largely due to this abstemiousness.

The number of stillborn children is much smaller among the Israelites than others, and there are notably fewer illegitimate births.

The prevalence of venereal disease is not nearly as widespread as is seen in others. The ancient and ever present custom of circumcision is the main contributing factor to this absence, enhanced by generations of culture, suffering, and tribulations which have placed the senses under the rule of reason. The race stands to-day as the least carnal of all.

While the race enjoys this relative immunity to many diseases it is not to be envied in every respect, for there remain afflictions which seem particularly prone to attack the Hebrew. Especially noteworthy of mention are maladies of the nerve centres, cerebral and spinal diseases, and diabetes mellitus. The latter occurs from two to six times more frequently among Jews than among nonJews. Strangely, while the disease exhibits such a marked predilection for the race, it is better endured than among other races. Von Noorden states that patients with glycosuria lasting for years, without much discomfort, die from what is supposed to be heart failure. Death through coma is more commonly seen in the Jew (Stern). With our present knowledge of the etiology of diabetes mellitus the only reasons offered for the predisposition of the race to the disease are the nervous theories, together with such contributing factors as sedentary habits, lack of exercise, high living, and overfeeding.

Of the nervous disorders, hysteria and neurasthenia affect the race most frequently. The causes commonly assigned are: 1. The fact that they are largely town dwellers, these functional nervous diseases being common to the population of a great city. 2. Neurasthenia is seen mostly among the commercial classes, bankers, and speculators, of whom the Jews comprise a great proportion. However, those of the poorer classes, laborers and artisans, are not exempt. 3. Consanguineous marriage was at one time a reason offered, but the more modern views that such marriages when contracted between healthy individuals are not at all detrimental to the health of the offspring contradict this theory. 4. The repeated persecutions and abuses to which the race has been subjected. 5. Such massacres as occurred in Kishineff, in 1903, were of frequent occurrence in the middle ages and their effect on the nervous system of the race could not be other than a rigorous one, transmited hereditarily. 6. The excessive mental and intellectual tax demanded to overcome and outspread environment.

While these conditions rarely, if ever, cause death, yet they exert a most harmful tendency. Kraft-Ebing states: "Neurasthenia and other nervous diseases affect the Jews with exceptional severity."

Amaurotic idiocy and the Mongolian type of idiocy are frequently observed among Hebrews. The causes again advanced are referable to neurotic taints. Marriages of those of near kin have been considered a prominent cause for the prevalence of idiocy in the race, but statistics do not bear out this contention. "It appears that the proportion of idiotic children who are the offspring of cousins is not in excess of the ratio of consanguineous marriages to marriages generally, and the sole evil result of such marriages is the intensification in the offspring of some morbid proclivity common to both parents." In summarizing, it may be said that the race suffers chiefly from the functional nervous diseases, and that the organic nervous degenerations such as locomotor ataxia, and progressive paralysis of the insane are uncommonly seen. Minor states that serious organic diseases of the brain and spinal cord are less frequently met with among Jews than among others.

Apoplexy is another affliction which attacks the Jew with a great degree of frequency. Lombroso attributes the connection to the racial temperament of emotion, struggling with adverse conditions and the persecution of centuries.

Diseases of the heart and circulatory system are more common in Jews, in the United States being double that of the general population. Articular rheumatism so frequently seen in the race is an important etiological factor in the production of organic heart disease. Arteriosclerosis also prevails largely among members of the race, owing to excessive activity, worry, and care. Intermittent claudication attacks the race more often than others, which condition is possibly due to the prevalence of arteriosclerosis.

The proportion of blindness is greater among modern Jews than among nonJews. In America, however, this does not hold true, owing to the stringency of the immigration laws which prevent the entrance of defective classes, including the blind. Considering the etiology of blindness it might be expected that the affliction should attack the race less than others. The most important cause of blindness in the newborn from thirty to fifty per cent. of cases is gonorrheal infection from the mothers. It is a well known fact that gonorrhea is comparatively rare in Jewish women. Conceding this it would be reasonable to think that Jews would have at least twenty-five per cent. less blindness than nonJews. In spite of this the condition is common to the race. Consanguinity, careful investigators contend, is not a factor in the production of blindness, apart from heredity. Trachoma, glaucoma, and diseases of the cornea and uveal tract are largely seen in the race, all of which conditions may lead to blindness.

It is most interesting to note that suicide in the race appears to be less common than among others. Among ancient Hebrews but few cases are recorded, only four cases being specifically mentioned in the Old Testament, those of Samson, Saul and his arrow bearer, and Ahitophel. Later it appears to have occurred with greater frequency. Josephus records the suicide of several thousand Jewish soldiers who were besieged by the Romans in the stronghold of Masaden in the year 72 or 73 A. D. During medieval periods of persecution the Jews often chose self destruction as a means of relief. In modern times the Jews are less liable to suicide. It is generally known that suicide is on the increase in most of the European countries as well as in America. Marselli explains this increase as due to the effects of "that universal and complex influence to which we give the name 'civilization.'" Yet, notwithstanding this pressure the Jew at present rarely resorts to self destruction. Among nonJews about one third of all suicides are directly or indirectly attributable to abuse of alcoholic beverages. and the paucity of such cases in Jews is again explained by their abstemiousness.

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203 EAGLE STREET.

Treatment of Puerperal Sepsis.—Heuze (*Le Scalpel et Liège médical,* December 15, 1912, reports cases in which the production of "fixation abscesses" by the subcutaneous injection of 16 minims (1 c.c.) of oil of turpentine yielded gratifying results. In one case which was already practically in the preagonic period, recovery took place, and similar good results were obtained in others. From his experience in a dozen cases the author is led to characterize the treatment as simple, almost painless, and devoid of danger. The procedure also possesses true prognostic value; in cases where no local reaction is observed after one or several injections, a fatal termination is to be expected.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Closed April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Answers due not later than May 15th.)

CXXXV.—How do you treat burns? (Answer due not later than June 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXII has been awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appeared on page 931.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

(Continued from page 935.)

Dr. G. F. Ellis, of Covington, Ky., writes:

A few cases of obstinate chronic bronchitis in the middle aged are secondary to the acute form, but the majority of cases are but symptoms of other diseases. Chronic bronchitis occurs in pulmonary tuberculosis, chronic pleurisy, emphysema, aortic aneurysm, cardiac disease, chronic nephritis, syphilis, gout, rheumatism, and chronic alcoholism. Treatment is primarily directed to any underlying disease found responsible. Four or five varieties of chronic bronchitis are described, but for purposes of treatment two classes are sufficient, moist and dry, according to the amount of expectoration. A change of climate offers the best prospect of relief. If the patient's circumstances admit, he should spend his winters in the south; choosing the moist, warm seacoasts in the dry form of the disease and the dry interior regions, especially the pine forests, in the moist form. If the patient is unable to leave home, we can only endeavor to protect him from all harmful influences and relieve symptoms as far as possible. The patient should wear flannel underclothing but not excessively heavy outer clothing. He should remain indoors in all inclement weather. Outdoor exercise may be allowed on dry, clear winter days, but the vitiated air of theatres and similar public assemblies should be avoided. Occupations necessitating inhalation of dust or irritant vapors should be abandoned. Diet should be generous and easily digested. Alcohol should be forbidden unless specially indicated. Debilitated patients require tonics; cod liver oil, hypophosphites, and syrup of ferrous iodide being most suitable. When excessive cough threatens cardiac exhaustion, digitalis, strychnine, and nitroglycerin may be indicated.

In the dry form of chronic bronchitis the main object of treatment is to increase expectoration. This is best effected by the use of warm, moist inhalations given in the steam atomizer. For this purpose, a solution of sodium bicarbonate and borax, ten grains of each to one ounce of water, answers every requirement. This may be made more agreeable by the addition of aromatics, as in Seiler's solution or the liquor antisepticus alkinus (N. F.). Oily solutions are not suitable, as they tend to increase dryness. Iodide of potassium or sodium is the best internal remedy. It should be given in five grain doses every three or four hours until free expectoration is produced. Ipecac, senega, and squill are useful expectorants, but will often derange the stomach. Ammonium carbonate and benzoate are useful given in five grain doses every three or four hours. Opiates should not be used as routine treatment, but are sometimes necessary to relieve harassing cough.

In the moist form of chronic bronchitis the indications are entirely different. Cough is rarely painful and expectoration is to be checked rather than promoted. Here oily inhalations are properly used. A few drops of eucalyptol and creosote may be dropped into a cup of boiling water, and the rising steam inhaled. Internally, the bronchial antiseptics are indicated. Terpin hydrate, syrup of tar, cubebs, and copaiba are useful. In the mucopurulent and fetid forms of bronchitis, creosote, eucalyptol, and myrtol are excellent remedies. Any one of these may be given in five minim capsules every four or five hours. Calcium sulphide, one grain every two hours until the breath has a distinctly sulphurous odor, is also very efficacious in these cases. Where the pyogenic organisms are demonstrated in the sputum, serum or vaccine therapy might be of benefit.

Dr. H. S. Mathewson, of Milwaukee, Wis., remarks:

This disease is essentially a winter ailment and affects largely city dwellers north of latitude 35. In the open country it is comparatively seldom seen. A distinction must be made between a chronic bronchitis which follows an acute attack, and that form of bronchitis which is chronic from the start. The prolongation of an acute bronchitis, which "hangs on," as the saying is, yields readily to treatment and need not detain us here. Far different, however, is the chronic bronchitis of the middle aged. They begin to cough as winter begins, cough all winter, and gradually recover as good weather appears the following spring. For these patients much can be done by proper treatment. Attention should be paid first to their mode of life and their dietary habits. They should live in well ventilated quarters, the dry heat of which is to be corrected by a water vaporizing apparatus. Many of these patients wear too much clothing in the house and too little when they go out, and these errors must be corrected. Their diet should be simple and nutritious; tea, coffee, and meats are to be used sparingly. That oft quoted aphorism, "The patient should be treated, and not the disease," is more true in chronic bronchitis than perhaps in any other disease. These patients are all overmedicated. They take home remedies of every description and are regular patrons of the druggist's bargain counter of cough mixtures. In placing one of these cases under treatment it is well to insist that all use of remedies other than those prescribed be suspended. The patient should be thoroughly examined to determine whether the heart, stomach, liver, kidneys or intestines by imperfect functioning are contributing to the persistence of the diseased condition in the bronchi. The nose and throat also must be examined, and any abnormality therein found corrected. Having eliminated all accessory conditions, there remain a large number of patients in our northern cities and towns whose bronchitis appears to be due to the irritation of a cold, damp, smoke laden atmosphere, acting upon a bronchial mucous membrane whose resistance is diminished as a result of the changes of advancing age. This is proved by the immediate relief obtained by these patients if they are sent to the arid Southwest for the winter. This is really the best treatment for this class of cases, but, unfortunately, it is impossible in the great majority of our patients.

As to medication, there is but one drug that is of any use in the treatment of chronic bronchitis and that drug is potassium iodide. It may be prescribed in solution, with some excipient to partially disguise its unpleasant taste, in dose of from five to ten grains after each meal and well diluted with water. Or it may be prescribed in pill form if its taste is seriously objected to. Many patients find the iodide hard to take and will discontinue it before giving it a fair trial unless urged to do so. In the dry form of bronchitis, with an irritable, nonproductive cough, this drug stimulates secretion and allays the irritation and feeling of constriction in the chest. The cough "loosens," expectoration becomes abundant, and gradually both cough and expectoration diminish and disappear. In cases where a profuse expectoration is present, the secretion becomes less tenacious and less foul, diminishes gradually in amount, and disappears.

When the improvement has become marked, the patient should be instructed to discontinue the medication for a time, to resume it, however, at once upon the occurrence of any chest symptoms. While not taking the iodide many of these patients should take a little iron, as they are anemic on account of the long continued suppuration within the bronchi. Any sufferer from chronic bronchitis who cannot be carried comfortably through the winter on the above indicated treatment should be advised to make a permanent change of residence, and that preferably to the semiarid Southwest.

Dr. Gustavus Eliot, of New Haven, Conn., contributes the following:

The cough of chronic bronchitis is often made worse by going into the cold air. This suggests the desirability of sending a patient with this disease to a climate which is warm. It is generally more beneficial if it is also dry, and not liable to extensive variations of temperature. If a change of climate is impracticable, the patient should be protected from exposure to cold. He should be kept in a house the air of which is maintained at an even, warm temperature, and which is kept pure and fresh by suitable ventilation. If he has fever he should be kept in bed.

Before prescribing any medicine for the bronchitis the physician must assure himself that his patient has not tuberculosis, and that the cough is not perpetuated by some reflex cause, such as hypertrophied tonsils or uvula, or by some toxemic condition such as may accompany nephritis, or functional disorder of the liver.

The cough is usually the most obvious disturbing symptom, and any satisfactory treatment of the disease must effect early diminution of this symptom. The most useful of all drugs for the control of cough is opium. The most effective preparation of opium is, of course, morphine, but its use should be avoided, or continued only for a very short time, on account of the danger of developing the opium habit. Codeine is far safer, and is usually sufficiently effective. With it should be combined a small amount of ipecac, which promotes the secretion of the glands of the bronchial mucous membrane, lessens the reflex irritability which favors the cough, tends to counteract any disturbing effect which the codeine may have upon the digestive organs, and also renders the dose of the mixture less likely to be increased by the patient on his own initiative, in order to get more of the effect of the codeine, because an increase in the dose of the ipecac will usually cause nausea. To these should be added ammonium chloride, which has a sedative action on the bronchial mucous membrane, renders the catarrhal secretion less viscid, and assists in restoring the mucous membrane to a healthy condition. In order to modify its pungent taste glycerin and one of the syrups may be added, as in the following prescription:

℞ Ammonii chloridi, ...ʒiv;
Syrupi ipecacuanhæ, ...ʒii;
Codeinæ sulphatis, ...gr. viii;
Glycerinæ, ... }
Syrupi sarsaparillæ compositi, } ....āā ℥i;
Aquæ q. s. ad..............................℥iv.

M. Sig.: Take one teaspoonful, in half a tumblerful of water, after each meal, and repeat after two hours.

This prescription may be modified to suit the individual case. It will benefit the bronchitis and will not injure the digestive organs.

If there is any fever, if the patient is debilitated, if the pulse is weak and rapid, quinine should be given with digitalis. The former frequently has a beneficial action in all forms of inflammation of the respiratory organs; the latter strengthens the action of the heart, and assists in overcoming local congestion. The following is a useful prescription:

℞ Extracti digitalis, ...gr. x;
Quininæ sulphatis, ...ʒi.
M. Divide in capsulas xx.

Sig.: Take one capsule, three times a day, one hour after eating.

If the patient is constipated a small amount, from one tenth to one half of a grain, of purified aloes should be added to each of these capsules.

If the pulse is weak but slow, one fortieth of a grain of the sulphate of strychnine should be substituted for the digitalis.

If the infectious element of the disease seems to predominate over the inflammatory element in any patient, a creosote mixture should be substituted for the ammonium mixture, as in the following prescription:

℞ Creosoti carbonatis, ...℥ss;
Acaciæ, ...℥ss;
Syrupi, ...℥iii;
Aquæ cinnamomi, q. s. ad....................℥vi.
M. Sig.: Shake. Take one dessertspoonful every two hours.

If one hopes to secure an antiseptic action from the creosote, he must not give too small a dose, or repeat it at too long an interval.

If the cough is not very troublesome, but does not entirely disappear, and if the patient is debilitated and emaciated cod liver oil is often very useful. A good preparation of the pure oil may be prescribed in tablespoonful doses, to be taken two hours after eating, or an emulsion may be prescribed:

℞ Olei morrhuæ, ...ʒviii;
Acaciæ ....℥ii;
Olei gaultheriæ, ...gtt iv;
Syrupi, ...ʒiv;
Aquæ, ...ad ℥xvi.
M. Sig.: Take one tablespoonful three times a day, two hours after eating. The syrup of calcium hypophosphite may sometimes be advantageously substituted for the syrup in this prescription.

Often slight counterirritation to the chest is of considerable benefit. A liniment containing turpentine is useful for this purpose, as in the following prescription:

℞ Olei terebinthinæ, ... }
Linimenti saponis, .. } ....āā ℥ii.
Linimenti camphoræ, }
M. Sig.: Shake. Rub thoroughly upon the front and back of the chest at night and in the morning.

The practice of taking a series of deep inspirations and forcible expirations, repeated several times a day, which has in recent years been condemned by distinguished phthisiotherapeutists, is theoretically less objectionable in chronic, nontuberculous, bronchitis. It should be advised after the expectoration has become not profuse, and should be continued until complete recovery has followed.

Dr. Thomas W. Maloney, of Geneva, N. Y., states:

Chronic bronchitis is for the greater part a secondary affection. It is met with in association with chronic lung affections, heart disease, aneurysm of the aorta, gout. and renal disease. Undoubtedly the most important exciting factors are climate, season, and habit.

It seems needless, but hardly out of place, to state that any attempt at local treatment will be unsatisfactory while any causative factor is overlooked or disregarded.

The obstinate chronic bronchitis in the middle aged is usually characterized by paroxysmal coughing, with little or no expectoration. Often there is a feeling of substernal constriction, which the coughing at first increases and then diminishes. This relief is comparable to that which succeeding doses of a drug bring to the habitué, and is a factor in the chronicity of the affection.

The treatment of chronic bronchitis must be directed along other lines than medicinal if one would hope for success. Suggestion on the part of the tactful physician and mental discipline on the part of the patient will do more than drugs to relieve this disagreeable symptom. To suggest to a patient that habit has a great deal to do with the continuance of the coughing spells may precipitate a few consultations of a stormy character, but the effect on the patient's mind will be a benefit, and perhaps lay the foundation for permanent relief. There can be no question that there is much more coughing than is necessary. It may be said that a cough which is not productive is unnecessary. I have found that the suggestion that lung damage results from coughing and that all unnecessary coughing weakens the resistance of lung tissue to later changes is beneficial. It requires a nice judgment in the selection of cases where this form of treatment may be used alone, but it surely is not out of place, even when used in conjunction with other measures. Impress on the patient that the symptom will take some little time for permanent relief or cure. This will often do much toward better control of this class of patients.

We cannot direct the rank and file of our patients to winter along the southern seacoast or in the lands of pine, but to those who can afford the time and money, a winter sojourn in Southern California or Florida will either prevent or greatly ameliorate a symptom which a cold and changeable climate appears to make inevitable.

Woolen underwear should be advised in all seasons. It is my custom to order four different weights of woolen underwear during the year, that the change from season to season may be gradual. Half wool is suitable and comfortable for the summer. It is not so necessary for the patient to wear heavy and uncomfortable outer clothing.

Internally drugs avail little. Potassium iodide in ascending doses appears to benefit obscure cases. Of course, luetic cases should be saturated with this drug. Tuberculosis is a contraindication.

Hydrotherapy does good if it can be controlled. I find it is easier to follow out cold morning sponges if the habit is begun during the hot weather. The change in the temperature of the water as the cold weather approaches is not then so noticeable. Tap temperature is easiest to prescribe and will be followed better than if the patient is put to the inconvenience of tempering the water.

(*To be concluded.*)

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Therapeutic Notes.

Use of Iodine Vapors in Otology.—E. Chapellier, in *Archives générales de médecine* for September, 1912, reports good results from blowing iodine vapor into the tympanic cavity in a case of chronic otitis media in which the mastoid had been opened, but discharge of thick pus continued through the meatus. The apparatus used consisted simply of an ordinary flat ink bottle, provided with a perforated cork through which were passed two short glass tubes, one connected with an atomizer bulb and the other leading through a rubber tube to a small curved cannula. Before use, a small quantity of iodoform was placed in the bottle, and the tip of a thermocautery (or wire heated in a flame) brought near the iodoform to set free iodine fumes from it. The cork with the two tubes was then inserted, and the tip of the cannula pointed toward the aditus and the iodine fumes blown into the tympanic cavity. Previous to the insufflation, the meatus and mastoid wound were cleansed, the passages cleared—by the Valsalva method—and the wound and meatus again wiped out. After the insufflation further cleansing was practised and sterile gauze inserted in the canal and wound.

In a few days the purulent discharge rapidly diminished. First, it became serous, remaining thus for three days; then only a small drop of fluid collected on the gauze in the meatus. Next, the tympanum underwent rapid resolution, and dressing of the mastoid wound could be carried out in the usual effective manner.

An attempt had previously been made to pass tincture of iodine into the tympanum in this case, but the discharge, instead of diminishing, had increased. The iodine vapor, however, by virtue of its great diffusibility, and with the help of the Valsalva procedure, unquestionably reached the tympanic cavity, as the patient tasted and smelled the iodine. The insufflations were given daily.

Treatment of Streptococcic Skin Lesions.—Sabouraud, in *Paris médical* for March 1, 1913, recommends that in intertrigo diluted tincture of iodine be applied daily:

℞ Tincturæ iodi, ...ʒiiss (10 grammes);
Alcoholis (80 per cent.), ...℥iii (100 grammes).
Misce.

This preparation causes local burning, but the latter lasts only a few minutes. The affected area should next be covered with the following ointment, and finally talcum powder dusted over it:

℞ Zinci oxidi, ...gr. xlv (3 grammes);
Petrolati, ...ʒv (20 grammes);
Adipis lanæ hydrosi, }
Aquæ destillatæ, ... } ...āā gr. lxxv (5 grammes).
M. ft. unguentum.

The intertrigo will have disappeared in a few days, but as recurrence may unexpectedly take place, the treatment should be continued a few days longer than appears necessary.

Where there are fissures in skin, which is the seat of intertrigo, the following preparation will give excellent results if painted into each fissure before the iodine is applied:

℞ Aloes, ...gr. xv (1 gramme);
Myrrhæ, ...ʒss (2 grammes);
Balsami tolutani, }
Benzoini, ... } ....āā ʒiss (6 grammes);
Alcoholis (80 per cent.), ...℥iiss (75 c. c.).
Fiat tinctura.

If the impetiginous lesions are situated on open skin surfaces, instead of in the folds, Sabouraud washes them two or three times a day with the following solution, which may be used either pure or diluted one half:

℞ Cupri sulphatis, ...gr. xv (1 gramme);
Zinci sulphatis, ...ʒss (2 grammes);
Spiritus camphoræ, ...ʒiss (5 grammes);
Aquæ destillatæ, ...℥x (300 grammes).
Fiat lotio.

Zinc oxide ointment should be applied without fail before retiring, as it tends to overcome the effects of excessive astringency on the part of the lotion.

In rupial lesions infected with streptococci the same lotion may be used for detergent purposes, but the ulcers heal more rapidly under a 2.5 per cent. ointment of ferrous carbonate. Once daily the ointment should be washed off with a little sterile oil and then renewed.

In impetiginous lesions of the fingers loose portions of the horny epidermis should be removed with scissors before each dressing, and the hand and fingers should be bathed in the copper and zinc solution already referred to, diluted one half.

Treatment of Tuberculosis.—John Laird, in the *British Journal of Tuberculosis* for January, 1913, is credited with a formula constituted essentially as follows:

℞ Sodii iodidi, ...ʒss (2 grammes);
Sodii benzoatis, ...ʒiii (12 grammes);
Liquoris potassii arsenitis,.......ʒss (2 grammes);
Syrupi aurantii, ...℥i (30 grammes);
Aquæ chloroformi, q. s. ad....℥viii (250 grammes).
M. ft. solutio. Sig.: One teaspoonful in water three times a day.

The preparation may be taken either before or after meals, according to indications. It should be administered for a prolonged period, with occasional intermissions for a few days. Should anemia be marked the citrate of iron and ammonium can be added to the mixture. The maximal dose of the latter for adults is two drachms.

Treatment of Urethritis Due to Micrococcus Catarrhalis.—L. Buck, in *Northwest Medicine* for November, 1912, reminds us that, as shown by Ayres, the *Micrococcus catarrhalis* is the cause of a number of cases of so called gonnorrhea. This germ can be differentiated with certainty from the gonococcus only by culture, but the resulting urethritis is different in that recovery takes place rather readily if local treatment is limited to the use of mild remedies or entirely omitted, while the more energetically the condition is treated the more stubborn it becomes. In general, a urethral discharge occurring within five days after exposure, though showing diplococci, is not gonorrheal unless it represents a return of trouble in an uncured gonococcal case.

The treatment of the catarrhalis urethritis should include the giving of large doses of santal oil or Lafayette mixture internally. The formula of this mixture is as follows:

℞ Copaibæ, ...
Tinturæ lavandulæ compositæ, }
Spiritus ætheris nitrosi, ... } ...āā ʒiii (12 c. c.);
Liquoris potassii hydroxidi, ...♏l (3 c. c.);
Syrupi, ...℥i (30 c. c.);
Mucilaginis acaciæ, q. s. ad.........ʒxxv (100 c. c.).
Fiat mistura.

No local treatment should be given at first, but if after a week or ten days the discharge still persists, irrigations may be begun with a 1:32,000 silver nitrate solution (1 grain to 4⅗ pints) and no stronger. The newer silver salts should not be used, as they seem to aggravate rather than benefit the condition; if they are used, the solution should be very mild. If any complication appears, local treatment should be stopped and ten grains (0.6 gramme) of hexamethylenamine given three times a day. L. W. Hyde has used a catarrhalis vaccine with satisfaction in two cases.

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FRIEDMANN'S PREPARATION.

Assuming the correctness of the newspaper statements concerning the recent developments in regard to Friedmann's preparation, it is evident that the question of the sale of this product has entered upon a new stage. Hitherto its use in this country has been restricted to trials in certain hospitals and its administration by Friedmann himself to certain private patients in Rhode Island, where he seems to have been permitted to practise. Now it is announced that the rights to the use of the preparation have been secured by a drug house and that it is the intention to establish "Friedmann Institutes" in thirty-six States. In this way the necessity of obtaining the license which is required by the federal government in the case of concerns desiring to engage in interstate commerce in such products is obviated. Any control over Friedmann's preparation must henceforth be exercised by the individual States; not only is there no federal statute which applies, but it is difficult to see how under our present constitution it would be possible to formulate a statute which would cover such a case. The most that the federal government could do would be to act in an advisory capacity; this the Bureau of Public Health has been doing, but it has been greatly handicapped by the secrecy which Friedmann maintains in respect to his alleged cure and by his apparent unwillingness to cooperate. At one time it was reported that certain firms were waiting for a favorable report from the Bureau of Public Health before undertaking to finance the project; such a course would have been more creditable than the one now adopted.

As to the value of the preparation itself, the medical profession is still as much in the dark as it was when Doctor Achard made his report nearly three months ago (NEW YORK MEDICAL JOURNAL, February 15, 1913); it still has only the unsupported word of Friedmann himself and the latter's methods of exploitation, which are so much at variance with what we are accustomed to expect from a member of our profession that they have not tended to increase confidence in his alleged cure.

It will be interesting to see what action the various States will take in this matter; that they will be forced in the near future to adopt some policy in regard to products of this character is highly probable, for the methods adopted by Friedmann will almost certainly be pursued by others who claim to have curative vaccines, serums, etc., the nature of which they are unwilling to disclose by applying for a federal license. Friedmann's whole attitude is so degrading, and conflicts so utterly with the traditions of the American medical profession, that we may venture the hope that any policy adopted will serve once for all to defeat any attempt to obtain such privileges.

THE STATUS OF THE CANCER QUESTION.

In looking over the programme of the meeting of the Congress of American Physicians and Surgeons, one is struck by the fact that papers on carcinoma or malignant tumors appear in nearly every section. Besides, one of the societies present devoted its entire time to that subject. When any one topic appears for discussion from so many different aspects it generally indicates one of two conditions. Either it is new and relatively infrequent, or else it is old and widespread. In this instance the latter holds true, and there is added the fact that as yet comparatively little has been done in the way of combating the condition. Consequently, the energies of hundreds of men are being expended in attempts to find the cause and to effect a cure whatever that cause may be.

What has been accomplished along either of these lines? Are we any nearer an understanding of the problem now than fifty years ago? It would seem that we are. The work of many indicates that there is what might be termed a precancerous condition, one that can be experimentally produced. To this, as one more link in the chain, can be added the evidence that chronic irritation is in many cases essential. Very recently Ryall has pointed out the frequency of cancer of the tongue in those who have had syphilis, over eighty per cent. giving a specific history. Example after example has been added to the list of chronic irritative changes that precede the development of malignant disease. It will therefore be noted that at the above mentioned meeting much has been said concerning prophylaxis, and those toward whom this was mainly directed are the women, particularly those who have borne children. Many papers also were read the theme of which was the treatment and cure of cancer, and here comes up the question of diagnosis. Unfortunately, there has as yet appeared no method other than microscopical examination that has been of any assistance. Immune reactions with serum have been attempted, but have proved of no use. The blood has been examined for the presence or absence of many substances, but unsuccessfully. At present there is no way of telling what it is that one is dealing with. Although no means of early diagnosis other than the microscope is known, the outlook for the sufferer is not the gloomy one that so often obtrudes. Many cases of cancer can and have been cured. All sorts of schemes have been attempted, everything from a poultice of crushed violets to surgical interference, but it is the latter alone that promises anything. Even if the cause has not been found we must not feel that the outlook is hopeless. It may be that all kinds of parasites have been blamed, but what interests the patient is the method that will cure. Consequently, while the laboratory worker is busy with his research, the man in the fighting line must be constantly exerting himself to get his cases earlier, which means at a time when complete removal is possible. There seems little doubt that cancer is primarily a local condition and as such can be handled readily. To wait, however, means to court disaster.

THE OPHTHALMOLOGIST AS A CONSULTANT.

The value of the services of a consultant does not depend wholly upon his ability to recognize and name certain lesions in a certain organ, although this is essential, but to a very great degree on his capacity to show the connection of those lesions with other symptoms of the disease from which the patient is suffering, and thus to aid in the establishment of a differential diagnosis. So far as an ophthalmologist is lacking in the power to group ocular with other symptoms, he is deficient as a specialist and as a consultant. These thoughts, which may not be *mal à propos* in view of the present agitation for a special training for ophthalmologists, are suggested by the report of a case of cerebellopontine tumor made by C. A. Veasey in the *Ophthalmic Record* for March. Three years before death Doctor Veasey, in consultation found the patient to have choked disks, intense occipital headache, nausea, vomiting, ataxia, deafness, and tinnitus of the right ear with dizziness and vertigo, not explained by any condition of the conducting mechanism, paresis of the right abducens and facialis, and a great loss of function of the right trigeminus. Now, the only place where pressure can produce all of these symptoms simultaneously is the right cerebellopontine angle, and the diagnosis was made of a tumor in that location. The patient declined the only effective treatment, went to another doctor, and had other consultants. Some operation is said to have been performed in vain on the nose to relieve the symptoms, and later another oculist found optic atrophy, which he thought had been caused by a tumor of the brain, but he could detect no localizing symptoms. The patient died, and was found on autopsy to have a tumor exactly where it had been located three years before. How was it that the other consultants failed to find the localizing symptoms? The pareses of the fifth, sixth, seventh, and eighth cranial nerves caused by the pressure of the slowly growing tumor could not have disappeared; they must have been overlooked, or else their bearing on the case was not appreciated. Men differ much in their powers of observation, so it may be possible for one not to notice a right sided facial paresis with loss of sensation, a paresis of the right external rectus, and labyrinthine deafness of the right ear, but it seems more probable that, while these conditions were observed, it did not occur to the examiners to group them together with the other conditions for the purpose of making a diagnosis.

The great privilege of a specialist is that he is able to assist his colleagues in the diagnosis of obscure diseases from the resources of his superior knowledge concerning the diseases of a certain organ and the reciprocal relations they bear to diseases of the general organism. Other practitioners have a right to expect such knowledge from him if he poses before them as a specialist. A diagnosis is not made by tagging the lesion seen with an appropriate name, such as optic neuritis, chorioiditis, or retinitis, but can be made only by tracing the connection of the lesion with the disease that affects the organism as a whole, and here is where the true specialist proves himself an efficient consultant. A real specialist in diseases of the eye needs a working knowledge of the adjacent organs, like the nose and accessory sinuses; he must be something of a neurologist, to trace cause from effect on various nerves which may suffer from lesions that simultaneously affect those that supply the eye, and he must have a living knowledge of the effects produced in the eye by various diseases of other organs of the body. Adam brings this out strongly in his *Ophthalmoscopic Diagnosis,* in which he makes the pertinent query: "What is to be expected from an ophthalmologist who is called into consultation over a patient having a high fever without characteristic symptoms, in whom the diagnosis needs to be made between typhoid fever, miliary tuberculosis, tuberculous meningitis, and sepsis?" Granted that his aid is less needed in such a case as this than it was before the days of Widal's reaction and the tuberculin test, the fact that scattered hemorrhages in the retina would mark it as one of sepsis, an optic neuritis as one of tuberculous meningitis, and scattered white spots in the fundus as one of miliary tuberculosis, serves to illustrate the point that the ophthalmologist needs to be thoroughly well posted in general medicine to be an efficient consultant. His thought must be centred on the eye, but must extend beyond the anatomical boundaries of that organ, along the lines that join it to the other organs of the body, until it grasps the truth of interdependence and perceives the reciprocal relations that govern the eye as a part of the organism. If he confines his attention within the anatomical limits of the eye he never learns this relationship as a whole, no matter how skillful he may become in certain details, but remains narrow and ignorant of an extremely important part of his specialty, gains no diagnostic acumen, and proves an inefficient, if not dangerous, consultant.

THE SENATE AND THE AMENDMENT TO THE PRACTICE OF NURSING ACT.

Elsewhere in this number we submit the report of the commission appointed at the request of the management of the Chautauqua School of Nursing to determine the character of the work done by that school and whether its graduates serve a useful purpose to the medical profession and to the suffering public. Our readers are referred to the report itself for the details of the inspection and for the conclusions reached. It may be mentioned here that the commission started its labors somewhat prejudiced against any method of teaching nursing which did not include hospital training, but that the inspection of the Chautauqua school convinced them that, conscientiously conducted and supervised, home study—in keeping with considerable teaching in other directions carried out by the University of Chicago, for instance—could serve an exceedingly useful purpose in the field of nursing, precisely as it did in other branches.

A feature among others thoroughly emphasized by the report is that the proposed amendment to the Nurses' Practice Act, through which nonhospital nurses would eventually have been debarred from practice, would, if adopted, have worked havoc with the large proportion of people in New York State who cannot pay twenty-five dollars a week and over for nursing. The Senate, in accord with our commission and with practically the entire medical profession and the medical and lay press of the State, has evidently deemed the proposed amendment harmful to public welfare. Indeed, the bill encountered such decisive opposition that it had to be amended and reprinted several times until divested of its obnoxious clauses.

What remains of the original bill, if it is ever adopted in its present form, is that hospital trained nurses will alone have the right to call themselves "trained, graduate, certified, or registered nurses." This will hardly prove as advantageous to them as the amendment suggested by our commission, that nurses be required to print on their cards, charts, etc., the hospital, school, etc., in which they had been trained, since this plan would insure the hospital trained nurse due recognition, while enabling physicians to identify those institutions which gave their students a thorough training from those which did not. Still, as matters stand, the harmful effects of the ill advised amendment proposed by the New York State Nurses' Association have been prevented through the watchfulness of the Senate, an act for which it is entitled to the congratulations of the medical profession and of thousands of bedridden and helpless sufferers.

INADEQUATE DIRECTIONS AS TO DOSE.

From two such widely separated points as Vienna and Niagara Falls comes confirmation of the importance of writing out in full directions for taking, and of the danger involved in substituting for such instructions the phrase "as directed." Dr. Hans Arzberger, of the Vienna General Hospital, in an address before the Vienna Therapeutical Society, points out the fact that the substitution of the term "as directed" for the instructions as to dose makes it impossible for the pharmacist to draw deductions which will aid him in deciphering doubtful prescriptions, and thus removes an important safeguard. In Niagara Falls a patient was killed by the substitution of guaiacol for glycerol, and one of the excuses put forward by the dispenser was that the phrase "take as directed," which was used in place of the directions for taking, gave no clue to the dose. Our repeated references to the danger involved in failure to write out the full directions are justified by the repetition of errors of this kind, which probably would not have been made had the directions been written out on the prescription.

A RASH FROM VENICE TURPENTINE.

Venice turpentine, a thick, resinous preparation with an acrid taste, seems to be a popular remedy in Great Britain for colds and for the pain in the back that quacks ascribe to kidney disease. Dr. William Angus communicates to the *British Medical Journal* for April 5, 1913, a short account of a patient who was sent to him by his medical adviser as suffering probably from scarlet fever, as he presented over the entire body a vivid, scarlet, punctate rash, as well as marked redness and mottling of the fauces. Doctor Angus attributes the rash, which soon faded away without further symptoms or desquamation, to the Venice turpentine which the patient had been taking for a "cold." The slight rise in temperature which was noted was due probably to this slight ailment.

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Obituary.

FRANCIS PARKER KINNICUTT, A. M., M. D.,

of New York.

Dr. Francis Parker Kinnicutt died suddenly on May 2nd, at a monthly meeting of the Practitioners' Society held at the house of one of the members. Doctor Kinnicutt went to the meeting in good health, but while there was seized with a sudden faintness and died a few moments later. Born in Worcester, Mass., on July 13, 1846, Doctor Kinnicutt graduated from Harvard in 1868 as A. B., receiving the title of A. M. in 1872. After a three years' course at the College of Physicians and Surgeons, of New York city, he received, in 1871, his diploma as doctor of medicine. For two years he took a postgraduate course at Heidelberg and Vienna and then returned, in 1875, to New York, where he settled as practitioner. Since 1893 he had held the chair of clinical medicine at the College of Physicians and Surgeons. Doctor Kinnicutt was connected with the Presbyterian Hospital, St. Luke's Hospital, Woman's Hospital, Hospital for the Ruptured and Crippled, and many others. He also took an active part in civic life, and thus was a member of the advisory board of the commissioner of health of New York city; of the advisory board of the port offices of the State of New York, etc. From 1885 he was, together with Dr. N. B. Potter, editor of the English translation of Sahli's Clinical Diagnosis. In 1907 he was president of the Congress of American Physicians and Surgeons. Doctor Kinnicutt was a member of the New York Academy of Medicine and many other societies, and was a charter member of the Medical Association of the Greater City of New York. Admired by his friends and fellow practitioners, his loss will be greatly felt.

News Items.

Change of Address.—Dr. C. A. Wilson-Prévost, to The Wyoming, Fifty-fifth Street and Seventh Avenue, New York.

Meetings of Philadelphia Medical Societies.—During the coming week meetings of medical societies will be held in Philadelphia as follows: Monday, May 12th, Samaritan Hospital Medical Society; Tuesday, May 13th, Pediatric Society; Wednesday, May 14th, County Medical Society; Thursday, May 15th, County Medical Society, Northeast Branch; Friday, May 16th, Jefferson Hospital Clinical Society and the County Medical Society, Southeast Branch.

A Merger of Medical Colleges on the Pacific Coast.—It is reported that the Medical Department of Willamette University, Salem, Ore., has been merged with the medical department of the University of Oregon, Portland, the merger to take effect at the conclusion of the present college year. There will be hereafter only one medical college in the State, the medical department of the State university.

Philadelphia County Medical Society.—At a meeting of the West Branch of this society, to be held on May 20th, Surgeon General Stokes, United States Navy; will be present and deliver an address. After the meeting a reception will be held in honor of Doctor Stokes. The profession in general is invited, and those who wish to attend should communicate at once with the chairman of the committee, Dr. George Knowles, 4812 Baltimore avenue, Philadelphia.

Northern Medical Society.—The following programme has been arranged for the next meeting of this society, which will be held at 12 Mount Morris Park West, on Monday evening, May 19th, at 8:45 o'clock: Presentation of ophthalmological cases, by Dr. Otto Schirmer; presentation of cases of pituitary disease, by Dr. DeWitt Stetten; a paper on the Successful Treatment of Vulvovaginitis in Young Children, by Dr. Nathaniel Barnett; and a paper on Should Venereal Disease Be Reported to the Board of Health, by Dr. William J. Robinson. A general discussion will follow the reading of the papers. Members of the medical profession are invited to attend.

Investigation into the Radium Treatment of Cancer.—The effect of radium in the treatment of cancer is to be made the subject of a special investigation under the direction of Dr. William Duane at the Harvard Medical School. For the present the experiments will be conducted in the Collis P. Huntington Building, but as soon as possible a special building is to be constructed adjoining the medical school and devoted entirely to the work of radium investigation. Doctor Duane has studied in the laboratory of Madame Curie, in Paris, and has been in touch also with the work of the Radium Institute in London. The investigation is to be made under the supervision of the Cancer Commission of Harvard. Dr. E. E. Tyzzer is director of the commisssion.

Society for Medical Gymnastics and Massage.—This society, which was organized in New York less than a year ago, has decided to open a clinic for the treatment of patients. The site of the proposed clinic has not yet been decided upon, but it is expected that one will be chosen in time to open the clinic in August or September. It will be under the supervision of the medical advisory board of the society, and only those patients will be treated who present a prescription from a duly licensed physician stating the particular treatment required. The policy of the new society is to employ only those persons who thoroughly understand the application of medical gymnastics and massage, and to put this form of therapeutics under the supervision of the medical societies of the State.

American Medical Editors' Association.—The annual meeting of this association will be held in Minneapolis, Minn., on June 16th, with headquarters at the Hotel Radisson. An interesting programme has been prepared, on topics of journalistic as well as general interest. The annual banquet will be held at the Hotel Radisson on the evening of the 16th. The officers of the association are: President, Dr. Thomas L. Stedman, of New York; first vice-president, Dr. E. A. Van der Veer, of Albany, N. Y.; second vice-president, Dr. George Strobach, of Cincinnati; secretary and treasurer, Dr. Joseph MacDonald, Jr., of New York. The Executive Committee is composed of Dr. O. F. Ball, of St. Louis, Dr. W. A. Jones, of Minneapolis, and Dr. Finley Ellingwood, of Chicago.

Louisiana State Medical Association.—At the twenty-fourth annual meeting of this society, held in Baton Rouge on April 22d, 23d, and 24th, under the presidency of Dr. B. A. Ledbetter, the following officers were elected to serve for the ensuing year: President, Dr. Fred J. Mayer, of Opelousas; first vice-president, Dr. Allen J. Perkins, of Lake Charles; second vice-president, Dr. A. H. Gladden, of Monroe; third vice-president, Dr. William S. Rutledge, of Rushton; secretary, Dr. L. R. De Buys, of New Orleans; assistant secretary, Dr. George Augustin, of New Orleans; treasurer, Dr. E. W. Mahler, of New Orleans. Dr. John G. Martin, of Lake Charles, and Dr. W. G. Owen, of White Castle, were elected members of the State Board of Medical Examiners. Next year's meeting will be held in New Orleans.

Doctor Tyson Honored.—In recognition of his work as a practising physician for more than fifty years, Dr. James Tyson, emeritus professor of medicine in the University of Pennsylvania, was the guest of honor at the annual banquet of the Northern Medical Association of Philadelphia, held on the evening of April 30th. More than fifty physicians were present. Dr. Thomas Shriner presided as toastmaster, and among those who responded to toasts were Dr. John B. Deaver, who spoke of the University of Pennsylvania; Dr. William T. Robertson, who told of the work of Temple University; Dr. J. M. Anders, whose topic was the Medico-Chirurgical College; Dr. F. X. Dercum, who spoke of the work of Jefferson Medical College, and Dr. Albert Bernheim, whose topic was the medical teachers of Philadelphia.

New York Society of Anesthetists.—A meeting of this society will be held in the New York Academy of Medicine on Wednesday evening, May 14th, at 8:15 o'clock. Dr. Joseph Marshall Flint, professor of the theory and practice of Surgery, Yale University, will read a paper on Pharyngeal Anesthesia, and will exhibit an apparatus for pharyngeal anesthesia and insufflation. Dr. William Branower will demonstrate a combined pump and suction apparatus for anethesisa in oral surgery, and the lungmotor will be exhibited. Dr. Charles J. Pick will present a paper on Ethyl Chloride Anesthesia, which will be followed by a general discussion. The officers of this society are: President, Dr. Joseph E. Lumbard, of New York; vice-president, Dr. F. W. Pinneo, of Newark, N. J.; secretary and treasurer, Dr. Harold A. Sanders, of Brooklyn; librarian, Dr. William C. Woolsey, of Brooklyn.

Women's Medical Society of New York State.—The seventh annual meeting of this society was held in Rochester on Monday, April 28th, under the presidency of Dr. Helen J. C. Kuhlmann, of Buffalo, with headquarters at the Hotel Seneca. About one hundred women physicians from various parts of the State attended the meeting, which was one of the most successsful ever held by the association. The following officers were elected to serve for the ensuing year: President, Dr. Marion Craig Potter, of Rochester; first vice-president, Dr. Angenette Parry, of New York; second vice-president, Dr. Emily Dunning Barringer, of New York; third vice-president, Dr. Eveline P. Ballantine, of Rochester; secretary, Dr. Sarah Gardner Pierson, of Rochester; treasurer, Dr. Edith R. Hatch, of Buffalo. At the annual banquet of the society, which brought the meeting to a close, Dr. Grace Peckham Murray, of New York, presided as toastmistress.

Sixtieth Anniversary of the Sheppard and Enoch Pratt Hospital.—The celebration of the sixtieth anniversary of the granting of the charter to the Sheppard and Enoch Pratt Hospital by the legislature of Maryland took place on Thursday, Friday, and Saturday, May 8th, 9th, and 10th. On Thursdav afternoon, Mr. George A. Pope, president of the board of trustees, delivered the address of welcome, which was followed by an interesting historical address by Dr. Edward N. Brush, superintendent of the institution. Dr. Edward D. Fisher, professor of nervous and mental diseases, University of Bellevue Hospital Medical College, New York, read a paper on the Present Position of the Asylum as an Education Factor in Medicine, and Dr. William Rush Dunton, Jr., presented a paper on the Work of the Hospital. After an inspection of the hospital, a buffet luncheon was served. Thursday evening and Friday afternoon were devoted to the presentation of scientific papers, and on Saturday the exercises were brought to a close by a bazaar for the sale of the work of the handicraft classes and field sports.

Associated Outpatient Clinics Organize a Department for Venereal Diseases.—A section in genitourinary, skin, and syphilitic clinics has been formed by the Associated Outpatients Clinics, as a result of the symposium on hospital and dispensary facilities for the treatment of venereal diseases, which was presented at a stated meeting of the New York Academy of Medicine last February. This section, which acts in an advisory capacity to the association, has already formulated a set of recommendations with regard to the treatment of syphilis, and at its second meeting, to be held next Tuesday evening, at 8:15 o'clock, in Room 40 of the New York Academy of Medicine, recommendations with regard to the treatment of gonorrhea and chancroid will be considered, and circulars of instruction for patients, as well as history cards, will be adopted. The association will in all probability endorse all the forms and recommendations presented by the section, thus bringing about a uniform method of keeping histories and giving instructions, with a resultant higher standard of equipment and therapeutics.

Civil Service Examination for Physician (Male) in the Public Health Service.—The United States Civil Service Commission announces an examination, on June 4, 1913, at various places throughout the United States, from which to secure a list of persons eligible to fill vacancies in the position of physician as they may occur in different branches of the service. It is expected to make certification immediately for filling vacancies in the Isthmian Canal Service, at initial salaries of $1,800 a year, and a vacancy in the position of acting assistant surgeon in the United States Public Health Service at Jacksonville, Fla., at a salary of $500 a year. Appointees to this position are required to devote only part of their time to the government service. The scope and character of the examination, as well as the requirements for the different branches of the service and the salaries of each, are contained in section 1912 of the Manual of Examinations for the Spring of 1913. Persons who desire to take this examination should apply at once to the United States Civil Service Commission, Washington, D. C., for either Form 1312 or B. I. A. 2 and a copy of the manual, and for further information regarding the examination.

Personal.—Dr. William H. Welch, professor of pathology at Johns Hopkins Medical School, has been elected president of the National Academy of Sciences for a term of six years.

Sir William Osler, regius professor of medicine at Oxford University, delivered the Silliman lectures at Yale University recently, his subject being the Evolution of Modern Medicine.

Dr. Fielding H. Garrison, of the Army Medical Museum, Washington, D. C., recently presented to the Johns Hopkins Medical School a portrait of the late Dr. Robert Fletcher, of the surgeon general's library, Washington, D. C.

Dr. John Berwick Anderson, of Waxahachie, Texas, Dr. Coleridge Livingstone Beaven, of Baltimore, and Dr. William W. Vaughan, of Washington, D. C., have passed the preliminary examination for appointment in the Medical Corps of the United States Army, and will be ordered to attend the next session of the Army Medical School in Washington, beginning October 1, 1913.

Dr. Ralston Lattimore, of Savannah, has been elected president of the Georgia Medical Association.

Dr. Charles T. Painter, of Boston, delivered a lecture on the Treatment and Training of Crippled and Deformed Children, at the Mechanics Institute, Richmond, Va., on the evening of May 9th.

Dr. William H. Cameron, of Pittsburgh, Pa., has been placed in charge of the commercial exhibit of the Medical Society of the State of Pennsylvania, at the annual meeting to be held next September.

Dr. John D. McGregor has been appointed city physician of Chicago.

Dr. Hugo Kinner, of St. Louis, has received a golden diploma from the University of Berlin. These diplomas are given to graduates of the University on the fiftieth anniversary of their graduation.

Miss Frances Margaret Harper has received a diploma in tropical medicine and hygiene, granted jointly by the Royal College of Physicians and the Royal College of Surgeons, of London. Miss Harper is the first woman to gain such a distinction.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

March 2, 1913.

Pressure Oxygen Respiration for Resuscitating Asphyxiated Infants at Birth.—F. Engelmann describes a resuscitating apparatus consisting of the usual capsule containing oxygen, a water ventilator, and a somewhat modified Wantscher-Tiegel mask. The apparatus permits an even supply of oxygen under a determinable pressure for as long a period as is desired, and makes the not inconsequential and at times difficult catheterization of the trachea unnecessary. The method fulfils in a simple and harmless way the two most important requirements of a resuscitating therapy, namely, the unfolding of the lungs and the uniform supply of oxygen.

March 9, 1913.

Heredity in the Sane and Insane.—Ph. Jolly, making comparisons under homologous conditions, found that the number of those encumbered by hereditary influences among the insane was not much greater than among the sane, 64.5 per cent. as against 46.5 per cent. Contrary to the statement of Koller and Diem, a greater encumbering effect on the insane by the parents, and on the sane by remoter progenitors, could not be proved. The affective psychoses showed a larger percentage of hereditary effects than the other psychoses. The rôle of heredity in paralysis is questionable; among drinkers alcoholism and suicide were more prevalent in the family than was the case among the healthy.

Heart Blocklike Disturbance after Lumbar Anesthesia.—K. Vogel and A. Kraemer report the case of a man of seventy-five years who had enjoyed relatively good health up to the time of an uncomplicated operation for rupture. On account of the age of the patient and a chronic bronchitis, lumbar anesthesia with tropacocaine was practised, and after this there appeared the symptoms of a severe disturbance of the vagus, with bradycardia. Recovery, however, took place.

March 16, 1913.

Antiarthralgic and Antineuralgic Action of Adrenalin.—F. Gaisbock found that injections of adrenalin have a favorable effect upon the inflammatory joint processes; the neuralgic processes, like sciatica, also seem favorably influenced. Adrenalin, because of this pharmacodynamic effect, may thus be classed with the antineuralgics.

Influence of Diet upon Diseases of the Skin.—Hübner considers dietetic therapy a noteworthy factor in the treatment of skin diseases, especially in infants, the intestinal tract of whom is more readily affected by harmful substances than that of adults. Seborrheal eczemas appear chiefly in infants who are overfed and too fat, and such children often improve markedly as a result of reduction in the diet, especially as regards the proportion of fat in the food. The contention of Finkelstein that the injury is due to the salt content of the milk is not well founded. Regulation of the diet is not alone sufficient. The eczema must be treated locally, and the fear that many physicians entertain of "eczema death" for infants treated locally is groundless. In older children much can be accomplished by diet in urticaria, prurigo, and acne vulgaris. The ingestion of fats with low melting points (such as lamb) is to be interdicted. Patients with anal eczema should not be allowed highly seasoned foods. In adults no form of eczema, except the anal, can be much affected by influences from the gastrointestinal tract. The same may be said of psoriasis.

March 23, 1913.

Transplantation of Thyroid, Spleen, and Bone Marrow.—Kotzenberg decided to transplant thyroid gland tissue from a human subject (in this case from the mother of the patient) into the spleen and bone marrow in two cases of severe infantile myxedema which had not responded to internal treatment (the mothers of the children being employed for supplying the thyroid). The transplantation into the spleen, which has hitherto been considered somewhat dangerous on account of the hemorrhage, proved to be quite easy in consequence of operating at two different periods. The wounds closed normally. The functional result was satisfactory in the course of time.

March 30, 1913.

Alkali Treatment of Albuminuria. — W. Wieland says that in a great majority of the cases examined by him no effect on the albuminuria could be observed by the administration of alkalies. In a few instances there was a temporary, or even lasting, decrease of the albumin in the urine, but a causal relation between the alkali therapy and the cessation of albuminuria was not clear. In four cases very unpleasant side effects developed among the edema and uremic symptoms. Taken all in all, no good results should be expected from the use of alkalies in this class of cases.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

March 4, 1913.

Prophylactic Serum Therapy in Tetanus.—K. Kolb and K. Laubenheimer report the case of an incised wound of the right hand, which is of interest because of the finding of the tetanus bacillus in the secretions of the wound a few days after the injury without the subsequent development of tetanus symptoms. The patient had been given at the time of his arrival in the clinic a prophylactic dose of tetanus antitoxine consisting of twenty units.

Which Forms of Pillar (Pfeiler) Resection Are to Be Recommended According to the Extent and Severity of Pulmonary Involvement?—Wilms gives the technical details concerning the different forms and extent of thoraplastic procedures according to the nature and dimension of the tuberculous involvement of the lungs. In the case of large, rapidly growing cavities, particularly in those with mixed infections, the author recommends opening of the chest toward the exterior.

Treatment of the Internal Injury of the Knee Joint.—O. Vulpius advises in recent injury to the meniscus, the replacement of this and immobilization for from five to six weeks. In chronic cases only can a radical operation do good. Before opening the joint an attempt should be made to replace the meniscus by inflating with oxygen and to cause adhesions and healing in the correct position by the injection of a few drops of absolute alcohol between the meniscus and the capsule of the joint.

Specificity of the Protective Ferments.—E. Abderhalden says that the question of the serological diagnosis of pregnancy, discovered by himself, being specific, can in all probability be answered in the affirmative. In 200 cases there was only one wrong diagnosis which could not be explained etiologically. A definite answer to this question can be given only after the examination of a larger clinical material, which also takes into account nonpregnant women under pathological conditions. Unified results can be obtained only by following the minutest details in the method of examination. A detailed description of the method is given.

Danger of Infection after Abortions and Its Prevention.—Wolf-Eisner is of the opinion that the medical profession has underestimated the danger of infection from the use of public toilets. Not only typhoid bacilli, but also gonococci were found capable of growth two hours after drying, and the spread of an infection in this way would thus seem possible. The author tested an apparatus for the disinfection of the seating board, called the "clofector," which contains a formalin generating contrivance and kills the bacteria in from ten to thirty minutes, thus markedly reducing the danger of infection.

March 11, 1913.

A New Codeine Preparation.—A. Fraenkel says that codeine is the cough remedy *par excellence,* because in contradistinction to morphine and pantopon it has no narcotic action on the higher cerebral centres, but a reflex sedative action on the respiratory centre, and does not lead to habit formation. A satisfactory substitute is a paracodeine, made of hydrated codeine. This is twice as powerful as codeine and is capable of checking cough more rapidly and for a longer period with half the dose. The average dose is from 0.02 to 0.04 gramme.

Colloidal Palladiumhydroxydul "Leptynol."—M. Kauffmann, proceeding from the standpoint that the metals of the platinum group, especially palladium, are preeminently catalysts and oxygen carriers, concluded that colloidal palladium would be an excellent remedy for reducing obesity. He convinced himself of the nontoxicity of the preparation by experiments on animals. The best colloidal solution is one of wool fat palladiumhydroxydul in liquid paraffin, which contains 2.5 per cent. palladium in each c. c. Two c. c. are injected each time into the abdominal wall. After two and a half years of use it may be said that the preparation exerts a good therapeutic effect on the severe forms of obesity.

Chloroform Narcosis and Diseases of the Liver.—W. Hildebrandt is convinced from animal experimentation and clinical observation that chloroform, alone, is capable of bringing about the severest degeneration in a normal liver, and that deaths following a few days after chloroform narcosis, with the picture of a typical acute yellow atrophy and showing corresponding pathologicoanatomical changes, are positively traceable to chloroform poisoning. A second factor, a lessened resistance, i. e., pathological changes of the liver, must be made responsible for fatal complications. Therefore, before every narcosis the determination of the urobilin should receive special attention.

Extirpation of Brain Tumor under Local Anesthesia.—H. Andree reports the removal without pain to the patient of a tumor, a psammoma of the dura, the size of a small fist, under local anesthesia. A circular subcutaneous injection of the line of incision was made with one per cent. suprarenin novocaine solution. The patient experienced no pain, even while the dura was being split.

Therapeutic Application of Autogenous Serum.—B. Spiethoff has observed good results in various inflammatory affections of the skin (prurigo herpetiformis, chronic urticaria, pruritus, etc.) by the repeated injection of the patient's own blood serum. A difference in the results with activated and nonactivated serum has thus far not been observed.

Salvarsan and Cerebrospinal Fluid in Early Syphilis.—K. Altmann and G. Z. Dreyfus found in untreated cases of syphilis, in the early stages, that only twenty-two per cent. of the cases showed normal relations of the fluid. With the aid of salvarsan treatment it has been possible to reduce its pressure to normal in a vast majority of the cases. Large salvarsan doses are necessary for bringing about good results. The length of the intervals between the injections is very important. The best method is to give from six to eight injections of 0.5 gramme, in from four to six weeks, in combination with a mercury course.

March 18, 1913.

Abderhalden's Etiological Diagnosis of Pregnancy.—E. Engelhorn reports that Abderhalden's dialysis procedure does not give a specific reaction, as carcinomatous tissue was frequently dissolved by the serum of pregnant persons. The serum of nonpregnant individuals often gave a positive reaction. Therefore we are not justified in making a diagnosis on this basis alone.

Benign Polyps of the Rectum and Sigmoid Flexure.—Decker is of the opinion that for the removal of deep seated rectal polyps only endorectal surgery should be considered. For pedunculated polyps the cold snare should be employed, and for high seated tumors with broad bases the Pacquelin cautery. In all the author's rectal cases there was no hemorrhage; therefore he considers this method without danger.

Presence of Specific Protective Ferments in the Serum of the Mentally Diseased.—A. Fauser has examined serologically 100 patients with psychoses in accordance with the specific requirements of Abderhalden's method. In the great majority of the cases of the dementia præcox group a protective ferment was found against the action of the reproductive glands and brain cortex, and at times against that of the thyroid. In syphilitic and metasyphilitic diseases there were found regularly only cortex protecting ferments, in manic depressive insanity, and in all so called functional psychoses no protective ferments up to the present time have been found against any organs whatsoever.

March 25, 1913.

Heredity of the Inclination for Development of Tumors.—B. Morpurgo and A. Donati describe animal experiments from which it could be seen that artificially produced rat sarcomas of the immediate descendants of tumor animals were not greater than in the immediate descendants of nontumorous animals of the same species, and that the propensity to retrogression of the tumors was more in evidence in the former than in the latter. Therefore it was not shown by these experiments that the inheritance of an individual disposition to the development of the tumors is present.

Neosalvarsan.—G. L. Dreyfus finds that neosalvarsan seems to have a milder and less intensive action than salvarsan. Therefore in inveterate syphilitic diseases of the central nervous system salvarsan is to be preferred. In most cases the combination of salvarsan and neosalvarsan has special advantages. Unpleasant side effects have been noticed after the use of neosalvarsan, notwithstanding its greater solubility, but by the use of unobjectionable technic and careful dosage even these may be avoided. He recommends the use of doubly distilled water prepared in a Jaener glass apparatus for injections of neosalvarsan and salvarsan.

Salvarsan and Neosalvarsan Treatment of Local Spirochetosis.—Gerber advises the local application of from five to ten per cent. watery or glycerin solution of salvarsan and neosalvarsan in powder form in the local spirochetoses (such as the Plaut-Vincent angina, ulitis simplex, stomatitis, noma, and alveolar pyorrhea). In these cases it is ordinarily a specific. The intravenous injection should be reserved for the severe cases accompanied by general symptoms.

First Aid in Asphyxia by Direct Insuflation of Air.—Kuhn says that it is very difficult to establish the actual commencement of death. The cessation of respiration signifies nothing; the inaudibility of the heart sounds, very little. There are many authentic cases on record where life returned many hours, and even days, after the patient had been declared dead. The necessity of resuscitating procedures is therefore very essential, particularly in cases of electric shock, lightning strokes, asphyxias. and gas poisoning. Beside mechanical respiration it is necessary to force air or oxygen directly into the lungs by the catheter, or other contrivance. The manipulations about the mouth are easy, for we are dealing with an unconscious person and the apparatus need be only very simple.

ZENTRALBLATT FÜR CHIRURGIE.

March 22, 1913.

Absorption by the Pleura.—Boit injected a saline solution, with and without the addition of a one per cent. solution of India ink, carmin, or other stain, or of olive oil, into the pleural cavity of dogs for the purpose of studying the nature of its absorption. He found that after he had made such an injection on one side, the fluid appeared almost immediately on the other, and that it proceeded to accumulate slowly in its lower portion. A few minutes after fifty c. c. of the staining solution had been injected into the right pleura the entire left pleura was deeply stained. The same result was obtained when the thoracic duct and the right lymphatic trunk had been ligated beforehand. These experiments show that absorption takes place from the pleural cavity through the activity of the endothelium, which guides the fluid, oily, and corpuscular components into the subendothelial lymph spaces and tracts.

How Should the Wound be Treated in Pyelotomy?—Raffaele Bastianelli says that an incision in the pelvis of the kidney will heal without suturing unless there is some obstruction in the ureter, a serious infection, too large a wound, or a wound with ragged edges. When he finds it difficult to draw up the kidneys he does not try to loosen the adipose tissue, but cuts directly down upon the stone; the fat then closes the wound and renders a suture unnecessary. When the wound in the pelvis of the kidney is long or lacerated it may be covered with a flap of fat. He does not recommend this method in all cases, but for those in which it is indicated.

Separation of the Appendix.—F. Steinmann reports a case in which the appendix was left *in situ* after it had been severed from the cecum, as it was involved in an inflammatory mass which glued together the ileum, omentum, and median wall of the cecum. The appendix seemed to be normal at the place where it was divided, and the stumps were sutured separately. The case seemed to be one that was especially well suited for such a procedure, but the result was not good. An acute inflammation flared up, the appendix became perforated, a fecal concrement was extruded, and an abscess formed; which necessitated the reopening of the abdomen two days after the primary operation. The appendix was then removed with considerable trouble and the abscess drained and tamponed, and the patient finally recovered.

LYON MÉDICAL

March 30, 1913.

Epilepsy during Typhoid Fever.—F. Mouisset and L. Folliet state that while it is well known that epilepsy may follow typhoid fever, the disorder may also occur in the course of the disease. In the latter case it may appear either where there had not previously been any nervous disturbance—usually in severe and prolonged cases—or where epilepsy had developed before, but became latent. The authors report the case of a man, alcoholic and previously subject to convulsions, in whom, during convalescence from a severe typhoid attack, with numerous complications, two epileptic seizures occurred. Uremia could be definitely excluded, but it was noted that whereas the liver had been enlarged and the urine brown and scanty, diminution in the size of the liver, polyuria, and a return of the urine to its normal color coincided with the seizures. The recurrence of the epilepsy may thus perhaps be ascribed to the fact that the blood, at the time of the onset of polyuria, was loaded with toxic material, which acted on the nerve centres.

PRESSE MÉDICALE.

March 29, 1913.

Dose and Modes of Administration of Strychnine.—P. Troisfontaines deplores the prevailing timidity with regard to the dose of this alkaloid, and states that he has not only given daily doses of 0.02, 0.03, and even 0.04 gramme without ever witnessing any serious untoward effect, but is convinced that the larger the dose given the more marked the therapeutic results. While, as Kobert states, patients with cardiovascular disease may show convulsive effects more rapidly than others, no great risk is entailed in this connection, as the author has given strychnine to many heart cases without untoward phenomena. That the drug may be given in large doses for a long period without eliciting signs of intolerance is illustrated in a case of syphilitic myelitis in which 0.015 gramme was given daily for two months, then 0.024 for six weeks, and finally 0.03 for nearly a year, without any unpleasant effects. In conjunction with small doses of mercury cyanide, intravenously, the strychnine medication led to a gradual disappearance of bladder and locomotor paralysis. Troisfontaines believes 0.02 to 0.035 gramme daily to give the best results; this amount may be attained in a few days and only exceptionally gives rise to a sense of mild "intoxication," with slight headache and muscular rigidity. These effects promptly disappear if the dose is even only slightly diminished. In marked collapse and acute lung edema, 0.01 and even 0.015 may be injected at a dose, to be repeated, if required, in three, four, or five hours. In alcoholics, as much as 0.04 or 0.05 may be given in twenty-four hours. Strychnine nitrate is preferable to the sulphate in that it contains six per cent. more of the pure alkaloid and is anhydrous, and therefore invariable in strength, whereas the sulphate varies in activity according to whether it has effloresced or not and the amount of water of crystallization it has taken up in separating from its solutions. The author gives, in accustomed individuals, 0.008 to 0.012 gramme of strychnine in pill form during or after each meal. He lays stress on the utility of the drug in alcoholics and in cases of infectious disease where temporarily the heart must be sustained and general depression combated with drugs. Where caffeine, camphor, ether, and epinephrin seem the only resources left, strychnine in full doses is a valuable reserve measure, as the author's experience has shown him.

April 9, 1913.

Fracture of Ulna with Luxation of Head of Radius.—E. Kirmisson objects to the statement of Abadie, in regard to the treatment of this condition (see this JOURNAL for February 22, 1913, page 412), that failure of reduction of the ulnar fracture is less often due to nonreduction of the radial dislocation than to the jagged fragmentation of the ulna, which renders impossible sufficient extension to disengage and coaptate these fragments. Kirmisson considers that, in recent cases, the ulnar fragments overlap because of the shortening of the forearm consequent upon the luxation of the radial head, and that under these circumstances the chief aim should be to reduce the radius; after this has been accomplished reduction of the fracture will present no difficulty.

BRITISH MEDICAL JOURNAL.

April 19, 1913.

Studies on Beriberi.—Casimir Funk recalls the fact that the vitamine fraction obtained from yeast and other food stuffs is curative of the condition of beriberi in birds. This substance had been considered to be an entity, but he has been able to fractionate it into three substances. One, melting at 229° F. and appearing in needles and prisms, and being nearly insoluble in cold water; the second very soluble in cold water and yielding a difficultly soluble picrate and melting at 235° F.; and the third more soluble than the first and melting at 222° F. These substances have not as yet been tested in regard to their powers of curing beriberi; hence Funk advises that the whole purified vitamine fraction be employed for the present.

Alimentary Toxemia; Cutaneous Indications.—James Galloway groups the cutaneous phenomena of alimentary toxemia as: 1. Those resulting from vascular disturbances, which disappear and leave no permanent trace, for example, urticaria, erythema, etc. 2. Conditions in which an inflammatory lesion progresses to infiltration of the skin with cellular elements, terminating in persisting deformity, such as vascular dilatation atrophy, ulceration, and scarring. 3. Purpura, diffuse, punctate, and associated with other hemorrhagic manifestations. 4. Pigmentation. He believes that the lesions of the first group, particularly urticaria, are more frequently the result of direct absorption of noxious ingesta or a consequence of the simpler chemical changes in foods occurring in the upper portion of the alimentary tract from the action of the natural alimentary ferments. The eruptions of erythematous nature, on the other hand, arise more frequently from affections of the large intestine, in which the terminal processes of digestion take place. He also says that there are reasons for associating that type of purpura which is marked by large areas of cutaneous hemorrhage with absorption of poisons from the upper part of the alimentary tract. The petechial and punctiform types appear to occur as the result of the terminal digestive changes or of abnormal fermentative processes occurring in the lower bowel, and possibly influenced by the microorganisms present.

Chronic Intestinal Stasis.—Arthur F. Hertz remarks that even those symptoms which by common consent are regarded as characteristic of this condition, are by no means pathognomonic. The only trustworthy means of determining the presence or absence of chronic intestinal stasis is by a series of careful examinations of the motility of the gastrointestinal tract by the x rays. Hertz calls attention to the fact that bismuth tends to reduce intestinal peristalsis in those cases in which there is a considerable formation of hydrogen sulphide; hence he advises the use of barium sulphate to replace bismuth. As a result of a long series of painstaking observations he draws the following conclusions regarding the question of chronic intestinal stasis: 1. When precautions are taken to prevent errors in diagnosis, intestinal stasis is never found to lead to gastric stasis. 2. Intestinal stasis does not lead to kinking, dilatation, or ulceration of the duodenum, and duodenal ulcers are associated with an unusually rapid passage of chyme from the stomach, and through the entire small intestine. 3. Stasis in the ileum is a normal phenomenon and is due to the action of the ileocecal sphincter. Iliac kinks are relatively rare, and do not directly increase normal iliac stasis. Normal iliac stasis may be increased by spasm or by absence of relaxation of the sphincter, due to disease in the cecal region, including perhaps kinks in the ileum. 4. Intestinal ptosis does not lead to stasis, except in rare instances at the splenic flexure. A pelvic cecum and a pelvic transverse colon are compatible with perfect health and normal intestinal action. In most cases of constipation a single portion of the bowel, such as the rectum, pelvic colon, ascending colon, or splenic flexure, is alone involved. Treatment should, therefore, be directed to the affected part only. In those cases in which the entire colon is involved medical treatment is almost invariably successful, but when it is not, ileosigmoidostomy, with or without colectomy, is indicated.

LANCET.

April 19, 1913.

Morbid Anatomy of Periodontal Disease.—J. F. Colyer concludes from an examination of specimens in man and animals that: 1. The bone lesion is a progressive rarefying osteitis which begins at the margin of the alveolar process. 2. The disease is purely local in origin and has its immediate cause in the formation of stagnation areas around the teeth. 3. The rate of destruction in different regions varies with the varying density of the bone.

Abdominal Pain in Infants.—Eric Pritchard gives the causes of abdominal pain in infants in their approximate order of frequency as follows: 1. Dysperistalsis of the intestines, including enterospasm caused by irritation, obstruction, or nervous incoordination. 2. Disturbances of the motor functions of the stomach, including pylorospasm, hour glass contraction, spasm of the cardiac sphincter from wind, food, or other cause. 3. Incoordination of the motor functions of the bladder, spasm of the sphincter, etc. 4. Referred pain from disease in the thoracic cavity, as pneumonia, pleurisy, empyema, etc. 5. Renal colic. 6. Spinal caries and osteomyelitis. 7. Peritonitis, appendicitis, etc. In infants under six months of age the first is the most common cause of abdominal pain; in fact it is a more frequent cause than all of the other causes taken together.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 24, 1913.

Trichiniasis.—Thomas F. Leen describes trichiniasis as an acute, febrile illness with more or less marked gastroenteric symptoms, edematous swelling of the face, mainly of the eyelids, redness and eventually ecchymoses of the conjunctiva, sleeplessness, profuse sweats, pains in the muscles with stiffness and hardness, absence of patellar and tendo Achillis reflexes, Kernig phenomenon, absence of enlargement of the spleen, strong diazo reaction, leucocytosis, eosinophile embryos circulating in the blood, and trichinæ located in the striated muscles. To differentiate it from typhoid is confusing because of the slow onset, gastroenteric disturbances, continued ascending temperature, apathy, and the positive diazo test, especially when there is no enlargement of the spleen and no Widal reaction. Against typhoid are the edema of the face and lids, the marked muscle symptoms, the absence of splenic enlargement and rose spots, and the presence of the leucocytosis and eosinophilia. The heart and kidneys and inflammation of the face and scalp are readily excluded as causes of the edema. Trichiniasis is not as sudden and violent as meat and sausage poisoning, in which the blood picture is different and there is no edema of the lids or muscle lameness. Rheumatic troubles may be ruled out by the edema of the face, the eosinophilia, and the cause of the disease. Acute primary polymyocitis is difficult to differentiate, as the eosinphilia does not aid, but examination of muscle from the deltoid or biceps will show trichinellæ, and perhaps the embryos in the blood. Multiple neuritis is easily differentiated.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 26, 1913.

The Danger and Prevention of Severe Cardiac Strain during Anesthesia.—W. D. Gatch, Dewell Gann, and F. C. Mann observe that there are three classes of patients who are peculiarly liable to be injured in the course of anesthesia by overdistention of the heart; those with a well developed muscular system, those who are alcoholic, and those who have disease of the circulatory apparatus (in which class are included patients with cardiac and vascular disease, exophthalmic goitre, pneumonia, or empyema). The writers conclude that the Trendelenburg position is harmless for patients with normal hearts, provided respiration is free and unobstructed. In case of partial or complete failure or obstruction of the respiration, the patient should at once be restored to the horizontal or semirecumbent position. In cases of cardiac disease the Trendelenburg position should be used only with the most extreme caution. To prevent a too sudden influx of blood to the heart the patient should be gradually placed in the Trendelenburg position, and to prevent a sudden failure of the circulation the patient should be gradually lowered. Strain on the heart is greatly increased by the effect of struggling and of pressure on the abdominal viscera. These agencies are harmless to patients with normal hearts and arteries, if the breathing is adequate to prevent cyanosis. During asphyxia all of the three agencies considered tend to produce a rapid dilatation of the right side of the heart; a heart once over distended while in a state of asphyxia is temporarily, and possibly permanently, injured, and this may explain certain cases of postoperative death. Robust patients should be given morphine, and alcoholic patients morphine and alcohol, before anesthesia, and should not be permitted to become cyanotic. Patients with cardiac disease, pneumonia, or empyema should receive morphine before the anesthetic and should be anesthetized cautiously and slowly in the sitting or semirecumbent posture. The production of a hypercapnia fends against respiratory failure during anesthesia, and hence the harmful effects of any agent which promotes a free supply of blood to the heart. Under ether certainly, and probably under nitrous oxide, cardiac failure is always secondary to asphyxia. Morphine and moderate ether narcosis does not impair vasomotor tone in man. Hence in the absence of hemorrhage the semiupright posture is not harmful to man under this form of anesthesia.

Prophylactic Vaccination against Epidemic Meningitis.—J. H. Black concludes that prophylactic vaccination produces a high degree of immunity in most cases, this immunity being demonstrable at the end of one year. At the end of a year some individuals may show an actual increase in immune bodies over those demonstrable soon after vaccination. Fixation occurred with the serum of the positive control who had recovered from meningitis, but this fixation did not reach as high dilutions as did that of some of those vaccinated, as has been previously found by other observers. Experimental evidence warrants the conclusion that prophylactic vaccination is a measure of the highest value in the control of epidemic meningitis.

Causes of the Migration of the Omentum.—Arthur E. Hertzler states that surgeons have long known the fact that the great omentum is commonly found attached to areas of inflammation in the abdomen, but the compelling forces that attract it are yet undiscovered. Peristalisis is supposed to account for its actual movements, but this is not proved. The writer concludes that the migrations of the omentum are not due to any particular inherent properties. Corn pith migrates in the same way under similar conditions. Fibrin formation, however, is the preliminary requisite for migration, no fibrin, no migration. The movements of the omentum are produced by the same forces that attract cells to any inflammatory field, and the carrying with them of the omental network is a purely accidental occurrence.

Surgical Method of Clearing up Chronic Typhoid Carriers; Report of Two Cases of Removal of the Gallbladder and the Entire Cystic Duct.—Thomas J. Leary concludes that the operation of removal of the gallbladder and cystic duct is a very valuable means of clearing up chronic typhoid carriers. He advises that the treatment of all typhoid carriers should be carried out only in conjunction with the laboratory men, and that the different medicinal treatments, but more especially the continued typhoid vaccine treatment, should be carried out thoroughly from the start. These methods failing, the typhoid carrier should either be quarantined or be operated upon, the gallbladder and the entire cystic duct being removed. The two cases operated in by the writer cleared up within nine days. No aftereffects followed the removal of the organs in either case.

Fatal Peritonitis Due to Infection with Bacillus Coli.—Arthur L. Grover, in reporting a case of septic peritonitis resulting from infection with *Bacillus coli* remarks that cases of peritonitis caused by the colon bacillus are common, and cases of uterine infection with the same bacillus are common, but colon bacillus peritonitis occurring through perforation of the uterus, as in the case reported by the writer, is not common. The patient would acknowledge nothing, and no light could be thrown on the instrument used or on how such a large perforation could have been made without more shock. It is not known that the perforation was made artificially, but no other explanation seems possible, as the attending surgeon did nothing more than tampon the cervix to increase dilatation.

MEDICAL RECORD

April 26, 1913.

What is Psychanalysis?—E. W. Scripture defines psychanalysis as a group of methods used for analyzing the human mind, particularly those portions of it that are not directly conscious, being analogous to the dissection of the body and the microscopical study of the tissues. Combining the qualities of care, caution, and exactness, it is complemental to the scientifically accurate anatomical and physiological neurology of to-day.

The Albumin Analysis of the Sputum; Its Great Value as a Reliable and Positive Diagnostic Laboratory Method for Differentiating Pulmonary Tuberculosis from Other Pulmonary Diseases.—John Ritter emphasizes the importance of properly collecting the sputa, and describes the proper technic not only for this but also for making the sputum test, adding that the technic for the test is so very simple, the results so very satisfactory, and the necessary appliances so few in number, that this examination of the sputum should become a routine method in every case of suspected or positive tuberculosis. He concludes that if the chemical examination of the sputum is albumin positive, but tubercle bacilli negative. With physical findings obscure and indistinct, the intradermal injection of tuberculin will often change both to positive. When the albumin reaction and tuberculin test are both positive they will outweigh a negative clinical examination; likewise a negative albumin reaction and tuberculin test are of far greater and more positive value than the negative clinical examination, since a negative clinical examination may be doubtful and may not be positively negative. A single positive sputum finding is not definitely diagnostic of tuberculosis, but a single negative albumin reaction will certainly preclude tuberculosis. A sputum negative for albumin is also microscopically negative for the tubercle bacilli; in the open or infectious cases both albumin and bacilli will be found in the sputum, while in the closed or noninfectious cases albumin will be present without the bacilli. The positive albumin reaction indicates with certainty an inflammatory invasion of the pulmonary parenchyma, which may be tuberculous, pneumonic, or congestive, and the reaction is always negative when the lung tissue has not been affected, as in acute and chronic bronchitis and asthma; therefore, the reaction has most value in those cases in which the pulmonary infection is not yet manifest, and the differential diagnosis lies between tuberculosis and simple bronchial catarrh. Albumin in the sputum is often the forerunner of the tubercle bacillus, and albumin may be found in the sputum, many months before the bacilli; hence a positive sputum reaction with but few or very slight physical findings and negative bacilli would seem to indicate a possible incipient or preincipient tuberculosis. Like all clinical signs, however, it must be considered with all other signs, subjective and objective, in order that positive conclusions may be reached.

Epilepsy.—C. R. McKinniss notes, as the common symptoms observed when interviewing an epileptic, some impairment of memory and abundant conceit and self assurance. The religious fervor of epileptics is often strongly contrasted by their conduct. During the paroxysmal state an epileptic may exhibit mild excitement or mania, or, on the other hand, melancholia with rare suicidal attempts; a feeling of impending personal harm is present in some, or impulses to do strange things, though frequently the mental atmosphere is cleared after the convulsion. The writer reports the history of three cases demonstrating these several phases, and in summing up admits that while the cause of epilepsy is as yet unknown, heredity and excesses must be recognized as contributory etiological factors. The mental states vary within wide limits. As mentioned, they may be melancholic or maniacal, at times suicidal, and they are also frequently homicidal. The patients are usually irritable, and almost always hopeful of recovery.

The Management of the Puerperium and Its Minor Abnormalities.—In this connection B. A. Fedde emphasizes two points: The Fowler position in every case from the beginning, and early consultation when complications, all but the very simplest, occur. In Fowler's position the patient is raised up on pillows beneath the shoulders, or on a washboard inserted between the springs and mattress, and blocked up.

Early Diagnosis of Tuberculosis, with Notes on Internal Antisepsis.—C. Am Ende, believing that recognition of the presence of tuberculosis in the earlier part of the prodromal period, when the sputum is bacilla free, may be the means of saving life, has experimented with the Moro salve, in preference to tuberculin injections, in twelve reported cases. Moro salve contains equal parts of lanolin and tuberculin, and when rubbed in at the pit of the stomach produces within two days a characteristic efflorescence. In this series of cases the writer was enabled by the Moro reaction to detect the presence of tuberculosis in its earliest incipient stages, as well as in its obscure and latest stages; it demonstrated the absence of the disease, as well, and to a degree the intensity of the reaction was apparently proportionate to the intensity of the disease. No resistance was met with in children. Except in a case of early developing hip disease, the reaction revealed the disease at a time when its cure was not so very difficult. The principal, though rather obscure, symptoms suggesting the use of this salve were an arrested normal development, emaciation, a general laxity, and a short dry hacking cough. The active agent in the production of the Moro reaction is tuberculin. The writer believes that internal antisepsis is capable of utilization in proper cases and remarks that its condemnation has probably resulted from its use in insufficient dosage.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

April, 1913.

The Influence of the Ovary as an Organ of Internal Secretion.—Graves gives a brief review of the present status of our knowledge concerning the physiology of the ovary. He first discusses the question as to whether there exists any definite anatomical evidence that the ovary is actually an organ of internal secretion. From the evidence it is seen that the corpus luteum has the greatest claim from a histological standpoint of being the chief centre in the ovary for the manufacture of an internal secretion. The author concludes that the ovary is probably, but not certainly, an organ of internal secretion; also that infantilism is not a result of ovarian deficiency. He holds that there is evidence to show that the ovaries preside over menstruation by an internal secretion which has a selective action on the endometrium; and that abnormal uterine bleeding may be due to increased secretion of the ovaries. Graves believes that, inasmuch as castration of sexually mature women directly causes vasomotor symptoms, ovarian extract is invaluable in the treatment of the vasomotor disturbances following castration. Its value in the treatment of other gynecological conditions is problematic.

Tuberculosis in Its Relation to Pregnancy, Labor, and the Puerperium.—Lobenstine calls attention to the fact that the strain of child bearing exhausts the vitality of the tuberculous subject and in a high percentage of cases brings about an untimely end. He shows that pregnancy, in many cases, may be directly responsible for the development of tuberculosis in susceptible individuals and may stir up a dormant infection. It is also shown that an existing tuberculosis may be seriously aggravated by pregnancies. Consequently, Lobenstine advises that tuberculous women should not marry until the process is fully arrested. This is important, because with one of the couple tuberculous, the other may readily become so. and then there are the above mentioned dangers of pregnancy. Incidentally he expresses the opinion that the time will come when no marriage license will be granted unless both of the contracting parties are in sound physical, as well as mental, condition.

The Function of the Thymus Gland.—Doctor Lampé of Halle, Germany, gives a very interesting presentation of this matter, both from the anatomical and physiological viewpoint. The experiments of various men are reported and the results summarized as follows: The thymus gland is an organ of vital importance, as extirpation at the height of its development results finally in death. Probably its most important function consists in inhibiting acids, thus removing injurious substances from the blood. This supposed function gives an explanation of the disturbances occurring in the calcium metabolism after extirpation of the organ, for the changes in bone and in the central nervous system. The thymus gland occupies a dominating position over the lymphatic apparatus. Between the thymus, on the one hand, and the various organs of internal secretion on the other, complex relations exist. This is especially true of the spleen. This organ is, so to speak, "prepared" by the thymus to take up some of the latter organ's still unexplained functions after its involution.

ANNALS OF SURGERY

March, 1913.

Myositis Ossificans Traumatica.—William B. Coley reports three cases illustrating the difficulties of diagnosis from sarcoma. The first developed in the quadriceps of a young man, aged nineteen, following a football injury; the second in the muscles and ligaments of the lower femur of a young woman, aged twenty-six, following a runaway accident; and the third in a boy, aged sixteen, where the quadriceps became involved after a football injury. As to the etiology, one of the theories supposes that at the time of the injury a portion of periosteum becomes detached and that from these fragments of periosteum result the bone formations in the muscles and fascia. In other words, that they are in the nature of bone grafts. The chief condition to be differentiated from is sarcoma. The writer says that in the radiograph myositis ossificans the sharp line corresponding to the junction of the tumor to the bone is always present, while in sarcoma it is less distinct except in the very early stages of the disease. On palpation in myositis ossificans the consistence is much harder than in sarcoma; furthermore, it is almost always uniform in character, whereas in sarcoma it is very apt to be soft in some places and harder in others, though there is never the bony hardness typical of myositis ossificans. Early disability of the neighboring joint and pain are much more apt to accompany myositis ossificans than sarcoma. Lastly, a portion should be removed for microscopical examination, or, this being refused, the tumor, under observation, will rapidly increase if sarcomatous, and slowly, if at all, if it is myositis ossificans. The writer believes that no single method of treatment is applicable to all cases.

The Thyrogenic Origin of Basedow's Disease.—J. H. Jacobson reviews the experimental and clinical evidences relating to the thyroid origin of Basedow's disease and draws the following conclusions: 1. Basedow's disease can and has been produced experimentally in lower animals by the injection of thyroid pressure fluid (Klose), by implantation of the thymus gland (Bircher), and by the injection of the macerated thyroid gland (Baruch). Symptoms closely resembling Basedow's disease can be produced in animals by thyroid feeding. 2. The evidence at hand indicates a close relationship between the thymus and thyroid glands. 3. That the symptoms of Basedow's disease are due to either an excess or perverted secretion of the thyroid. 4. Basedow's disease has been produced in man by the excessive administration of thyroid extracts and the preparations of iodine. 5. There is a characteristic blood picture in Basedow's disease, which disappears after the surgical removal of a sufficient amount of the diseased thyroid tissue. 6. The successful treatment of Basedow's disease by measures directed toward the thyroid gland itself, as well as by serum therapy, proves the thyroid origin of the disease. 7. Basedow's disease can be cured by the surgical removal of portions of the gland in approximately seventy per cent. of all cases.

Membranous Pericolitis and Allied Conditions of the Ileocecal Region.—J. N. Jackson believes that no one theory will explain all cases of pericolonic membrane. Mayo is inclined to view this membrane as true peritoneum, which, as the cecum descended, failed to settle itself closely in the normal way to the gut wall, but, remaining loose, acquired the peculiarly excessive vascularization noted. Lane believes that within the ligaments formed to antagonize the downward strain, segments of the intestinal tube have prolapsed. Pilcher and others consider the membrane to be the result of long continued or often repeated infections of the peritoneal covering of the cecum and appendix transmitted through the intestinal wall. The following symptoms combined are usually sufficient to establish a definite clinical syndrome: 1. Intermittent attacks of pain on the right side without rise of temperature or pulse disturbance. 2. Diffuse tenderness or hyperesthesia, but without any attendant rectus rigidity. Distinctly localized symptoms are lacking. 3. Constipation. 4. Distention by gas. 5. Attacks of mucous diarrhea following constipation. 6. Gastric disturbance. 7. Loss of weight and tone. 8. Neurasthenia. This condition must be differentiated from chronic appendicitis, gastric ulcer, gallbladder disease, ovarian disease, chronic colitis, Lane's kink, and, at times, nephrolithiasis. Nonsurgical treatment should be tried first, viz., proper drainage of the large intestine, diet, massage, exercise, colonic lavage, and external supports. About seventy-five per cent. of the cases are cured surgically by the removal of the obstruction of the pericolonic membrane, supplemented by a cecal plication.

Carcinoma of the Papilla of Water.—G. W. Outerbridge reports that in a series of 5,865 autopsies there were twenty-three cases (0.4 per cent.) of cancer of the duodenum, and that it has elsewhere been reported that seventy per cent. of duodenal cancers are situated at the papilla of Vater. In a review of the literature he finds 112 cases of cancer at the papilla of Vater and that twenty-two were submitted to the radical operation. He finds that no single symptom is common to all, not even jaundice, which, however, was naturally by far the most frequent. The jaundice is gradual in onset and progressive, pain is variable, and vomiting, fever, and intestinal hemorrhage may also be present. The duration of the disease is comparatively short, the average time elapsing between the onset of symptoms and death being about seven months, and in many cases less than three months. In most cases death results from cholemia before metastasis or invasion of the surrounding organs by the tumor has occurred. In sixteen of the reported twenty-two radical operations, the duodenum was opened by a longitudinal or transverse incision, and the growth, with a small amount of surrounding healthy tissue, excised; the bile and pancreatic ducts having been cut through and then reimplanted in the duodenal wall. Several authors advocate a two stage operation, believing that the obstructive symptoms (cholemia, etc.) should be relieved by a less serious procedure than radical extirpation of the tumor, which the patients are rarely in condition to stand satisfactorily; this to be followed subsequently by the radical operation.

The Arrest of Hemorrhage from Bone by Plugging with Soft Tissues.—G. T. Vaughan satisfactorily checks troublesome hemorrhage from bone, as in fractures of the skull, amputations, resections, bone transplantations, etc., in the following manner: Cut a fragment of soft tissue, preferably muscle, from any convenient place in the field of operation and apply the fragment to the bleeding surface or edge of the exposed, broken, or cut bone, by means of the fingers. If the tissue does not adhere at once it should be rubbed into the bleeding area by some suitable instrument, as a knife handle, dissector, or chisel, so that the vascular openings in the bone become plugged with small fragments of soft tissue.

Proceedings of Societies.

REPORT OF THE NEW YORK MEDICAL JOURNAL COMMISSION OF THE CHAUTAUQUA SCHOOL OF NURSING.

The New York Medical Journal of January 4, 1913, having commented editorially upon the recommendation of the New York State Nurses' Association to have the Nurses' Practice Act so amended by legislature as ultimately to debar from practice all nurses who had not had hospital training, Dr. J. M. Brooks, principal of the Chautauqua School of Nursing, in a letter published in our issue of January 11th, urged the following reasons against the adoption of the said amendment: 1. There are not enough hospital trained nurses to supply the demand (but one tenth of those in practice, according to statistics). 2. The charges of hospital nurses being prohibitive for families of limited means, eighty-five per cent. of sufferers, who are now provided with competent, though nonhospital, nurses, would be deprived of nursing. 3. A large number of earnest, capable women would be deprived of a livelihood. 4. The demand for the "closed shop" amendment is not made by the medical profession or the public. 5. The correspondence trained nurse, when she has gone through an exhaustive course, is immeasurably superior to the untaught nurse and, at least, a competent substitute for hospital nurses, for people who cannot afford to employ the latter.

Believing that the graduates of the Chautauqua School of Nursing fulfilled these requirements and, in justice to the physicians and patients who have employed them, Doctor Brooks requested that a group of three physicians appointed by this Journal, make a thorough investigation of the status of these graduates and determine: 1. Whether the Chautauqua School carried on a work beneficial to public welfare; 2, whether its work was such as to provide "competent nurses for those patients who cannot meet the wage demands of the organized hospital graduate." Full access to all records, study material, correspondence, management, etc., being tendered without reserve or conditions, the undersigned members of the editorial staff, all connected with hospital nurse training schools and practitioners, were appointed as a commission to conduct the desired investigation and report thereon.

A visit of the commission to the school in Jamestown, N. Y., to conduct a careful analysis of its system of instruction and examination, its financial management and purpose as an enterprise, and of the efficiency of the graduates as judged through the opinions of physicians under whom they had nursed, brought out the facts described under the following headings:

Character and Object.—The Chautauqua School of Nursing was founded in 1902 as a philanthropic and self supporting enterprise by men of means, to encourage the study of high grade nursing, among families, missionaries, sisters of charity, matrons of educational institutions, teachers, or individuals of both sexes who, through age limit or inability to leave their homes for two or three years, were unable to obtain hospital training. Prominent among these were the female "practical nurses" whose efficiency could, by means of a thorough theoretical course, be enhanced, and persons who, though occupied, wished to devote their labor to an occupation more in keeping with their inclinations.

The commission found, by means of an examination of the correspondence of the institution with its pupils, that this plan had been strictly adhered to, the purpose vouchsafed by student nurses admitted during a year having been as follows:

To enhance efficiency as practical nurse, though unable to drop practice	47 per cent.
For home use only	27 per cent.
To increase earning power and satisfy aspiration to become nurses	26 per cent.
Total	100 per cent.

Of the students enrolled for the courses thirty-two per cent. were unable to attend hospital training school because over thirty-five years of age while fifteen per cent. were unable to attend hospital training school because unable to leave home.

Conditions of Admission.—The rules of the school require that the applicant be over nineteen years of age and of good moral character, while her letters of recommendation must include one from a physician; she must show evidence of having received at least a good common school education. Moreover, the school reserves the right to discontinue teaching the student nurse if her studies prove unsatisfactory. In that case, however, all fees received from the student are to be returned.

The commission found that these conditions were complied with, and that *over fifty per cent.* of the applicants were rejected, the main reasons being inadequate age, lack of education, ill health, ability questioned by a physician, and objection of the parents.

A perusal of the correspondence with the students dropped for incompetence and those who could not terminate the course through lack of funds or other causes, indicated marked and generous consideration of the management for them, and a total absence of cupidity or business harshness. Inquiry disclosed that no magazine in which the school's announcement had appeared during the past ten years had ever received a complaint from its subscribers regarding their relations with the school. This fact is mentioned to indicate the character of the school's business administration.

Of all applicants enrolled, sixty-five per cent. were found to complete the course.

Instruction.—The Chautauqua School asserts to instruct its pupils by a system of correspondence calculated to supply the advantages, 1, of a carefully regulated course of lectures, supplemented by illustrations, diagrams, charts, etc; and, 2, of individual instruction by letters; all to impress upon their minds facts which a fully competent nurse should know. The pupil nurse must memorize the essentials of the course to pass the weekly written examinations and these must reach a certain degree of excellence to unable her to retain, as stated under the preceding heading, a connection with the school.

The scope of the subjects taught, and the completeness of the course, exceeded the expectations of the commission, the purpose of the instruction being eminently calculated to enable the nurse to carry out efficiently the instructions of the attending physicians. In logical sequence, the subjects taught (greatly abbreviated from the original report, owing to lack of space) proved to be as follows:

The duties of the nurse in what should be under her care an ideal sick room; attentions to the patient's person and handling of the helpless; observation and registration of symptoms, pulse, temperature, expression, excretions, etc.; the preparation of reports, charts, tracings, etc.; a knowledge of drugs and therapeutic agents of all kinds that the physician may order, including baths, massage, etc., or methods of relief such as catherism, enemas, rectal feeding, etc.; besides a careful course in elementary anatomy and physiology.

The elements of bacteriology considered sufficiently to give the nurse a clear understanding of the meaning of infectious diseases and of the commanding importance of asepsis, disinfection, the use of physical and chemical disinfectants, etc., not only in the course of infectious diseases, but also in obstetrics and surgery.

The detailed nursing of febrile diseases and constitutional diseases; diseases of special organs, including the peritoneum, liver, kidneys, bladder, etc.; the main test for albumin, sugar, etc.; cardiovascular disease, the Nauheim baths, emergency measures; diseases of the nervous system and the mind; diseases peculiar to childhood; obstetrical nursing, opening with a careful study of the anatomy and physiology of the pelvic organs and mammary glands, and of the fetal development. The care of the expectant mother, her dietetics, dress, exercise, care of the breasts, watchfulness through the urine, the disorders of pregnancy, etc., insofar as the nurse can aid the physician by prophylaxis, and watchfulness for danger signals are concerned, are all carefully considered, many excellent illustrations serving to elucidate the text. The process of birth and all the many features which a nurse must know in this connection—including that of acting as obstetrician should the physician's arrival be inevitably delayed. Obstetrical convalescence and care of the mother and infant during the puerperium and all its dangerous phases.

Surgical nursing was found quite as completely taught. The influence of bacteria, wound infection, sterilization of wounds and utensils, etc., the preparation of dressings, gauze, sponges, packing, etc.; preparation of the operating room, sterilizing solutions, care and handling of instruments; preparation of the patient for operation, etc. Review of the principal operations, each organ or set of organs being considered in turn. Anesthesia and its danger signals, with the remedies available. Postoperative nursing, including the various ways of using saline solution, hypodermoclysis, Murphy's proctolysis, etc.; septic wounds, general infection, pyemia, gangrene, emergencies, first aid to the injured, bandaging, etc.; the course ending with a study of hospital nursing.

All this instruction was found to be carefully revised periodically by physicians under the supervision of the principal.

Collateral Information.—Besides the direct instruction contained in the lectures, considerable information is furnished the student through direct correspondence with the principal, Dr. John M. Brooks. If the student meets with any difficulty or desires more detailed information, she is urged to consult the principal without reserve. Examination of the correspondence with a considerable number of student nurses enabled the commission to ascertain that this feature was freely taken advantage of by them to increase their knowledge. In every instance the information furnished was found to be most satisfactory and calculated to afford serious help to the student. The school maintains this association with its students after their completion of the course. Many take advantage of this opportunity, often for many years, to gain further information on nursing subjects and to keep conversant with advanced nursing methods and treatment.

Each lecture, moreover, is accompanied by an explanatory letter entitled "From the Physician's Viewpoint," in which the principal emphasizes the importance of the particular subjects in its bearing upon practice, i. e., in the sick room, and adds thereto many invaluable details. By means of printed study questions, which the student answers in writing with the lectures before her, she is caused also to impress the essential features upon her mind, and to discern, in each lecture, what points she fails to understand, and which she can elucidate by further study or by corresponding with the principal.

Examination.—The student nurse must practically memorize each lecture and week after week, as she proceeds with them, mail to the school a written examination. This consists in writing answers to printed questions formulated by the faculty. The student nurse must attain a general average of sixty-five per cent. throughout the course to obtain her certificate.

While the passing average was found by the commission to be greatly exceeded in almost every instance, this form of examination did not seem to eliminate the possibility of the student nurse's facilitating her examination by consulting her lectures when answering questions. The authorities of the school, in answer to this criticism, stated that this was a limitation which should be considered inherent in the administration of all home study work. The fact was emphasized that the school's association was with pupils of mature age who had undertaken the course with a serious and definite purpose, and therefore that this criticism could not be urged in such a degree as would obtain were its students young or immature. The honor system adopted by them had given excellent results, not a single complaint having ever been received from a physician or patient against a Chautauqua graduate. The commission ventures to suggest, moreover, that inasmuch as efficiency is the only source of success in nursing, since the work is done under the supervision of physicians, student nurses would only defeat their purpose by failing to take full advantage of the course. The testimony of physicians submitted below as to the actual ability of Chautauqua nurses in the practical field demonstrates that the school has no cause to regret its reliance upon the honor system.

Practical Experience.—The commission deemed the lack of practical experience during the period of tuition a serious defect; but a closer study of the question showed that although hospital training was an efficient way of acquiring this experience, other means of obtaining it were available. As previously stated, forty-seven per cent. of the students of the Chautauqua School are practical nurses to begin with; though untrained scientifically, they had therefore (some during many years) acquired considerable experience at the bedside before entering the school. Continuing as they do to practise while taking the Chautauqua course, they apply the knowledge thus acquired day after day, under the guidance of physicians, obstetricians, and surgeons. That a large proportion of these nurses, on receiving their certificates, are as competent as hospital nurses, owing to the large experience they had obtained before and during their course, is beyond doubt.

Of the remaining fifty-three per cent. of student nurses, twenty-seven per cent. take the course for nonprofessional nursing, home use, etc.; leaving twenty-six per cent. who either begin nursing as a vocation while taking the course, or take the latter before practising at all. All students are required by the school to conduct a system of "home practice," which means the practical application, among their surroundings, relatives, friends, etc., of the procedures described in their lectures. A survey of these and of the duties of the nurse in general clearly shows that she can acquire considerable experience by following out this plan. It is not her duty to diagnosticate a disease, but to carry out the instructions of the physician. To administer specified quantities of a medicine, at proper intervals, with graduated spoons or glasses, take the temperature, count the pulse, keep a chart, wash the patient, insure asepsis, prepare antiseptic solutions, disinfect excretions, make and change beds, ventilate the sick room, adjust supporting frames, give enemas and vaginal douches, give baths of various kinds, apply cold and hot packs, catheterize, feed rectally, use the hypodermic syringe, apply external irritants, plasters, blisters, leeches, use the inhaler, fumigate, test urine for albumin or sugar, measure the urine passed, prepare the labor bed and utensils, tend the parturient and the infant, carry on artificial feeding and pasteurization, sterilize surgical instruments, the hands, and utensils, prepare gauze, dressings, drains, sponges, cotton balls, etc., prepare an operating room, mix sterilizing and saline solutions, prepare the patient for operation, bandaging, wound dressing, etc., are all elementary measures which the student nurse, when well instructed theoretically, can practise at home, and which women in particular acquire very readily. Dietetics, an all important feature of good nursing, may also be practised at home, better in many instances than in hospitals, where the diet kitchen is often supplied with a special cook, thus giving the hospital nurse but little opportunity to practise the preparation of special foods.

As to the more scientific features of nursing, those concerned with a knowledge of disease, drugs, parturition itself and its complications, surgical procedures, etc., a thorough theoretical training is a prerequisite.

Students who only take the course for home use, or as an accomplishment only, receive theoretical knowledge, supplemented by home practice. Since, however, they do not adopt nursing as a profession, comparison with hospital trained nurses is not in order. As to those who enter the professional ranks either during or after their theoretical course, work under physicians, obstetricians, and surgeons by repeatedly bringing this knowledge into active practice, soon gives them a high degree of efficiency as aids to physicians, since (a fact which must not be overlooked) there is a great deal of repetition in her work in all cases, the finer distinctions of diagnosis, complications, and treatment all belonging to the domain of the physician himself.

That the system described has borne fruit as to practical efficiency of the graduates of the school in actual practice is shown under the next heading.

Efficiency.—Although the management of the school placed at the disposal of the commission over 5,000 letters received from physicians under whom their graduates had nursed, it was deemed preferable to obtain up to date evidence, since an estimate of the present status of the school was desired. Of the 618 physicians practising in New York State heard from during March and April, 1913, all, excepting nine, expressed more or less briefly opposite the printed words "Statement of Efficiency" their estimate of the particular nurse named. These expressions are extremely varied, but by quoting those most commonly used and adjusting those seldom employed to the former whenever the meaning was approximately the same, it became possible to establish a standard of the actual standing of Chautauqua nurses among those who were best able to decide as to their actual value, the members of the medical profession. Their estimates of the Chautauqua nurses who had nursed under them were as follows:

Efficiency.			
Fairly efficient	2		
Efficient or competent	103		
Very efficient or competent	136		
Most efficient or competent	73	314	
Satisfactory.			
Fairly satisfactory	4		
Satisfactory	47		
Perfectly satisfactory	69		
Very satisfactory	62	182	
Good.			
Good	36		
Very good	8		
Exceptionally good	2		
One of the best nurses employed	22	68	
Comparison with Hospital Nurses.			
Not equal to the average hospital nurse	4		
Equal to hospital or registered nurses	24		
Better than hospital or registered nurses	17	45	609

The relative efficiency between Chautauqua and hospital nurses was furnished in the answers, notwithstanding the fact that no comparison had been requested. The commission approved, however, the attitude of the Chautauqua School in this respect, which is to advise its graduates to acquire hospital training if at all possible, offering to aid them in obtaining opportunities to do so if need be.

Fees Charged by Chautauqua Nurses.—We have seen that nearly one half of the graduates of the Chautauqua School had been practical nurses before taking the course, and that the latter, taken while in actual practice, endowed them with a degree of efficiency quite comparable with that of the average hospital nurse. Of the remaining half, we have also seen, but twenty-six per cent. enter the field of practice and, after two or three years' of experience under physicians, also compare favorably with the hospital nurse. Yet fifty-six per cent. of the aggregate were found on investigation to earn from $7.00 to $18.00 a week. This meets an all important feature of the question as a whole, since hospital trained nurses demand from $25.00 to $30.00 per week, a price which is prohibitive for eighty-five per cent. of our sufferers. "There is an urgent demand at all times for a moderate priced nurse who is efficient," writes one of our medical correspondents; "many patients could not have nurses were it not for them," writes another; "any legislation which would debar them from practice," writes a third, who echoes the sentiments of many others, "would work a great hardship." The Chautauqua School thus fills an imperative need in our communities by supplying nurses, a large proportion of whom content themselves with modest fees, even though, as we have seen, their efficiency is such as to give the sufferers less favored by fortune a high average of professional care, supplemented, as many of our correspondents attest, with painstaking devotion.

Conclusions.—In view of the facts recited above, the commission concludes as follows:

1. The education afforded by the Chautauqua School to its students is of a high order as to quality, completeness, and practical value.

2. The Chautauqua School carries on a work of great value to public welfare because fifty-six per cent. of its graduates in active practice accept fees which are within the reach of the eighty-five per cent. of patients who cannot afford the rates demanded by hospital trained nurses, and because hospital trained nurses are entirely too few to supply the demand.

3. As the amendment to the Nurses' Practice Act proposed by the New York State Nurses' Association would ultimately deprive the public of the aid afforded by Chautauqua nurses and all nonhospital nurses in the two directions just mentioned, and would, therefore, prove detrimental to the great majority of the sufferers of New York State, and to the medical profession, its passage would be regarded by the commission as extremely unfortunate.

4. The commission, duly recognizing, however, the superior value of the hospital trained nurse, would advocate an amendment which would cause every nurse to indicate, on her professional cards and sick room charts, the institution, hospital, asylum, school, etc., from which she had been graduated, those who had not received such a training being identified as "practical nurses." Hospital trained nurses would thus receive their due recognition, while those graduated from schools which, as in the case of the Chautauqua School, provide an excellent education, would continue their useful work. Such an amendment would, moreover, serve to rid the suffering public of New York State of poorly trained nurses, since the schools of the country which produced such graduates would soon be identified by him who alone can judge as to the actual value of a nurse, the physician.

Respectfully submitted,
Godfrey R. Pisek,
Special Editor for Pediatrics.
Wilmer Krusen,
Special Editor for Gynecology and Obstetrics.
C. E. de M. Sajous,
Editor and Chairman.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, Held January 20, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Election of Officers.—The annual election of officers resulted as follows: Recording secretary, Dr. P. Brynberg Porter; chairman for the Borough of Brooklyn, Dr. Robert E. Coughlin; chairman for the Borough of Richmond, Dr. William Bryan; member of the council, Dr. Louis F. Bishop.

Protest against the Reporting of Venereal Diseases.—The following resolutions, presented by Dr. William S. Gottheil, were adopted:

Resolved, That the recent official request of the New York Board of Health for all physicians to report promptly to them all cases of syphilis, gonorrheal infection, and chancroid, together with the source of infection, if obtainable, is an undesirable and useless invasion of the most confidential relationship between physician and patient. The mere compilation of statistics in venereal diseases has no value, and the attempt to make it in this manner is a direct incentive to falsification and disobedience to the law. The measure is of value only as a step toward the relegation of these cases to the Board of Health, and its ultimate effect will be to promote self medication and quackery.

Resolved, That a committee be appointed to arrange suitable action in regard to this matter, and report at the next meeting of the association.

Annual Reports.—The reports of the Council, the corresponding secretary, and the treasurer were presented. The statistics given by the recording secretary showed a substantial gain in the membership of the association during the year.

High Tension Electricity as a Remedy; with Demonstration of Methods and of Cases, Including Sarcoma and Hepatic Cirrhosis.—This paper, by Dr. J. Herman Branth, appears in the present issue of the Journal, on page 961.

Dr. Frederick De Kraft said that the results which Dr.

Branth had obtained by the utilization of high potential, high frequency currents in the cases presented were very remarkable. In order that it might be understood how Dr. Branth achieved his success he would briefly consider the method of producing these currents. If we attached a pair of small Leyden jars to each of the two prime conductors of a static machine and had the sliding rods slightly apart, the machine running at fair speed, we noted the rapid passage of sparks at the sliding rods. A pair of electrodes attached to the outer coatings and held the same length apart would also show a shower of sparks. Such an arrangement was shown by Dr. William J. Morton in March, 1881, under the name of static induced current. D'Arsonval interposed a stout copper spiral between the outer coatings, utilizing the same arrangement. Tesla utilized the inductive properties of a D'Arsonval spiral on a secondary spiral of greater length, interposing insulating material between the two, for obtaining currents of high potential and high frequency; the D'Arsonval current being of low potential. That these currents could be made to penetrate the tissue could be clearly shown. A pair of electrodes attached to opposite sides of a D'Arsonval spiral were placed against the opposite sides of a potato and a current of 1,500 or more millianpères was passed for two or three minutes; steam was seen to rise from the potato very quickly. In cutting through the potato, we could see that the interior was cooked and mealy, while the skin was as yet untouched. We could clearly trace the lines of current passage by the degree of cooking. Prolonged cooking would dry out the very centre in a straight line, while the rest of the potato was still moist and steaming. We could utilize this principle in practice. We could heat an organ to any degree.

Dr. Branth had utilized a Tesla coil energized by a Toepler-Holtz static machine of remarkable efficiency, and he had constructed this himself. The current thus obtained was one of high potential and high frequency. By using a glass vacuum electrode attached to one end of the spiral and a metal electrode to the other end, he had a current capable of very deep penetrability and of marked warming effect. The first effect noted at the point of application of the glass vacuum electrode was marked anemia, which was quickly followed by erythema and intense scarlatinioform redness of long duration. If we applied an intense irritant to the skin (and we could do this by this glass vacuum electride) we would find the sentitiveness of the skin was much increased, while the feeling of pain soon diminished. The circulation in distant organs was influenced. By reflex action, vasomotor, sensory, and motor nerves, glands and involuntary muscular fibre were stimulated. Organs which were deeply seated were relieved of congestion by producing hyperemia of the skin. Again, as the result of the heating effect produced by the molecular bombardment of this oscillatory current as it rushed through the tissues, we created centres of heat in every vital cell. As a further result of this heat we had an intensification of the circulation, arterial in kind. The arterioles became much dilated and the venous engorgement was relieved by a stimulation of the vasoconstrictor nerves, resulting in an attenuating effect on the abducting vein. The normal cellular activity was aroused as the result of the heightened nutrition made possible by the greatly increased flow of arterial blood. As a result of the altered vascular supply the morbid interstitial tissue was subjected to an altered nutrition and disappeared. The pressure being released, especially in these hepatic cases, the flow of blood was guided into normal channels. It was thus that Dr. Branth achieved his wonderful results. Dr. Branth deserved the commendation of all for having the courage to apply these methods to those desperate cases, very few of which had ever recovered under any method of treatment.

Dr. Albert G. Geyser said that the cases presented by Doctor Branth spoke for themselves, and therefore called for no discussion on his part. The technical part of the paper, however, afforded much opportunity for elucidating remarks. Time would hardly permit him to take up any other point than the title of the paper. Much had been said concerning high tension, high frequency, step up transformers, high voltage and low voltage, and dielectrics. With the permission of the president, he desired to illustrate upon the blackboard the meanings of these various terms that seemed so confusing to the average listener. Doctor Geyser then went on to say that if energy were applied to a piece of steel spring fastened to a holder, so as to bend it from its normal upright position to an angle of 45° and keep it there, we had by the expenditure of energy produced in the spring a form of kinetic or stored energy which when released was turned into dynamic or moving energy. The effect of this dynamic energy caused the spring to vibrate or oscillate from one side of its centre or normal position to the other, until, as the oscillations grew smaller and smaller, they came to rest. The same amount of energy that was originally bestowed upon the spring was now returned to us in the form of oscillations. If this stored energy of the spring should be released in a vacuum, instead of in the air, the vibrations would continue longer, on account of the lessened resistance. It would now be apparent that the farther the spring was originally forced from its normal position, the greater would be the tension, or pressure. If we placed upon either side of the spring a limiting buffer, so that the spring could only be bent from its path, say, one inch, we would then have only as much tension or pressure as the bending of one inch would create. This, then, was high or low tension in the spring. We had an exact analogy in electricity. Whenever a current was induced through a nonconductor (dielectric) into some electrical capacity, stress, strain, pressure, tension, or voltage was set up in that capacity. The capable voltage or tension depended upon the number of turns and other conditions in the secondary capacity, if that capacity happened to be a coil of wire. If the primary current emanated from a static machine, the size or the diameter of the revolving plates decided the tension or voltage. The source, either a coil transformer or static machine, was analogous to the steel spring in which was stored kinetic energy. From this source we had two conductors, and connected with each was an adjustable spark gap. The two buffers placed upon either side of the steel spring represented this sparkgap, just as these buffers created the extent of the tension in the spring, so did the sparkgap limit or control the tension or voltage in the electrical circuit. No more voltage could be created within this circuit than was necessary to break down this resistance of the sparkgap. As soon as the voltage or tension had risen to the proper height to cross the intervening airgap, that moment a spark or series of sparks passed, and equalization or rest was restored in the tension of the electrical circuit. As we passed further down from the sparkgap the conductor came in contact with the inner lining of the condensers or Leyden jars. One conductor was the plus (+) or positive, while the other was the minus (—) or negative pole. This inner side of the Leyden jar became an extension of the conductor, and so became a capacity charged with the same kind of electricity as the conductor. The inner side of one jar became loaded with the positive, the other with the negative kind. The glass wall of the Leyden jar acted as a nonconductor or dielectric, and the same phenomenon happened as before. By the process of induction, the same amount and the same stress, tension, or voltage was set up in the outer coating of the jar, but of opposite polarity. The inner plus jar induced the outer capacity to become negatively laden and *vice versa.* If now a coil of wire consisting of a certain number of turns, in accordance with the rest of the apparatus, was connected to the outer coatings of the jaws, we had constructed a D'Arsonval apparatus. Two conductors were led from this spiral to the patient. Each time that the outer coatings were charged with the induced current they tended to discharge themselves—tended to an equalization of their stress or tension, with the same result as in the case of the original steel spring. Oscillations were thus set up, large in amplitude at first, and gradually getting smaller until they died out entirely. Then a new set of such oscillations followed. It had been estimated by the electrical experts of the wireless system that 200,000 of such discharges may take place per second, each discharge consisting of from 100 to 500 oscillations; giving us several million oscillations per second. Hence the term high frequency.

Some Newer Methods of Treatment for Malignant Disease; with Demonstration of Lantern Slides and Cases.—Dr. William Seaman Bainbridge preceded the presentation of patients and the lantern slide demonstration with a few introductory remarks concerning the work of the Committee on Scientific Research of the New York Skin and Cancer Hospital in the testing of new methods, surgical and nonsurgical, for the treatment of malignant disease. At the present time he, with the assistance of his staff of expert research workers, was conducting investigations along several different lines. No final report could be rendered now with reference to any of these investigations, and the present demonstration was merely a report of progress. With this in mind, he spoke briefly of the work of the committee along the following lines: (1) Electrical: (a) Fulguration; (b) thermoradiotherapy; (c) electrocoagulation, thermopeneration, diathermy, etc. (2) Serological: (a) Vaughan cancer extract; (b) Skin and Cancer Hospital extract, etc. (3) Surgical: Ligation of pelvic arteries.

Lantern slide pictures of the de Keating-Hart fulguration apparatus, of the Doyen electrocoagulation apparatus, and of a large number of patients before, during, and after treatment by the different methods, were shown. Three patients were presented who had been treated, with remarkable results, by means of fulguration. The surgical procedure to which Dr. Bainbridge called special attention was the method of "the starvation ligature" in the treatment of so called inoperable cancer of the pelvis. He had employed this procedure in about fifty cases of advanced, irremovable cancer, sometimes in conjunction with the curettement of the diseased areas, sometimes in conjunction with one of the other methods to which attention had been directed. The serological treatment of cancer had received considerable attention on the part of the research staff of th Skin and Cancer Hospital, the results of which would be reported in due time. In closing, Dr. Bainbridge made a strong plea for humanitarianism in the treatment of cases of so called inoperable cancer, emphasizing the fact that in many cases which were ordinarily called inoperable much might yet be done to bring relief of suffering and prolongation of life by the application, according to the exigencies of the case, of one or more of the various measures now being empolyed at the Skin and Cancer Hospital, and to which he had briefly referred.

Dr. **Gordon K. Dickinson**, of Jersey City, said that Dr. Bainbridge had the aptitude and capacity for working out such problems as those presented this evening, and that the Skin and Cancer Hospital was well qualified to offer the facilities necessary for the purpose. The work done at that institution he had had the opportunity of seeing in a number of instances. The superficial cases were almost always successful, but in the deeper seated ones the disease was apt to return and end fatally. In this connection he referred to a case of papilloma which had come under his observation, where the patient was relieved for a time, but eventually died. As to the treatment described, there was something more in electricity and this type of juice which they did not yet understand. They did feel, however, that a good deal of the success which had attended the fulguration method was due to the operative procedures before its application.

Dr. **Herman J. Boldt** said he was simply astonished at the results accomplished, as portrayed upon the screen. Dr. Bainbridge, he thought, was to be particularly congratulated upon the manner in which he had combined these special forms of treatment with surgery. In the treatment of cancer we might never, perhaps, be able to decide upon any one specific, but it had been shown that we now had methods for curing a large proportion of cases, and in the others for relieving the pain and prolonging life. Personally, he believed that in serology there would be found a wider field of usefulness than in any other direction. In the cases Dr. Bainbridge had described and shown, however, he was convinced that no other treatment than that employed could have given such successful results.

Dr. **Worthington Seaton Russell** said that in the case of Hodgkin's disease which had been shown upon the screen the patient had come to the skin and cancer hospital from another hospital where he was told that his case was hopeless. There were immense masses on both sides of the neck, and not only were the cervical glands enlarged, but also those of the axillæ and other parts. Up to the present he had had thirteen treatments. At first the treatments caused some systemic reaction, but later on there was no reaction; and he was now receiving massive doses. The various glands had become much reduced in size, and in some of them the enlargement had entirely disappeared. The man was a florist, and was able to work regularly at his business. What the ultimate outcome might be no one could say, but, at all events, the treatment would undoubtedly prolong the patient's life. The case of tumor in the lungs, x ray pictures of which had been shown, had received eleven treatments. It had been pronounced quite hopeless in a number of hospitals; yet this patient was now out every day and was able to do a certain amount of work. It was scarcely to be expected that he would be cured of his tumor, but his condition had certainly been greatly relieved. Very careful statistics of all these cases were being kept.

Dr. **William Benham Snow** said that the hot spark as delivered from a high frequency apparatus was not fulguration proper, but what might be, and was correctly, called *destructive fulguration;* while the desiccation method of Clark dried out the tissues and thus destroyed them. The long, cooled spark of de Keating-Hart did not destroy tissue, but acted as a stimulant, which overstimulated all of the tissues, to the extent that the cancer cells perished. The reparative process after its application was slow. During this there was a profuse discharge of serum, of lymphorrhea, in the course of which the cancer cells perished. As to Hodgkin's disease, he had seen a case, treated by Dr. Herman Grad, in which there was extensive enlargement of many of the glands in the neck, axilla, and groin. Under x ray treatment they all disappeared, but at the same time the number of red blood cells became more and more reduced until death ensued. He would like to know if in the case shown on the screen, and further described by Dr. Russell, there had been any change of this kind in the blood count. He was much pleased to observe the tendency at the present time to the joint use of surgery with the x ray and other electrical measures, a plan which he had advocated for years. In regard to the removal of the lymphatic glands, he thought that in all cases only the enlarged glands should be removed, because they were defenses retarding extension in case of recurrence. The removal of the glands of the axilla, and beneath the pectoral muscle, was often too radical, when the x ray or fulguration could be used in addition to surgery. He hoped that the method described by Dr. Bainbridge would lead to the conclusion that it was not advisable to remove other than the diseased glands.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Anatomische Grundlagen wichtiger Krankheiten. Fortbildungsvorträge aus dem Gebiet der pathologischen Anatomie und allgemeinen Pathologie für Aerzte und Medizinalpraktikanten. Von Dr. **Leonard Jores**, Professor der pathologischen Anatomie an der Kölner Akademie für praktische Medizin. Mit 250 Abbildungen im Text. Berlin: Julius Springer, 1913. Pp. xii-382.

As Doctor Jores states in his introduction, this volume is intended primarily for the graduate physician and not for the undergraduate student. It deals with the pathological changes occurring in the special tissues and organs, and as only the essential and well recognized changes are mentioned, the different matters are very ably presented. Whether one reads of the circulatory system, the lungs, or the genitourinary apparatus he is struck by the clearness and conciseness of the text. Although it does not profess to be a textbook on pathology, it nevertheless contains as much information as many more pretentious volumes. As the entire book is so good and the different sections so well treated, it is practically impossible to select any particular portion as being worthy of greater praise than the others. In addition to the excellent text are 250 valuable illustrations. These latter are particularly good, both in regard to selection and to presentation. The book is one that cannot be too highly recommended to those who wish a valuable addition to their library on the subject of special pathology.

Burdett's Hospitals and Charities for 1912. Being the Year Book of Philanthropy and the Hospital Annual. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities; an Exhaustive Record of Hospital Work for the Year; a Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Nursing and Convalescent Institutions, Consumption Sanatoria, Religious and Benevolent Institutions and Dispensaries. By Sir HENRY BURDETT, K. C. B., K. C. V. O. London: The Scientific Press, Limited, 1912. Pp. 952.

The present issue of Burdett's Hospitals and Charities constitutes the twenty-third year of publication of this valuable handbook. It contains as usual a great wealth of information for the English speaking world and has become during the years of its long career a valuable book of reference. Besides the usual introduction, it contains in its present form thirteen chapters, coinciding in number with the issue of 1911, but the arrangements of these chapters have become different. Chapter 13 refers to United States, Canada, Australasia, and India, for which countries it is very difficult to obtain information.

Der Unterleibstyphus. Von weil. Dr. H. CURSCHMANN, Professor an der medizinischen Klinik in Leipzig. Zweite, umgearbeitete und vermehrte Auflage. Herausgegeben von Dr. H. CURSCHMANN, in Mainz, und Prof. Dr. C. HIRSCH, in Göttingen. Mit 48 Abbildungen und 2 Kurventafeln. Wien und Leipzig: Alfred Hölder, 1913. Pp. viii-516.

This volume is one of the most recent additions to the splendid Nothnagel *System*. In the 500 pages devoted to this subject there is practically everything bearing upon the various phases and manifestations of typhoid fever. The first chapter deals with the etiology. The second discusses the pathology, in general also in regard to the individual organs and systems. A hundred and seventy pages are devoted to an analysis of the various symptoms, being followed by a hundred pages in which is taken up the course of the disease in its various forms. Diagnosis by means of bacteriological and serological methods is very thoroughly dealt with and constitutes a chapter of particular value to the laboratory worker, the various methods being given in full. Ways of prevention are briefly reviewed, and the topic is closed with a presentation of the treatment, the necessity of plenty of food being emphasized. An extra chapter deals with the diseases of the paratyphoid type. As might be expected this book is an excellent one. It is also somewhat unusual in its richness of references to foreign authors, American, English, and French.

Zur Klinik der Opsonine. Von Professor Dr. med. ALEXANDER STRUBELL. Mit 4 Abbildungen und 4 Tafeln. Jena: Gustav Fischer, 1913. Pp. vi-225.

This volume is of particular value in that it represents, not a review of the literature, but the work actually performed by the author and his assistants. As the technic of the method has become more clearly understood and better applied, the results obtained have become very trustworthy. The opsonic index is now of great significance in certain infectious diseases, not only in diagnosis, but in prognosis. The entire question of the opsonins is carefully gone into and the sources of error in estimating the opsonic index are given in detail. The index in tuberculosis receives a chapter, but the greater part of the book is devoted to the staphylococcus. The vaccine therapy, as employed in local infections by this organism, is given in great detail, and is illustrated by numerous actual cases. It is especially on account of this clinical aspect that the book can be highly recommended.

Glycosuria and Allied Conditions. By P. J. CAMMIDGE, M. D. New York: Longmans, Green & Co., 1913; London: Edward Arnold, 1913. Pp. vii-467. (Price, $4.50.)

As might be expected, a book on this subject by so well known an authority as its author covers the ground most thoroughly. In its 460 pages of text are included not only the conclusions to which Dr. Cammidge has come as a result of his own researches and observations, but also a general summary of the work of others. Inasmuch as glycosuria is essentially a chemical problem, that phase is first presented; then the pathology, symptomatology, diagnosis, and treatment are discussed. The author calls attention to the fact that up to the present the carbohydrates, other than dextrose, met with in the urine of diabetes have not received much attention at the hands of the clinicians. He believes it is probable that if they were more carefully investigated light might be thrown on the pathology of the condition. This publication on so interesting and important a subject is indeed a most valuable addition to medical literature. The matter is clearly put and, on account of the great experience of the author, must carry authority.

New Aspects of Diabetes. Pathology and Treatment. By Professor Dr. CARL VON NOORDEN, Professor of the First Medical Clinic, Vienna. Lectures Delivered at the New York Postgraduate Medical School, New York. New York: E. B. Treat & Co., 1912. Pp. 160.

This monograph is composed of the lectures delivered some time ago by the author in New York on Diabetes proper, and in St. Louis, on acetonuria. The subjects are treated in a fluent and easily understood manner, no quotations being introduced. It is a plain matter of fact review of the subject, very interestingly set forth but marred to a certain extent by poor translation. Such sentences as: "the adrenalin not only whips up the liver, but also the pancreas, causing it to hyperactivity, perhaps especially to hypertrophy of the still unhurt activating islands of Langerhans" are unfortunately not uncommon. Even the title "New Aspects of Diabetes" can hardly convey the meaning of the author, since the work contains nothing new, though it covers very satisfactorily the *modern* view concerning the disease and particularly as it is interpreted by the distinguished author. One can hardly fail to become impressed, moreover, with the confidence with which he deems settled questions which are still decidedly *sub judice*, the supposed antagonistic action between the thyroid and pancreas, concerning which he writes for example: "Here we are in no doubt whatever," whereas in truth the theory is an extremely weak one. The book as a whole, and particularly the section on treatment, is very satisfying, the latter particularly so, sustained as it is by the author's own great experience.

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Meetings of Local Medical Societies.

MONDAY, *May 12th.*—Society of Medical Jurisprudence; New York Ophthalmological Society; Williamsburgh Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *May 13th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); New York Obstetrical Society; Newburgh Bay Medical Society; Jamestown Medical Society; Rome, N. Y., Medical Society; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer (annual); Buffalo Academy of Medicine; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, *May 14th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Surgical Association; Richmond County Medical Society; Dunkirk and Fredonia Medical Society; Alumni Association of the Norwegian Hospital, Brooklyn.

THURSDAY, *May 15th.*—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Æsculapian Club of Buffalo; Newark, N. J., Medical and Surgical Society.

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Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 30, 1913:

Ebert, H. G., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, San Francisco, Cal., and directed to report to the medical officers in charge of the Immigration station, Angel Island, Cal., for duty. **Goldberger**, J., Surgeon. Detailed to represent the Service at the meeting of the American Society of Tropical Medicine at Washington, D. C., May 6 and 7, 1913. **Guiteras**, G. M., Surgeon. Detailed to represent the Service at the meeting of the State Medical Association of Texas, San Antonio, May 6 to 8, 1913. **Oleson**, Robert, Passed Assistant Surgeon. Directed to report to the medical officer in charge, San Francisco Quarantine Station, for temporary duty. **Parker**, H. B., Passed Assistant Surgeon. Granted four months' leave of absence from sailing of first steamer in June, 1913, from Guayaquil, Ecuador. **Rucker**, W. C., Assistant Surgeon General. Directed to proceed to Boston, Mass., and deliver an address before the Women's Municipal League on April 25th; also to address the graduating class of Tuft Medical College and the Bacteriological Society of Harvard College. **Young**, G. B., Surgeon. Granted leave of absence, without pay, for a further period of one year, from July 1, 1913.

Resignation.

Resignation of Assistant Surgeon N. D. Brecht accepted, by direction of the President, to take effect May 31, 1913.

Boards Convened.

Board of commissioned medical officers convened to meet at the call of the chairman for the purpose of preparing and recommending a revision of the regulations governing the uniforms of officers and employees of the United States Public Health Service. Detail for the board: Assistant Surgeon General A. H. Glennan, chairman; Assistant Surgeon General L. E. Cofer, member; Assistant Surgeon General W. C. Rucker, recorder.

Board of commissioned medical officers which was convened to meet April 7, 1913, for the examination of applicants for appointment as assistant surgeon, reconvened to meet May 5, 1913, for the same purpose.

Board of commissioned medical officers convened to meet at Manila, P. I., June 10, 1913, for the purpose of making a strict physical examination of candidates for appointment as assistant surgeon and of presenting to candidates the questions for the written examination. Detail for the board: Surgeon Victor G. Heiser, chairman; Surgeon W. A. Korn, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 3, 1913:

Appel, D. M., Colonel, Medical Corps. Left Chicago on April 24th en route to Hawaii, sailing on May 5th. **Beasley**, S. O., First Lieutenant, Medical Reserve Corps. Has resigned his commission in the medical reserve corps. **Beeuwken**, Henry, First Lieutenant. Will sail from San Francisco for the Philippines on August 5, 1913, instead of June 5th, as heretofore ordered. **Boehs**, C. J., First Lieutenant, Medical Reserve Corps. Relieved from duty with the Aviation School, Texas City, Texas, and will sail on August 5, 1913, for the Philippines. **Card**, Daniel P., Captain. Will proceed to Fort Ethan Allen, Vt., for duty upon expiration of his leave. **Clark**, John A., Captain. Will return to his proper station at Plattsburg Barracks, N. Y., for temporary duty at Fort Benjamin Harrison. **Davidson**, W. T., Major, Medical Corps. Granted twelve days 'leave of absence, about May 9th. **Denton**, William, First Lieutenant. Granted two months' leave of absence, about July 4, 1913 **Ferenbaugh**, Thomas L., First Lieutenant. Will report to the commanding officer of the Walter Reed General Hospital for observation and treatment. **Gills**, William A., First Lieutenant, Medical Reserve Corps. Relieved from further duty in the Medical Reserve Corps, and honorably discharged, his services being no longer required. **Kramer**, Floyd, First Lieutenant. Assigned to duty with the medical superintendent, San Francisco, for duty in the Army Transport Service. **Miller**, C. N., First Lieutenant, Medical Service Corps. Has resigned his commission in the medical reserve corps. **Reddy**, J. J., First Lieutenant. Left Grandville, Pa., on April 29th, for San Francisco, sailing therefrom on May 5th for duty in the Philippines. **Register**, E. C., First Lieutenant. Left Fort McPherson, Ga., on April 26th, for San Francisco, and will take the transport from that place at a later date for the Philippine Islands. **Reynolds**, F. F., Major. Granted fifteen days' leave of absence before sailing for Hawaii on June 5th. **Robinson**, James L., First Lieutenant. Relieved from temporary duty with the 26th Infantry and will return to his station in Fort Wayne, Mich., about May 5th. **Shields**, William S., Captain. Left Columbus Barracks, Ohio, on April 5th, on twenty-one days' leave. **Sparrenger**, F. H., and **Wall**, F. M., First Lieutenants, Medical Reserve Corps. Relieved from duty in the Philippine Islands and will return to the United States for further orders.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 3, 1913:

Clifford, A. B., Passed Assistant Surgeon. Ordered to the Naval School, Washington, D. C. **Warner**, R. A., Passed Assistant Surgeon. Detached from duty on the *Yankton* and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

Browne—Gibbs.—In Bryn Mawr, Pa., on Wednesday, April 30th, Dr. Charles Browne, of Princeton, N. J., and Miss Georgiana Gibbs. **Comstock—King.**—In Brooklyn, N. Y., on Saturday, April 26th, Dr. Carl Rodney Comstock, of Saratoga Springs, and Miss Ethel King. **Freeman—Freeman.**—In Trenton, N. J., on Sunday, April 27th, Dr. Samuel Freeman and Miss Fanny Freeman. **Jacobs—Price.**—In Philadelphia, on Thursday, April 24th, Dr. Francis Brinton Jacobs and Miss Phoebe A. Price. **Nelles—Robie.**—In Chicago, on Tuesday, April 22nd, Dr. J. M. Nelles and Mrs. Anna Robie.

Died.

Bailey.—In Middletown, Conn., on Monday, April 28th, Dr. Leonard Bailey, aged seventy-eight years. **Bliss.**—In Philadelphia, on Friday, May 2nd, Dr. Arthur Ames Bliss, aged fifty-four years. **Carson.**—In Chatsworth, Ill., on Saturday, April 26th, Dr. George T. Carson, aged fifty years. **Denbo.**—In Mauckport, Ind., on Monday, April 21st, Dr. William R. Denbo, aged sixty-five years. **Dickinson.**—At Cobleskill, N. Y., on Tuesday, April 29th, Dr. Charles Dickinson, aged eighty years. **Emerson.**—In New York, on Sunday, May 4th, Dr. J. Haven Emerson, aged seventy-three years. **Fenwick.**—In Chelsea, Mass., on Friday, April 25th, Dr. Joseph B. Fenwick, aged seventy-five years. **Freutel.**—In New York, on Tuesday, April 29th, Dr. August J. Freutel, aged thirty-six years. **Garceau.**—In Boston, on Tuesday, April 29th, Dr. Edgar Garceau. **Grady.**—In Quincy, Ill., on Tuesday, April 22nd, Dr J. H. Grady, aged seventy-one years. **Graham.**—In Kansas City, Mo., on Saturday, May 3d, Dr. Alice Graham, aged fifty-three years. **Hunter.**—In Kansas City, Mo., on Tuesday, April 22d, Dr. Duke W. Hunter, aged eighty-three years. **Kahn.**—In New York, on Thursday, May 1st, Dr. Hermann Kahn, aged seventy-nine years. **Kendall.**—In Ruston, La., on Tuesday, April 15th, Dr. W. S. Kendall. **Kinnicutt.**—In New York, on Friday, May 2nd, Dr. Francis Parker Kinnicutt, aged sixty-seven years. **Knight.**—In New York, on Tuesday, April 29th, Dr. Charles Huntoon Knight, aged sixty-four years. **Noble.**—In Preston, Md., on Tuesday, April 29th, Dr. Jacob L. Noble, aged sixty-four years. **O'Neal.**—In Gettysburg, Pa., on Thursday. April 24th, Dr. J. W. C. O'Neal, aged ninety-two years. **Thorne.**—In San Francisco, on Tuesday, April 22nd, Dr. Walter S. Thorne. **Timmins.**—In Boston, on Sunday, May 4th, Dr. Patrick J. Timmins, aged sixty-two years. **Upson.**—In Rome, Italy, on Thursday, April 24th, Dr. Henry Swift Upson, of Cleveland, Ohio, aged fifty-four years. **Walker.**—In Union, Neb., on Thursday, April 24th, Dr. Alexander Walker, aged forty-two years.

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Original Communications.

VENEREAL DISEASES.*

The Attitude of the Department of Health in Relation Thereto.

By Hermann M. Biggs, M. D.,
New York,
General Medical Officer, Department of Health.

On February 20, 1912, the Board of Health of the City of New York adopted a series of resolutions requiring the full notification of all cases of venereal disease from public institutions and requesting physicians to notify their private cases by number. The board also provided for the application of the Wassermann test for syphilis, the complement fixation test for gonorrhea, and for the examination of fresh smears for spirochetes and gonococci. This action was taken after very mature deliberation and with some reluctance and only after the proposal had been unanimously approved by the medical advisory board.[1] The subject had been under discussion for more than three years, and the board of health fully realized the many difficulties of the problem presented in the sanitary surveillance of these diseases. The resolutions were finally adopted only after the Board of Estimate and Apportionment had provided funds for the erection of a pavilion at Riverside Hospital for the care of such cases of venereal disease as the department of health might be called upon to isolate and treat.

The board was influenced in taking the action, as described above, by the following considerations:

First: The venereal diseases are infectious and highly communicable. They are also preventable. They constitute a very serious menace to the life and health of the people of the city of New York. The board of health is charged by law with the control and prevention of such diseases. The logic of the situation, therefore, demanded that action should be taken.

Second: As is well known, sanitary authorities in the past have not attempted to deal with these diseases, because the sanitary problems have been inextricably interwoven with vice and immorality, and because many attempts have been made to deal with the latter problems in many cities in various parts of the world by police regulations. The moral sense of the community here has seemed to be antagonistic to any efforts at police regulation, and, moreover, the methods adopted abroad have generally given most unsatisfactory results.

Third: Although no serious attempts have ever been made by the sanitary authorities of a great city to deal with this problem, yet as it seems to be the almost universal opinion that police regulations have generally failed, after careful consideration, the board of health decided that it was the duty of the Department of Health to attempt to deal with the purely sanitary features of the problem from the public health standpoint, while the social and moral phases were entirely ignored.

Fourth: It was believed by the board of health that the more enlightened portion of the medical profession and of the laity were in an attitude of mind, not only to accept without serious protest an earnest attempt at an improvement in existing conditions through the application of scientific sanitary procedures, but to extend general support and commendation to such a course.

The resolutions adopted by the board of health read as follows:

Whereas, The venereal diseases are infectious, communicable, and preventable, and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

Whereas, It is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others, be it therefore

Resolved, First: That on and after May 1, 1912, the superintendents or other officers in charge of all public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage, and duration of the infection, the date and source of contraction of the infection, if obtainable, and,

Second: That all physicians be requested to furnish similar information concerning private patients under their care, excepting that the name and address of the patient need not be reported.

Third: That all information and all reports, in connection with persons suffering from these diseases, shall be regarded as absolutely confidential, and shall not be accessible by the public nor shall such records be deemed public records.

Fourth: That the Department of Health shall provide facilities for the free bacteriological examination of discharges for the diagnosis of gonorrheal infections, and

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*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

[1] The members of the advisory board were: Dr. Joseph D. Bryant, Dr. William M. Polk, Dr. Abraham Jacobi, Dr. T. Mitchell Prudden, Dr. A. Alexander Smith, Dr. J. Winters Brannan, Dr. John A. McCorkle, Dr. Francis P. Kinnicutt, Dr. L. Emmett Holt, Dr. Glentworth R. Butler, Dr. Simon Flexner, Dr. Walter B. James, and Dr. Alvah H. Doty.

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also shall provide, without charge, vaccines for the treatment of such infections, and

Fifth: That the Department of Health shall undertake to make, without charge, the Wassermann and Noguchi tests for the diagnosis of syphilis and examine specimens for spirochetes.

Sixth: That these diagnostic and therapeutic facilities be extended only when the data required for the registration of the case be furnished by the physician treating the patient, and

Seventh: That the department provide and distribute circulars of information in relation to these diseases.

The initial step taken by the board of health for the control of these diseases was essentially the same as that previously followed with reference to pulmonary tuberculosis, excepting that the measures are more restricted in character in connection with the venereal disease. A compliance with the new regulations has been perhaps less general even than was the case in the beginning with reference to pulmonary tuberculosis, and the opposition has been greater.

The superintendents and the boards of trustees of some of the larger institutions of the city have failed to comply with the new regulations of the department, excusing their action on the ground that the notification of cases as required by the Department of Health involves so much clerical work that it is impossible for them to comply, as the physicians cannot do the work and no clerical staff is available for this purpose. Other institutions have declined to report their cases because they were not in sympathy with the purpose and spirit of the regulations.

The existence of large numbers of cases of venereal disease, and the terrible effects produced by them, is universally admitted. Still the medical boards of three large hospitals of the city have appointed committees to protest against the attitude of the Department of Health, and a joint committee representing them has addressed a communication to His Honor the Mayor, asking for his interference.

Such opposition and such criticism were fully anticipated, and much more is likely to follow. The progress of sanitation, like the warfare of science, has been the history of a continuous struggle against opposition, carried on in the name of law, religion, personal rights, or expediency. The history of this struggle, like that of previous ones in science and sanitation, will end finally in a long delayed success, although the difficulties of the problem presented are much greater than has been the case in most previous instances.

In connection with the opposition which has developed to the action of the Department of Health, and the attitude which has been adopted by some authorities, it may be well to recall the history of the experience of the department in its tuberculosis work. The movement for the prevention of tuberculosis, which has long since become worldwide, was inaugurated by the New York City Department of Health in 1887, when Dr. Joseph D. Bryant was commissioner of health. It did not gain much impetus, however, until 1893. Active work began in 1894, when 4,166 cases of pulmonary tuberculosis were reported from the old city of New York and 511 specimens of sputum were examined: premises vacated by tuberculous patients were disinfected, and an extensive educational campaign was inaugurated.

It may not be amiss to recall the fact that as late as 1898 and 1899, special legislative committees were appointed by the New York County Medical Society and by the New York County Medical Association, which were instructed to obtain a repeal of the Act of the Legislature under which the Department of Health derived its power to deal with the tuberculosis problem. A special committee was also appointed by the Academy of Medicine, which, after prolonged deliberation, declared "the action of the Department of Health, with reference to tuberculosis, as inexpedient and inadvisable." I think, in view of the history of the campaign since that time and the present attitude of the public and the medical profession toward tuberculosis, it may properly be said that the action of these committees was ill advised.

I believe that ultimately the result will be the same with reference to the sanitary surveillance of the venereal diseases, now under discussion, but I realize as fully as anyone can the enormous difficulties presented by the problem.

Nearly twenty years ago, the board of health of New York city adopted a policy in relation to the control of infectious, communicable, and preventable diseases. In effect it determined that every such disease properly came under its jurisdiction, and that any measures which contribute to the prevention, accurate diagnosis, proper sanitary surveillance, or the specific treatment of such diseases, become properly a function of the Department of Health. The board has consistently followed this policy.

I believe that the attitude of the board toward the venereal diseases is practically governed by this statement of its policy. It is prepared to register venereal diseases, to provide hospital care for those patients who cannot obtain care elsewhere, to assist in every way in its power in the diagnosis and sanitary surveillance of such diseases, and only *if necessary and only so far as it seems necessary*, will it undertake the treatment of these diseases.

An investigation made last year showed that with perhaps one or two exceptions, the public clinics and dispensaries in this city did not *regularly* follow modern methods for the diagnosis and treatment of syphilis. As it has been satisfactorily shown, in the opinion of the board, that early cases of syphilis in which the diagnosis is made by the examination for spirochetes, before the appearance of secondary symptoms, can be cured in the course of a few months, while in most cases subsequently the treatment must often be continued for years with even then a doubtful result, the board of health felt that it was incumbent upon it to provide means for such treatment, if the Board of Estimate and Apportionment would furnish the funds. The board of health, therefore, asked for funds to establish a clinic for the early diagnosis and specific treatment of syphilis, viz., by the administration of salvarsan. The Committee of the Academy of Medicine on Budgets and Hospitals did not approve of this action of the board of health, and insisted that efforts should be made to induce existing institutions to discharge their duty in this matter. The board of health, in view of this attitude, did not strongly press its request, and funds for the clinic were not granted.

I think that the medical profession and the laity do not fully understand what the attitude of the Department of Health is and has always been toward this and similar questions.. The department does not desire and has never desired to assume any responsibility, nor do any work which is being properly done by any other authorities or agencies. The board has always received coldly the numerous suggestions made at various times to place under its jurisdiction other functions which, it believed, did not properly belong there, such as the administration of the general public hospitals of the city, the work of the coroners, etc. The department does not wish *to treat* the venereal diseases if some other authorities will furnish proper and adequate facilities for this purpose.

Early in January of this year, a circular letter was sent to every physician in New York city, requesting him to report the number of cases of venereal disease which had been under his care during the year 1912. Up to the present time, the number of cases reported is as follows:

Syphilis	13,348
Gonorrhea	24,980
Chancroid	4,331
Total	42,659

Let it be understood that these represent only the cases reported by 1,500 private physicians out of more than 8,000 in the city and do not include those treated in public hospitals, dispensaries, etc. They naturally indicate only a small proportion of the cases actually under the care of the physicians of this city during the year. It is probable that a large percentage of these cases were in the active, infectious stage. I think that 200,000 would be much nearer the real number of cases developing in the city during 1912. These figures give a very inadequate conception of the character of the problem which is presented by the venereal diseases and its enormous importance to the health, happiness, and physical welfare of the people of the city of New York.

The Department of Health established a diagnosis venereal clinic in July, 1912, at the research laboratory at the foot of East Sixteenth Street, where it was conducted until about the first of January last, when it was transferred to the main offices of the Department of Health and connected with the diagnosis laboratories. Patients are examined only when they come with a request from the attending physician, unless the chief of the clinic can be convinced that there is no attending physician. The reports of the results are furnished *only* to the attending physician. A large percentage of the examinations consist in the application of the Wassermann test. Early in January, an evening diagnosis clinic was established at 307 West Thirty-third Street, for the accommodation of persons who could not well leave their work during the day. This is held at present only one evening a week.

The total attendance since January 1st at the main clinic is 1,275, and has averaged sixteen a day, while at the night clinic the average has been six. The average number of cases reported daily, exclusive of the clinic, since the first of January, has been thirty-seven. We feel confident that the facilities offered by the Department of Health at these clinics for the diagnosis of these diseases will be much more widely used as soon as physicians have become gradually acquainted with their existence and usefulness to them.

I do not think that the importance of the educational influence of such bacteriological work can be overestimated, and this opinion is emphasized when one recalls the fact that but few dispensaries or outdoor departments in New York city were regularly doing such work last year. I do not know what the situation is in this respect at the present moment. The application of the tests for the diagnosis of the venereal diseases requires time, experience, and adequate training; services which are not at the disposal of the poor, and the type of laboratory facilities which are generally not at the command of public dispensaries.

The line of development which the work of the Department of Health is likely to take cannot, as yet, be foretold, as this must depend upon many factors and conditions at present undetermined. I think that it is fairly certain, however, that the work in the diagnosis of these diseases will develop rather rapidly. Perhaps next to the bacteriological examinations and in connection with registration, the most important feature of the work will be, as was the case in tuberculosis, educational in character. It seems to me fairly clear that this is certain to be a very important phase of the campaign.

The institutional care of active, highly infectious cases of the various forms of venereal disease, is bound largely to increase. It is certainly most discreditable to the great city of New York that thus far only a few beds in two hospitals have been assigned to the care of these diseases. As they are infectious and readily communicable and most dangerous to the public health, I believe the Department of Health is under obligation to provide institutional care, unless some other authorities take action in this matter. I have already said, the department has received funds to provide hospital beds for a limited number of cases.

No one who is familiar with the problem, I believe, has any doubt that prompt and efficient treatment will cause a very large reduction in the number of cases in which disability or death, directly or indirectly, result from venereal disease.

CONCLUSION.

It may be briefly said that the policy of the Department of Health toward these diseases, at present, comprises the following:

First: The development and extension of the system of registration as at present conducted.

Second: The provision of adequate facilities for the early diagnosis and general supervision of all forms of venereal disease.

Third: The institution of an extensive campaign of education in relation to sex hygiene, and the causes, prevalence, danger, and the results of such infections and the means for their prevention and treatment.

Fourth: The provision of hospital accommodations for such cases as constitute a menace or which can find no facilities elsewhere for their care.

It is the firm conviction of those who have given much thought to this subject that by these and other similar measures, which may be later developed, a very important decrease may be brought about in the amount of sickness and death, directly or indirectly produced by the venereal diseases. It was this conviction which influenced the board of health in the adoption of the resolutions referred to in the beginning of this article.

I venture to say that when the antituberculosis movement began in this city some twenty years ago, no one anticipated the vast organization of social forces that would be developed to cope with this disease. As the campaign progressed, first one and then another agency was enlisted, and as the problems presented themselves they were met in the light of existing knowledge and experience. Exactly the same situation confronts us in the control of the venereal diseases, and while the initial steps seems quite clear, I do not for a moment hesitate to say that the further development of the campaign must await further knowledge—knowledge to be obtained only through the results of experience.

DEPARTMENT OF HEALTH.

DISPENSARY FACILITIES FOR THE TREATMENT OF SYPHILIS.*

By HOMER F. SWIFT, M. D.,
New York.

In the general movement to render outpatient diagnosis and treatment, especially the latter, more efficient, the question of dispensary facilities for the treatment of syphilis holds naturally an important place. The need of improvement in the case of this disease is, however, especially urgent, since the study of syphilis in the past ten years has entirely altered our conceptions of its treatment. With these advances the outpatient departments of most of our hospitals have not kept pace, so that to-day their treatment varies little from that of five years ago, except that a few patients receive a small number of injections of salvarsan.

The problems of the outpatient treatment of syphilis are peculiar to this disease. Most of the patients in the early stages are not incapacitated, and syphilis, therefore, lends itself peculiarly to dispensary treatment. It would be better, however, to have many of the patients in the wards of hospitals for a certain time, and the ambulatory treatment of the disease is only one phase of the problem.

In considering the subject of dispensary treatment, we will divide it into two parts, namely, the organization of the individual clinic, and the general organization of clinics.

THE INDIVIDUAL CLINIC.

Up to the present time the distribution of patients has been left to the admitting clerk, who has divided them into various classes with the result that the room to which the patient was first sent has usually continued to be his place of treatment. For example, the genitourinary room receives the patients with primary syphilis, the dermatological room the patients with secondary and tertiary cutaneous lesions. The ophthalmologist treats the patients with iritis, keratitis, chorioiditis, and optic atrophies, and the otologist those with auditory neuritis or atrophy. The neurologist and the internist, on the other hand, treat the patients with nervous and visceral syphilis. The result of this classification has been that syphilis is regarded as a congeries of different symptoms and not as a disease. The prevalence of this view has resulted in the symptomatic treatment of syphilis, and when the symptoms disappeared the treatment was discontinued. The patient disappeared from view to return later, perhaps, to some different room in the same dispensary.

Syphilis is syphilis no matter where it is localized. The symptoms of syphilis are often mechanical. These mechanical manifestations demand the attention of the specialist for the particular organ involved, but the treatment of the disease is essentially the same. The drug which causes the disappearance of a roseola will cure an iritis. If we accept this view of the treatment of syphilis as syphilis and not as one branch of many specialties, the advisability of a room specially equipped, both with men and apparatus, for the treatment of the disease is at once evident. Just who will be at the head of this room will have to be determined in the individual clinic. Syphilis is a genitourinary disease practically only in the primary stage in men. In women in this stage treatment is carried out by the gynecologist, or in the majority of instances the disease is untreated until it reaches the secondary stage. Because many of the genitourinary specialists are more interested in the surgical side of their specialty than in medical treatment, and because syphilis more often falls into the hands of the dermatologist than under the care of any other one specialist, it might be better for the dermatological department to supervise the diagnosis and treatment. The fact that the disease involves so many of the special organs makes it almost necessary to have the help of the ophthalmologist, the laryngologist, and the otologist. The neurologist and the internist might well be included in the staff of this special room. With a consulting staff consisting of members of all the specialties, the clinical diagnosis would be well looked after.

The development in laboratory diagnosis in the last few years has made it imperative that proper laboratory facilities should be at hand for diagnosis. In the primary stage the dark field microscope is essential to an early diagnosis. If the disease is ever to be eradicated, an early diagnosis of syphilis must be made in the majority of cases. For a period of about two weeks during the primary stage, many patients are suffering from a simple local infection. During this time exact diagnosis is possible in the majority of cases only by means of demonstration of *Treponema pallidum*. Examination with the dark field microscope is one of the simplest procedures in clinical microscopy. The obtaining of serum from the initial lesion, placing it on a slide, covering with a cover glass, and direct examination will reveal spirochetes in practically one hundred per cent. of early untreated chancres.

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*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

The necessity and importance of such a diagnosis is little realized by the majority of physicians. Today one often hears that the simple clinical examination is sufficient to make a diagnosis. Genitourinary surgeons have stated that practically fifty per cent. of chancroids develop later into chancres, followed by secondary syphilis. This large proportion of mixed sores could be accurately diagnosticated were a dark field examination made from the serum of every genital ulcer. How little this important procedure is employed is well illustrated by reports from a number of clinics in this city. In eighteen dispensaries[1] where primary syphilis is treated, spirochete examination is used as a routine in only five, in ten occasionally, and in three not at all. In only five is there a dark field miscroscope. In only five out of the eighteen clinics is it customary to make an early diagnosis and institute treatment before the appearance of a positive Wassermann reaction. It is time that the dark field microscope be regarded as a practical instrument and not as a toy for the laboratory worker. The methods of staining of spirochetes, which are much slower, are not often used. Every dispensary should have a dark field microscope which is always ready for use. The examination can then be made in from three to five minutes and proper treatment at once instituted.

The introduction of salvarsan has made this early diagnosis of much more relative importance than formerly. because the successful abortive treatment of the disease in the primary stage, before the general invasion of the body with the virus, is now possible. This phase of the subject of treatment has been most carefully followed, and in spite of what one may hear to the contrary, the successful abortive treatment of syphilis in this stage has been shown to be possible.

The Wassermann reaction has proved to be one of the most useful diagnostic measures at our disposal. Where formerly we were guessing at the nature of a given lesion or condition, we are now able to state with a fair degree of accuracy whether the condition is syphilitic or not. Every dispensary should therefore have attached to it an efficient Wassermann laboratory. The reaction is of use, not only as a diagnostic measure, but indicates to some extent the condition of the disease at a given time. In the primary stage the development of a positive reaction means a general invasion with the virus; hence, if present, the treatment, which earlier had to be directed against a local lesion, must be directed against a general infection, and must therefore be more extensive. The Wassermann reaction is also a most useful guide in the control of treatment. While a negative reaction does not mean that the patient is necessarily cured, a positive reaction does mean that the disease is still present somewhere in the body. If treatment is to be, not symptomatic, but carried out until the disease is eradicated from any individual, it must be continued until a negative reaction is secured and maintained.

The treatment of syphilis would be much more efficiently carried out in one department. The many forms of mercury have resulted in as many variations in treatment. Probably no disease is so inefficiently treated in proportion to the efficacy of our therapeutic measures. As has been mentioned, this is partially due to the fact that it has been symptomatic. It is partially due to the fact that it has not been systematic. One patient has been given a boxful of protoiodide pills, another patient a bottle of mixed treatment, a third blue ointment, and a fourth some injections. All of the treatments resulted in the removal of symptoms for a time, so that one man argued about the superiority of his treatment with as much authority as another. The more careful study of the relative efficacy of treatment has shown that the best forms of treatment, namely, inunctions or injections of mercury, in the opinion of such an excellent authority as Neisser, cured much less than fifty per cent. of the patients. What must have been the result from the chronic dispensing of pills?

The introduction of salvarsan has changed the attitude of careful workers as to the curability of syphilis. One of the most unfortunate incidents connected with the introduction of salvarsan was the statement that one or two injections would cure. The failure of one or two injections to cure has resulted in the disappointment of many physicians and has caused them entirely to reject this most valuable drug. No results based on the injection of two or three medium sized doses of salvarsan can be accepted as disproof of its efficiency. We must rather accept the work of such men as Fordyce, Gennerich, Neisser, Wechselmann, Milian, and others, who have had abundant material and a wide experience in the treatment of this disease, and who depend so much upon the repeated application of salvarsan in their treatment.

At the present time no dispensary can consider that it has done its duty by the patients who place themselves under its care without the administration of salvarsan in sufficient quantities. The investigations of the past two years have shown that it is necessary to administer this drug in courses of intravenous injections. Such courses should consist of five or six injections at intervals of from five to seven days. The treatment of secondary syphilis with one or two injections without further treatment cannot be too strongly condemned. Such treatment alters the body reactions so that relapses are at times more severe than in patients poorly treated with mercury. In addition, the patient has a false sense of security and wastes much valuable time as well as the benefit of the treatment already received. It has been fairly well shown that a course of salvarsan is much more effective if it has been preceded by a course of mercury intramuscularly or by inunctions. This preliminary mercury treatment also eliminates the probability of a febrile reaction, which so often follows the first intravenous injection of salvarsan in florid syphilis, and thus renders much safer the administration of salvarsan in dispensaries.

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[1] These figures are furnished through the kindness of Doctor Lewinski-Corwin as a part of the Report on the Investigation of Dispensary Facilities for the Treatment of Venereal Diseases.

While the intravenous injection of salvarsan is not a serious operation, it should be carried on under proper conditions. Absolutely freshly distilled sterile water is necessary for the solution of the drug and the preparation of the salt solution. The strictest asepsis is necessary in the preparation of apparatus for the injection. The needles and rubber tubing should be washed and sterilized in freshly distilled water. By close attention to all of these details the administration of salvarsan is accompanied by fewer toxic symptoms than follow the intramuscular injection of mercury.

The great care necessary for the proper administration of salvarsan renders a special room almost essential. If each department in a dispensary tries to administer the drug, there is a great loss of time and efficiency. With the same effort in a given time more than double the number of treatments can be carried out in a special room than in several poorly prepared places. Even the intramuscular injections of mercury can be more effectively given where the apparatus is kept in proper condition in a central place. The centralization of treatment will lead to more efficient treatment, because the methods will be more uniform and larger groups of patients in relatively the same stage of the disease may be followed. The failures of a certain course will be more evident and the plan can be altered in the light of new facts gathered by careful study.

Some uniform plan for the instruction of patients in the nature of their disease should be adopted. Patients should understand that symptomatic cure is not sufficient, and that one or two or four injections of salvarsan do not cure the majority of patients. They should be told of the increasing difficulty of cure as the disease progresses, and of how much time and money are wasted by stopping treatment too soon. If a patient or the dispensary has invested fifteen or twenty dollars in his treatment, it is poor economy to stop the treatment and allow him to pass on into a condition where fifty dollars' worth of drugs will not cure, when the additional expenditure of fifteen dollars would probably have cured permanently. Here it would be well to consider the cost of the treatment. At the present wholesale price, a course of six injections of salvarsan cost fifteen dollars. The government collects at least twenty-five per cent. of this amount. In addition, the price of the drug was set at a time when it was thought that one or two treatments would cure, and the necessity of repeated injections has not reduced the cost of a single dose. In view of the great benefit to be derived from salvarsan, it seems wise for the medical profession to take some concerted action to reduce its cost. Both our government and the manufacturers should be approached with this end in view.

In regard to the relative efficiency of salvarsan and neosalvarsan, it has been shown, both in experimental syphilis and clinically in early syphilis, that for the same amount of money about twice the therapeutic effect can be obtained from salvarsan as from neosalvarsan.

The work of the social service could be more efficiently carried on if the treatment of syphilis were under one department. Upon first glance it might be thought that social service workers might not be needed in this branch of medicine. But similar methods might be used here as in other branches of the dispensary. The financial condition of the patients should be investigated, and those patients who are able should be compelled to pay for their treatments, while those who are unable should receive free treatment. The patients who fail to return could be followed up and encouraged to continue their treatment until a cure was effected. Social workers, specially trained and adapted to this kind of work would be needed, but the efficiency of the dispensary would be enormously increased by such assistants.

GENERAL ORGANIZATION OF CLINICS.

In the general organization of all the clinics the division of the city into various districts should be most seriously considered. Patients should not be treated in a dispensary outside of their own district. Exceptions to this rule might be made in university clinics, where as much material as possible is desirable for teaching purposes. The districting of the city would soon allow of a fair estimation of the amount of syphilis in a given district, and suitable provision for physicians and equipment could be made in each dispensary.

SUMMARY.

The dispensary handling of syphilis should be centralized, with representatives of each specialty as members of the staff. Every facility for exact and early diagnosis should be at hand, so that guesswork in diagnosis can be eliminated as much as possible. Centralization in treatment would result in economy and increased efficiency, and the social work with these patients could be more effectively carried out, especially the following up of negligent patients.

After all this part of the work is organized, the question of treatment will be only partially solved unless the wards of all the hospitals are opened to patients in all stages of syphilis. Severe early cases and many cases with nervous and visceral involvement should be under ward treatment for a certain period. Because of the chronic nature of the disease, the work between the ward and outpatient department should be closely correlated. The laboratory workers in the past ten years have furnished us with the weapons to successfully combat this disease. In this day of preventive medicine it is important that we, as clinicians, should see to it that there is every opportunity for the application of the measures at hand. The question of cost must be met squarely. The cure of syphilis is not cheap, but the failure to cure it is still more expensive. If our hospitals and asylums are ever to be relieved of the care of such preventable diseases as visceral syphilis, congenital syphilis, and so called parasyphilis, the dispensary facilities for the early treatment of the disease must be properly organized.

Rockefeller Institute Hospital.

DISPENSARY TREATMENT OF GONORRHEA.*

By Edward L. Keyes, Jr., M. D.,
New York.

The practical problem of providing adequate dispensary facilities for the treatment of persons suffering from gonorrhea in large cities presents as its chief economic difficulty the time when such clinics shall be held. Women patients may be treated at any time during the day, but the male gonorrheic is usually a wage earner whose capacity for work is but little interfered with during the major part of his disease. Consequently, he finds it extremely inconvenient to visit the clinic during working hours. Therefore the clinic for men to be truly efficient should be held in the evening—at 8 o'clock. It is true the city harbors a great number of night workers who would be debarred from evening clinics. Yet, inasmuch as it is always difficult to obtain assistants for the management of an efficient evening clinic, we need have no fear that the daytime clinic for venereal diseases will disappear.

A second problem which was mentioned in the discussion of this subject before the Society of Sanitary and Moral Prophylaxis, in February, 1907, is this, although the number of clinics for the treatment of venereal diseases in the city is inadequate, nevertheless, it is felt that multiplication of purely venereal clinics unattached to general dispensaries may repel patients who feel the odium of attending such a clinic. This problem, however, is largely theoretical, for a few years ago, and perhaps now, the largest clinic in town was devoted exclusively to venereal diseases and held in the evening at the Hudson Street Hospital. When I was associated with this clinic the patients seen in the evenings, twice a week, numbered from eighty to 100.

The clinic for gonorrhea must be divided into two entirely distinct parts: One for the women, the other for the men. Whether a special department shall be set aside for the treatment of children is open to question. Little girls can most conveniently be treated at the women's clinic, though some provision should be made for segregating them while waiting their turn. The immature boy gonorrheic is so rare a visitor at our clinics that it is difficult to make special provision for him. At present he is treated with the adult male gonorrheic.

Gonorrheal rheumatism and conjunctivitis require hospital care. Inasmuch as gonorrhea forms so large a part of clinic work in gynecology it would obviously be impossible to separate the two subjects, and, therefore, the clinic must combine treatment of all gynecological disorders with that of gonorrhea.

Special provision must, however, be made for separate sets of instruments for the treatment of gonorrheal and nongonorrheal cases. Even with this precaution the danger of infection cannot be entirely eliminated, for however stringent the rules may be as to the boiling of instruments, these instruments pass through many hands, the responsibility is inevitably divided, and, therefore, in view of the grave risk of gonorrheal infection by indirect contagion, it is wiser not only to have separate instruments, but also a separate room for the treatment of noninfectious cases. The uncertainty of diagnosis forbids precise segregation, yet the mere fact of placing gonorrheal cases in one room to be treated by one set of instruments, and noninfectious ones in another, will serve as a constant reminder to the members of the staff of the ever present danger.

In the men's clinic, which may be frankly labeled "Genitourinary Clinic" or "Clinic for the Treatment of Male Urinary Diseases," the danger of infection is apparently not so great, while the number of postoperative and other nongonorrheal cases requiring the passage of instruments is small. Hence segregation of patients is probably neither required nor practicable, though obviously the most stringent asepsis is required.

A small clinic with one or two assistants presents no difficulty for the supervision of patients, as this may be made by the chief physician in attendance. But if the clinic is a large one the chief may find it convenient to spend the greater part of his time in carefully examining each new patient in conjunction with the physician to whom it is assigned. Under such circumstances the chief surgeon should note the condition of each returning patient at least every ten days or two weeks, so that he may be personally responsible for the action of his assistants. It is preferable that the clinic be open every day excepting Sunday. Yet it is usually convenient to divide the physicians into two groups, each visiting on alternate days. Indeed, some clinics do efficient work, although seeing their patients but twice a week.

So long as the attendance of patients at the clinic is limited to ten or fifteen patients, almost any organization or lack of organization will suffice to serve them. But if a larger attendance is expected or desired, certain special provisions must be made for the sake of efficiency.

Attendants. The gynecological clinic requires at least one trained nurse for every two physicians in attendance. These nurses see to the sterilization of instruments, the distribution of history cards, the inscription upon these cards of such data as age, name, address, occupation, etc., the distribution of patients to the physicians who are to attend them, and also assist in the actual examination and treatment. One nurse to each physician is obviously none too many to perform efficiently these manifold duties, if she can be had.

The male clinic requires at least one attendant for duties similar to those performed in the gynecological clinic by the trained nurses.

Ground plan and equipment. The clinic should be composed of at least three rooms, viz., waiting room, treatment room, and operating or cystoscopic room. If possible, there should be a separate sterilizing room or alcove, and a laboratory for microscopical and chemical analyses.

In the interests of decency it is proper, in the male as well as in the female clinic, that the treatment room be divided into a number of curtained alcoves, each containing an examining table, chair, and instrument table, leaving the remainder of the room in the form of a corridor running by these alcoves. At least one alcove should be provided for each physician in attendance, and much time can be saved by having extra alcoves to which the physician can pass for the treatment of one patient while the patient in the adjoining alcove is dressing or undressing.

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*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

In large clinics it will be found convenient to use the central alcove as a sterilizing and laboratory chamber.

The rooms should be so arranged that the patients enter from the waiting room into one end of the treatment room, where they receive their cards and pass thence to the treatment or cystoscopic rooms, leaving their cards with the physician after their treatment, and passing out by a door at the far end of the corridor in the treatment room.

The precise instrumental equipment of the clinic depends upon the taste and experience of the physician in charge as well as the generosity of the institution supporting the clinic. The distribution of a special alcove and special patients to special physicians would doubtless improve their work. The distribution of special instruments still further stimulates them to efficient service. Each clinic should possess a microscope and the equipment for rapid staining and examining of discharges for pus and gonococci. This method of diagnosis will be employed in each acute case, while in chronic cases the clinic will depend for its diagnosis chiefly upon the complement deviation test, which must be performed by the board of health or some other properly equipped laboratory.

Finally, the social and hygienic side of the venereal problem must be constantly borne in mind. The cases must be reported to the board of health, as required by law, and the individual patient should have impressed upon him the precaution required by his social circumstances, especially the danger of infection to his own eyes, and those about him, whether by sexual intercourse or by direct or indirect contact with the pus from the urethral discharge. The best way to impress these general precautions upon any patient is to distribute leaflets emphasizing them. These leaflets should be printed, not only in English, but also in the other languages chiefly employed by the patients who visit the clinic. The following form is a good sample for men. It was compiled by the late Dr. Follen Cabot.

Gonorrhea, or "clap," is a local contagious disease which requires treatment until the physician pronounces you cured.

To avoid infecting others and to prevent complications, as bubo, stricture, swollen testicles, etc., the following rules should be observed:

1. During the first few weeks walking should be limited. When the discharge is profuse you should keep off your feet as much as possible.
2. Do not use alcohol in any form, as it always prolongs the disease. Drink milk, tea, and from six to eight glasses of water during the day.
3. Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always aggravate the disease.
4. Always wash the hands after handling the parts. The discharge, if carried to the eyes, will cause blindness.
5. Sleep alone, and be sure that no one uses any of your toilet articles, particularly towels and wash cloths.
6. Never lend your syringe to any one, and as soon as you are well destroy it.
7. Be sure that the bowels move every day. If they are inclined to be constipated, take a dose of Rochelle salts before breakfast.
8. Do not use ginger ale, mustard or pepper, horseradish, or stimulating sauces on your food.

109 East Thirty-fourth Street.

HOSPITAL ACCOMMODATIONS FOR THE TREATMENT OF VENEREAL DISEASES.*

By S. S. Goldwater, M. D.,
New York.

Hospital accommodations in the city of New York for patients suffering from venereal diseases are conspicuously wanting. A careful investigation made five years ago showed that there were then available approximately 150 designated beds for cases of venereal diseases in male patients, and about fifty beds for female patients. At that time there were only five hospitals in the city that officially accepted the treatment of venereal diseases as part of their function. Although there has since been a slight increase in the number of hospitals engaged in this work and in the number of beds devoted to it, the general situation is not materially different from what was revealed by the investigation of 1908. There must be reasons for this alarming neglect of an important hospital duty in a city which is so obviously determined to keep abreast of the times in its public health activities. What are these reasons?

An important factor is the failure of hospital physicians and of hospital trustees to formulate a theory of hospital administration as a whole. In planning a hospital, or in formulating a scheme for hospital organization, it has not hitherto been the custom to ask, What properly constitutes a hospital? How should the clinical organization of a hospital be composed? What groups of cases, what clinical departments, should be recognized, in order to insure the greatest efficiency in the treatment of disease in order to provide for indispensable cooperative effort in the handling of complicated cases? To work out a theory of hospital organization and then to bring into being, at once or by gradual or successive steps, an institution to correspond to the accepted theory, would be to organize a hospital on rational lines. If hospitals were planned in this way, no phase of clinical medicine could or would be neglected. It would be found very speedily that complicated cases are not exceptional in hospital practice, and that the care of such cases implies the cooperation of a group of clinicians of varied training and capacities. The wide dissemination of venereal diseases, in their various phases, would soon be brought to light, and general hospitals would proceed to provide departments for the treatment of syphilis and gonorrhea, precisely as they would establish departments equipped to deal with every special branch of medical and surgical work. The many distinctive problems in clinical medicine would be recognized, and the interrelations of the various branches of medicine provided for.

Considerations of a slightly different sort would also forbid the neglect of venereal diseases in hospital work, if all the facts were generally known. When a hospital turns away a patient suffering from syphilis or gonorrhea in the early stages of either disease, certain economic consequences cannot be escaped. The temporary neglect of these diseases carries with it a penalty, not only for the patient and for society at large, but for the hospitals themselves. Hospitals which turn these cases away from their doors, heedless of the consequences, bring upon themselves the necessity of caring for these same patients in the later, more lasting, more hopeless, and more expensive stages of disease.

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*Some informal remarks (abridged) made at a stated meeting of the New York Academy of Medicine, February 20, 1913.

Prejudice against the diseases in question and also against the victims of these diseases, has been another potent factor in determining hospital policy in the past. However much the moral status of patients may vary, from the standpoint of the hospital all sufferers from "social" diseases are objectionable persons. The innocent woman and child are thus condemned to neglect along with the libertine. In the early stages of the disease, when its more serious consequences are still avoidable, the hospital declines to act; but later, when complications have arisen which threaten life, when irremediable harm has been done, the patient is welcomed to the hospital, partly because of the urgency of the symptoms and partly because the disease is now given another name. At a recent conference, a hospital trustee declared that no case of syphilis or gonorrhea was ever admitted to the hospital which he represented. A former house officer of the hospital, who was also present, replied that fully one fourth of all the patients treated in the hospital in question presented evidence of syphilis or gonorrhea in some form.

Too much emphasis has been placed upon the danger which is supposed to be encountered by hospital workers in the treatment of those afflicted with venereal disease. The danger of infection in hospitals is comparatively slight, and is least of all present in hospital wards which are specifically set aside for the treatment of known communicable conditions. In wards specially designated for this class of treatment, the sources of danger are not likely to be overlooked. When these sources are once recognized, suitable precautions are readily taken.

Hospital authorities are apt to think that their duty is done when these patients are referred to dispensaries. They assume that the dispensary treatment which is available to-day is efficient treatment, and that if the patient declines to go to the outdoor clinic when he is so advised, and consequently fails to get well, the fault is his own. The difficulties attending the treatment of these diseases in dispensaries are many. The continued attendance of patients cannot readily be enforced; the equipment of outdoor clinics is often inadequate; the hours at which treatment is offered are often inconvenient to the wage worker and act as a deterrent. If the facts in regard to dispensary work in this field were better known, two things would happen: First, the equipment of outdoor clinics for the treatment of venereal diseases would be improved; and, second, hospitals would be less likely to feel that their duty was done when a patient was brusquely turned away from the hospital door and advised to seek dispensary treatment.

It is gratifying to learn from Doctor Biggs that the hospital for the treatment of venereal diseases which the health department is about to establish will limit itself to the care of patients who obviously constitute a menace to their environment, and who cannot find elsewhere the care which they need. If it is to be the continued policy of the health department simply to fill such gaps as may be left in the field of medical relief by the voluntary and general municipal hospitals in the city, no strong objection can be made. If, however, the health department should propose, now or in the future, to undertake the treatment of syphilis generally, this could be done only in the face of a strong protest from the medical profession; if persisted in, such a policy would necessarily cause a great drain upon the city treasury, and would tend rapidly to impoverish the taxpayer. Besides, on general principles, it is a mistake to establish more hospitals, with facilities limited to the treatment of certain diseases or certain regions of the human body. The rate of hospital progress in the future will be proportionate to the acceptance of the theory of the superiority of the general hospital, with its group of coordinated departments. The Academy of Medicine and the medical profession at large should use their influence to spread this gospel of perfection, and thus to prevent as far as possible the multiplication of special hospitals, for only by yielding up their individual and separate existence can the latter overcome the handicap which tends to minimize their efficiency. In my opinion, a special hospital is an unsafe place for a patient because of its imperfect or incomplete equipment, and because of the limited professional outlook and capacity of its specialized staff. In such a hospital all possible emergencies and many common complications cannot effectually be dealt with, while in a general hospital consultants representing all branches of medicine and surgery are in daily attendance, and their combined skill and knowledge, supported by a proper equipment, can be brought to bear whenever needed.

It would be a mistake for the health department to proceed too rapidly in providing facilities for the treatment of venereal diseases or even for their diagnosis. It is true that voluntary hospitals have hitherto neglected this work, that they have failed to do what was plainly indicated as necessary; but public sentiment has been aroused, and the active campaign of education which has been going forward during the past few years has brought about a gradual change of sentiment on the part of the public, which has already reacted, and which is bound to react more and more, upon hospital policy. Old prejudices are being swept away; new conceptions of hospital administration are taking hold; on all sides there is a demand for efficiency in medical work, and the neglect of progressive and dangerous diseases during their earlier stages will no longer be tolerated. It is predictable that in the course of the next few years voluntary hospitals will do everything possible to render unnecessary any large participation in ordinary hospital work by the Department of Health.

I am not at all sure that the system of notification of venereal diseases which the health department is attempting to establish, and the legality of which has been questioned, represents a wise policy. If the names of patients who are treated in institutions must be reported to the department, while the names of those privately treated are not so reported, patients will naturally avoid hospitals and dispensaries, and will seek such private care as they may be able to afford. And if later the health department should require from private physicians the same form of notification which they are now demanding from hospitals and dispensaries, a strong incentive will thus be furnished to patients to undertake self treatment, while those who are not bold enough to attempt this are sure to select practitioners of an unscrupulous type, who have no sense of loyalty to the community and no respect for the sanitary code. That many patients will thus be driven into the arms of advertising quacks is inevitable. Unscrupulous individuals will seize the opportunity to thrive upon the desire of patients to avoid publicity. Such an outcome is not what the Department of Health is seeking. It should be the policy of the health department, therefore, to encourage the poorer classes to seek treatment in free hospitals and dispensaries; but I fear that no argument, no persuasion will suffice to popularize dispensary treatment if as an immediate result of registration at a public clinic there is to follow a branding of the patient as infamous.

The Associated Outpatient Clinics has undertaken to improve dispensary facilities for the treatment of venereal diseases. The Academy of Medicine has expressed its interest in the subject. The Department of Health should now stand aside for a period, and see how far the organized effort of hospital and dispensary managers will go toward providing for the treatment of venereal cases on a comprehensive and satisfactory scale.

MOUNT SINAI HOSPITAL.

THE RELATIONSHIP OF SYPHILIS TO INTERNAL MEDICINE.*

By WARFIELD T. LONGCOPE, M. D.,
New York.

The relationship of syphilis to internal medicine is a subject almost without bounds, and it is therefore necessary to restrict what I have to say to a limited field, and, indeed, do little more than touch upon a few important topics. The great importance which syphilis bears to the etiology of many well defined chronic diseases that incapacitate our population in the prime or a little after the prime of life is rapidly becoming evident. Indeed, as we investigate this one disease—syphilis—its effects become little less than appalling. On the general hospitals falls the burden of the care of most of these penniless, chronic sufferers, and during the entire year the majority of the ward patients belong to this group. The acute infections come spasmodically, but, like the poor, the chronic diseases are always with us. Principally by means of the Wassermann reaction we are rapidly discovering which of these chronic diseases are directly dependent upon syphilis, and let me call your attention for a moment to some of these.

The two situations in which *Spirochæta pallida* seems most often to persist and where it causes most trouble, late in the disease, are the cardiovascular system and the nervous system. The whole group of nervous diseases dependent upon syphilis, I should like to discuss later and at some length. But first let us see how frequent is cardiovascular syphilis and syphilis of some of the other systems which come directly under the observation of the clinician.

Of the cardiovascular diseases dependent upon syphilis, syphilitic aortitis stands out most prominently. This manifestation, which usually produces symptoms some ten or twenty years after the primary infection, forms the basis of three very serious conditions, namely, aneurysm, aortic insufficiency, and angina pectoris. It can now be shown definitely that syphilitic aortitis is the direct cause of from ninety to ninety-five per cent. of all aneurysms of the arch of the aorta, so that for practical purposes aneurysm of the arch means syphilis. The same disease is responsible for about seventy-five per cent. of the cases of aortic insufficiency in adults, and anywhere from thirty to fifty per cent. of the cases of angina pectoris in young adults. Aneurysm and aortic insufficiency are common diseases, and though angina pectoris is less often seen, it is still by no means rare. To the involvement of the coronary arteries by syphilitic aortitis, we must ascribe, as well, a certain proportion of cases of myocarditis, and it has been estimated that excluding aneurysm and aortic insufficiency, about twenty-four per cent. of patients suffering from cardiovascular diseases give a positive Wassermann reaction. With generalized arteriosclerosis, however, the conditions are different, and in only a small proportion of cases, about twelve per cent., is a Wassermann reaction obtained. If, therefore, we are to prevent the development of the severe cardiovascular affections, that as you know deal a fatal blow to so large a proportion of our population, we must direct our attention to two diseases of perhaps equal importance, syphilis and rheumatic fever. Were we to eradicate these two infections, chronic disease of the heart and aorta would, for the time of superannuation, be a rarity.

Of the general diseases next in importance, we must perhaps mention the bone and joint manifestations of syphilis. It can now be shown that many of the cases of chronic arthritis, osteitis, and periostitis are directly due to syphilis. A certain proportion of cases of cirrhosis of the liver, too, are caused by *Spirochæta pallida*, but it is difficult to obtain any convincing statistics on this subject. Along with cirrhosis of the liver, we must mention the fact that positive Wassermann reactions have been obtained in cases of splenic anemia or Banti's disease, and in some instances these conditions seem to be dependent upon congenital syphilis.

Recently the importance of syphilis as the basis of certain cases of neurasthenia has been forcibly impressed upon me. Nonne and the French have always insisted upon this point, and I have recently seen at least two patients in whom the underlying cause for general ill health and severe neurasthenic symptoms seemed to lie in a chronic syphilitic infection (totally unsuspected), which lurked probably in the aorta.

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*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

The list of diseases which until this time have had rather an obscure etiology, is quite a long one. I have time only to mention such conditions as paroxysmal hemoglobinuria, a disease which, according to recent reports, is almost constantly accompanied by a positive Wassermann reaction, and the appalling number of eye diseases which are dependent upon syphilis. According to Leber, excluding suppurative cases, the Wassermann reaction is positive in twenty-six per cent. of cases of retinitis, thirty-eight per cent. of iritis, and eighty-four per cent. of keratitis.

What now does this mean to the general hospital and indeed to the general public? It means that at the Presbyterian Hospital at times as many as one fourth of the patients in the medical wards give positive Wassermann reactions. Most authorities are now agreed that a positive Wassermann reaction in a syphilitic means potentially active syphilis, though the infection may to our eyes be latent. And, indeed, most of these patients are suffering from some chronic syphilitic affection. The statistics vary from time to time, but it may safely be said that the number of cases which give positive Wassermann reactions in the medical wards of the hospital, and I believe it equally true of all general hospitals in this city, as well as elsewhere, varies between twenty and thirty per cent. The bulk of these consist of cardiovascular, joint, and bone syphilis, or early syphilis of the nervous system, with occasional cases of late congenital syphilis. Many of these without the aid of the Wassermann reaction would not have been recognized as due to syphilis, and a few are being treated for conditions which are patently not syphilis; but not infrequently a positive Wassermann reaction has prompted a more careful special examination, and a lumbar puncture, eye ground examination, or radiogram, has revealed syphilis of the central nervous system, a chorioiditis, or irregular dilatation of the aortic arch. All of this means in cold figures that it costs the hospital, at perhaps a low estimate, about $25,000 a year to care for these individuals.

But the conditions in regard to the disease of the nervous system are perhaps even worse. Through the numerous investigations which have now been made upon the blood and spinal fluid in cases of paresis and tabes dorsalis, we know that for practical purposes both of these diseases are due to syphilis. Noguchi, by his beautiful demonstration of *Spirochæta pallida* in brains from cases of paresis, has now set beyond a doubt the fact that paresis is not a parasyphilitic affair connected in some indefinite way with syphilis, but that paresis is syphilis itself.

Through the kindness of Doctor May and Doctor Hoch, I have obtained some statistics from the State hospitals for the year 1911. From these we learn that 13.3 per cent. of all cases admitted to the State institutions were cases of general paresis, and during the year 1911 there were 758 cases. The total number of patients treated at the State hospitals September 30, 1912, was 31,624. I have myself made some rough calculations, and if we assume that thirteen per cent. of the patients were paretic, it is evident that on this day there were about 4,000 cases of paresis in these hospitals. The care of these patients probably costs the State almost a million dollars a year.

Swift calculated that, during the year 1910, there were admitted to all hospitals throughout the State from the island of Manhattan alone 822 cases of paresis and from the entire State of New York about 1,500 paretics.

In the State of Massachusetts, Cunningham has recently estimated that the care of cases of tabes and other syphilitic nervous diseases in the various insane hospitals costs about $300,000 a year. In Philadelphia at the City Hospital the cases of paresis, tabes, and cerebrospinal syphilis admitted to the neurological wards alone, form fifteen per cent. of the admissions, but further data than this I could not obtain accurately. This does not include cases admitted to the psychiatric wards.

Thus it can be seen what a tremendous economic problem this matter becomes, to say nothing of its humanitarian aspect, and we may safely say that the two most important and widespread diseases with which we have to deal are tuberculosis and syphilis. One hesitates indeed which to mention first.

The pathetic part about these cases of tertiary syphilis is that treatment is of such little avail. In a few cases the disease may be arrested and even the symptoms cured, but too often the damage has already been done, and though the life of the individual is spared over a few years, he remains an invalid, hampered by a leaking heart valve, a partial paralysis, or a stiff joint. In many cases the therapeutic outlook is even less favorable, and finally in the paretic absolutely hopeless. If only these patients could be seen, a correct diagnosis made, and proper treatment given at the beginning of the disease! Then the cure is possible and all this needless expense and suffering could be prevented. The fight against tuberculosis has been carried out with energy and with most creditable sympathy and aid of the public. The fight against syphilis is perhaps just starting in earnest, and as compared with the difficulties which arise in the control of tuberculosis, syphilis should be a comparatively easy matter to attack. Cooperation of physicians, hospitals, the public health department, and the public seems to be almost the only means to reduce the incidence and unsuspected ravages of this ubiquitous disease.

680 Madison Avenue.

HYPERTROPHY OF THE PROSTATE.*

A Discussion of the Treatment.

By John H. Gleason, M. D.,
Manchester, N. H.,
Surgeon, Beacon Hill Hospital.

Complete extirpation of the enlarged prostate is the procedure recognized as necessary for the relief of the progressive and distressing symptoms of prostatic hypertrophy.

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The prostate gland is approached in two ways, suprapubically and through the perineum. The writer advanced the theory in a paper published November 16, 1907 (1), that the route of the operation should invariably and always be one of choice, such choice being influenced mainly by the condition of the patient, the site and type of the tumor, and the safety of the procedure.

This plea for a selective operation I would make again, as I firmly believe that the best functional results and lowest mortality are to be obtained only through adherence to this plan. Until within the last few years the perineal operation for the removal of the hypertrophied prostate was the operation of choice in this country. We maintained that the period of convalescence was shorter, that the wound healed quickly with less danger of infection, and that the mortality was lower. Recently, however, the technic of the suprapubic operation has been so much improved, chiefly through the work of Mr. Freyer, who does an ideal, so called complete prostatectomy, that one must regard this as the operation to select in all cases if conditions warrant. I would, therefore, reserve the perineal operation for those patients who have hard fibrous prostates presenting low down in the rectum. The anatomy and surgical pathology of the prostate will be briefly alluded to in such a manner as would bear on the selection of the route and on the methods to be adopted in the proposed operative treatment.

It has recently been discovered that the traditional anatomical and pathological nomenclature as applied to prostatic hypertrophy is in need of revision. Tandler and Zuckerkandl (2) held that our accepted division of the prostate into two lateral and one median lobe does not correspond with the facts. They say that the anatomical capsule of this gland is derived from, and is intimately connected with the endings of the pelvic fascia that meet around the gland. They further state that it is impossible to enucleate the prostate out of this capsule, that it can only be dissected out, and that the term surgical capsule is misleading. They agree with the statement of von Frisch (3), that the prostatic capsule of the surgeons consists of compressed prostatic tissue, and are convinced that the hypertrophy of the prostate takes place exclusively in the part of the gland which extends from the internal urethral orifice into the openings of the ductus deferentes, and that this hypertrophy includes only the central nucleus of the gland.

The enucleation, therefore, of the hypertrophied part of the prostate occurs inside of a circular layer of compressed prostatic tissue, detached from the central part of the gland. This part of the gland is interwoven with the proximal end of the urethra which will always be removed in the suprapubic operation, together with the enucleated part of the prostate. If the operator is fortunate, the urethra will be severed proximally from the section of the urethra that carries the colliculus seminalis with the openings of the ductus deferentes. The nature of the so called surgical capsule will explain the surgical experience that the larger the prostatic tumor, the easier will be its enucleation. This is so for the reason that the extensive growth of the hypertrophied nucleus leads to excessive compression and complete separation of the peripheral glandular tissue.

There are often cases where there is difficulty in finding cleavage and smooth enucleation. In such instances the differentiation between the peripheral prostatic tissue and the central hypertrophied prostatic tissue is not complete. One then encounters dense strands, consisting of lobular septa and of rests of glandular tissue. In rare cases, where separation has not taken place at all, enucleation is out of the question, and the tumor has to be dissected out of the surrounding tissue. Wilson and McGrath (4), of the Mayo clinic, report a study of 468 prostatectomies. Of this series 387 cases (eighty-three per cent.) were of hypertrophy, the remaining cases being of tuberculosis or neoplasms. They report the ages of the patients whose prostates showed hypertrophy only, as follows:

50 to 60 years of age	65	(17 per cent.)
60 to 70 years of age	194	(50 per cent.)
70 to 80 years of age	116	(30 per cent.)
80 to 90 years of age	12	(3 per cent.)

It will be noted that all the patients may be assumed to have passed the most active period of sexual life.

In regard to the etiology of prostatic hypertrophy, Wilson and McGrath (4) discuss it under the following headings:

1. Is the disease an inherited or family tendency?
2. Is it a normal phenomenon of senility?
3. Is the disease analogous to the formation of fibroid tumors of the uterus?
4. Is the disease referable to errors of alimentation, as overfeeding, alcoholism, constipation, etc.?
5. Is prostatic enlargement the result of hyperemic processes brought about by overstimulation during sexual life?
6. Does prostatic hypertrophy result from acute and chronic prostatitis, gonorrhea, vesicular calculi, etc.?
7. Is prostatic hypertrophy an end result of general febrile disease, for example tuberculosis, rheumatism, gout, etc.?
8. Is it due to arteriosclerosis?
9. Is it a compensatory process in order to effect hypertrophy of the muscles of the bladder?
10. Is the process of prostatic hypertrophy neoplastic?
11. Is the hyperthrophy due to the absence, in declining sexual life, of some internal secretion from the testicles which normally inhibits the growth of the prostate?
12. Is the process a compensatory provision to supply a stimulus to a testicle with declining function?
13. Is the hypertrophy caused by urethral stricture?

One finds in looking over the literature regarding the etiology of this disease many able writers who advance and defend some of the foregoing theories. Also one finds equally able exponents of the fallacies of the theories in question. Coincidences often must be the foundation for such arguments. In view of these diversified claims of the authors as to the causation of the disease, one must agree with

Wilson and McGrath (4), in the statement that "no hypothesis has yet been advanced adequately harmonizing the facts." Freyer (5) has recently reported one thousand cases of total enucleation of the prostate, and as a result of a study of these cases he states as follows:

> I have analyzed innumerable cases and devoted much time and thought to this subject, but I have to confess that I have still no insight into the origin of this disease; and my researches would indicate that all theories hitherto advanced on this subject have no foundation in fact. My experience would seem to show that the previous mode of life led by the patient has nothing to do with the advent of this disease. It occurs with uniform frequency in persons who have suffered from urethritis and those who have not; in the married and unmarried; in the continent and those who have indulged in sexual excess; in persons of sedentary equally with those of active habits; in the gourmand and in the man who has eaten sparingly all his life. Even the purpose of the normal prostate in the human economy, always a subject of speculation, has been rendered more speculative still by the results of this operation. It is widely held that the prostate is some kind of an accessory sexual organ. But there is no diminution of the sexual capacity after enucleation of the enlarged organ suprapubically, the nerves controlling this function being left intact, though when removed perineally sexual desire would appear to be destroyed.

In regard to the question of anatomical regeneration following the operation of prostatectomy, and as an illustration of the late postoperative anatomical changes, Tandler and Zuckerkandl (2) describe the regenerative process noted at autopsy two years after prostatectomy. In this instance the cause of death was arteriosclerosis. Following the operation the patient had completely normal function of the bladder. On sagittal section the small, thick walled bladder is seen descending almost vertically as a narrow tube, and after a course of about two cm. it bends quite sharply forward upon itself and presents a small dilatation. The tube connecting this widened area with the vesical cavity is not urethra, but transformed bladder. Nowhere is a stricture of the urinary canal noted. The contraction of the circular muscular fibres of the bladder, especially the sphincter portion, has narrowed the lower part of the organ, thereby forming a canal. Of especial interest is the fact that the patient did not suffer from disturbance of the bladder function. Consequently, though at least a part of the bladder was transformed functionally into urethra, continence remained.

Thus, in the restitution of the normal function, the inferior part of the bladder, together with the sphincter, forms the urethra. Tandler and Zuckerkandl further conclude from their observations in their series of cases that the hypertrophy affects without exception the portion of the prostate which is turned toward the bladder. Basing their opinions, therefore, upon anatomical grounds, they state that aside from considerations of technic, prostatectomy performed through the vesical route is the method of choice. They further say: "As a principle, we would like to insist here that on surgical grounds we can hold only that method as justified in which the operation is performed under the guidance of the eye. The anatomical knowledge gives us the right to reject those methods by which the operator in some manner removes the prostate from its position with obscured finger."

In regard to malignancy in the prostate, Wilson and McGrath (4) state it is observed from earliest childhood until late old age. The ages of the patients with carcinoma tabulated by them are as follows:

1 was between 40 and 50 years of age.
9 (12 per cent.) were between 50 and 60 years of age.
29 (40 per cent.) were between 60 and 70 years of age.
30 (41 per cent.) were between 70 and 80 years of age.

Carcinoma may be present in the gland both primarily and secondarily. Carcinoma of the prostate occurs most frequently as the medullary or adenoid type. Young and Geraghty's (6) description of the macroscopic appearance of prostatic cancer is as follows:

> It is ordinarily hard, tense, and on pressure gives very little sense of elasticity which is generally not lost even in well advanced fibroid prostatitis. On cutting into the section it imparts a gritty sensation to the knife blade, which is absent in the lobulation so characteristic of hypertrophy. Occasionally, where the cancer has invaded a growth previously adenoid, a carcinoma may persist in this tissue, but it is seldom confusing. The finer details of the cut surface vary somewhat; irregularly interlacing bands of varying size are seen, with small, grayish yellow, isolated masses scattered here and there. The interlacing bands are fibrous in character, and the yellowish areas accumulations of cancer cells. This appearance is not present in fibroid prostatitis, in which the epithelial element frequently disappears and in which the surface is much more smooth and homogeneous than in cancer. Where cancer is infiltrating in character, fine yellowish lines can frequently be seen by the aid of a small magnifying lens. Usually one can be moderately certain of the cancerous nature of the tissue upon gross inspection alone. When the operator's knife, in making the capsular incision, cuts through tense tissue which does not bulge, the edges of which are firm and rigid, suspicion should be at once aroused.

These relatively small hard fibrous prostates are tumors very difficult to remove, especially by the suprapubic route. Cancer and hypertrophy are often observed together and usually present great difficulties in removal. Freyer (5) does not remove the malignant prostate unless the disease is confined within the so called true capsule of the prostate, that is, if it has not spread into the sheath or anatomical capsule. If the hard, apparently malignant prostate is movable in the surrounding tissues, he removes it, but if it is fixed he makes no attempt to do so.

CONDITIONS REQUIRING A PROSTATECTOMY.

In determining whether or not to operate for enlargement of the prostate, we must consider the symptoms depending on the enlargement from which the patient is suffering. These symptoms, according to Freyer (7), are as follows:

1. There may be from three to fifteen ounces of residual urine and the patient not using a catheter.
2. Extreme overdistention and dribbling.
3. Retention from time to time.
4. Ability to void some urine, although the patient is obliged to employ a catheter to obtain rest and comfort.
5 Entire dependence on the catheter.
6. Complete retention.

Judd (8) states: "As a rule, it is not advisable to operate if there are only from two to three ounces of residual urine and only slight symptoms. This condition may exist for years without becoming worse." One should operate, however, as soon as recurring retention or beginning infection shows that the period of toleration is past and not wait for those threatening symptoms which add so greatly to the mortality. Also, if malignant tumors of the prostate are removed early, some cures are to be expected. The late operations for malignancy are not apparently worth the patient's while.

CONDITION OF A PATIENT SUFFERING FROM PROSTATISM.

The primary symptoms are frequency of micturition, the act gradually becoming more difficult and prolonged. The stream starts slowly and sometimes dribbles. This condition is followed by a sense of fullness, burning, pain, and distress. These symptoms gradually become more and more pronounced, and partial or absolute retention may or may not intervene.

The secondary symptoms are insomnia, loss of appetite, strength, and weight. According to Judd (8), "these secondary symptoms may be caused by damming back in the ureters and pressure in the kidneys; or they may be caused by intoxication from the presence of residual urine. These symptoms are identically the same, and are probably caused by the same factors which produce symptoms in patients having insufficient kidney elimination." Judd further states that "it is very important to determine whether the patient is suffering from renal insufficiency alone, or whether he is suffering from autointoxication resulting from absorption and interference with kidney function, which interference is caused primarily by mechanical obstruction of the enlarged prostate."

Few patients suffering from prostatism are free from one or more grave complications, such as cystitis, vesical calculus, nephritis, pyelitis, diabetes, chronic bronchitis, cardiac disease, hernia, hemorrhoids, paralysis, etc. However, even in some of the most complicated cases, where atony or contraction of the bladder is more or less extreme and where there is marked secondary involvement, a successful prostatectomy will bring relief, the kidneys will be benefited, and the bladder will nearly always regain its function. It further stands to reason that one should urge an early operation and not defer the procedure until secondary changes have taken place, for a prostatectomy performed before sepsis is present is of slight gravity compared with one performed in an emergency or as a last resort.

ANTEOPERATIVE TREATMENT.

The preliminary treatment is of most importance. It should begin as soon as a careful examination has been made. The skin, kidneys, and bowels must be attended to. If possible, the bladder should be cystoscoped. Changes in the urine should be combated vigorously. In the more severe septic cases perineal or suprapubic drainage should be established as a preliminary measure in the treatment. That is, the prostatectomy is divided into two stages, one of drainage and preparation, and one of enucleation. With a permanent catheter in the bladder, the patient is placed in the same condition, so far as emptying the bladder is concerned, as he will be after the prostate is removed. By relieving the secondary symptoms first, the patient will be enabled to eat, drink, sleep, and improve in condition. He should be encouraged to take large quantities of water for several days in order to fill the circulation and to stimulate the kidneys into marked activity. During this period the specific gravity will change from 1.020 or more to 1.010 or less within a few days. One should not operate until this reaction has taken place and the specific gravity has risen. This preparation may take one or more weeks.

CHOICE OF OPERATION.

In a study of the details of the suprapubic and perineal operations, and taking into consideration the tissues involved in the dissection, and the immediate and ultimate results to be obtained, one at once concludes that there are many points of advantage as well as some disadvantages in either procedure. It seems to me that one should deliberately weigh the evidence presented, and, keeping in mind the element of safety, choose the operation that will promise the most favorable result in the individual case.

Reasoning in this way, one would say therefore that the operator should be as familiar with both the infrapubic and suprapubic methods of prostatectomy as with any other two methods of operating for one condition, and make his selection of route accordingly. The relative value of the statistics of the results of operators practising one method or the other exclusively should have no bearing or weight in the selection of the method of procedure. One must take for granted, that although this operation is comparable to none other in surgery owing to the advanced age to which it is mainly confined, yet if the cases are in the least selected, the mortality must be very small in the hands of an experienced operator. Hence a summary of cases from one clinic showing a slightly less mortality than that of another is of little practical value because of inequalities in potentiality in individuals.

The statistics of the operations done under favorable condition are invariably good. Freyer (5), in his 1,000 cases, reports fifty-five deaths or 5.5 per cent. mortality. The cause of death in twenty-four of these cases was uremia due to chronic nephritis. Freyer did not select his cases. Had he done so, to use his own words, "selection would have condemned a large proportion of them (1,000 cases) to a painful death after prolonged suffering, instead of the complete restoration to health that ensued in each case of recovery after operation."

In view of our present knowledge of the anatomy and pathology of the prostate the suprapubic method, as already stated, should be the operation to select unless there are strong contraindications. This operation has the marked advantage also of providing absolute control from the time the urine is first voided through the urethra. It enables one also thoroughly to explore the bladder. The suprapubic sinus usually requires a longer time to heal. The operation, however, is less likely to be attended with painful complications such as inflammation in the epididymis or testicle or wounding of the rectum.

The perineal operation should be reserved for those cases presenting hard fibrous prostates. If the firm or nodular gland is situated well down toward the perineum, and if one can reach the upper border of the prostate with a finger in the rectum, then, if the condition is uncomplicated by the presence of stone, the infrapubic route should be selected. In fibrous or malignant cases, where the gland must be removed by dissection accompanied by considerable force, this method is far safer, owing to better drainage and to one's ability absolutely to control hemorrhage with ample packing.

TECHNIC OF THE PERINEAL OPERATION.

The method of Young (9) has been my operation of choice for the perineal route for some little time. The patient is placed in the exaggerated lithotomy position, and a wide curved or inverted V incision is made and carried down to the prostatic capsule. The membranous urethra is incised longitudinally, and through this opening Young's tractor is introduced and passed into the bladder. The blades of the instruments are then opened and gradual traction is made upon the gland. The prostate is further exposed by blunt dissection, and lateral incisions are made through the capsule at either side of the median line outside the ejaculatory ducts. The tumor is freed from its bed by dissection with the finger or blunt instrument, the gland being held and guided by the metal tractor.

The complete dissection and enucleation of the gland is further aided by Young's forceps, which very materially aid delivery. When the tumor has been removed the wound should be irrigated, and a large drainage tube introduced into, and retained in the bladder, the wound partially sutured and packed with gauze. The tube is removed in from three to five days, and the patient is allowed to sit up as soon as possible. If the operation has not been complicated by too forceful dissection, the bladder function is restored early and the wound is usually completely healed in from three to five weeks.

TECHNIC OF THE SUPRAPUBIC OPERATION.

The operation of Mr. Freyer is the most complete in detail and the one to be adopted. A description of his operation in abstract is as follows: The bladder is washed and then distended with boric acid solution or sterile water. A vertical incision, from two to three inches long, is made. The recti muscles are separated or cut. The bladder is still further distended by an assistant and made tense as a drum. The prevesical tissues are scraped or pushed up out of the way for two inches above the pubes. The peritoneum is not seen. The knife is then plunged into the bladder and the bladder incision is enlarged sufficiently to allow its cavity to be explored thoroughly. An incision is now made over the greatest prominence of the prostate, which is usually a little behind the urethral orifice. It is very important to find the proper layer for a satisfactory and successful separation. If the first incision is carried too deeply the difficulties and dangers of the operation are greatly increased, and much trouble may be experienced from wounding the venous plexus surrounding the neck of the bladder.

When the forefinger has found the proper layer of easy enucleation, one or two fingers of the other hand are inserted into the rectum to act as a guide and to push the gland upward and forward. The separation is carried on behind, at the sides, and in front of the prostate, the finger being kept close to the prostate until the gland is free, except below where the urethra attaches it to the triangular ligament. The finger is then bent behind the urethra and hooks the prostate and urethra upward and forward, with the result that the urethra breaks off at or above the insertion of the ejaculatory ducts. The tumor can then be withdrawn from the bladder with suitable forceps. Before the finger is withdrawn from the rectum, the wall of the cavity which contained the prostate is compressed so as to lessen the size of the space that is left to heal. After the removal of the prostate the bladder is washed out through the urethral catheter which is still in position.

A large rubber tube is used for drainage, care being taken that it projects only about one inch into the cavity of the bladder. I always close the bladder wall tight around the drainage tube and invert the cut edges. This inverting of the incised wound in the bladder and the partial closure of the same very materially shorten the period of healing of the sinus. A small gauze wick is placed in the wound superficially and the parietal tissues are approximated in the usual way.

Much depends during the aftertreatment upon free drainage being maintained. The drainage tubes should be about one inch in diameter. This size of tubing enables one to irrigate the bladder through it with a glass tube or small glass catheter attached to an irrigator. At the same time there is space enough for the fluid to return freely through the drainage tube, thereby removing clots or other material without back pressure. Irrigation in this manner should be carried out once daily. The outer dressings should be frequently changed in order to keep the skin in good condition. The drainage tube is usually removed on the fourth to the sixth day. Irrigation is then continued through the sinus as long as it is practicable.

The patient should begin to sit up as early as possible, beginning with bed rest or pillows on the second day. The urine begins to come away through the urethra after about twelve or fifteen days. At the end of three weeks very little leaks through the suprapubic sinus.

There are no half measures about this operation. The patient always regains the power of voluntary micturition without the aid of a catheter. There are no instances in my experience of relapse of symptoms. Time only seems to consolidate the cure, for after a lapse of months, patients state they feel ten or more years younger than before the operation.

CONCLUSIONS.

1. We must acknowledge that the recent work of Tandler and Zuckerkandl has substantially advanced our knowledge of the anatomy and surgical pathology of the prostate. It has further changed our ideas as to what actually takes place in the operation of prostatectomy and the anatomical regeneration therefrom. Most remarkable, however, is the fact that a hypertrophy of all parts of the prostate does not exist. Contrary to our old beliefs, the middle lobe and portion toward the bladder is always affected. Remarkable also is the fact that the prostate can be only artificially enucleated from its anatomical capsule. The capsule in the surgical sense, as has been already stated, is formed of atrophied prostatic tissue, which has been compressed by the hypertrophied portion of the gland. Therefore, these aforesaid facts resulting from the work

of these investigators, are of extreme importance and form an essential advance in regard to the surgical aspect of the prostate.

2. The proper and early treatment of a patient suffering from prostatism is most essential. The catheter should never be used habitually, and if its use becomes necessary in relieving acute retention, then the most scrupulous asepsis should be observed. Experience has demonstrated that the benign prostate has a tendency also to assume cancerous degeneration under the irritating influence of prolonged catheterization and its resulting complications. The ideal time for operation is before toleration and infection, and should be performed as soon as the presence of sufficient residual urine indicates the progression of the disease.

3. Prostatectomy is not an operation to be attempted by an inexperienced surgeon. If the veteran in judgment and technic is ever needed in surgical procedure, certainly then the operator of known quality and skill is required in the management of prostatectomies. Even the most experienced are frequently puzzled with the unknown factors and conditions met with in operating by either route. The mechanical ability of the operator to perform certain acts with absolute regularity and precision is of great importance in regard to its bearing on the length of the operation. The action of an untrained individual's mind and nerves under varying degrees of excitement, is one of the factors that are extremely hard to control, especially if the case is that of a hard fibrous gland. Satisfactory work can be accomplished only by the man whose mind and nerves have been trained to that very sort of thing. They must work with automatic rapidity, without effort, under all circumstances, thereby saving time. There is also then as a result less handling of the parts, less resultant shock, and less anesthesia required. The rapidity with which the operation is accomplished on account of the advanced ages of these patients is of the most vital importance; furthermore, the anesthesia should be profound only during the period that elapses between incising the skin and the delivery of the prostate from the bladder.

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967 Elm Street.

GASTROINTESTINAL THERAPY.*

By John N. Upshur, M. D.,

Richmond, Va.

I desire in presenting the remarks which follow to enter a protest against the lodgment in any one's mind of so narrow a conception of the word therapy as to restrict it to the administration of drugs. On the contrary, I insist that it shall have the widest possible scope, the fullest meaning of the application of every legitimate remedy, no matter what, that may be used for the relief or cure of the affections of the stomach or bowels. Many years of observation of affections of the gastrointestinal canal have convinced me that treatment of these disorders is too commonly narrowed down to medication solely of the stomach or bowels, and so called dyspepsia comes to be an opprobrium to medical science, often through the guessing treatment of some doctor. If the digestive disturbance is not due to organic lesion of the stomach or bowels, such as ulcer or cancer or pyloric constriction from contracture of the cicatrix of a healed ulcer, causing gastric dilatation; or, in the case of the intestines, adhesions, such as a Lane's kink, or otherwise; in a word, if functional, most commonly the digestive disturbance is due to reflexes from trouble located elsewhere: liver, kidneys, heart, pelvic organs, or gallbladder. Or it may be that nervous let down may be behind a too slow gastric motility, allowing fermentation of a most distressing character, resulting in time in a mechanical dilatation of the stomach, and this, perchance, may be emphasized, because, as the result of a reflex and intractable condition, a pylorospasm may be developed; in other words, a number of lesions, outside of the stomach, any one of which would be sufficient to form a vicious circle, all of which causes must be removed to bring about a cure. The investigation of gastrointestinal disturbance by test meals and gastric analysis to determine the relative proportion of the constituents of the gastric juice may, or may not be of value. The analysis can at best tell us what the conditions are at the time that the test meal is withdrawn, but that may not indicate that the excess of butyric and lactic acids, and absence of the proper proportion of hydrochloric acid is really the true condition responsible for defective digestion. We do not know how much gastric juice it takes to digest a meal, and if the innervation of the stomach is faulty and consequently motility is defective, even a normal gastric juice cannot complete the digestion of the stomach contents, and fermentation of necessity takes place, and mechanical dilatation of the stomach results. Nor must it be lost sight of in this connection that the capacity of the stomach varies in different individuals. A capacity, however, in the adult under 800 c. c. or over 2,000 c. c. is abnormal (Gillespie). Then, too, the stage of digestion must be considered.

The first stage lasts from fifteen to forty minutes, the acidity of the contents is always rising, but the hydrochloric acid being secreted is in combination with the salts and proteids, so no free hydrochloric acid can be detected. This stage is often marked by the presence of lactic acid in the contents of the stomach; it may be contained in the food, or be due to the action of microorganisms. The hydrochloric acid, upon which the acidity of the gastric juice is based, being in combination with proteids and organic salts, exerts weak antiseptic action and the lactic organisms flourish unchecked. In the second stage the hydrochloric acid is still being secreted, the total acidity of the gastric juice continues to rise, and the hydrochloric acid is now susceptible of detection; more is being secreted than can combine with the proteids and some antiseptic action is exerted, fermentation is checked, and lactic acid disappears. When the maximum acidity has been attained the third stage follows, the gastric contents have largely been propelled through the pylorus, and the amount of hydrochloric acid in combination with the proteids is diminished and the total acidity falls. The duration of the several stages of digestion is affected by the kind of diet, and the amount of proteids in consequence, if largely carbohydrate, the first stage is short, and the second stage is characterized by a larger amount of hydrochloric acid, though the total acidity does not rise, nor is it even well marked. If the meal is largely proteid, free hydrochloric acid is slow in appearing in the gastric contents, the total acidity may rise to a high point, though the free acid present may be small in amount. In the third stage after such a meal, the total falls, and this condition may be slow and not attained for several hours.

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Hence the value of a mixed diet of proteids and carbohydrates that a happy medium between these two extremes may be reached. The cited facts being true, and I believe they are not disputed, emphasizes the fact that the conclusions drawn from the analysis of a test meal may or may not be correct. Clinically they give emphasis to the direction of a correct diet in pathological conditions of the gastrointestinal tract. This point is to be reached only by the most analytical investigation into the diet of the patient, and its ordering so as to meet the conditions demanding relief. Nor must we forget that functionally the stomach may be all right in itself, and some outside affection of appendix, gallbladder, pancreas, or pelvic viscera may lie at the bottom of it all, and be relieved only by prompt surgical intervention. Nervous breakdown in the business man, abuse of tobacco and alcohol, eyestrain, the tension of household cares, and other exacting duties in women may find their climax in intractable gastric disturbance, manifested by impaired gastric motility, fermentation, gastric dilatation, and acute pain, secondary nervous depression, and paroxysms of hysteria. In these cases all the drugs in creation will not effect a cure, or even retard the progress of the trouble. Metabolic disturbance becomes most marked and nutrition suffering carries in its wake anemia and emaciation, and a still further outcry from the suffering nervous system. Here the first essential in the therapy is rest, rest of body and mind; all other treatment will be of no avail without it.

Restoration of tone in the nervous system results in improved gastric motility, therefore a more thorough because more rapid digestion, gastric dilatation diminishing and finally disappearing. Furthermore, in the most simple forms of indigestion, functional in character, short in duration, and brought on by imprudence in diet, quiet, abstinence, and a good mercurial purge will remove the trouble. But we must not lose sight of the fact that the human stomach is given less chance, and is more abused than any other organ in the body and it is kept more constantly on duty. The unrestrained appetites of men and women, many of whom live to eat, and do not eat to live, reckless of the time of meals, eating heavy meals, rich, stimulating, and of difficult digestion, at late dinners, or late at night, when the body is weary after the day's labors, or after the tiring exertion of sight seeing, or responding to the demands of society. At night, when the viscus should have a time for rest, when the machine is slowed down to its limit for repair, the stomach is working on laboriously to rid itself of the late meal, and rest and repair come not. After a night disturbed by dreams, the man or woman awakes in the morning; languid, "headachey," bad taste in the mouth, foul breath, little or no appetite for breakfast, and not feeling up to the mark until after midday. And then comes a repetition of the day before. Look at the girl in fashionable society, night turned into day; consider what she eats, and when, and how; combinations of salads and sweets, champagne and Rhine wine and sherry, etc. Consider the abomination of dress in the modern corset, confining and displacing her viscera, distorted spine from French heels on her shoes, the shock to her nervous system through sparsely clothed extremities and improperly shod feet. Look at her at the season's end, when the wreck is brought to us for repair, thin, pasty complexion, digestion broken down, constipated, suffering with dysmenorrhea or amenorrhea, nervous, cross, not fitted to be a thing of beauty or a joy forever. What of drugs here? Nought. Absolute reformation from all of these things only can bring relief. Yet how often do we see cases such as I have mentioned that the doctor is trying to relieve or cure by pouring down drugs, digestive ferments, or all sorts of proprietary concoctions, etc., *ad nauseam,* and the patient drifts to some quack to the opprobrium of legitimate medicine.

But there is another side and a graver one to this discussion. At the recent meeting of the State Medical Society of Virginia, a joint paper on Intestinal Stasis was presented by Dr. J. Shelton Horseley and myself. That paper was based on three cases of intractable indigestion. Pain was a constant symptom in all three of them, in one just in the left hypochondrium, bowels obstinately constipated; in another the same symptoms of constipation, but pain running across the hypogastric and iliac regions, with pasty complexion. In the third, the discomfort was intense, burning pain coming on in the afternoon and increasing in violence until at times it was agonizing. Drugs proving futile, these cases were referred to Doctor Horseley and were operated in by him. Extensive adhesions, chronic appendicitis, and disease of the gallbladder were found. All made perfect recoveries (*American Journal of Surgery,* December 12, 1912).

A fourth case has recently come under observation, that of a patient, fifty-seven years old, clergyman, usually in good health, in charge of a large church, and led an active life, had not been up to his usual standard of health for several months, tongue obstinately coated with a brown fur, no evidence of indigestion, except heart burn, so trifling that he did not mention it to his doctor. He was seized on January 12th, while closing the Sunday school, suddenly became faint, lost consciousness, and then vomited, throwing up his breakfast undigested and about a pint of blood. A second hemorrhage occurred at 3 p. m. the same day. The shock was profound and it was several hours before he reacted under the most powerful stimulation of strychnine, adrenalin, atropine, morphine, and ergotine. The next day his condition was very good. On the morning of January 14th he had the third hemorrhage and his bad condition became extreme. Ulcer of the stomach had been diagnosticated when he was first seen on the 12th. Doctor Horseley was called in consultation for transfusion of blood and further surgical intervention. The patient was hurried to St. Elizabeth Hospital, it being a question if he would reach there alive. Transfusion was immediately performed, abdominal section made, and an ulcer found on the anterior inferior wall of the stomach, about one and a half inch from the pyloric orifice. The pylorus was closed and a gastrojejunostomy done. At the time of operation, before the transfusion, the hemoglobin was twenty per cent.; ten days after the operation it had risen to seventy per cent. This man has made an uneventful recovery, and has had scarcely a hint of indigestion since the operation.

I have referred to these cases to call attention to the fact of how very obscure these serious troubles of the stomach may be, and especially to emphasize the great importance in cases of intractable gastrointestinal disease, of calling to our aid the counsel of a competent surgeon, and further to emphasize the fact stated in the opening of this paper, that often the cause producing gastrointestinal trouble is some organic lesion, if not cancer or ulcer, situated outside of the stomach.

I wish briefly to call attention to two drugs, useful above all others in my experience, in the treatment of digestive troubles, *strychnine* and *condurango*. The physiological action of strychnine points to its value, a bitter tonic, a stimulant of the vasomotor nerves on the muscular coat of the stomach and bowels, quickening gastric motility, vascularity of its mucous lining, and consequently a gastric juice of improved digestive power is secreted. By quickening peristalsis, it helps the normal emptying of the bowel. It stimulates the motor nerve cells of the spinal cord, the cardiac motor ganglia, the respiratory and vasomotor centres of the medulla, contracting the arterioles all over the body (although by full doses they are relaxed), and the excitability of the sensory nerves and their terminal elements. The result is that respiration is increased and the blood pressure raised (Potter, in *Practical Therapeutics* by Foster, p. 26).

Condurango figures sparsely in literature, and I fail to find anything satisfactory about it. It is described as an astringent bitter tonic. But careful clinical observation for several years proves it to be more. I have observed that in susceptible patients it produces ringing in the ears and vertigo. It has demonstrated a special power over the muscular coat of the stomach by increasing its motility, and I have an abiding faith in its efficacy in that form of digestive disorder characterized by distressing flatulence. I usually give it in forty drop doses, of the fluid extract, sometimes alone, at other times in combination with strychnine and dilute hydrochloric acid.

In conclusion, to sum up, it is contended that the simpler forms of gastrointestinal disorder are purely functional, from acute disagreement of some article or articles of food; that a more obstinate form is due to no fault of the stomach primarily, but is the result of reflexes of a lesion or lesions elsewhere forming a vicious circle, or to eyestrain; that the most intractable cases that we see depend upon early pregnancy, when the uterus is found at too low a level and retroverted, to some pelvic lesion, to appendicitis, galltract disease, intestinal adhesions, etc.; that in these latter cases the assistance of a competent surgeon should be sought early as giving the only promise of cure.

210 West Grace Street.

MEDICAL EXPERTS

And Expert Medical Testimony.

By Henry M. Friedman, M. D., LL. B.,
New York,
Acting Assistant Surgeon, United States Public Health Service.

In this modern strenuous age in which we are living, we are judged, as a class, not so much by the work we actually accomplish as by that part of it which succeeds in reaching the eyes and ears of the public through the medium of utterances of men supposed to be representative of our class. This is especially the case at the present time with the medical profession. They have been judged, and misjudged, by the general public at least, from the actions and especially the utterances of the few who have managed to drift into the limelight as expert witnesses. When the physician testifies on opinion as an expert in medical questions, he is presumed to be voicing the opinion of the entire medical profession, and to be representative of its ability and honesty. He is understood to be giving to the public the gist or result of all the work, research, and knowledge in that branch of the science whereof he speaks. It has not, therefore, enhanced the reputation of the profession when experts so frequently give widely different and wholly inconsistent opinions on apparently similar matters. Many of the laity consider such diametrically opposed statements of opinions as expressions of ignorance, but more especially of bias and dishonesty. There is a tendency to deny their need or usefulness. Yet the province of the expert has been recognized for a long time. The more the sciences, and especially their individual branches, become separated and crystallized, the more removed will they be from the knowledge of the general public, and the more will it be necessary for the public to call to its aid such persons as are thoroughly versed in them. This is the age of the specialist in all branches of human endeavor. In the medical sciences especially, has nearly every branch of it become so vast, every new discovery an opening for trackless fields of research, that it is well nigh impossible for an individual to keep pace with more than one branch. Indeed, to illustrate the rapid strides made in the medical sciences, it can well be said that the expert of yesterday would be an ignoramus to-day. To be sure, the range of the expert may be very narrow, but in the details of his own specialty it is very broad. It is for this reason that he is called upon to give his opinion on the significance of matters falling within his sphere of activity, on the assumption that somewhere in his studies and researches he has come upon conditions similar, or as nearly similar as possible to the condition in question. In jurisprudence these opinions are given for the information of those called upon to determine controversies in which the scientific question is a part, but who from ignorance of the scientific subject are unable to form an opinion of their own.

Opinion evidence is the definite and necessary outcome of the Anglo-American jury system. On the continent, where the jury system is not an established institution, such evidence has as yet no place. It was well understood even in early times that while juries were the sole and final arbiters of questions of fact, they were recruited from the general citizenship, who had only a general and therefore inaccurate knowledge of even general topics, who were not particularly conversant with any one topic, and who had therefore to be assisted in deciding matters involving special knowledge by those having this special or expert knowledge. The theory on which opinion evidence was nevertheless sought to be excluded from the legal proceedings, whether it was lay or expert, was that the witness must be a "knower," and not a "guesser." "We want what you know and not what you think. We can all opine as well as you, but we cannot all have personal knowledge of the facts." In early jurisprudence, moreover, it was a serious objection to the admission of expert or other opinion evidence that the witness could not be prosecuted for perjury in knowingly giving a false opinion. Now it is just as much a crime to give false opinions as make false statements of fact. Both are perjury.

The rule on the admission of opinion evidence is that only when the jury is for any reason incompetent to infer or form an opinion, will such evidence be admitted to influence that body; or, if the facts alone were admitted, they would be stated so poorly that their significance could not be comprehended sufficiently for the jury to form an opinion of its own. "The poverty of human language makes it impossible to separate in words the minute and transient facts, by a witness, from inferences as to some other facts irresistibly connected with the former, in his own mind" (1). Opinions are admitted in any event only to aid the jury and are in no manner binding on it. In scientific matters, even if the facts were lucidly stated, their meaning would not be comprehended by those not familiar with these subjects, and would be tantamount to the poorly stated facts of a layman. For this reason, after all the facts have been stated, an opinion becomes necessary in order to characterize and summarize for the jury the facts already stated by other witnesses. The admission of expert or opinion evidence on given or observed facts really amounts to making the expert or opinion witnesses collateral jurors on the scientific matters involved in the controversy. Their opinions are then submitted to the real jury as new facts to be considered with other facts adduced at the trial. This doctrine is tenable when it is considered that if the jury was composed entirely of such men as have been trained in the branch of science around which the subject of the trial is centred, the mere presentation to them of the facts in question would be sufficiently comprehensive on which to base an opinion. Conceded, then, that the jurors have not this training, they can form no opinion, and they must delegate this power to such individuals as have had this training—the expert witnesses. The opinions of the experts must, thereafter, become their own. In performing its function the jury really acts in an expert capacity, only that it is on facts capable of common understanding. It is for this very purpose that they are chosen. Logically carried out, this theory would mean the selection of juries, and possibly only collateral to the main or principal juries, who are familiar with the subject on which they are to be called to pass judgment. Judges decide legal questions, on which they are the constituted qualified experts; business men should decide business and commercial method and usages under litigation; and medical men or scientists should act as jurors or quasijudges in deciding medical or scientific questions.

Even in ordinary, that is, lay matters, the differences between expressions of fact, opinion, and knowledge are not very great; they frequently run into each other or are used interchangably. Even the simplest sensations require a degree of judgment for their proper interpretation. In other words, statements purporting to be of fact are frequently only statements of opinion. The line of demarcation between them is never very sharply drawn. In any event, however, if the opinion given or intended to be given is of such a nature that from the facts presented the jury itself is able to draw conclusions or make inferences, it is inadmissable because irrevelant. But since, in scientific or technical matters, no such ability usually exists in the court or jury, the latter, therefore, being unable to determine the scientific or technical weights of the facts presented, must call to their aid those who can interpret the technical language into the lay. Yet even though the necessity for expert witnesses was long ago recognized, they always acted independently of the legal proceedings, that is, collateral to them. For their testimony was admitted only by the special consent, either actual or implied, of the court, and then carried no more weight, if any, than the court or jury chose to give to it. Here again the early jurisprudence objected to the admission of opinion witnesses on the ground that their admission served to usurp the opinion forming function of the jury. The term "witness" itself, they said, implied presence and therefore *personal* knowledge of the facts.

As early as the year 1353, the English law reports cite a case in which "skilled surgeons were summoned from London to inform the court whether the wound was mayhem or not" (2). Subsequently, as the sciences became more highly specialized and separated, this usage became an established step in legal procedure. "I grant," says the court, "that matters arise in our law which concern other sciences and faculties, and we commonly apply for the aid of that science or faculty which it concerns; which is an honorable and commendable thing in our law" (3).

Skilled or expert witnesses can give their testimony only after it has been established that they are in fact skilled and expert in the branches of the science about which they are to testify. The competency of skilled witnesses was presumed to have arisen on the theory of "experimental qualifications"; that is, they were such persons as gained their particular skill from devotion of all their time and energies to work, research, and especially experimentation in the subjects about which they were to testify. The value of experimentation as a means of acquiring proficiency and expert knowledge was, then, recognized, even in very early times. Yet because of this extraordinary exception to the rule of procedure, allowing the introduction of evidence not of fact, it had to be clearly established before the admission of this evidence that the person to be introduced as an expert was one in fact, because of his "experimental qualifications," and one, therefore, on whose opinions reliance could be placed. The competency of an expert was a question solely for the court to determine (4). Only *prima facie* evidence of competence need be established before allowing the expert to testify (5). The court's decision on this question is not, however, final. It is reviewable by an appellate court (6). The judge must decide in the first instance who is an expert and who is not. He is thus an expert on experts.

A physician, though not qualifying as an expert, may, however, after detailing all the facts within his personal knowledge, give his opinion on them, but, as in all cases, the jury decides what weight, if any, shall be given to that opinion (7). The courts are at present inclined to give more weight, and so to advise the jury, to the opinions of nonexpert physicians having personal knowledge of the facts, than to those of experts; and in the case of insanity, even though the physician is not conversant with the subject (8).

After the qualifications of the expert have been primarily established, by having set forth his length of practice, specializations, institutional affiliations, authorship, etc., he can give his opinion on the matter in question. The crossexamination which follows has for its object mainly the determination of the witness's degree of expertness. If in the opinion of the court the expert does not evince sufficient capacity in his branch it will order the jury to disregard his testimony (9). Even if admitted the jury decides for itself the value of that opinion from the general impression of credibility made by the witness, and on his apparent skill and learning. When admitted, the opinion becomes new fact, the value of which is decided as is the value of the other facts.

In most States it is not essential that an expert in medical matters be a licensed physician, on the ground that the line between chemistry, biology, and medicine is too indefinite to admit of practical separation. Indeed, in many branches of the medical sciences the research work is carried on almost entirely by nonmedical men. They teach in the medical schools as well as in the postgraduate schools. The immortal Louis Pasteur is a shining example of a nonmedical man making discoveries in medicine.

The crossexamination of the expert is carried out by one of the attorneys. His knowledge of the medical question before the court is usually very meagre. Often it is based on a hurried reading of medical works on the subject. In actual practice, however, each side hires experts whose duty it is, beside testifying, to prepare the questions to be asked the opposing expert on crossexamination, in the efforts to discredit him in the eyes of the court or jury. The questions are not formulated with a view toward arriving at an honest and fair determination of the witness's qualification and ability, but are designed almost entirely to catch him on such usually insignificant details that his confession of ignorance of them will create the impression that the witness is incompetent, and in this way discredit his testimony. Further to test the expert, standard medical works can be introduced to show that the statements made on this examination were false. In no case, however, can medical works be used to establish or rebut medical questions before the court. These can be determined only from the stated opinions of the experts if admitted. Dry opinions are not admitted. They must be preceded and based on facts adduced at the trial, and stated either by the expert himself or by other witnesses. As regards the value of standard works to prove a fact, the courts have admitted the value of standard textbooks in their own profession, and have used them as the bases for their decisions. The United States Supreme Court held that "treatises written by jurists and commentators who by years of labor, research, and experience have made themselves peculiarly well acquainted with the subject they treat, are resorted to by the courts for trustworthy evidence of what the law really is" (10). This applies to medicine far more justly than to law, since with all its inexactness medicine is a far more exact science than is law. Medicine deals with facts in Nature, fixed and settled. Its inexactness lies only in the incompleteness of the knowledge therein at the present time. Law varies according to the body of law makers that enact it, or according to the thoroughness of the judge who interprets it.

When opinion evidence is admitted from lay witnesses, the opinions must be based on facts within their own knowledge. Witnesses who qualify as experts, on the contrary, may give opinions on facts not within their own knowledge, as well as on facts that are. An expert may give his opinion on the significance of facts stated to him, which facts arose at the trial, but of which he need have no personal knowledge. In most jurisdictions, the facts arising at the trial must be formally propounded to the expert in the form of a question before an opinion can be given, even if the expert was present at the trial and heard the presentation of the testimony. This *formal* statement of the facts, in question form, is called a "hypothetical question." The "hypothetical questions" are long and involved, having a tendency, and are unquestionably designed to confound those who should be enlightened by them. They are prepared in advance of their proposition, and usually by the expert for whose opinion they are designed. Often these questions are so long and involved that without such previous preparation it would be hard to follow the trend of thought contained therein and give any answer at all (11). In some States, and with far more logic, an expert can give an opinion on the facts he heard adduced at the trial throughout which he was present, without waiting for the propounding of a formal or "hypothetical question." He must here state the facts on which his opinion is based, and his reasons. "When an expert states his reasons or 'facts,' the court will be ready to listen to his conclusions or inferences." In these jurisdictions he becomes really a juror on the scientific facts, but collateral to the main or real jury.

In the subject of insanity we have the stumbling block for the experts. The indefiniteness of the whole subject, and the consequent difference of opinion thereon, has been the means of casting more discredit on the medical profession than any other element (12). The public seems willing enough to accept, often without question, expert opinion on other medical matters, but when psychiatric questions are concerned they become very skeptical. In common law times every one was allowed to give opinions on sanity or insanity. "All men," every one said, "could appreciate how rational persons acted, and if they acted differently they were not normal mentally." This rather extreme point of view is not now held by the courts generally, because even they seem to recognize the fact that psychiatry is a subject in which special training and study are required, and which cannot, therefore, be within the understanding of every one, at least not sufficiently to justify the taking of liberty or property. In the determination of the mental condition of a deceased person, all jurisdictions allow lay witnesses to testify. Very recently, and owing largely to the frequent and almost "scandalously" opposed opinions expressed by different alienists on the same statement of fact or on a given case, there has been a growing tendency on the part of the courts to minimize the value, and even the sincerity of expert opinions. They seem to lend to a reversion to the old rule of allowing all witnesses to testify on this condition, and even to give to the testimony of the lay witnesses more weight than to that of the experts when they testify in the same case. A judicial dictum illustrating this tendency held: "If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my opinion, that of medical experts upon the question of mental unsoundness. They may be able to state the diagnosis most learnedly; but upon the question whether it had at a given time reached such a stage that the subject of it was incapable of making a contract, or irresponsible for his acts, the opinions of his neighbors, if men of good common sense, would be worth far more than those of all the experts in the country" (13). While part of this *opinion* is not without truth—that part which doubts the ability of experts to determine from the conflicting statements regarding the acts of the individual in question, the mental capacity of such a one—yet it need not be given much heed, because, on the whole, it is only an expression of general contempt for the integrity of those engaged in a fellow profession. Judges themselves pass opinions on statements of fact of which they have no personal knowledge. That they could pass more accurate opinions were they personally acquainted with the facts goes without saying, but obviously that could not be possible in all cases. Giving an opinion on the common sense capacities of individuals itself savors of expert opinion. Indeed, it is far harder to form an opinion on a man's common sense, because that question involves a multiplicity of circumstances and facts, than on the question of his sanity, the latter being usually based on particular actions or expressions of the mind.

Expert opinion is to be given only in the light of, or received as a statement of fact. As a mere conjecture it has no right to jeopardize the life, liberty, or property of an individual. "Expert opinion is really fact, but not of personal knowledge" (14). Scientific data or doctrines are facts, at least until such time as new discoveries change them, and then the new discoveries must be the generally accepted ones in that subject, and not present only in the minds of the discoverers. A standard is thus established in medicine. In a homicide case, however, where an expert used a then recognized chemical test, and found poison with it, a new discovery repudiating that method was held sufficient to reopen the case. Nevertheless, though the medical sciences are not exact, there have still been established incontrovertible facts which can universally be accepted, freed from any taint of uncertainty, and on which differences of opinion can be placed at the door of insincerity or ignorance. In the minority decision of the United States Supreme Court on the interpretation of the Food and Drug Act of June 30, 1906, the court recognized this principle when it held that "granting the wide domain of opinions and allowing the broadest range to conflict of medical views, there still remains a field where statements (of conflicting opinions) are downright frauds and in no case expressions of opinion" (15).

The admission of expert opinion to influence the court or jury, is, then, only a rule of necessity, because in the absence of better evidence the opinion becomes a fact and can thus be admitted. Medical opinions usually concern the "internal actuality" rather than external appearances. The former is determined in a given instance by deduction based on analogical studies, researches, and experimentations, with as nearly similar subject matters as is possible. "Things equal to the same thing are equal to one another," even though it is really in mathematics only where we can have absolute certainty or equality. Differences of opinion on the same facts is the same thing as different versions of the same happening by different witnesses; they are influenced by the personal equations of the persons stating them. When the only facts adduced are these opinion facts, or when the opinion facts preponderate, they constitute the preponderance of evidence, on which a contrary finding by the court or jury is "against the weight of evidence" (16). "When there is no conflict in the expert evidence the jury cannot use their own 'judgment' and find to the contrary." Very few courts adhere to this principle. Most of them, even though the opinions of the experts on both sides agree in every respect, direct the juries to disregard them. On questions of insanity especially have the juries been told to use their "common sense" rather than to rely on the opinions of medical men (17).

While it is true that the opinions of some of the experts vary according to the interests which they represent, yet most of blame can fairly be placed at the door of the judicial procedure which encourages litigants to chose their own judges of the scientific questions involved—the experts. For after an expert is qualified he is asked to give his own individual opinion on the question. He is not required to state the accepted doctrines or teachings on this subject. If only a statement of the accepted doctrines was asked and stated, there would be little likelihood of such wide differences of opinions on similar matters as are now usually expressed. Such disputes would then be determined from a standard. It is then better to ask an expert what the consensus of the medical profession is on such a question, on which a qualified expert would be the best informed person. He might even be asked to state the opinions of most of the men qualified as he is, even though he himself holds a different opinion. Every physician knows whether his opinions are at variance with the accepted ones or not. Opinions given in this way would be strengthened by comparison with standard medical works on the subject. It is always the latest *accepted* doctrine which is of value as a standard, and not an expert's own theory which is, perhaps, yet unpresented to the world, or if presented, not yet accepted. The latter should receive no notice in a court on the same principle on which a new legal principle receives no recognition therein until adopted by the courts. A physician does not usually possess much advanced knowledge, or hold opinions which he does not share with the other workers in his own particular branch of the medical sciences. But even if he does, it should not be available to affect the rights of others until, at least, it is so shared. It is conceivable that some of the so called experts who qualify because they apparently have had long years of experience, institutional connections, or have written works on scientific subjects, may hold "bizarre and whimsical ideas which may even be delusional in nature"; they may be summoned to testify only because they have been found to hold these opinions, being, possibly, just the kind of opinions suited to the pleas of the parties hiring them. And even though medical men in general repudiate these views, they have no way of signifying their disapproval, except as their opinions are expressed in the standard medical works on the subject and in use at the time. The present legal procedure does not yet admit these to determine the scientific questions involved in the controversy (15). They still adhere to the personal opinion doctrine in expert testimony. "No one," they say, "has any title to respect as an expert, or has any right to give an opinion on the stand, unless *it is his own opinion;* and if he has not given the subject involved such careful and discriminating study as has resulted in the formation of a definite opinion, he has no business to give it. Such an opinion can be safely formed or expressed only by persons who have made the scientific questions involved matters of definite and intelligent study, and who by such applications have made up their *own* minds" (18). When only personal individual opinions are desired, then differences of opinions are natural and to be an expected outcome. Mere personal opinions may vary with the persons who express them. When experts are hired to investigate certain scientific matters, as in chemical analyses, bacteriological and anatomical examinations, etc., their own results, conclusions, or inferences are, obviously, desired. Such work is really in the nature of personal professional services and not merely dry expert opinion. In these cases the expert is required to have made the investigations especially for this instance, and he can only testify if he has done so. His compensation accrues only, as it does in the case of personal services, from actually having performed the services or investigations. On this ground he can demand a "retainer" before commencing work (19). A physician merely stating the facts coming to his knowledge is not an expert and not entitled to compensation (20). Nevertheless, opinions based on special investigations, while facts, yet entitle the investigator to special compensation.

Now, when the testimony touches mere "speculative psychology," that is, as to the probability of a person being unsound mentally, based only on the consideration of certain words or acts related to, or in the presence of the expert, by witnesses of fact, it is to be considered merely an argument, and not an opinion fact; and the arguments are submitted to the court for determination as to which side has the better argument. Considered in this light, it is hardly a very edifying spectacle, nor does it help to raise the standing of the profession, to see representative medical men engaging in these arguments, before a lay body—the jury. It is in this very thing in which physicians become involved when they attempt to express their opinions on "hypothetical questions." When given on questions in the more exact branches of the medical sciences, these opinions may be excusable. given on psychiatric probabilities, they are reprehensible. The "hypothetical question" is an error in legal procedure and should, therefore, be abolished. As a basis for diagnosticating the mental condition of an individual not actually examined, it can be of little value. A diagnosis of mental disease is difficult even after long observation; when finally made it is often the subject of revision. Its justification, if any, now lies only in its tolerance in the present legal procedure. Even then it is only taken for what it is worth, for at best it is only a problem in chance. The conscientious scientific physician should not testify on "hypothetical questions," especially when he has not even heard the facts on which he is asked to express an opinion recited, any more than he would be willing to sign the commitment papers merely on hearing the symptoms related by a third person, even if that person were a medical man. The public seems to be firmly convinced that experts can be hired to suit any opinion desired. Even if they are honest in their expressions of opinion, that fact can in no way undo the harm. Experts are really the judges in scientific matters, and it is neither politic nor just to have such judges or jurors employed by the interested parties. As long as it is possible to search through the list of the avowed experts until one or more are found who hold the desired opinions, so long must chaos exist in the science of medical jurisprudence.

The question of the medical expert is becoming a more and more acute one every day, and a solution for it must soon be found. The medical profession is the most concerned in this problem, and from it must come the remedial plans and overtures.

Since expert opinion is in fact judicial opinion, the power of expressing these opinions must be vested in individuals or commissions, judicial in nature, especially appointed for such purposes, either by an executive, as in the case of many judges, or by a judicial officer in each case as is done in the appointment of referees or masters in chancery. The functions of these officers are to take testimony in such matters as are considered too complicated for the juries or too cumbersome for the judges—in "numerous litigated items," as they say in legal verbiage. The findings of fact by these officers are submitted to the court who, though it cannot usually alter them, can reject them entirely as unsatisfactory and refer the matter to a new referee or master in chancery, as the case may be. Similarly, medical questions are "numerous litigated items," and their reference to a *referee in medicine* would make for a more thorough adjudication of the questions in controversy, and with much less opportunity for bias. Yet both sides could bring their talent before the referee, who, being familiar with the scientific matters in question, could give the opinions of the experts their proper weight. The findings of such a referee would also be submitted and received as facts to be considered with the other facts in the case. The absence of any apparent bias by this method would inspire confidence in all concerned, even though not ultimating in bringing before a court such an array of talent as is brought when the usual method is pursued.

On the continent, especially in Germany and Austria, a public medical officer or officers act as experts and decide these questions for the courts. An appeal may lie to an impartial board recommended by what would be equivalent to our State medical associations. The United States tried a similar procedure in the appointment of the Remsen board. The federal, State, and municipal health authorities might be drawn upon for similar duties in controversies before the court. Their findings would have, at least, more uniformity. Hired experts are more likely to be biased, especially those who hold themselves out to the public as experts, because the interests we serve unconsciously influence us in their direction (21). When expert medical testimony is taken out of the hands of the litigating parties, and is put in the hands of the governing body, a much needed reform will have been accomplished. Then "not only will the dignity of the physical and psychological sciences be vindicated, but the science of jurisprudence, of all others the secular arbiter, will be able to discharge its great office with the precision, the wisdom, and the system which are necessary to the welfare of the community, but which are unattainable when so important a subsidiary agency as expert testimony remains in the chaos in which it is now plunged" (22).

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ELLIS ISLAND.

THE SURGICAL ASPECT OF GASTRIC ULCER.*

By J. C. KENNEDY, M. D., LL. D.,
New York,
Visiting Surgeon to St. Catharine's and St. Mary's Hospitals, Brooklyn.

In this series of twenty-two operations on the stomach occurring in my work recently, four gastrojejunostomies were performed for duodenal ulcers with no mortality. Eight gastrojejunostomies were done for gastric ulcer with one death; in this a vicious circle was formed and the patient refused further operative treatment until it was too late to remedy the defect. There were three excisions of chronic gastric ulcers; one situated in the posterior stomach wall, perforated, and adherent to the pancreas, in which a gastrojejunostomy was not done; another on the anterior gastric wall, perforated twenty-eight hours before the operation, and the patient, being thoroughly septic and exhausted, died the second day following the operation. The third was a somewhat similar case.

Four operations were done for advanced cancer, where a partial gastrectomy could not be done and in which a posterior gastrojejunostomy was done, with the Murphy button as a palliative measure. One of the patients died, within two weeks, of exhaustion, due largely to his starved condition. The others lived from six to twenty-four months in far greater comfort and ease than if they had been fed on morphine. The best behaved of this last group lived a little over two years, eating three meals a day, and so far as carcinoma and its symptoms went, was progressing well when he died of pneumonia. Gastrostomy was done in one case for cardiospasm, due to malignant disease of the cardiac orifice, death following in six weeks from an attack of acute Bright's disease coupled with exhaustion. In the second case of cardiospasm due to cicatricial contraction, the esophagus was dilated so that the patient could take food with very great comfort. This patient died of pneumonia several weeks after the treatment began.

In one case of cancer of the pyloric end of the stomach involving the pylorus itself, a partial gastrectomy was done. In this case, which was almost unsuitable for this operation because of adhesions present—the middle colic artery was injured—the patient survived but a few days.

In reference to the late treatment of these advanced and exhausted cases of gastric cancer, the following comment might be made: The obligation of the medical man, whether he be surgeon or physician, is to alleviate human suffering to the end.

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*Read before the Alumni of St. Catharine's Hospital, and the Brooklyn Medical Society.

Should we then permit a secret desire for a reduced mortality to influence us to withhold our best efforts to put in force this great privilege? On the other hand, should the so called "take a chance" in doing a radical operation influence us when our judgment tells us that the best interest of our suffering and often doomed patient lies in palliation only? Should we do, for instance, a gastrostomy for cancer of the cardiac orifice, and colostomy in an inoperable cancer of the sigmoid or gastrojejunostomy, as a palliative measure in advanced cancer of the stomach wall, when partial or complete gastrectomy cannot be employed? They are, in my hands at least, more efficacious in every way, so far as prolongation and comfort of life are concerned, than to assign the patient to a morphine life.

The surgical historians state that "gastric surgery may be traced back to 1880, when von Mikulicz sutured a perforation on the lesser curvature of the stomach"—the patient did not recover. In 1881, Rydygier excised successfully an ulcer of the stomach. In the same year, Wolfer devised and performed the first anterior gastroenterostomy; this was done for cancer. In 1883, Doyen conceived and introduced the drainage operations for the relief of gastric ulcer. Since then, tardiness at first, and later, activity and evolution characterized the efforts of the surgeon, so that now nearly every kind of stomach derangement is brought under his care with very considerable success. From that excision of an ulcer on the posterior wall of the stomach, down to Carl Schlater's complete removal of the stomach, in 1897, there have been many devices, as well as many modifications of established operations, whereby stomach growths and gastric ulcers have been surgically treated. The diagnosis and differentiation of gastric ulcer is by far less advanced than its surgical treatment. Notwithstanding the fact that innumerable difficulties in differentiation have been cleared up, many problems in diagnosis still remain unsolved. The great similarity of symptoms in nonmalignant diseases of the stomach to other conditions frequently renders a positive conclusion so obscure that exploratory operation must be resorted to; even then the field is sometimes clouded. When the abdomen is opened it is rare that a chronic ulcer cannot be detected in the stomach wall when present, yet I have on more than one occasion been compelled to proceed with operation, with benefit to the patient where symptoms pointed strongly to ulcer, and yet no evidence of ulcer in the stomach wall could be found. This is well borne out by a case I had some time ago:

CASE I. A young man, aged thirty years, had an acute attack of hematemesis, some three years previously, with pain and collapse, followed by a period of exhaustion which lasted for some weeks. His recovery under medical treatment was slow, but in time he was able to resume his ordinary duties. This attack was diagnosticated by the attending physician as an acute ulcer of the stomach. We have all seen cases of this kind in our work, and have learned that people seldom die from these acute ulcer hemorrhages and that an operation at this time is not advisable, unless the hemorrhage is accompanied by very sudden and severe pain with rapid pulse, subnormal temperature, localized tenderness, perhaps some distention, and it might be, if time would permit, some localized peritonitis. All this would suggest perforation, and such a case should be operated in at once.

A year previous to this man's coming to my office, which was two years following his acute attack, he began to have pyrosis, with other dyspeptic symptoms; pain on taking food became more pronounced over the epigastrium, radiating to the back; he was emaciated, complained that the pain just before he was operated upon occurred almost immediately after taking food; there was some vomiting at unusual periods; no blood since his acute attack; pulse rapid; no rise in temperature; free hydrochloric acid present.

The abdomen was opened in the usual way and a careful search made for an ulcer. The liver was raised and the stomach pulled forward; the greater and lesser curvatures with both cardiac and pyloric ends were searched, but no ulcer was found. The anterior wall was pushed over the posterior wall, but still no evidence whatever of ulcer; the abdomen was carefully gone over down to the ductus communis choledochus and was found normal. I was so convinced from the history and symptoms that there was a chronic ulcer present, that I refrained from opening the stomach. A posterior gastrojejunostomy was done with suture. The patient made a rapid recovery, remaining entirely well.

Dwelling on the difficulties of diagnosis in these peculiar cases at the last meeting of the American Medical Association, May 12, 1912, held at Atlantic City, N. J., Doctor Rovesing, of Copenhagen, has devised a method where many if not all the diagnostic difficulties in this class of cases may be overcome; he calls this method direct gastroduodenoscopy, and it consists of a gastroscope, introduced through the anterior wall of the stomach after proper exposure, whereby all creases in its mucous membrane are effaced and one sees the stomach shining like a large electric lamp; all its anatomical details are revealed with wonderful accuracy. Doctor Rovesing is enthusiastic as to the usefulness of this means of diagnosis.

The great responsibility which rests upon the medical profession in reference to gastric ulcer is well shown in a statement made by Doctor Welch (a most reliable authority) that five per cent. of mankind suffer from it. This responsibility is equally and obviously divided by the physician and surgeon. The surgical aspect of gastric ulcer is indeed so vast in importance and scope that it is impossible in a paper like this to go into details even of cases observed. It is almost impossible to separate symptomatically the duodenum, or more properly that portion of the duodenum above the opening of the common bile duct, from the stomach proper. Ulcers appear here because the duodenum is subject to much the same chemical influences as the stomach, and is the seat of similar disturbances, although a differential diagnosis can often be made.

The presence of gastric ulcer does not necessarily mean pain and vomiting; in other words, they are often latent, and sometimes the first symptom is perforation. Three principal types of ulcer are to be thought of, namely, erosions, acute, round ulcers and chronic ulcers. To the surgeon the last named is perhaps the most important, while the other forms are largely dealt with by physicians. The tuberculous and syphilitic ulcers are not met with so frequently, and the malignant ulcer is now frequently found grafted on a simple ulcer base. The erosions are mere bleeding abrasions of the epithelium from which alarming venous hemorrhage may occur. A medical friend asked me to come in great haste to a house in the vicinity of my home. I found him standing at the bedside of a woman who was almost pulseless, bathed in blood from a stomach hemorrhage, from which she died while we were there. The post mortem examination showed an extensive erosion of the cardiac end of the stomach; some spots were shallow and some deep with eroded small and a few large bloodvessels which caused the patient's death. She was forty-two years of age, previous health good, except for some slight attacks of hematemesis which were treated medically with some success until the fatal hemorrhage.

The round ulcers of the acute and chronic form are hard to differentiate. Dyspeptic conditions and symptoms are often less marked in acute round ulcers than in the chronic round ulcers. The attack of the acute round ulcer is often sudden and the tendency is toward spontaneous healing. It may have as its symptoms hemorrhage and pain, but often pain alone is the symptom. The history is often that of a severe pain suddenly occurring in the stomach; that the taking of any kind of food or drink increases it so much that the patient is compelled to abstain for a time, and that the regulation of the diet with great care is compulsory, and finally the pain passes away. The absence of hemorrhage does not prove that ulcer is not present. On the other hand, we may have patients come to us complaining of quite a profuse hematemesis, with or without distress or pain, and this hemorrhage is their first knowledge of trouble. Chronic ulcer, on the other hand, is seen at a later period, and more time is given for the study of symptoms. Acute ulcer often lingers to become chronic. In chronic form of ulcer there is less acute pain and seldom hematemesis, in my experience at least, but there is almost persistent indigestion, sometimes malena, which I have more than once overlooked until my patient arrived at the hospital and the nurse called my attention to it. The vomitus in chronic ulcer may sometimes be streaked with blood, but large hemorrhages are extremely rare. Pulling upon adhesions produced by chronic ulcer frequently refers the pain to some other part of the body, for instance, the scapular region. Sometimes irritation of the ulcer itself will produce pain, but never so severe as in the acute type.

Perforation in chronic ulcer is rare, and where it does occur it is either the subacute or chronic type, producing perigastric or subphrenic abscess more often than immediate general peritonitis, as is the case in perforation produced by acute, round ulcer. A palpable mass can sometimes be made out in chronic ulcer simulating malignant disease, and dilatation of the stomach with food stasis, and regurgitation are common. In the diagnosis of gastric ulcer the clinical history must so far hold first place, laboratory methods second, and physical examination third. Persistent effort should be made to get the patient's history of a slight hematemesis having occurred at some remote period. The physical examination is only confirmatory of the clinical history, and the clinical test of the stomach contents might corroborate, to some extent, both the clinical history and the physical examination. A blood examination will show the chronic anemia which often exists. The presence of normal leucocytosis during digestion favors ulcer rather than carcinoma.

DIFFERENTIAL DIAGNOSIS.

It is almost impossible, at times, to distinguish duodenal from gastric ulcer. Pain, however, if there is pain, does not occur in duodenal ulcer until two or three hours after taking food. With an empty stomach the pain is usually increased. On the contrary, the pain is relieved by taking food—the so called "hunger pain" of duodenal ulcer of Mayo-Robson. The reason of this, it is supposed, is because the acid gastric secretion is neutralized before passing the pylorus; thus the irritation of the ulcer is prevented. Gastric ulcer often exists together with duodenal ulcer; in this case a positive diagnosis is almost impossible. Hematemesis is also rare; in duodenal ulcer malena is often present; the quantity of blood in the stools is, as a rule, scant; tenderness is near the right costal border and extends somewhat downward; jaundice is rare—its presence, however, is an indication that the papilla of Vater is invaded, or it may be due to accompanying duodenitis; perforation is more frequent than in gastric ulcer. Gastric ulcer must be differentiated from gastritis; in this the vomiting does not recur regularly after taking food; constant nausea is almost pathognomonic of this inflammatory condition. The tenderness here is diffuse, and not localized as in gastric ulcer. Absence of food with other appropriate treatment quickly relieves this inflammatory affection, as a rule, while in gastric ulcer often the symptoms persist, and, if temporarily relieved, will frequently recur.

Hemorrhage from the gastrointestinal tract due to other causes must be differentiated from gastric ulcer. A sudden rupture of varicose veins in the stomach without ulcer might give rise to a profuse hematemesis. An enterorrhagia from a walking case of typhoid fever might give rise to a suspicion of gastric ulcer. The surgeon must, therefore, be careful and, so far as he is able, get other symptoms than hemorrhage in gastric ulcer. A distinction between gastric ulcer and gastric carcinoma is frequently made, but with a thickened chronic ulcer with perigastric adhesions the diagnosis is not only difficult but important. Gallstone colic and cholecystitis, both chronic and acute appendicitis, as well as chronic and acute pancreatitis, must be thought of in the differentiation.

PROGNOSIS.

Prognosis in cases of ulcer of the stomach must be based largely on its treatment, and this may be considered under three headings: Those which cease untreated; those which are medically treated; and those which are surgically treated. The last division concerns us.

In regard to the surgical treatment of gastric ulcer, the pendulum has swung and is still swinging. The world's greatest surgeons have contributed to this all important question, now advocating, and again condemning various operations for gastric ulcer, many of them supporting their arguments pro and con by case records.

A gastroenterostomy is an anastomosis between the stomach and bowel. In this may be included the operation of pyloroplasty and Finney's modification of the same, known sometimes by the name gastropyloroduodenostomy, also Kocher's lateral gastroduodenostomy, and the many and various modifications of gastrojejunostomy. Doctor Deaver considers only two of these worthy of consideration: Finney's pyloroplasty and gastrojejunostomy. Pylorodiosis, or digital divulsion, he mentions only to condemn. He considers that the drawbacks to Finney's modified pyloroplasty overshadow by far the theoretical advantages of the operation. In the first place, the rate of mortality is higher than is that of gastrojejunostomy, even in Finney's own hands, the mortality being from six to eight per cent. Scar tissue and adhesions make the operation difficult and dangerous. Doctor Finney lays great stress on the importance of a most thorough separation of the adhesions and looks upon this as a requisite for success. Doctor Deaver thinks pyloroplasty is limited to cases without pyloric stenosis, with good motor power, and where perigastritis is absent or where the pylorus is not involved in cicatricial tissue. According to Doctor Deaver, therefore, there are very few cases where pyloroplasty is advisable, yet he thinks it might be of advantage in some cases where the pylorus was an obstructive factor without being ulcerated or the seat of cicatricial tissue. Doctor Deaver states that gastrojejunostomy has been proved by clinical experience, the true criterion of success, to fulfill most admirably the indications in the surgical treatment of gastric ulcer. The death rate in this operation, which is immediately due to the operation itself, is very low, varying from three to less than one per cent., while pyloroplasty has a mortality of six to eight per cent.

The main objection to gastrojejunostomy as applied to the cure of open ulcer, without marked pyloric stenosis, is that the foodstuffs are in many cases prone to pass out of the stomach still by the way of the diseased pylorus rather than to escape by the newly formed anastomotic opening at the greater curvature, thus permitting the development of a vicious circle. Because of this, it was suggested and was actually put into practice, that the pylorus when patent was ligatured, thus rendering the passage through the new opening easier for the stomach contents than it would be when the pylorus opposed no special barrier to their progress. Roux states, however, that the duodenal secretions on open gastric ulcers are curative; if this is true, it would not be necessary to occlude the pylorus. The treatment of gastric ulcer by excision, first thought of and put into practice by Rydygier, soon fell into disfavor because of its high mortality. It was of late revived and is now practised by many surgeons because it acts as a preventive of carcinomatous degeneration, also it is asserted that excision of the ulcer alone, or of the whole ulcer bearing area, prevents hemorrhage and perforation which sometimes occur even after gastrojejunostomy. The mortality is from five to ten per cent., and as gastric ulcers are frequently multiple, one or two may be removed, while others may be overlooked, and at operations, if several ulcers were discovered, they could not all be removed except by a partial gastrectomy. Elsberg, Mayo-Robson, and others have reported cases where after excision of ulcers fatal hemorrhages and perforations have occurred from ulcers which were left behind.

WHERE EXCISION COULD NOT BE DONE.

In this connection I wish to mention a case which was sent from the medical to the surgical side (St. Mary's Hospital) with the following history:

Case II. About the second week of February the patient, a young Italian woman, aged twenty-eight years, and the mother of two children, with a previous history negative, swallowed a wineglassful of sulphuric acid by mistake. This caused an extreme burning sensation in the stomach, with intense pain and vomiting. She was immediately sent to a neighboring hospital, where she received lavage and egg albumen; she said she vomited blood immediately after taking the acid. Two weeks ago she vomited a great deal of blood. On arriving at St. Mary's Hospital, the medical side found the following conditions: Patient could not retain food, had constant pain in the epigastric region, with burning eructations of gas. On coming to the surgical side the woman was the picture of distress; emaciated, no food could be taken, even liquids causing intense pain in the stomach, together with vomiting. She begged that something might be done to relieve her.

Because of her exhausted condition a rapid incision was made over the stomach, under cocaine anesthesia. The pylorus was found indurated and thickened; even should time have allowed, a partial gastrectomy was not, in our judgment, justifiable; because of the unknown extent of the drainage the acid might have done to the stomach walls endogastric investigation was out of order; conservatism demanded that further operative interference should be relegated to another time, if at all. A rapid posterior gastrojejunostomy was done, which relieved her immediately. She remained well, and is now taking all the food she requires and is rapidly regaining her health and flesh.

It is an admitted fact that gastroenterostomy does cure gastric ulcer, and hence prevents the development of carcinoma. Take, as a type, the following case:

Case III. Mrs. C., aged fifty years, Irish birth, mother of six children, ailing with stomach trouble for five years. For the last year all food and drink caused pain. No active bleeding at any time; some occult blood. December 7, 1911, a posterior gastrojejunostomy was done with suture for a partially cicatrized ulcer, low down in the pyloric end of the stomach. Relief was immediate and continued from date of operation until now. She increased in weight from ninety to one hundred and thirty-five pounds; she ate at the family table without any discomfort whatever. This operation we did at St. Mary's Hospital, Brooklyn. It is now over one year and I consider this ulcer cured by gastroenterostomy.

Excision without gastroenterostomy will frequently cure chronic gastric ulcer. Take, as a type, the following case, mentioned in the series of chronic ulcers excised and sutured. The ulcer was situated quite a distance from the pylorus and in the posterior wall of the stomach:

Case IV. The patient was a married woman, aged forty-three years, and the mother of a family. She was much emaciated, having been reduced within a year and a half, from a stout woman to one weighing ninety-eight pounds. She had gone the rounds; all, including myself and a few of my colleagues in St. Catharine's Hospital, failed to make a diagnosis. In the borough of Manhattan a very distinguished internist and diagnostician ventured, after a most careful examination, a diagnosis of gallbladder disease. The patient was referred to us, bringing a note with the diagnosis of gallbladder disease and with instructions to operate for the same. My colleagues and myself excluded gallbladder trouble so far as signs and symptoms would inform us. We so informed the family physician and also notified him that we were unable to make a diagnosis. He justly praised the diagnostic ability of the gentleman mentioned above and insisted on the gallbladder being explored, which was done and found healthy. The finger while in the exploratory opening was swept over in the region of the stomach because of the persistent vomiting which the patient had, when a small hard mass on the posterior wall of the stomach, about the size of a ten cent piece, was felt. The gallbladder incision was immediately closed and one made over the stomach, when the mass was found to be a chronic perforated ulcer adherent to the pancreas. This was separated, the indurated and raised edges of the ulcer were excised and closed with Pagenstecher silk in a round needle, the sutures being fortified with Lambert sutures, and a drain was introduced; gastroenterostomy was not done as is frequently recommended.

The patient recovered; the vomiting ceased, and she speedily gained in weight. She is now well and strong at this date. The operation was done about six years ago. No previous history of any value could be obtained from this patient.

Perforation of a gastric ulcer is without a doubt operative. If operation is not done, ninety-nine cases out of one hundred will die (Deaver). In the case mentioned above, Nature, with her plastic adhesions, was only staying the fatal end until surgery came to the rescue. Neglected perforative gastric ulcer usually means shock, peritonitis, subphrenic abscess, with other misfortunes, and finally death. The following is a type which bears out this statement:

Case V. Mr. Q., aged forty-eight years, referred to me by Doctor Gibbons, June 17, 1912, with a culminating stomach trouble. He took suddenly ill at Huntington, L. I., with epigastric pains. The physician diagnosticated perforated gastric ulcer and advised immediate operation, which advice brought the patient to the hospital the following day, twenty-eight hours from the onset. Patient was septic, prostrated, pulse 180, temperature subnormal, rapid shallow respiration. A median incision over the stomach permitted a large amount of milky fluid to escape from the peritoneal cavity; stomach wall covered with exudate. A perforation found on the anterior stomach wall was closed; despite free drainage the patient died in twenty-four hours from septic peritonitis.

Every surgeon is master of his own table and uses his best judgment in the selection of his operation, as well as the selection of his cases. The mortality in selected cases of gastric ulcer and its concomitants has been materially reduced, but in the routine work of large general hospitals the selection of cases is difficult when alleviation, or cure when possible, is paramount, consequently this reduction is not so noticeable. In chronic gastric ulcer, gastroenterostomy, fortified in most cases by excision and infolding of the ulcer, holds first place. In other cases the different operations mentioned will find a place.

762 Willoughby Avenue, Brooklyn.

NEOSALVARSAN.

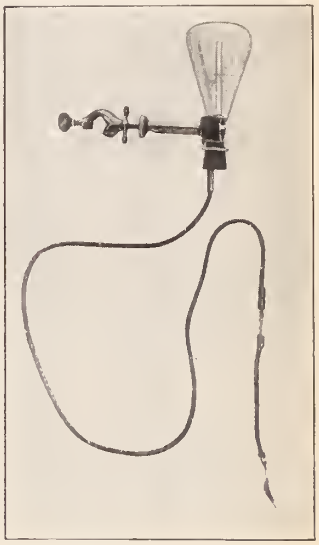
A New Simple Apparatus for Its Intravenous Use.

By O. L. Suggett, M. D.,
St. Louis,
Professor of Urology and Syphilology, College of Physicians and Surgeons and Barnes University.

The ease with which the new salvarsan (neosalvarsan) is prepared for use justifies a simple apparatus for its administration.

The apparatus I have designed renders its use as easy as the giving of a hypodermic. Transferring the solution from one vessel into another increases the liability of its contamination, beside necessitating the sterilization of more containers and making the entire outfit less compact and less portable. I have therefore merely inverted the Erlenmeyer flask, in which I mix the drug, and use it for its administration. Its use is briefly this:

Into a 200 c. c. Erlenmeyer flask, upon which you have scratched with a file a 100 c. c. mark, empty the ampoule of neosalvarsan, which, of course, has been opened with strict asepsis and with care not to splinter the glass. Add 100 c. c. of *freshly* distilled cold water; agitate gently until a perfect solution results; then insert a rubber stopper containing two small holes, into one of which a piece of glass tubing is inserted, which is sufficiently long to project above the surface of the solution when the flask is inverted, serving as an air vent. Into the other opening is inserted a short section of glass tubing, which is flush with the inner surface of the stopper, but projects externally sufficiently to attach a piece of rubber tubing some three feet in length, near the outer end of which is inserted a short section of glass tubing for the detection of air bubbles. The flask may be held by someone or it may be fastened into the clamp (see Fig.), which may be attached to the gas fixture, the head of a brass bed, or any other convenient place. For office and dispensary use I have fastened vertically to the wall an ordinary metal towel rack, which may be secured at any ten cent store, although the clamp is so designed that it may be placed at any angle and the apparatus brought into an upright position. Any good needle of sufficient lumen is plunged into the vein, the site of the puncture having been sterilized with absolute alcohol, and all air bubbles having been expelled, while the blood and the solution are both flowing, the two are coupled.



Treatment of Phlyctenular Conjunctivitis.—R. Sabouraud, in *Paris médical* for March 1, 1913, advises the use of the following collyrium in this affection:

℞ Cupri sulphatis,
Potassii nitratis, } ....āā gr. i (0.06 gramme);
Aluminis, ...
Camphoræ, ...gr. 1/20 (0.003 gramme);
Aquæ destillatæ, ...℥iiss (100 grammes).
M. ft. collyrium.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Closed April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXII has been awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appeared on page 931.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

(Concluded from page 987.)

Dr. Nelson Du Val Brecht, of Angel Island, Cal., observes:

The therapy of this condition resolves itself into prophylactic and curative. The succession of attacks of this intractable malady may be frequently prevented by having the patient spend two or more years in continuous outdoor life, because an abundance of oxygen will disinfect the air tubes. To be effective the open air cure must comprise living in a tent and sleeping in the fresh air at night. For those who are unable to follow this régime, thorough ventilation of their dwellings and a window tent for use at night are to be recommended. For the wealthy, change of climate to a southern latitude is advisable, and Southern France, Southern California, and Florida have the best winter climates. The salient desirable characteristic of a climate for this class of patients is one in which it is comfortable for the greatest number of days per annum to remain in the open air without exposure to chill. Another valuable hygienic measure is the protection of the skin by the use of woollen underclothing, or buckskin over light flannel, worn throughout the entire autumn, winter, and spring months. Every endeavor should be made to prevent catching cold or becoming chilled. In wet weather rubber boots or overshoes should invariably be worn. A substantial, easily digested diet and daily movement of the bowels are necessary. Tobacco and alcohol should be interdicted. The former is a strong irritant to the entire respiratory system, and both of them, by causing an arteriosclerosis, are direct etiological factors in the production of bronchitis in many individuals. A moderate amount of exercise daily, but not to the point of fatigue, is to be advised. Walking and light calisthenics in the open air are the two best forms. The skin should be kept active by daily baths and rubbing.

Treatment of an attack of chronic bronchitis largely depends upon the cause and whether there are associated local or constitutional affections. In the so called gouty bronchitis, associated with sclerotic vessels and scanty, highly colored acid, or albuminous urine, the emunctories must be regulated, and Basham's mixture, fifteen c. c. in water, three times a day, after meals, or saturated solution of potassium iodide, one c. c. in a tumblerful of water, flavored with lemon juice, three times daily, are indicated. If there is an antecedent history of lues, and a positive Wassermann or Noguchi reaction is obtained, one or more injections of Ehrlich's salvarsan, 0.6 gramme as an average dose, or neosalvarsan in larger dose, and mercurials and iodides, are specific. When there is cardiac disease or enfeeblement, circulatory stimulants, as digitalis or strychnine, are indicated. In cases of fetid bronchitis a spray of phenol (from ten to twenty per cent. solution) or thymol (one part to a thousand parts) will make a valuable deodorizer.

The armamentarium of drugs recommended for internal use contains preparations of tar, creosote, terebene, terpin hydrate, ammonium chloride, senega, and balsams, such as sandal wood, copaiba, Peru, and tolu. The best external or tropical remedies are dry cupping or the application of counterirritants, as mustard plasters to the chest, camphorated oil, kerosene, and cataplasma of kaolin, U. S. P. Inhalations of the spray of wine of ipecac or compound tincture of benzoin, fifteen c. c. to a kettle of boiling water, are especially good for exacerbations. Stimulating expectorants are contraindicated. To aid expectoration and ease the cough which is frequently so annoying in the morning when the patient first wakens from sleep, hot drinks, as a cup of coffee, tea, or milk, are useful. When dyspnea and cyanosis become marked, venesection is the most effective single remedial measure. Sometimes if the patient is allowed to hang his head over the side of the bed when he coughs, the expulsion of the secretion is facilitated.

Dr. N. D. Graham, of Washington, D. C., gives his views as follows:

A radical change in the habits of the individual is essential to the successful treatment of obstinate chronic bronchitis in the middle aged.

Irritation of the bronchial mucous membrane usually is as clear an indication of disturbed metabolism as are cutaneous signs like urticaria or chloasma. Measles presents an acute condition in which bronchial and cutaneous irritations arise simultaneously from a common internal cause, e. g., from an intoxication. The sources of the toxines in chronic bronchitis are most commonly—

1. Constipation and intestinal indigestion.
2. Gouty or rheumatic diatheses with insufficient elimination by the kidneys.

3. Infections which may not invade the bronchial mucous membrane directly or primarily.

In the first two classes the hygienic management is most important. The amount of protein (animal) food should be radically reduced generally to one third the original amount.

The corresponding increase in the fat and vegetable content of the diet should be gradual and governed by the digestive ability. Butter, cream, and olive oil are the best fats, while the patient's appetite may dictate its choice of the fresh, ripe, and seasonable vegetables.

The amount of water must be increased both internally and externally. A minimum of two quarts of fluid should be taken daily, but stimulating drinks are to be avoided. Generally speaking, the patient should eat less and exercise more. Walking is probably the best exercise on account of the ease with which it may be prescribed and regulated. Guard against great fatigue, and see that the nasal passages are unobstructed and that clean, pure air is breathed through them, not through the mouth. In the greatly debilitated, general massage may be substituted with benefit. Daily hot baths in which the temperature is lowered to 80° F. at the end are useful. Dry the skin by vigorous rubbing with a coarse towel. Constipation should be overcorrected by the daily use of a saline water taken hot before breakfast.

On account of the nonstimulating diet a digestive atony is often manifest. A useful preparation is:

℞ Dilute nitrohydrochloric acid, ...16 c. c.;
Tincture of nux vomica, ...24 c. c.;
Essence of pepsin, ...60 c. c.
Sig.: One teaspoonful in water after meals.

If the toxine is the result of an infection, a stimulating diet is indicated. In these cases the invading organism should be identified if possible, and vaccine therapy employed. Either stock or autogenous vaccines may be used. If the lungs are the seat of the infective process, it is usual to clean the mouth by repeated washings with a mild antiseptic solution, and make the vaccine from the predominating organism or organisms found in the bronchial secretions.

In cases where the secretion is scanty, iodine is a useful drug with which to attack the bronchitis directly, on account of its ability to liquefy secretions and purge the lymphatics. One may use either the iodides or the syrup of hydriodic acid.

In all cases bronchial sedatives are permissible when relief from cough is necessary to obtain rest for mind or body. Codeine in effective doses gives satisfaction.

Investigation in each case will lead to its specific treatment, for the important thing to remember is that the bronchitis is a symptom rather than a disease, or, in other words, bronchitis does not become chronic unless the resistance of the patient is lowered, and the medical man should seek to remove all possible causes for this lack of resistance.

Dr. Richard Leiman, of Detroit, Mich., says:

The end in view is to dry the secretion, modify the secreting parts, remove the cause, and return the parts to as normal a condition as possible. I first make the necessary corrections of diet and habits; if possible, remove the patient from the action of injurious influences. If he cannot go to a suitable climate in cold weather I advise him to stay in his room in all unpleasant weather, but at other times he is permitted to stay in the open air. He should avoid as much as possible all the harmful influences which his calling and manner of life entail. Food is given sparingly to those inclined to corpulence, and it should be nourishing and easily digested. Alcohol should be taken in limited quantity, if at all. Constipation when present is combated by taking fruit, especially grapes, prunes, etc., honey, graham bread, and the bitter waters. The digestion must be regulated, with special attention to the prevention of flatulency, a most distressing condition to the patient.

I advise moderate exercise regularly, but the patient should avoid overexertion, such as climbing stairs or hills quickly. All the habits and diet are brought to as near a degree of perfection as it is possible.

As to medication, inhalations are sometimes very advantageous—simple steam or a one per cent. or two per cent. solution of common salt or sodium bicarbonate. Creosote or oil of turpentine is sometimes used with good results. One method very satisfactory to me is a bottle fitted with a cork having two holes, through which are passed two glass tubes open at both ends, one going to the bottom of the bottle, the other just through the cork. The latter is turned at a right angle, and a rubber tube fitted with a mouth piece is fastened to this. Fill the bottle about one third full of water, on which is floated a drachm or so of oil of turpentine. This is set in hot water, and the patient smokes his pipe with some degree of comfort. Creosote, benzoin, eucalyptus, and wine of ipecac are tried in the order named should the oil of turpentine not prove beneficial; sometimes the Robinson inhaler, with the sponge moistened with a mixture of equal parts of alcohol, chloroform, and beechwood creosote, give more relief and seem more suitable to some patients. The apparatus should be worn as much as possible.

Sweat baths and electric incandescent light baths do good service in some cases, and are well worth trying. Large amounts of warm drinks are prescribed. Sodium iodide or potassium iodide, in five grain doses, is used when the secretion is tough and hard to expel. For expectorants, apomorphine has given good results in doses of one thirtieth or one fortieth of a grain, every four hours. For a very distressing cough I give a Dover's powder and one eight or one twentieth grain of heroin. Oil of turpentine, in five or ten drop doses, given in an emulsion in milk, three or four times a day, is useful. Terpin hydrate, in one or two grain doses, is more effectual in some, and, like creosote carbonate, is more tolerable to some. When a bitter tonic is indicated I give the following:

℞ Creosote, ...ʒii;
Tincture of nux vomica, ...ʒss;
Compound tincture of gentian, q. s. ad..........℥iv.
M. Sig.: One teaspoonful.

I usually give the syrup of ferric iodide some time during the course of treatment. Local applications to the chest, in the form of embrocations, mustard plasters, dry cups, or cool or warm wet compresses, are used when there is severe dyspnea, pain, or a feeling of oppression in the chest.

In all secondary chronic cases our chief attention, beyond the symptomatic treatment of the bronchitis, must be directed to the treatment of the underlying disease. If we succeed in once more regulating the heart's action by digitalis, caffeine, or cactus, when there is an uncompensated heart, in establishing diuresis when there is renal disease, or in improving the general physical condition by proper dietetic measures in the corpulent, gouty, alcoholic, etc., we may also in that way cause improvement in the existing bronchial catarrh.

Dr. P. A. Smithe, of Enid, Okla., states:

Prophylaxis.—As in the majority of cases chronic bronchitis is secondary either to some other disease, as influenza, vasomotor cold, cardiac or renal degeneration, or else is an indirect result of general impairment of constitutional resistance, preventive treatment is largely concerned with intelligent management of many commonly met conditions. The ordinary catarrhal or vasomotor cold should have more attention paid to it both by the general practitioner and his patient, who should be warned against the common practice of shutting one's self up in an overheated, underventilated room with a bottle of cough syrup. Good ventilation, thorough elimination, simple hydrotherapy, and a moderate amount of outdoor exercise should be insisted upon, and less dependence be placed on treatment that can be symptomatic merely, not curative. Influenza proper also comes under this head, with the further caution that the profound depression sometimes caused by this infection requires watching. It is best combated by a nourishing, easily assimilated diet during convalescence, outdoor air, an occasional purge of fractional doses of calomel followed by a saline, and, when the patient's pocketbook permits it, a trip to the seashore or an ocean voyage. Renal, cardiac, and arteriosclerotic conditions should be early recognized and properly managed, but too often the bronchitis seems to be determined by the fact that the bronchial mucosa is a *locus minoris resistantiæ*, and the bronchitis exists when we first see our patient, having developed coincidentally. To sum up the matter of prophylaxis, more attention should be paid to open air treatment, and hydrotherapy should be used more than so called tonics internally in the convalescence from acute disease.

Treatment of the fully developed case is hygienic and medicinal, with the emphasis on the former. If the case is curable at all it is more apt to be cured by building up the general system than by drug therapy. If the patient, as often happens, has formed the habit of remaining indoors at the first attack in the early part of winter, and staying there like a hibernating animal, the thing he is most apt to need is proper ventilation, with warmed air. This may be done by raising the windows and putting a board of the proper length underneath, allowing the air to enter between the upper and lower sashes, or the upper sash may be lowered; but the modern combination of heating with forced ventilation is preferable, although unfortunately out of reach of the poor. Remember that cold air is apt to irritate, especially when the cold is not a steady cold. A quick hot tub bath, followed by a brisk towel rub, should be given daily when the patient is robust, or, after his strength has improved, douching the spine with cold water. The diet should be as nourishing as the patient can assimilate. My preference is for eggnog, milk, custards, steak, and fruit. A daily bowel movement is best secured by drinking two or three glasses of water before breakfast, and then sitting on the toilet and making expulsive efforts at a certain definite time each morning, preferably just after breakfast, whether the bowels feel like moving or not. This may be reinforced by from ten to fifteen minim doses of fluid extract of cascara sagrada (bitter), in capsule, before each meal. When the patient is not suffering from an exascerbation of the condition, it is best to have him spend from a few minutes to an hour a day out of doors, sitting on a sunny porch, riding, or walking, according to his strength. Under this head comes the benefit obtained from simple change of climate. Sea voyages are sometimes efficient. A change from a great altitude to a lower one, or *vice versa,* sometimes cures. Remember that a case with emphysema is usually made worse by great altitude; likewise those with cardiac involvement. Patients with scant secretion usually do better in a moist, warm climate; those with abundant secretion may receive more benefit in a warm, dry climate, e. g., Southern California. Dust should be particularly avoided.

Drug treatment may be symptomatic to relieve certain troublesome symptoms, or even in some cases curative. The cough should not be treated unless it is severe enough to interfere with the patient's rest. Codeine, one fourth grain, or heroin, one twelfth grain, given hypodermically, is best if an opiate is necessary, but it is advisable not to resort to opiates until it is plain that an opiate is positively required. Patients with tenacious secretion, mucoid in character, are most apt to be benefited by ammonium chloride in twenty grain doses, every three hours, until secretion is fully established, when it should be discontinued. It interferes with the stomach less when given as an inhalation of the nascent vapor from an inhaler made up of three bottles connected by glass and rubber tubing passing through perforated corks. In the first bottle is placed hydrochloric acid, in the second a mixture of ammonia and water, while the third contains wash water and a little acetic acid, added to remove any excess of ammonia, which is very irritating. The patient inhales the freshly formed vapor through a tube, being warned to replenish the acetic acid in the wash water occasionally. In this class of cases with tenacious secretion, also in those cases with dry irritating cough and very little secretion, I use potassium iodide in ten grain doses, given in water or milk, three times daily, after meals. In the emphysematous and asthmatic type of cases, I sometimes substitute for this syrup of hydriodic acid one half drachm, three times daily, in water, before meals. When the secretion is very free, and especially when it has a foul odor, I use five grain doses of terpin hydrate, in capsule, every three or four hours.

There are two local applications which deserve special mention and are of great use when congestion of the bronchial mucosa is severe, as shown by increase in the number of râles, shortness of breath, or cyanosis. They are the old fashioned mustard paste, and the Priessnitz cross bandage. The paste is made by mixing ground mustard with three times its volume of flour in cold water, and adding a little vinegar and white of egg. The paste is spread on a piece of cotton cloth and covered with surgical gauze or cheese cloth. This may be applied both on the chest and over the lungs posteriorly, for half an hour to an hour, and repeated, greasing the skin with a little sweet oil meantime. The Priessnitz bandage is made from a piece of surgical gauze or cheese cloth, eight feet long and two feet wide, so that when it is folded three ply it is about eight inches wide. It is wrung out of water at the temperature of the room and wrapped about the chest, starting at the left axilla, then passing diagonally over the right shoulder and across the back to the left axilla, then across the chest to the right axilla, thence up to the left shoulder, and again reversed and passed again over the chest, as far as it will reach. This is covered with a strip of dry flannel, which may or may not be covered with oiled silk. All is then to be made fast with safety pins. These applications will produce increased circulation in the vessels and probably reflexly lessen the deeper congestion.

To sum up, beware of shotgun cough mixtures, attend well to the general health and hygienic measures, and individualize with your drug treatment.

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Therapeutic Notes.

Treatment of Dhobie Itch.—C. L. Overlander, discussing, in the *Journal of the American Medical Association* for March 15, 1913, various diseases prevalent in the Canal Zone, refers to the condition known as dhobie itch, characterized by a scaling eruption, sharply defined, and with brownish pigmentation, appearing on the trunk, in the axillæ, and in the groins, but sometimes spreading over the entire body and extremities. The condition is believed to be due to the *Microsporon minutissimum,* and is transmitted by contact, like ringworm. The following ointment is recommended for this disease, as well as other conditions associated with pronounced itching:

℞ Acidi salicylici, ... }
Hydrargyri ammoniati, } āā gr. xx (1.3 grammes);
Bismuthi subnitratis, }
Olei eucalypti, ... } ....āā ʒi (4 grammes);
Adipis lanæ hydrosi, ...℥i (30 grammes).
M. ft. unguentum.

Treatment of Warts.—H. Löb is stated, in *Semaine médicale* for February 12, 1913, to have used salvarsan and neosalvarsan in the treatment of warts. Arsenic was already known to be an efficient remedy in some cases, and the author was therefore led to try the effect of the new arsenicals in these cases. In the first patient, a young woman with multiple warts on the hands and face, an injection of 0.26 gramme (0.005 for each kilogramme of body weight) of salvarsan was given in the buttock. Six days later the warts were clearly undergoing resolution, and in less than three weeks all had disappeared. Two years and a half later no recurrence had taken place, and there were no spots or scarring at the former site of the lesions. In the second patient, a boy with numerous warts on the face, of three or four months' standing, a single intravenous injection of neosalvarsan similarly led to complete disappearance of the warts within ten days. In a third case, an intravenous injection of 0.45 gramme of salvarsan was attended with a less favorable result, the warts recurring after undergoing partial retrogression. In this patient, however, the condition was already of fifteen months' standing. Because of the fact that this patient was predisposed to urticaria, it was not deemed advisable to try another injection.

Treatment of Valvular Heart Disease.—Sir William Whitla, in the recently issued fifth edition of his *Dictionary of Treatment,* recommends the following combination for chronic valvular disease accompanied by anemia:

℞ Tincturæ digitalis, ... }
Tincturæ ferri chloridi, } ....āā ʒiii (12 c. c.);
Acidi phosphorici diluti, ...ʒii (8 c. c.);
Aquæ chloroformi, q. s. ad.........℥viii (240 c. c.).
Fiat mistura.
Sig.: Two teaspoonfuls in a half glassful of water four times daily.

In failing compensation another good mixture is as follows:

℞ Tincturæ digitalis, ... }
Tincturæ nucis vomicæ, } ....āā ℥ss (15 c. c.);
Spiritus ammoniæ aromatici, ...℥iss (45 c. c.);
Aquæ chloroformi, q. s .ad........℥xii (360 c. c.).
Fiat mistura.
Sig.: One tablespoonful in a quarter glassful of water three times daily after meals.

Treament of Trypanosomiasis and Yaws.—H. S. Ranken, in the *Proceedings of the Royal Society* for March 6, 1913, reports results obtained in these diseases by the injection of suspensions of precipitated metallic antimony, and concludes that, given in this form, antimony is a safe and efficient remedy for sleeping sickness. Over 1,400 intravenous injections of the drug were given. The dose to be administered, usually one grain, was stirred in a glass mortar with half an ounce of normal saline solution to form a suspension and given as in ordinary saline infusion, with a funnel, tube, and large needle. Saline solution was run in before and after the antimony suspension, to the total amount of about six ounces. In selected cases one and one half or even two grains could probably be safely given, but several cases of extreme susceptibility were met with, and the initial dose should be one grain. The usual course of treatment was five doses at intervals of four days, followed, after an interval of six weeks, by three doses extending over nine days. Of thirty-five patients treated with antimony alone, twenty-four were improved and remained negative to all microscopical examinations for parasites. Of the remainder, four died, two from overdoses of antimony, one from bronchopneumonia, and one from an epileptiform attack; trypanosomes reappeared in four patients; one relapsed clinically and two deserted. Thirty-one other patients were treated with alternate courses of antimony and atoxyl, and all did well. Short courses of antimony were also given to 143 patients previously treated with atoxyl, 813 injections being administered altogether. The striking effect of antimony on the trypanosomes was illustrated in the facts that in blood slides made before injections were completed some of the parasites were already very obviously affected, and that numerous preparations made twenty minutes after injections invariably showed complete absence of parasites.

Of ten patients with yaws to whom metallic antimony was given, none manifested the excessive susceptibility witnessed in sleeping sickness. In an adult of fair condition one grain should be given as a first dose, and doses of one and one half or two grains repeated twice at intervals of four days. The treatment proved uniformly successful in the author's cases. In forty-eight hours after the first dose distinct improvement was seen, and in all except one very severe case, the lesions were entirely healed in ten to fourteen days.

Treatment of Paroxysmal Tachycardia.—C. Esmein, in *Journal médical français* for February, 1913, after reviewing newly discovered facts concerning the nature and etiology of this affection, enumerates, after Vaquez, the following measures to be instituted for overcoming the paroxysms:

1. Lying on his back, the patient should execute very slow inspiratory movements, keeping the chest well filled with air during the intervals. 2. He should drink water or some other fluid, executing energetic swallowing movements. 3. Every ten minutes he should take a cachet containing 0.15 gramme (2½ grains) of pituitary gland substance. 4. Mild compression of the right pneumogastric nerve in the neck. 5. Tickling of the pharynx with a feather. 6. If the condition is not relieved in twenty-four hours, the patient should be given two dessertspoonfuls of syrup of ipecac at a ten minute interval. 7. If the tachycardia should happen to persist longer than three or four days, and signs of marked cardiac insufficiency appear an intramuscular injection of 0.5 milligramme (1/128 grain) of amorphous strophanthin should be given, on the next day, one milligramme (1/64 grain) by the same route, and on the third day, if necessary, an intravenous injection of one milligramme.

The efficacy of the first five measures mentioned depends in part upon the promptness with which they are employed, and also varies in different cases. The whole series should be tried, even if the first few do not prove successful.

Treatment of Diabetes Mellitus.—E. Liotard, in *Journal de Médecine de Paris* for April 5, 1913, is credited with the following emulsion, to be used in the treatment of diabetes accompanied by marked loss of weight:

℞ Olei morrhuæ, ...℥x (300 grammes);
Glycerini, ...℥iv (120 grammes);
Aquæ aurantii florum, ...℥iiss (80 grammes);
Tragacanthæ pulveris, ...ʒss (2 grammes);
Acaciæ pulveris, ... }
Calcii hypophosphitis, } ..āā gr. lxxv (5 grammes);
Sodii hypophosphitis, }
Pancreatini, ...ʒi (4 grammes).
M. ft. emulsum.
Sig.: One tablespoonful three times a day.

Treatment of Palmar and Plantar Hyperidrosis.—Fouquet, in *Monde médical* for December 5, 1912, is credited with the following formulæ for these conditions:

I.

℞ Quininæ sulphatis ,.........gr. lxxv (5 grammes);
Alcoholis diluti, ...Oi (500 c. c.).
Misce.

II.

℞ Sodii boratis, .. }
Sodii salicylatis, } ....āā gr. lxxv (5 grammes);
Aquæ, ...Oii (1000 c. c.).
Misce.

For sweating of the hands glycerites are particularly suitable:

III.

℞ Acidi tannici, ...gr. lxxv-cl (5-10 grammes);
Glyceriti amyli, ...℥iss (50 grammes).
Misce.

Or,

IV.

℞ Acidi tartarici, }
Acidi salicylici, } ....āā gr. xv (1 gramme);
Glyceriti amyli, ...℥i (30 grammes).
Misce.

Formaldehyde preparations may also be used:

V.

℞ Liquoris formaldehydi, ...ʒi (4 grammes);
Spiritus camphoræ, ...℥x (250 grammes).
Misce.

Or,

VI.

℞ Tincturæ benzoini, ...ʒiii (10 grammes);
Liquoris formaldehydi, ...℥ss (15 grammes);
Aquæ, ...Oii (1000 c. c.).
Misce.

The following combination may also be prescribed:

VII.

℞ Acidi borici, ...gr. lxxv (5 grammes);
Sodii boratis, . }
Acidi salicylici, } ....āā ℥ss (15 grammes);
Glycerini, ... }
Alcoholis diluti, } ....āā ℥ii (60 grammes).
Misce.

After the use of either of the above mentioned lotions, some form of powder should be dusted over the parts. Powders containing fermentible vegetable matter should be eschewed. The following are suitable:

VIII.

℞ Zinci oxidi, ...℥ii (60 grammes);
Talci, ... }
Magnesii carbonatis, } ....āā ʒv (20 grammes);
Camphoræ, ...gr. xv (1 gramme).
Fiat pulvis.

IX.

℞ Acidi tartarici, ...gr. xlv (3 grammes);
Zinci oxidi, ...ʒiiss (10 grammes);
Talci, ...℥ii (60 grammes).
Fiat pulvis.

X.

℞ Acidi salicylici, ...ʒss (2 grammes);
Resorcinolis, ...ʒiiss (10 grammes);
Amyli, ...℥iss (50 grammes);
Talci, ...℥iii (100 grammes).
Fiat pulvis.

XI.

℞ Sodii salicylatis, ...ʒss (2 grammes);
Potassii permanganatis, ...ʒiii (12 grammes);
Bismuthi subnitratis, ...℥iss (45 grammes);
Talci, ...ʒx (40 grammes).
Fiat pulvis.

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PHYSICIANS AND THE TENEMENT HOUSE DEPARTMENT.

Next to the health department itself, no other city department in New York is so intimately and vitally connected with the preservation of the public health as the tenement house department. It is the duty of every intelligent physician and every good citizen to sufficiently familiarize himself with the wise provisions of our present excellent law. to support the tenement house commissioner in his vigilant administration, and to aid him in resisting the encroachments and attacks which are periodically made in the interest of greedy speculators and specious sham reforms.

For two years there has been a steady campaign of misrepresentation to promote a fantastic project, as inconsistent with sound principles of architecture and building as it is revolting to common sense and decency. We refer to a measure to legalize waterclosets opening on tenement house stairs, which was killed in committee at Albany last year. Its originators, with the fanatic zeal and eccentric vanity so often recognized as pathological by physicians, introduced their queer bill in the legislature again this year, and made it even worse by tacking on a proposal to diminish the present legal minimum of cubic air space in tenement bedrooms, by permitting rooms to be built only six feet wide. The present limit is seven feet, and affords none too much protection for the tenement dweller. With perhaps conscious humor the cities committee appropriately selected the first day of April as the date for a hearing on this extraordinary measure.

Reputable architects, sanitary engineers, prominent builders, social workers in the tenements, the City and Suburban Homes Company, the East River Homes Foundation, the tenement house committee of the Charity Organization Society, and Mr. Murphy, the present able tenement house commissioner, are all opposed to these pernicious proposals, designed to break down the safeguards of our slowly developed tenement house legislation. The exploiters of the six foot bedroom idea and the waterclosets opening on the stairs are also endeavoring to manufacture sentiment in favor of a board of appeal to reverse and override the tenement house commissioner's decision. There is no possible excuse for such a board, which would only saddle a needless expense upon the taxpayers and would reduce the office of tenement house commissioner to a mere figurehead without any real authority. Such a post only a man of mediocre ability and wanting in self respect could be induced to accept. It would be quite as reasonable to create a board of appeal to pass on rulings of the health department.

It is unfortunate that some two years ago the Academy of Medicine, as was explained by Dr. Abraham Jacobi in a recent statement, was induced to endorse the building of open waterclosets, which gives some color to the statement that the academy favors such closets on public stairways in tenement houses. An effort has been made for the rescinding of this resolution, which, it is felt, was promoted only too successfully in an attempt to use the academy for personal and commercial ends. We do not believe that its members or physicians generally are in favor of open waterclosets on either open or closed stairways, six foot tenement bedrooms, or a board of appeal for the tenement house department.

FRIEDMANN'S ALLEGED CURE FOR TUBERCULOSIS.

Dr. J. F. Anderson, speaking on behalf of the United States Public Health Service, adequately answered the criticism of the president of the National Association for the Study and Prevention of Tuberculosis (Mr. Homer Folks) that the medical profession, to which the public looked for authoritative guidance. had failed so far to furnish clear information as to the actual therapeutic value of Friedmann's alleged cure. While emphasizing the facts that the results so far observed had not justified the confidence in it that widespread publicity had inspired, and that the profession and the public should continue unabated the well tried agencies for the treatment and prophylaxis of the disease, Doctor Anderson counsels the postponement of a final verdict until reliable and unbiased pronouncements supported by convincing data shall have been vouchsafed.

Were we even to disregard the degrading commercialism which has surrounded Doctor Friedmann's whole demeanor since his name has been brought into publicity, it will take considerable time, at least two years, to determine the actual value of the treatment. Not alone may the numberless "cures" now buried in oblivion be evoked in support of this assertion, but the history of tuberculosis itself includes examples of the harm that undue haste may entail, while proving actually destructive to the remedy itself. We had a tacit example of this kind, as is well known, in the early history of tuberculin, but two decades ago. Koch had advised the use of what he had termed "original tuberculin" (O. T.) on theoretical lines which he eventually abandoned. Notwithstanding the caution he urged, this tuberculin was administered recklessly and repeatedly at all stages of the disease, regardless of the reaction produced; the result being, in a large number of instances, acceleration of the morbid process and untimely death. The storm of indignation awakened by Guttmann, Ehrlich, Virchow, and others, fortunately arrested this holocaust of far advanced consumptives, but tuberculin itself received a blow from which it only began to recover ten years later. While the experience gained has served a good purpose, and though none of the clinical errors, such as the use of the remedy in advanced cases regardless of reactions, made at the time, are likely to recur, the fact remains that haste in reaching a definite estimate of Friedmann's product may prove harmful in other directions. Especially does prudence impose itself in view of the facts that the mode of preparation of the remedy is not divulged and that a speculative spirit seems to be the mainspring of the whole scheme.

President Folks's inference that the effective press agents of Doctor Friedmann are rendering the task of obtaining funds from municipal and State authorities to sustain tuberculosis dispensaries, sanatoria, and hospitals increasingly difficult may, however, demand a tentative forecast. What landmarks are now available afford very little if any hope that, at best, Friedmann's alleged remedy will ever accomplish what is now, and has long been, accomplished by means of tuberculins, which do not, moreover, present the ever disquieting drawback of containing living tubercle bacilli, as does Friedmann's preparation. State and municipal authorities should take no heed of the latter until told by responsible and disinterested experts of the type afforded by our Public Health Service whether or not it possesses any *bona fide* therapeutic value over and above available resources. To withhold any benefit whatsoever from our sufferers on the plea that this alleged "remedy" *might* prove to be a specific would be little short of a crime.

SPRING CLEAN UP.

"Clean up" movements have become an established feature of sanitary work in this country. At first sight the relation of such "clean ups" to public health appears remote, but a little consideration shows that this is not by any means the case. In a number of preventable diseases, in fact, the relation can be shown to be remarkably direct. To cite only a few examples, it is now well established that a large part of the infant mortality in large cities is caused by gastroenteric diseases, and these are largely questions of bad food, bad air, and unclean surroundings. The rôle of flies in the production of typhoid fever, of mosquitoes in that of malaria and yellow fever, of fleas and rats in that of plague, and of lice in that of typhus fever, are all so well known that the direct relation of dirt and filth to these diseases will not be questioned. But such "clean up" movements undoubtedly exert a large educational influence on the general public, and thus accomplish an incalculable amount of good. We are glad to see, therefore, that Mayor Blankenburg has urged successfully a general clean up of Philadelphia, while Commissioner Lederle has inaugurated a strong movement to clean up the city of New York, a task of no small magnitude. All the important civic associations in the latter city have agreed to cooperate, as have also the various city departments. The actual removal of the dirt and rubbish collected will be undertaken by the department of street cleaning. From a preliminary survey made last month it was found that the amount of rubbish varied from one load for every thirty buildings, in the better residential section, to one load for every eight buildings in certain sections of the Bronx. The total estimated cost of removing and properly disposing of all the rubbish is almost $40.000, and the Board of Estimate has been asked to make provision for this outlay. The work contemplated is so important to the community that it is to be hoped everything will be done to carry it to a successful conclusion.

HOSPITAL AND DISPENSARY TREATMENT OF VENEREAL DISEASES.

We are publishing in to-day's issue a symposium on hospital and dispensary treatment of venereal diseases, arranged by the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine, a subject which because of its far reaching social importance requires the serious attention and consideration of the medical profession, as well as of the community at large. There is a lamentable lack of appreciation on the part of our hospitals of the need of provision for ward treatment of syphilis, and there is a great need for the improvement of the majority of our venereal disease outpatient clinics.

The matter was taken up actively by the Public Health, Hospital, and Budget Committee after the budget hearings last fall, when the Department of Health asked for an appropriation to establish a venereal disease clinic where modern treatment would be administered, and which, it was stated, was almost entirely nonexistent in private and municipal dispensaries of this city. The Public Health Committee of the Academy of Medicine objected to the granting of money for this purpose until it had been proved that the existing facilities could not be made adequate to meet the needs of the city. The money was not appropriated, and the committee assumed the responsibility of bringing this most important matter to the attention of the medical profession.

The Associated Outpatient Clinics of the City of New York, an organization which was brought into existence by the efforts of the Public Health Committee of the Academy, undertook a study of the existing dispensary practices with regard to the treatment of these diseases, and called a conference of the attending dispensary dermatologists, syphilographers, and genitourinary surgeons to formulate a plan by which the clinics could be made most efficient. A set of recommendations relating to the treatment of syphilis has already been prepared and adopted by the association. Recommendations bearing on adequate facilities for treating gonorrhea and chancroid are now under consideration by the association.

The movement has received proper impetus, and it is hoped that before long the genitourinary, skin, and syphilitic clinics of our dispensaries and outpatient departments of hospitals will be put on a very high level of efficiency, and that the necessity of a Department of Health clinic will be entirely obviated.

STUDIES IN BERIBERI.

The medical profession of our oriental possession, the Philippine Islands, have devoted much time and labor to the solution of questions referring to tropical diseases. Among these, beriberi unquestionably finds an important place. Since the founding of the *Philippine Journal of Science*, about seven years ago, our confrères stationed in our Asiatic possession have been provided with an excellent medium for the publication of their scientific conclusions.

The present issue of the Philippine *Journal* contains a study of polyneuritis gallinarum. Doctor Vedder and Doctor Clark, from their observations have reached the conclusion that the symptomatology and pathology of polyneuritis gallinarum could not be regarded as identical with that of beriberi. They have never observed any edema in fowls at all comparable to wet beriberi in man, and while there are undoubtedly slight changes in the heart of fowls suffering from polyneuritis, there is none of the hypertrophy which is such a characteristic finding in human beriberi. In spite of these facts, however, there is more similarity than difference between the two diseases.

It has been demonstrated that chemical changes take place in the brains of fowls suffering from polyneuritis gallinarum. It appears, therefore, that the disease is not simply a peripheral neuritis as has been generally supposed. On the contrary the entire nervous system is affected. The symptoms of the disease are not chiefly referable to degeneration of the peripheral nerves, since the degeneration occurs before symptoms arise. Moreover, while advanced degeneration may be present and be accompanied by no symptoms at all, degeneration of the nerves may remain after recovery has occurred.

SALVARSAN IN THE TREATMENT OF GANGOSA AND FRAMBESIA.

The present issue of the *United States Naval Bulletin* contains, among other interesting articles, one from the pen of Dr. William M. Kerr on gangosa. The pathology of this disease has never been carefully investigated, as it is not fatal. The gross lesions are destructive ulcerations of the nasopharynx, of the skin and underlying connective tissue, and gummalike lesions of the bone. All these lesions may occur separately, or all three may be found in the same patient.

The patients found at Guam were ordinarily treated with iodine mixture, but since the introduction of salvarsan this product has been given a trial, and it seems that if employed in the early stages, it will prevent extensive destruction of tissue. It should, however, be supplemented by a prolonged course of mixed treatment. From this antisyphilitic treatment it was concluded that the spirochetes might possibly be found in the lesions, but long and careful search failed to reveal the presence of treponemata of any description. Out of one hundred cases, eighty-two gave a positive Wassermann reaction, and fifteen were negative, while with the Noguchi modification a large majority gave a positive reaction. Further investigations show that out of 1,895 normal natives, over ten years of age, seventy-four per cent. had contracted frambesia generally during childhood, while out of 315 patients with gangosa, eighty-three per cent. gave a history of gangosa.

In the same issue of the *Bulletin,* we find a report of Dr. E. W. Reed on the treatment of frambesia with salvarsan, giving excellent results. This observer reports from Samoa, and makes the statement that no syphilis has ever been reported in American Samoa, but still in eighty-three cases of frambesia, seventy-seven showed *Treponema pertenue.*

These two reports indorse the observations from other parts of the globe with salvarsan, which seems to have a beneficial influence in certain tropical diseases.

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Obituary.

LOUIS ADOLPHUS DUHRING, M. D.,

of Philadelphia.

Doctor Duhring died in Philadelphia on May 8th. Born in Philadelphia on December 23, 1845, he graduated from the medical department of the University of Pennsylvania in 1867, studied dermatology for two years in the hospitals of Paris, London, and Vienna, and, returning to Philadelphia, he opened there, in 1870, a dispensary for skin diseases of which he was for ten years physician, acting as consulting physician since 1880. In 1871 he joined the faculty of the University of Pennsylvania, and since 1876 had held the professorship of skin diseases. Doctor Duhring was a widely recognized authority on skin disease, and dermatitis herpetiformis is known also as Duhring's disease. He wrote and published many books dealing with his specialty which have had a wide circulation in America as well as abroad. He was an honorary and corresponding member of many dermatological societies and was one of the founders of the American Dermatological Association.

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News Items.

Changes of Address.—Dr. M. L. Wager, to Marvelle Court, 1879 Fulton Avenue, the Bronx, New York.

Classes in Practical Hygiene in a Philadelphia Hospital.—The Orthopedic Hospital, Philadelphia, now has classes in which patients with spinal curvature or nervous diseases are taught the principles of hygienic living, such as, bathing, fresh air, exercise, etc.

Dorchester, Mass., Medical Society.—At the annual meeting of this society, held on the evening of May 1st, the following officers were elected: President, Dr. Edward J. Brearton; vice-president, Dr. F. X. Corr; secretary and treasurer, Dr. J. T. Kendricken; advisory board, Dr. John P. Treanor, Dr. W. J. Walton, and Dr. Bradford Kent.

Physician Wanted in Ancon Insane Asylum.—The United States Civil Service Commission invites attention to the fact that among the vacancies to be filled as a result of the open competitive examination for physician, for men only, to be held on June 4, 1913, it is expected to fill one in this position at $150 a month, for service in the Insane Asylum at Ancon, Canal Zone, for which an unmarried man is desired. The Isthmian Canal Commission states that the appointee to this position must be experienced in the treatment of the insane, and without this experience it will be useless to make application.

A Memorial to Doctor Bristow.—It is planned to equip an x ray room in the new building of the Bushwick Hospital, Brooklyn, as a memorial to the late Dr. Algernon T. Bristow, who died on March 26th, as the result of infection contracted while performing an operation. Mr. and Mrs. Frederick B. Pratt have contributed $1,500 to the hospital fund for this purpose.

Chicago Medical Societies.—During the coming week meetings of medical societies will be held in Chicago as follows: Monday, May 19th, Chicago Ophthalmological Society; Tuesday, May 20th, Chicago Urological Society, Dermatological Society, Laryngological and Otological Society, and the Pediatric Society; Friday, May 23d, Aux Plaines Branch of the Chicago Medical Society.

Personal.—Dr. Emory R. Hayhurst, of Chicago, has been chosen by the Ohio State Board of Health to take charge of the bureau recently created by the State legislature to study occupational diseases.

Dr. Charles F. Painter has been elected dean of the medical and dental departments of Tufts College, Boston, to succeed Dr. Harold Williams, who resigned recently.

Dr. Jacob W. Bolotin, the blind physician of Chicago, has been appointed attending physician at the tuberculosis hospital at Dunning.

Meetings of Medical Societies to be Held in Philadelphia During the Coming Week.—Monday, May 19th, Medical Society of the Woman's Hospital and the Episcopal Hospital Clinical Society; Tuesday, May 20th, West and North Branches of the County Medical Society, Stomach Hospital Gastroenterological Society, and the Philadelphia Laryngological Society; Wednesday, May 21st, Section in Otology and Laryngology of the College of Physicians; Thursday, May 22d, Pathological Society, and the Germantown Branch of the County Society; Friday, May 23d, Northern Medical Association, South Branch of the County Society, and directors of the Medical Club.

In Honor of the Late Dr. Prince A. Morrow.—A meeting to commemorate the life and work of the late Dr. Prince A. Morrow will be held by the Society of Sanitary and Moral Prophylaxis, on Thursday evening, May 22d, at the New York Academy of Medicine. Addresses will be given as follows: Doctor Morrow the Physician, by Dr. Edward B. Bronson; Doctor Morrow the Educator, by Dr. Edward L. Keyes; Doctor Morrow the Philanthropist, by William A. Purrington, Esq.; Doctor Morrow's Work in Uplift, by John P. Peters, D. D.; and The Pioneer Qualities of Doctor Morrow as a Social Reformer, by Dr. Charles W. Eliot, president emeritus of Harvard University.

American Physicians' Travel Study Tour.—The Travel Study Tour of American Physicians to the Seventeenth International Congress of Medicine will sail from New York on the North German Lloyd Steamship *Bremen* on July 3rd. About seventy-five physicians will participate in this tour, the chairman of which is Dr. W. B. De Garmo, of New York, and Dr. Richard Kovacs, 236 East Sixty-ninth Street, New York, is secretary. In cooperation with the International Committee for Postgraduate Medical Education, arrangements have been made for visiting clinics and hospitals in Paris, Munich, Vienna, Berlin, Dresden, Cologne, Brussels, etc., and to inspect the health resorts of Carlsbad, Marienbad, Nauheim, Wiesbaden, Homburg, etc. No other party from America has ever enjoyed similar privileges. The party will finally attend the International Congress of Medicine in London August 6th to 12th.

New York City's Spring Cleaning.—During the past week the Department of Health, in cooperation with the Street Cleaning Department, conducted a "cleanup" campaign for the purpose of improving the general sanitary conditions of the city. The object of the campaign was to remove all refuse and waste material from roofs, fire escapes, cellars, yards, alleys, air shafts, buildings, rooms, and apartments. An official notice was sent by the health department to every owner, occupant, or representative of every building, apartment, room, yard, or vacant lot, notifying them to prepare for removal all rubbish and waste material. Everywhere throughout the city householders responded enthusiastically to the orders of the health department and thousands of wagon loads of rubbish were taken in scows to Riker's Island, where it was used in filling. Altogether the plan of cleaning up the city has been a great success.

International Committee for Postgraduate Medical Education.—Announcement is made that brief courses in all branches of medical science will be given in Berlin, June 19th to 28th, by the Lecturers' Association for Medical Vacation Courses, for the first time under the auspices of the Central Committee for Medical Postgraduate Education in Prussia A complete programme of the series will be published in the near future. Foreign physicians will be admitted as far as space will permit, on the payment of a somewhat larger fee than that required of physicians licensed to practise in Germany. Applications must be sent to the Bureau of the Lecturers' Association, Berlin N. 24 Ziegelstrasse 10/11 (Langenbeckhaus).

Smallpox in Germany.—For nearly forty years Germany has had a law requiring the vaccination of all infants and the revaccination of children after the lapse of a number of years. It is understood that this law has been enforced generally throughout the Empire, with the result that Germany remains practically free from smallpox. According to a report published by the United States Public Health Service, during the year 1908 there were 434 cases of smallpox reported from 200 localities, with 65 deaths. Of these cases approximately one third occurred among foreigners. During the year 1909 the numer of smallpox cases in Germany was 247, with 26 deaths.

American Academy of Medicine.—The preliminary programme of the thirty-eighth annual meeting of the American Academy of Medicine, which will be held in Minneapolis, Minn., on June 13th, 14th, and 15th, has just been issued. An interesting feature of the programme will be a discussion on Physical Bases of Crime, twenty-nine papers on the subject having been promised. The officers of the Academy are: President, Dr. Ray Lyman Wilbur, of San Francisco; vice-presidents, Dr. Henry A. Tomlinson, of Willmar, Minn., Dr. W. Edgar Darnall, of Atlantic City, Dr. Alice Weld Tallant, of Philadelphia, and Dr. J. E. Tuckerman, of Cleveland; secretary and treasurer, Dr. Charles McIntire, of Easton, Pa.; assistant secretary, Dr. William J. Estes, Jr., of South Bethlehem, Pa.; chairman of the programme committee, Dr. Charles S. Sheldon, of Madison, Wis.; chairman of the committee on arrangements, Dr. Horace Newhart, of Minneapolis.

Graduate Nurse Wanted as Hospital Superintendent in South India.—The American Hospital for Women and Children, Madura, South India, wishes to engage the services of an American graduate nurse to act as superintendent of the institution. The hospital is equipped with 50 beds, and the staff consists of 2 American physicians, 1 Indian subassistant surgeon, 3 Indian compounders, 10 Indian nurses, and one Indian Bible woman. During the year 1911 there were 12,364 patients treated at the hospital, some of them coming 100 miles to be treated. Among the qualifications necessary for the work are a good constitution, a good education, a first calss hospital record, ability to learn the language, and qualities of leadership, as well as a deep spiritual life. The salary is $500 and room in the mission building; board is about $13 a month. For further information regarding this and similar positions write to Mr. Wilbert B. Smith, 600 Lexington Avenue, New York.

Mortality from Cancer in New York State.—According to statistics compiled by the New York State Department of Health, during the year 1912 there were reported throughout the State 8,234 deaths from cancer, an increase of more than 300 over the number of deaths in 1911. The death rate from cancer for the State was 85.9 in 100,000 of population, and 5.8 of all deaths recorded for the entire State during the year 1912 were due to cancer. The distribution of the total deaths from this disease, according to the part affected, was as follows: Cancer of the mouth, 290; cancer of the stomach and liver, 3,065; cancer of the peritoneum, intestines, and rectum, 1,211; cancer of the skin, 255; cancer of the breast, 749; cancer of the female genital organs, 1,207; cancer of other or unspecified organs, 1,457. There has been an increase in the number of deaths from cancer without exception yearly ever since 1885, when the State Department of Health began to keep records of the disease. Twenty-five years ago there were 2,000 deaths a year. The number has quadrupled since then, while the population has hardly doubled. Every year the cancer deaths exceed by from 150 to 500 the number of the year preceding. No other disease or condition has any such record.

Army Medical Corps Examinations.—The surgeon general of the United States Army announces that preliminary examinations for appointment of first lieutenant in the Army Medical Corps will be held on July 14, 1913 at points to be hereafter designated. Full informatio concerning these examinations can be procured upon application to the Surgeon General, United States Army Washington, D. C. The essential requirements to secur an invitation are that the applicant shall be a citizen o the United States, shall be between twenty-two and thirt years of age, a graduate of a medical school legally authorized to confer the degree of M. D., shall be of good mora character and habits, and shall have had at least one year' hospital training as an interne, after graduation. The examinations will be held simultaneously throughout th country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expense of applicants as much as possible. In order to perfect al necessary arrangements for the examination, application must be completed and in possession of the adjutant general at least three weeks before the date of examination Early attention is therefore enjoined upon all intending applicants. There are at present forty vacancies in th Medical Corps of the United States Army.

United States Public Health Service Reports on the Friedmann Cure.—The first official opinion of the government authorities on the merits of the Friedmann serum for the cure of tuberculosis was given in a statement made on May 9th before the National Association for the Study and Prevention of Tuberculosis, at the annual meeting o the association in Washington, D. C. This statement wa to the effect that the results of the treatment in the ninety-four cases of tuberculosis in New York hospitals do no justify the confidence in the remedy which has been inspired by widespread publicity. This finding of the experts of the United States Public Health Service was accepted immediately by the association as just grounds fo the passing of resolutions warning the people agains being led astray by unproved claims. These resolutions are as follows:

> WHEREAS, Widespread publicity has been given to the claims o an alleged cure for tuberculosis;
>
> *Resolved*, That there is no information before the National Association for the Study and Prevention of Tuberculosis to justify the belief that any specific cure for tuberculosis has been discovered which deserves the confidences of the medical profession or the people, and,
>
> *Resolved*, That it is the duty of the public to continue unabated all the present well tried agencies for the treatment and prevention of tuberculosis.

The government's report was read by Dr. John F. Anderson, chairman of the board appointed to investigate the treatment.

The New Phipps Institute Dedicated.—The new building of the Henry Phipps Institute, at Seventh and Lombard Streets, Philadelphia, was dedicated on the afternoon of May 10th, under the direction of the University of Pennsylvania. Simultaneously with the dedicatory exercises, the University of Pennsylvania conferred honorary degrees on Henry Phipps, donor of the $1,000,000 fund which made the institute possible, and on Dr. Edward L Trudeau, who founded the Adirondack sanitarium for the treatment of incipient consumption. The principal address at the dedication was delivered by Dr. Herman M. Biggs, of New York. Provost Edgar F. Smith, of the University of Pennsylvania, presided. The institute building is not primarily a hospital, although it has accommodations for twenty-four patients. The chief work of its staff, aside from dispensary and hospital treatment of patients in various classifications, will be sociological, educational and preventive. The sociological work of the institute consists of investigating the relationship of tuberculosis to garment making trades. This work involves the examination of workers, inspection of factories, and investigation of living conditions of workers' homes. It also includes the study of housing conditions of people in several selected blocks. It has been experimenting in a small court, where it has improved the sanitary conditions by supervising the patients in their living. Another department of the social service attends to the details of seeing that patients are distributed to the various sanatoriums, hospitals and relief agencies. The executive director of the institute is Dr. Charles J. Hatfield; the director of the clinical and sociological departments, Dr. H. R. M. Landis, and the director of the pathological department, Dr. Paul A. Lewis.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

March 3, 1913.

Injuries of the Kidneys during Eclampsia.—A. Zinsser is of the opinion that in true eclampsia the treatment aimed at the kidney alone is utterly useless, since the injury to that organ is merely an episode in the drama of eclampsia, and when it becomes so extensive that the entire organism may succumb to it, the other impairments in the various organs are so far advanced that the saving of the kidney alone would be futile.

Statistics of Gastric Resections; 157 Cases Treated in the Last Five and a Half Years at the Surgical Clinic in Breslau.—S. Weil summarizes the results as follows: Of all the 157 patients treated from 1907 to 1909 for gastric carcinoma in the surgical clinic in Breslau, only from two to three per cent. were permanently cured. This result would be discouraging were we not to consider that the resection of the stomach as a palliative procedure influences the condition of the patient favorably for a considerable length of time—much greater than does gatsorenterostomy. A better showing can only be reached when the patient is referred to the operator much earlier than has hitherto been done.

Internal Secretion and Nervous System.—A. Münzer says, in the conclusion of his contribution, that according to the teachings of physiology and pathology the functions of the blood glands (*Blutdrüse*) are intimately connected with the function of the nervous system. All the reactions brought about by the blood glands are arranged by this. Only certain portions of it are influenced, namely, brain, and, possibly, spinal cord, or sympathetic system. The nature of these mutual reactions is explained by the supposition that the secretions of the blood glands serve the purpose of regulating the tonus of the influenced portions of the nervous system. The individual blood glands perhaps exert only a special affinitive influence upon a certain portion of the nervous system, and not the whole of it. The specific affinities of the blood glands to the different divisions of the nervous system may serve as a means of classification for the polyglandular system. It may be of therapeutic value to know that tonus is brought about by certain of these divisions.

March 10, 1913.

Three Cases of Endocarditis Lenta.—J. Lewinski says that endocarditis lenta is a chronic sepsis with localizations in the valves of the heart and is caused by a well recognized bacillus, the *Streptococcus viridans*. The prognosis is unfavorable; the patients of the three cases here reported died. Therapeutically, all chemical substances are worthless. Bacteriological therapy would seem to offer a somewhat better prospect, particularly vaccine treatment, which should be given as early as possible, before the body has lost its power of resistance.

The Oldest Influenza Epidemic, in Persia and Mesopotamia 855 A. D.—E. Mittwoch says, in the chronicle of Hamza al Isfahani, there is a report of a cold wind which in 855 A. D., came out of the land of the Turks and caused cough and catarrh. The mortality was not as great as in the plague. This is probably the oldest recorded influenzal epidemic, and the course of the disease is accurately described.

March 17, 1913.

Advances in the Treatment of Diabetes mellitus in the Past Fifty Years.—Lepine reviews this subject for the past fifty years and observes that diabetes on the whole has become less severe since its treatment has improved. It has, however, increased in frequency. The mortality has not kept pace with the frequency on account of the better therapy. In the future a better special remedy may be found than is possessed at the present time, a glycolyptic and ketolyptic remedy. Until then we must, in our treatment, continue to be guided by the elements of the apparent pathogenesis of the condition.

Should Neosalvarsan Be Given to Ambulatory Patients?—Touton declares uncalled for the warnings of Wolff and Mulzer and all others who speak against the ambulatory treatment with neosalvarsan because their conclusions are based upon the unfavorable results of their own faulty technic (too large and too frequent doses), and not upon careful methods such as outlined by the author. The banishment of neosalvarsan from the armamentarium of the surgeon has been the result of a hasty misjudgment.

March 24, 1913.

Treatment of Basedow's Disease.—A. Rubino reiterates that Basedow's disease in a vast majority of the cases is due to excessive secretion of the thyroid, and therefore its treatment with an antithyroidin of Möbius is to be more highly recommended than any other. This treatment is, of course, to be used in conjunction with general hygienic and dietetic measures. When the hypertrophy of the thyroid assumes marked proportions, galvanization of the sympathetic nerve on both sides of the neck should be tried, or else faradization or the application of the Röntgen rays. In unchecked advance of the general symptoms a partial resection of the hypertrophied thyroid is indicated.

The Reaction of Congestion in Arteriosclerosis.—C. Hertzell found that by completely interrupting the blood circulation in the recumbent subject in both lower limbs and one arm by pneumatic compression, the congestion reaction takes place in the remaining arm with an increase of pressure of about five mm. mercury in the normal individual. In those having arteriosclerosis there is under similar conditions a rise in the arm up to sixty mm. or more. By the changes in the circulatory system in this disease is lost the possibility of compensatory dilatation in the affected portions of the system. The positive absence of the congestion reaction indicates that hydriatic procedures should be employed with great caution, since they place greater demands on the regulating functions of the circulatory system.

The Action of Heavy Metals upon Malignant Tumors.—C. Lewin's injection of the heavy metals in malignant animal tumors has given striking results, which depend upon the selective action of the metals upon the smallest bloodvessels of the tumor.

March 31, 1913.

The Present Remedies for Syphilis and Their Application in Practice.—Touton believes that mercury is still the safest remedy for syphilis. Salvarsan has not displaced it, and both rank about the same in value. The combination of a mercurial course, with a few salvarsan injections, at present offers the best and most hopeful therapy. The author appends at the end of his article a plan of treatment for the whole course of the disease, without, however, making it schematical.

Duodenal Ulcers in the First Year of Life.—W. Schmidt asserts that duodenal ulcer in the first year of life is more common than is usually supposed and, as a matter of fact, is more frequently found in this than in all the seven years following. Every indisposition of the child which is accompanied by weakening of its organism favors the formation of such ulcers.

PRESSE MÉDICALE.

April 16, 1913.

Cerebrospinal Fluid in Central Nervous Syphilis and Parasyphilis.—Henri Roger states that the reactions of the cerebrospinal fluid that are of greatest significance in the diagnosis of syphilis of the central nervous system are lymphocytosis, an excess of albumin, and especially a positive Wassermann reaction of this fluid. If the Wassermann test carried out with the blood serum is simultaneously negative, the presence of nervous syphilis is practically certain. A negative Wassermann reaction with the cerebrospinal fluid does not prove that the disturbance present, e. g., tabes, is not of syphilitic origin; if lymphocytosis and hyperalbuminosis are also absent, however, and the Wassermann reaction with the blood is positive, a diagnosis of central nervous syphilis is not warranted. In early malignant syphilis of the nervous system, the four reactions are distinctly positive, whereas later, except in general paralysis, only three persist, the blood Wassermann reaction becoming negative. Conditions apparently unrelated to the nervous system, e. g., perforating ulcers and gastric crises, can be definitely referred to a latent syphilitic or parasyphilitic meningitis if a leucocytosis in the cerebrospinal fluid is detected. In the secondary stage of syphilis the degree of meningeal reaction, as reflected in lymphocytosis in the cerebrospinal fluid, is considered by some a better criterion as to the intensity of the infection than the blood Wassermann reaction. According to Neisser, no case of syphilis should be considered cured, even with a negative Wassermann reaction, unless the cerebrospinal fluid has been examined. More than ordinary caution is required in the administration of salvarsan when an intense meningeal reaction, as shown by the various tests already mentioned, is present.

SEMAINE MÉDICALE.

April 16, 1913.

Bacteriological Diagnosis of Whooping Cough.—M. P. Weil presents a critical review of the work so far done in this direction. In the early stages of pertussis the method of choice in the laboratory diagnosis of the disease is direct examination of the sputum, in which the characteristic bacillus can be recognized and later cultivated. Complement deviation tests are useful only for incomplete (*frustes*) or symptomatically atypical cases, as they become constantly positive only two weeks after the onset of the affection, and their value in typical cases is thus very slight.

REVUE DE MÉDECINE.

April, 1913.

Postapoplectic Fixed Amnesia of Twenty-three Years' Duration.—H. Mabille and A. Pitres report the case of a syphilitic, stricken with apoplexy in 1885, at the age of thirty-four years. After remaining paretic, especially on the left side, and intellectually weak for some months, he recovered almost completely in the former and partially in the latter respect. It was then noted that although all occurrences previous to the apoplexy were recollected by the patient, he had been incapable of fixing in his mind any facts brought to his attention since that time. Nothing could be remembered for more than five or ten seconds. Twenty-three years after the ictus the condition remained exactly the same, the patient always asserting that he had entered the institution the same day, and being ignorant of the customs prevailing there. Death took place from pneumonia in 1908. Brain lesions were found at the autopsy to be limited to two cavities anterior to the caudate nuclei, hollowed out in the central white matter of the prefrontal lobes. On the right side the caudate nucleus was slightly involved, but in neither internal capsule were the true pathways affected. The effect of the lesions had been merely functional isolation of the prefrontal from the temporal and occipital convolutions, without injury to either. In conjunction with the experimental work of Franz in monkeys and cats, this case shows that the fixation of a sensation takes place in a different point of the brain from its perception. No sensation which has not been analyzed and elaborated in the frontal lobes can become fixed in the mind.

Malaria and Pneumococcus Infection.—Lafforgue, after calling attention to the more or less frequent coexistence of pneumococcus infection with other infections or with toxic states, reports cases illustrating the fact that acute malarial disturbances are capable of favoring the development of a latent pneumococcic infection and its generalization in the form of a septicemia. This may be due either to weakening of the functions of various organs owing to the sudden onslaught of the malarial organisms, and perhaps, also, to deficient phagocytosis through overloading of the leucocytes with remnants of red cells, or to hemoglobinuria favoring the growth of the pneumococcus. The author enjoins that in malarial districts the possible favoring influence of this infection in cases of pneumonia be borne in mind, and the specific action of quinine availed of.

ROUSSKY VRATCH.

March 2, 1913.

Diphtheria of the Sexual Organs of Children. V. N. Klimenko observed a case of primary diphtheritic vulvovaginitis in a girl, ten and a half years old. Repeated cultures failed to reveal diphtheria bacilli in the nose and throat, but cultures from the vaginal secretions proved positive and virulent. The patient died notwithstanding the use of antitoxine. The author collected a number of cases from Russian and other European literature, showing the frequency of primary diphtheria of the genitals in children, particularly girls. The mode of infection is usually by contact of the genitals with towels used by diphtheria patients. However, a lowering of local resistance must occur before infection can take place. The course of the disease and treatment do not differ from those of diphtheria in the nasopharynx.

Typhoid Endotoxine.—M. I. Barantchik concludes from his laboratory studies that the typhoid bacillus does not secrete toxine, but that the pathogenicity is due to endotoxines which are liberated from the bodies of the bacilli. These endotoxines are specific in their action, giving rise to specific antibodies, such as agglutinins, precipitins, bacteriolysins, and substances which fix the complement.

Experiments on Dialysis of Antidiphtheritic Serum by Means of Collodion Bags.—A. A. Urgelunas and N. I. Griaznoff succeeded in removing considerable albumin from diphtheria antitoxine (about five per cent.) by dialysis through collodion bags. The dialysate contained from ten to fifteen per cent. of the original antitoxine strength.

March 9, 1913.

The Diagnostic Significance of Increased Amount of Neutral Sulphur in the Urine of Patients with Cancer.—S. N. Alekseeff investigated Solomon and Saxl's method of determining neutral sulphur in the urine as a diagnostic aid in carcinoma. He applied the test in forty-nine cases of different diseases, including nineteen cases of cancer, and found that the test is not pathognomonic, although positive results together with suspicious clinical symptoms may have some diagnostic value.

The Employment of Pituitrin in Seventeen Cases of Labor in the Obstetric Department of the Tchernigoff District Hospital.—A. S. Kotelnikova reports seventeen cases of labor in which pituitrin was used. In ten, or fifty-eight per cent., the results were exceptionally good. Immediately after the injection uterine contractions became stronger, with either further dilatation of the os or further progress of the fetus. No bad effects were observed when pituitrin was administered before dilatation was complete—on the contrary, it seemed to facilitate dilatation, nor was the effect bad on the detachment of the placenta, the latter having been expelled spontaneously in twelve out of seventeen cases. In case of failure the injection may be repeated in two, five, or six hours.

BRITISH MEDICAL JOURNAL.

April 26, 1913.

The Uses and Abuses of Proprietary Foods in Infant Feeding.—H. C. Cameron believes that excess of sugar in the diet of the infants of the poorer classes is by far the most common cause of dyspepsia. The sugars undergo fermentative changes with the formation of an excess of volatile fatty acids; the contents of the stomach become intensely acid; reaching the intestine, these act as a powerful stimulus to peristalsis. In such cases the reaction of the stools is always acid, they are green and watery, and owing to their acidity, they irritate the anus and buttocks. The increased peristalsis may be so great as to cause marked cramp colic. In such cases the tolerance for sugar falls far below the normal for the healthy infant, and for a time it may be impossible to give the patients enough to supply their caloric needs, and a true marasmus is produced. Most of the proprietary foods are composed chiefly of carbohydrate and are therefore liable to cause fermentative dyspepsia in those infants whose sugar tolerance is small or has been reduced by improper feeding. Such as contain maltose are of considerable value even in the cases in which there is a diminished sugar tolerance, for maltose is the least liable of the sugars to undergo fermentation and it may, therefore, be a useful means of supplying the needed sugar to such cases as cannot handle the ordinary sugars. These foods are too poor in fats for older infants, they are relatively expensive, and they permit the development of scurvy. Foods consisting almost entirely of unaltered starch are useful for infants over seven months of age. An infant suffering from sugar dyspepsia should be treated as follows: A purge and twenty-four hours of starvation, during which only small amounts of boiled water sweetened with saccharin are allowed, are then followed by the administration of a few drops of diluted hydrochloric acid, given in mucilage and syrup, every four hours. When the symptoms have improved feeding may be begun with the use of small quantities of boiled milk undiluted. From this point a gradual ascension to a proper diet is made.

Gonococcal Urethritis in a Boy, Aged Seventeen Months.—Archibald Smith and C. S. McKee report this rare case, confirming the diagnosis by a cultural identification of the organisms. The first symptoms were inability to void urine and a moderate redness of the foreskin. A typical balanitis soon developed, and four days later a urethral discharge, from which the gonococcus was isolated. Infection seems to have occurred as a result of the child's being taken into his nurse's bed with her. The use of a colloidal silver preparation brought about a prompt cure.

Adrenalin in Chloroform Anesthesia.—H. T. Depree reports sudden death from stoppage of the heart as a result of the injection of five minims of a one in 1.000 solution of adrenalin into the nose of a patient who had been anesthetized with chloroform. At the time of the injection anesthesia was light, the corneal reflex being brisk, and no more chloroform was given. All attempts to resuscitate the heart failed. Depree calls attention to Levy's observations on cats to the effect that adrenalin by vein in light chloroform anesthesia caused death by fibrillation of the ventricles, and suggests that this case is a similar occurrence in man.

LANCET.

April 26, 1913.

Vaccinations for Various Infections with Living Microorganisms.—W. Broughton-Alcock gives the results of the use of vaccines made from various strains of staphylococci and streptococci and the gonococcus. In a series of 150 cases there has been no ill effect of the use of the living sensitized organisms. In twenty-six cases of uncomplicated acute gonococcal urethritis thus treated there was only one in which the discharge ceased and the gonococci disappeared from the secretions, and the author is inclined to discount this as not being attributable to the use of the vaccines. In this series he used various ones, autogenous, nonautogenous, and polyvalent living sensitized vaccines, and also the same killed and in amounts up to three billions at a single injection. In cases complicated by orchitis and epididymitis this method of vaccination gave most satisfactory results; most patients were free from pain after the first injection, and all after the third injection—that is within a week. Large doses seemed to give quicker relief. Two cases relapsed, probably from a prolonged interval between injections. Four cases in the group of gonococcal rheumatism, tendinitis, periarthritis, and arthritis with exudation gave remarkable results. After the first injection, and within forty-eight hours, the acutely inflamed joints were freely movable without pain and the exudation disappeared in three days. The cures had persisted when the patients were seen a month afterward. The cases of subacute tendinitis without exudation required from one to three weeks of injections before cure. Great value lies in large doses, and it is possible to start with from 500-3,000 million sensitized organisms without causing a very severe local reaction. Broughton-Alcock adds that he has as yet seen no advantage in the living sensitized organisms over the dead sensitized ones in this condition. In the case of staphylococcal vaccines the living organisms are far more useful than the dead, and it is of great importance to be certain that the organism used is the causative one. Here, as with the streptococci, the factor of symbiosis in the case of external conditions introduces an element of great uncertainty as to which of the strains isolated is the principal offender. Mixed vaccines, and even stock ones, not infrequently give the best results in these cases. It seems safe to begin with doses of twenty million staphylococci or streptococci and 200 million dead gonococci.

The Tests for Acetoacetic Acid, Including a Simple New Test.—W. H. Hurtley discusses the common tests in use and offers the following new test as being the most suitable for obtaining an idea of the amount of acetoacetic acid in a urine. To ten c. c. of urine add 2.5 c. c. of concentrated hydrochloric acid and one c. c. of a one per cent. solution of sodium nitrate; shake and allow the mixture to stand for two minutes. Add fifteen c. c. of strong ammonia, followed by five c. c. of a ten per cent. solution of ferrous sulphate or a ferrous chloride solution of equivalent iron content (two grammes iron in 100 c. c.); shake, pour into a Nessler glass, and allow to stand undisturbed. Do not filter. A positive reaction is present when a beautiful violet or purple color is produced. The reaction is slow, the speed with which the color develops depending on the concentration of the acetoacetic acid present. Acetone does not give this test. The test is delicate to the detection of one part of acetoacetic acid in 50,000 parts of solution. By preparation of known dilutions of acetoacetic acid for comparison with the unknown urines the test may be made accurately quantitative.

PRACTITIONER.

April, 1913.

Chronic Cystitis and Retention of Urine; Treatment by Drainage and Its Beneficial Effect upon Damaged Kidneys.—David Newman discusses chronic inflammation of the bladder and its treatment by intermittent catheterization and irrigation, continuous drainage by tying in a catheter passed through the whole urethra, continuous drainage through the perineum, and suprapubic drainage, and arrives at the following conclusions: 1. Obstruction to the free escape of urine, involving increased tension in the kidneys, may lead to the development of symptoms—polyuria, albuminuria, and toxemia—resembling those of interstitial nephritis, which form serious complications of the bladder trouble, and, if not relieved, ultimately lead to toxemia. 2. Suprapubic cystotomy is the best method of draining. 3. By free continuous drainage of the bladder these symptoms diminish and ultimately disappear, and the patient is placed in a more favorable condition for operation should further treatment be required. 4. Free continuous drainage is also followed by diminution in the size of the kidneys and contraction of the ureters, so that the orifices regain their normal valvular action. 5. In chronic cystitis, free drainage by suprapubic cystotomy is the surest method of giving relief to the symptoms, or of curing the disease.

Modern Urinary Surgery; Points for the Practitioner.—Henry Curtis says that the first and most essential thing for the practitioner to recognize is that, both in men and women, tuberculous cystitis, in the vast preponderance of cases, is secondary to renal disease, and that, accepting this proved fact, it is little short of criminal to treat such cystitis locally, on the idea that it is the primary trouble. Its precursor is almost always renal tuberculosis. Another essential fact is that renal tuberculosis is a unilateral local disease in from eighty to ninety per cent. of the early cases, and tends to remain so for from one to seven years. A third fact of vital importance is that, though the symptoms may become latent, sometimes for long periods, unilateral renal tuberculosis leads inevitably to complete destruction of the kidney. The more general the recognition and acceptance of these fundamental facts and, in consequence, the earlier the diagnosis of the primary renal focus, the better the chance for a radical cure of urinary tuberculosis by nephrectomy.

Diagnosis of Neurasthenia.—Ivo Geikie Cobb says that while neurasthenia and hysteria have many features in common they have striking differences, which are plainly exhibited in the following table:

NEURASTHENIA.	HYSTERIA.
Sex. Both, principally the male.	Sex. Mainly the female.
Age. Any age, the third and fourth decades being far the commonest.	Age. Principally young women, or women at the climacteric.
Mental condition. Weakness of intellect, slow to	Mental condition. Abnormally active intellect and emotions, deficient will pow-

NEURASTHENIA.	HYSTERIA.
grasp facts, easily forgetting even important events of recent occurrence. Will power often unaltered, many "phobias."	er, recurring attacks of loss of volition, and various seizures, but little introspection.
Physical condition. Languor, weakness of muscular system, reflexes often increased, all bodily functions badly performed; no trophic changes and no wasting.	Physical condition. In apparently good health between the seizures, but syncopal attacks common, and sometimes pseudomaniacal attacks. Bodily functions well performed, digestion and excretion being good.
General symptoms. Weakness of mind and body, mental depression, skull-cap headache, constipation, dyspepsia, insomnia, limb tremor (sometimes more marked on attention), irregular areas of anesthesia or hyperesthesia, but never regular in distribution, and never hemianesthetic.	General symptoms. Good health interrupted by various seizures. Anesthesia, regular in distribution, hemianesthesia common. Involuntary muscular spasm exemplified by globus, borborygmata, and flatulence. Enjoyment of life keen.
Progress. Tedious, but curable.	Progress. Attacks often relieved by undue stimulation, e. g., nerve pressure, faradic current, etc. Hysteria is hereditary, and patients are born with the diathesis. Alleviated by treatment.

The following points are worth noting with regard to the differentiation of the early stage of general paralysis from neurasthenia: 1. In neurasthenia the patient comes of his own accord to consult the doctor, whereas in general paralysis he is brought by some relative or friend, who has noticed changes in his behavior or conduct. 2. In general paralysis the pupils are often irregular and sometimes miotic; if there is any alteration in neurasthenia it is rather that they are large and slow to react. 3. The neurasthenic brings with him an account of his case, generally written at some length, but quite intelligible; whereas the general paralytic discloses his case in an unsatisfactory manner, and is frequently irrational in his recital. 4. Amnesia is a more marked feature in general paralysis than in neurasthenia.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

April, 1913.

Clinical Observations on Arteriosclerosis.—James Third discusses three classes of people, physicians and surgeons from fifty to sixty, women from forty-five to sixty, and business men from forty-five to sixty-five years of age. He finds that the great majority of deaths in these classes are due to breaking down of the cardiovasculorenal system, in other words, to arteriosclerosis, which he considers to be, up to a certain age, a preventable disease. In the first and third classes he ascribes the disease to mental overwork, imperfect digestion, and autointoxication from the absorption of toxines. In the second class excessive tension at the climacteric goes on to definite sclerosis in a large number of cases, found to be thirty-three per cent. in a series of 250. Under general management, he says: "A careful examination is the first essential in treatment. It quiets useless fears, inspires confidence, and gains intelligent cooperation. If a business man, he should relax, but not relinquish his grip on business, and should take frequent holidays, especially at some of our mineral springs." He ascribes the improvement obtained in many patients with excessive tension and even well marked arteriosclerosis to the laxative waters, the regular hours, the quiet restfulness of the place, the cheery optimism, and its reputation as a healing shrine. He thinks that in routine practice to-day, too much dependence is placed on vasodilators and iodides. A certain degree of excessive tension is necessary. The nitrites may relieve some symptoms for a time, but only for a time. Except in the earliest stages of the disease he has never seen any permanent benefit from the iodides. Judicious purgation will do more than anything else to restore the equilibrium. Alcohol should be prohibited, and tea and tobacco also if there are intermittent pains in the calves relieved by resting. Too many restrictions will not do; the mental attitude of the patient must be considered and life be made worth living.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 1, 1913.

Infections of the Upper Urinary Tract in Infancy and Childhood.—Robert M. Green says that in infants and children infections of the upper urinary tract, though infrequent, are likely to occur without adequate apparent antecedent cause. Their onset is acute, their clinical picture definite, and their recognition often missed on account of their simulation of other infectious conditions. The two most usual forms are acute pyelitis and acute inflammatory nephritis. The latter is most commonly hematogenous in origin, the former probably proceeds by lymphatic extension from the intestine. Predisposing causes are calculi, constipation, phimosis, anal fissures, and foci of infection elsewhere. The classic signs of both are pyexia, pyuria, and tenderness in the costovertebral angle. Differential diagnosis depends on examination of the urine. The treatment consists of rest, milk diet, aqueous diuresis, moderate catharsis, hexamethylenamine, with sodium benzoate, potassium citrate, or vaccine in obstinate cases; surgery only as a final measure.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 3, 1913.

Shattering of Femur with Extensive Compound Injury of Soft Parts.—J. J. Buchanan reports a case of this character, with recovery without operation and with useful limb, which illustrates the marvelous power of Nature to restore function to a bone which is apparently hopelessly shattered, the advantages of the Fabian policy in wounds with inaccessible depths and unknown tendencies to infection, and the fallacy of the belief that satisfactory function cannot follow unless fractures are anatomically adjusted.

A Possible Source of Danger in the Use of Antimeningitis Serum.—S. P. Kramer calls attention to fact that phenols have a great affinity for nervous tissue which is proved by the fact that a considerable percentage of phenol ingested has been recovered from the brain in cases of phenol poisoning. The phenols are all readily miscible in lipoid substances, which may explain their toxicity on the nervous system. This is important in view of the fact that tricresol is pretty generally used to preserve the various serums, and the writer believes the conclusion justified that serum containing

0.5 per cent. tricresol cannot be safely injected into the subarrachnoidal space.

MEDICAL RECORD.

May 3, 1913.

The Pathogenesis of the Gastric Crises of Tabes.—E. Castelli and T. Pinel claim that it has been demonstrated that the gastric crises are secondary to the painful irritation of the dorsal roots which furnish both the sensibility of the intercostal nerves and the sensitive fibres running to the gastric mucous membranes. When these fibres are simultaneously irritated there result intercostal and gastric pains which initiate the bulbar reflex of vomiting. All interventions are legitimate and rational, which, taking this point of view as departure, will attempt to approach the dorsal roots. The degenerative lesions are almost entirely found on the roots of the dorsal region from the second to the sixth dorsal which seems to demonstrate the dorsal systemization of the gastric crises. Of the operative measures proposed for the relief of this condition the writers discuss the Foerster, the Franke, and the Guleeke operations, and finally suggest one brought forward by themselves, which consists in the ligature of the two roots, anterior and posterior, as far as possible from the ganglion. This can be very rapidly done after laminectomy without any dissection; to this ligature might be added the section of the two roots, but this would be unnecessary. In this way the tabetic radicular lesion is reached; the reflex connections between the sensory ganglion and the medullary centres are completely intercepted, and the patients are not exposed to the dangers of infection of the meningeal cavities because the exit of the cerebrospinal fluid is avoided.

Newer Ideas Concerning the Problem of Cancer Etiology.—Leverett D. Bristol treats this question from a broad standpoint, combining biology, chemistry, physics, physiology, bacteriology, and pathology rather than any one of these alone. Primary and secondary "precancerous" stages are discussed as a basis for the development of cancer; the primary stage being local cell and tissue degeneration or necrosis due to all the known causes of such changes, which includes mechanical, chemical, physical parasitical, and physiological factors; the secondary "precancerous" stage being a local disturbance of chemical equilibrium, a chemical rearrangement, including an affinity of these degenerated areas for, and an attraction to them of, certain inorganic salts of the blood, a local disordered metabolism involving physical and chemical conditions in cell and tissue. It is then suggested that such a change in local chemical environment may influence the growth of adjacent cells through increased permeability, absorptive powers, and oxidations, and induce accelerated activity and growth, even to malignancy. These ideas are finally adapted to the important phenomena of cancer. The writer hopes that what may seem impracticable in these ideas may stimulate further work in cancer research.

Results of Operation for Gastric Ulcer.—Albert F. R. Andresen makes a plea for radical operation when operation is indicated. He concludes, however, that patients with simple uncomplicated gastric ulcer should not be subjected to operation except in the presence of one of the definite indications mentioned by him. In cases of gastric ulcer requiring operation the operation of choice is excision of the ulcer combined with gastroenterostomy, which should be performed wherever the condition of the patient will allow of it. When the patient's condition is not good, however, and operation is imperative, a palliative operation should be performed, advising that subsequent operation may be required. In all cases thorough postoperative treatment should be insisted upon, and should be entrusted only to specially qualified persons. Only when the patient is in the hands of a competent internist should the surgeon consider his duty at an end. The writer reports ten cases.

The Passing of Parasyphilis.—S. Pollitzer reminds us that Noguchi's discovery of spirochetes in the brain in paresis closes a most interesting chapter in the history of syphilis, as it has not only cleared away the dust of forty years of controversy, but has proved that paresis is not an indirect effect of syphilis, but is a disseminated spirillosis of the brain, is syphilis itself. Among many new things we have learned that the spirochetes within a few weeks of their inoculation invade every tissue of the body, and, not least, the central nervous system. If not destroyed there by the natural agencies of defense or by treatment, irreparable damage results. The lesson is obvious; every case of syphilis should receive the most energetic treatment as soon after infection as the diagnosis can be made. That treatment should await the development of secondary symptoms is an antiquated notion, and one strongly and unqualifiedly to be condemned, since the system by that time is flooded with spirochetes. By the demonstration of spirochetes in the initial lesion must the diagnosis be made, and the treatment by excision or destruction of the chancre and repeated doses of salvarsan, followed by an energetic course of mercury, be at once begun. In this way only can we hope to ward off the severe tertiary lesions of syphilis, the most terrible of which are those spirilloses of the central nervous system formerly known as parasyphilitic.

The Significance and Management of Overtension.—Henry F. Stoll concludes that in about ninety per cent. of patients with persistent overtension, there is a pathological process in either kidney or arteries. The essential blood pressure in these cases is materially higher than in health, and any attempt to reduce it to the so called "normal" is hazardous. A considerable part of the overtension, however, is often of the so called "incidental" sort which is caused by the activities of life and various endogenous and exogenous toxines. Successful treatment of overtension rests upon our ability to reduce this incidental pressure by moderation in all things—in eating and drinking, in play and in work.

Post Mortem Ophthalmoscopy; Segmentary Intravascular Coagulation.—Morris H. Kahn, in this connection, observes that in the last agonal glance there usually spontaneously occurs a marked dilatation of the pupils. Sometimes, however, there is but little, if any, dilatation. When mydriasis is present examination is made with the electrical ophthalmoscope, the direct and the indirect methods being both employed. When the pupils remain contracted after death, they are dilated with a few drops of a solution of atropine or homatropine, this being done before iridal rigor sets in, three or four hours after the patient ceases breathing. Where the eyeball is left exposed for some time after death, drying of the cornea takes place. The resulting opacity can be overcome by moistening with water, or when a mydriatic is needed, it will serve a double purpose. Another method is the examination of the fundus oculi through a glass slide overlying the cornea, and separated from it by a drop of water, as suggested by Cocius and by Czermak. Three cases are reported by the writer, with the results of post mortem ophthalmoscopy recorded; in the last of which, the observation being made five minutes after death, there was to be seen a transverse cleavage of the upper outer retinal branch, with the formation of an intercoagular space. Poor circulation existing for hours before death might explain this early occurrence. During this time circulatory stasis favored later coagulation.

AMERICAN JOURNAL OF OPHTHALMOLOGY.

April, 1913.

Report of a Case of Sympathetic Ophthalmia Developing Seven Days after Operation and Treated with Neosalvarsan; Recovery.—F. Phinizy Calhoun reports a case that is of particular interest because of the rapidity of the onset of sympathetic ophthalmia. Ordinarily this disease sets in about six weeks after the injury, and the shortest interval known is stated by some writers to be fourteen days. In this case an iridectomy was performed on an eye that had been badly injured by iritis. Seven days later the other eye began to suffer from photophobia, the deeper vessels were engorged, and precipitates were found on the posterior surface of the cornea, distinct symptoms of a commencing sympathetic ophthalmia. The eye that had been operated on was enucleated at once, the patient was placed in bed, and the usual treatment, hot bathing, atropine and dionin locally, with sodium salicylate, mercury, potassium iodide, and hexamethylenamine internally, was begun, but the eye constantly grew worse. Finally, although the Wassermann reaction was negative, 0.7 gramme of neosalvarsan was given intravenously. Improvement began at once and proceeded to recovery. As the writer says, the arsenical preparation may have been given at the very turning point or crisis of the disease, and that its effect may be overestimated, but it apparently had some power in controlling the disease.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

April, 1913.

Control of Diphtheria.—William H. Seeman observes that one of the great problems in the handling of epidemics is to teach the public that the so called "well" carrier is as potentially dangerous as the carrier "sick in bed," only more so, because of his greater freedom. Analyzing nearly 900 cases controlled by the city board of health laboratory, the writer found the average time at which the bacilli disappeared from the throat to be about nine days. One case remained infected for fifty-two days and one for forty-two days, which shows the absolute necessity of control over convalescents.

Nasal Diphtheria in the Public Schools.—Edmund Moss has found that the words diphtheria and membrane have been so closely associated in the past that it is hard for the clinician to grasp the one without the other. For the writer a running nose, with excoriations of nose or lip, is sufficient ground for isolation and culture. These unrecognized cases mix with the other children and by direct infection, or by expectorating on the floor, contaminate the dust which will be inhaled by others, and so spread the disease. The writer states three causes for the spread of diphtheria. First, is the failure of the physician to look for and recognize the nasal and catarrhal forms of diphtheria; second, the lax house quarantine service for which the attending physician is responsible, and, finally, the custom of dry sweeping in the public schools.

The Heart in Diphtheria.—John B. Elliott, Jr., alleges that the diphtheria's main effect upon the heart is an acute myocardial degeneration, both fatty and interstitial; a degeneration of the pneumogastric nerve may occur. The main symptoms that call attention to the heart are tachycardia or bradycardia, dyspnea, epigastric pain, and, finally and of paramount clinical importance, gallop rhythm and late vomiting. Rest, flat in bed, with bed pan and urinal in use, and no exertion allowed, is the first and last words in treatment. Digitals may do harm; strychnine may do good.

Anaphylaxis; Report of a Case.—M. J. Magruder reports a case of anaphylaxis in which for a time death seemed imminent. The writer suggests that when serum is to be used that hypodermic and various emergency tablets be at hand. He also advises personal supervision of the patient to whom serum has been administered for at least a half hour. He deprecates the use of serum in doubtful cases or as a prophylactic. When used in appropriate cases a small initial dose is suggested, a wait of half an hour, and then the full dose, especially if anaphylaxis is feared.

Diphtheria of the Ear and Nasopharynx.—W. Scheppegrell sees danger in cases of primary diphtheria of the nasopharynx, not only on account of its difficult diagnosis making it serious for the patient by involvement of adjacent structures, but also the liability of infecting others on account of the disease escaping recognition. This, he believes, is one of the causes of the persistence of epidemics.

NEW YORK STATE JOURNAL OF MEDICINE.

April, 1913.

Gonorrheal Conjunctivitis Aborted by a Two Per Cent. Solution of Silver Nitrate.—J. Herbert Claibourne wipes the secretion from the lashes and mucous membrane of the everted lids with gauze. The whole conjunctival sac is then filled with a two per cent. solution of silver nitrate, which is allowed to remain for thirty seconds, and then wiped away with gauze. Immediately afterward the lids begin to swell and become fiery red. Atropine should then be ordered, and a solution of mercury bichloride (one in 3,000) may be used every two hours, together with constant ice application. In less than twenty-four hours after the application of the silver nitrate solution the condition is well in hand. Such treatment is applicable for the abortion of the disease only when the infection is early.

Immunotherapy in Ophthalmology and Otolaryngology.—R. L. Crockett gives brief case histories of a considerable number of infections coming under these classes which have yielded very well to the use of autogenous vaccines after other means of treatment had failed. For the treatment to be applicable the disease must be local; it must be subacute or chronic; it must be due to an organism producing endotoxines; and it must be so located that the antibodies formed will have access to the organism. Finally, one must be sure that he has discovered the organism which is the cause of the disease, as associated organisms may often be present, and their use is without curative effect.

PENNSYLVANIA MEDICAL JOURNAL.

April, 1913.

High Intestinal Obstruction, Postoperative Ileus, and Acute Pancreatitis.—J. E. Sweet reviews some of the experimental studies on animals and the symptoms seen in man in the conditions mentioned and concludes:

> Because the absorption of pancreatic ferments has been shown to be the cause of death in acute hemorrhagic pancreatitis; because the clinical picture of acute obstruction of the upper bowel so closely resembles that of acute pancreatitis; because the loss of the normal function of the adrenals would explain the most striking symptom of these conditions, the collapse and shock, and the adrenals are found to be seriously damaged in intestinal obstruction; because of the relations between the pancreas and adrenals, I conclude that the cause of death in acute hemorrhagic pancreatitis, in high intestinal obstruction, and in postoperative ileus is the absorption of pancreatic products by causing destruction of normal adrenal activity.

He suggests that if this is the case, that is if the underlying cause of these conditions is the destruction of the function of the adrenals by the absorption of pancreatic juice, then the treatment should be by continuous administration by intravenous injection of saline solution containing epinephrin, thus inhibiting the action of the pancreas and supplying the epinephrin which is essential to life.

The Exploratory Opening of the Sphenoid Sinus.—Charles P. Grayson deprecates the common practice of removing a considerable portion of the inferior turbinate bone in order to provide access to the sphenoid sinus. He anesthetizes the nose with cocaine and epinephrin, and punctures the anterior wall of the sinus at its lower and internal portion. In the absence of any obstructive deformity of the upper part of the septum nasi this can be readily accomplished in the vast majority of cases, and no removal of nasal tissue is necessary. This opening has the further advantage of being in the best position for drainage of the cavity. The operation is free alike from pain, hemorrhage, and danger. If the cavity is normal the wound will have closed in twenty-four hours. If the sinus is infected the operation affords the best possible opportunity for making an early and accurate diagnosis and for the employment of suitable measures for local treatment, particularly lavage and drainage.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

March, 1913.

Surgery of the Spleen.—W. J. Mayo discusses the various diseases of the spleen from a surgical standpoint. He says that the leucemic spleen has been removed a number of times, and in practically all of the cases in which the diagnosis was established the patient promptly died as the result of the operation. Even if this were not the case, he says, since the leucemic spleen is but a part of the general condition, splenectomy would be unavailing. At the Mayo clinic splenectomy has been performed eighteen times for splenic anemia with gratifying results. If the disease is uncomplicated, splenectomy may be expected to cure the patient. Perisplenitis may exist to such an extent in association with splenic anemia that the spleen cannot be removed without enormous risk to life. Following splenectomy, there was pain for a time in the long bones in about twenty-five per cent. of the cases, and in one or two cases a temporary enlargement of the lymphatics, evidently a compensatory hypertrophy of the bone marrow and glands.—— Franke has collected twenty-nine cases of tuberculosis of the spleen, ten of which were operated in, with seven cures. In chronic malaria with hyperplasia the spleen has been removed with gratifying results. For wandering and movable spleens, splenectomy is to be preferred to splenopexy, as the latter does not always relieve the symptoms and splenectomy is exceptionally easy and safe. Splenectomy is also indicated for cysts and sarcoma of the spleen. Twenty-seven splenectomies have been done at the Mayo clinic, with but two operative deaths.

The Pathology of Splenomegaly; a Study of the Operative and Autopsy Material from the Mayo Clinic.—L. B. Wilson, from a pathological study of eighteen spleens from patients upon whom positive clinical diagnoses of splenic anemia had been made, says that in each spleen there was a hyperplasia of one or more of the constituent tissue elements. In two spleens the lymphoid tissue was so markedly overgrown as to suggest a diagnosis in one of lymphoma and in the other of lymphosarcoma. In three spleens the proliferation of the endothelium of the venous sinuses was most predominant. In thirteen spleens the process was a chronic diffuse one, involving all tissue elements. The writer says that while any case of primary splenomegaly may begin as an overgrowth of the lymphoid tissue or of the endothelium, in the ordinary course of events a secondary overgrowth of the stroma of the gland will later appear, accompanied by degeneration of the lymphoid or endothelial elements. The largest spleens are those in which the lymphoid or endothelial hyperplasia is greatest. As the connective tissue overgrows, the spleen may be reduced in size, the roughness of the exterior being an index to the development of connective tissue within it. The histopathological picture presented in all three types of spleens from cases of primary splenic anemia seems to be in complete harmony with the hypothesis of the presence of a slowly acting local toxine.

The Extended Abdominal Radical Operation for Cancer of the Uterus.—W. Weibel, assistant to Professor Wertheim, of Vienna, describes the technic of the Wertheim operation as follows: Scraping and cauterizing of the cancer immediately before the laparotomy; incision in the median line; Trendelenburg's position; wide separation of the uterus and vagina from the bladder; tying of the infundibulopelvic and round ligaments; dividing the two layers of the broad ligament. The ureter is to be exposed up to the entrance into the parametrium without isolating it. Here the ureter is crossed and covered by the uterine vessels. The index finger is pushed through the parametrium between ureter and vessels, thereby isolating the uterine vessels, which are now ligated. By this procedure the whole pelvic portion of the ureter becomes so accessible that it is easy now to complete the separation of the ureter. Separation of the rectum from the vagina is the next step. The parametrium is widely excised, after having put on bent clamps for the avoidance of hemorrhage. Two strong right angle clamps are now applied to the already isolated vagina, so that the cancerous tissue is completely enclosed, thereby preventing its coming in contact with the wound after the opening of the vagina. The next step is the removal of the lymph glands. They lie along the common iliac, the external and the hypogastric iliac arteries, and in the trigone between; also downward to the obturator foramen and as high up as the division of the aorta. Cancer has not been found in glands of normal size. The pelvic wound is always drained with iodoform gauze, and the peritoneum carefully closed. From 1898 to 1912, 675 cases of cancer of the cervix were operated upon. At the end of five or more years since the operation, during which eight died from intercurrent disease, of 380 patients, 160 are well and free of recurrence (forty-three per cent.). The primary death rate has been reduced from thirty per cent. in the first hundred to nine per cent. in the last 175.

Rupture of the Uterus.—B. C. Hirst advises the general physician on the subject of ruptured uterus as follows: Cultivate the ability and the habit of making exact diagnoses of the comparative size of fetus and maternal pelvis; estimate the degree of resistance to be overcome and the expulsive power available to overcome it; avoid hasty manual and instrumental interference and methods of extraction that must prove futile; do not delay the application of the appropriate method too long; bear in mind the symptoms of ruptured uterus and the fact that they may be far from distinctive in certain cases; be prepared to put into immediate effect the treatment apparently most suitable to the individual case, whether it be simply gauze drainage or a difficult, complicated major abdominal operation. The writer believes that many cases of ruptured uterus may be saved by gauze packing of the pelvic and uterine cavities. The uterine packing is removed in twenty-four hours, but the pelvic packing is left undisturbed for four days, when it is removed and replaced by fresh gauze. On the contrary, if the rupture is anterior or lateral, if there is much intraperitoneal hemorrhage, if the placenta or fetus has escaped into the abdominal cavity, an abdominal section is required, and most likely a hysterectomy.

Proceedings of Societies.

COLLEGE OF SURGEONS.

Meeting of Organization, Held in Washington, D. C., May 5, 1913.

A meeting of the organization committee authorized and appointed at the Clinical Congress of Surgeons of North America was held at the Willard Hotel, Washington. D. C., May 5, 1913. Dr. Edward Martin, of Philadelphia. acted as chairman, and Dr. Franklin H. Martin, of Chicago, as secretary. The object of the meeting was stated in the language of the following resolution bringing it into existence:

Resolved, That this largest organization of surgeons on the American continent, the Clinical Congress of Surgeons of North America, shall assume the responsibility of standardizing surgery. This should be accomplished through representative committees and along the following lines:

1. It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine who is allowed to perform independently surgical operations in general surgery, or any of its specialties.
2. It should consider the desirability of listing the names of those men who desire to practise surgery, and who come under the authorized requirements.
3. It should seek a means of legalizing under national, colonial, State, or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons.
4. It should seek cooperation with medical schools of the continent which have the right to confer the degree of M. D. under the present recognized standards, and urge these colleges to confer the supplementary degree of surgeons on such of its graduates as have, in addition to their medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories, and actual operative surgery.
5. It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians, in order that the laity as well as the medical man can distinguish between the men who have been authorized to practise surgery and those who have not.

This committee, "with power to act in any manner the committee may deem desirable," began its work by deciding to commit the final decision of the desirability of the method of organization, and the final accomplishment of an organization which would fulfill the spirit of instructions of the congress authorizing the committee, to the strongest representation of surgeons that could be gotten together. The method pursued by the committee to accomplish what seemed at first a hopeless task was familiar to surgeons. The net results of the committee's efforts were that five hundred surgeons of all specialties, representing every large centre of population, every important university city with a teaching faculty of medicine, every special and general society representing a specialty of surgery, all the important surgical clinics and hospitals, besides many independent surgeons from all portions of the North American Continent, have consented to become founders of the organization under contemplation, and of these five hundred fully three hundred were present to fulfill their obligations.

The chairman stated that the object of the meeting was to further formulate and endorse the work that had been done by the subcommittee in regard to the standardization of surgery, for the benefit of the profession and the protection of the public.

The following resolutions were adopted:

Resolved, That the surgeons who were invited to become the founders of this corporation are hereby declared Fellows of the College of Surgeons, and shall receive their election by the Board of Regents without further formality.

Resolved, That such other surgeons in the territorial dominion of the College whose surgeonship can be unquestionably approved by the committee on credentials be at once, without the formality of an examination, recommended to and received by the Board of Regents as accredited Fellows of the College of Surgeons.

Resolved, That members of the societies of surgeons and surgical specialities holding accredited positions in the federation of societies constituting the Congress of American Physicians and Surgeons shall also be accepted as Fellows of the College of Surgeons without the usual formality required by the Board of Regents.

The following resolutions regarding the selection of Fellows were likewise adopted:

Resolved, That the prospective fellows of the college be divided, for the purpose of classification, into four groups to be designated A, B, C, and D classes, respectively. The A Class shall consist of the founders of the college. The B Class shall consist of the members of the special surgical societies constituting the Congress of American Physicians and Surgeons, and one hundred each, nominated by an accredited committee, from the surgical section of the American Medical Association, from the section of obstetrics, gynecology, and abdominal surgery of the American Medical Association, from the general surgical section of the Clinical Congress of Surgeons of North America, from the surgical specialties of the Clinical Congress of North America, from the American Association of Obstetricians and Gynecolgists, from the Canadian Medical Association, from the Southern Surgical and Gynecological Association, and from the Western Surgical Association. The C Class shall consist of surgeons of prominence of ten years in the practice of surgery or a surgical specialty and who, in the opinion of the committee on credentials, are eligible for fellowship in the college without formal examination. The D Class shall consist of surgeons who cannot, in the opinion of the Board of Regents, be classified under A, B, or C divisions, and for whom the college must establish an examination or other evidence of acceptable qualifications.

Resolved, That the Board of Regents, through the committee on credentials, limit the admission of fellows to classes A, B, and C until the Board of Regents formulates a standard of requirements for Class D and reports the recommendations back to the Board of Governors for approval at a meeting to be called by the Board of Regents at the time of the next meeting in Chicago, November, 1913.

Provisional by-laws were read and adopted, subject to be changed, amended, or substituted for at the next meeting, to be held in Chicago in November.

Election of Officers.—The following officers were elected: President, Dr. J. M. T. Finney, Baltimore, Md.; vice-president, Dr. Rudolph Matas, New Orleans, La.; general secretary, Dr. Franklin H. Martin, Chicago, Ill.; treasurer, Dr. A. J. Ochsner, Chicago, Ill. Board of Regents: D.r George E. Brewer, New York; Dr. George E. Armstrong, Montreal, Canada; Dr. John B. Murphy, Chicago; Ill.; Dr. Edward Martin, Philadelphia, Pa.; Dr. F. J. Cotton, Boston, Mass.; Dr. Herbert A. Bruce, Toronto, Ontario; Surgeon General W. K. Stokes, of the Navy; Dr. William D. Haggard, Nashville, Tenn.; Dr. George W. Crile, Cleveland, Ohio; Doctor McKechnie, Vancouver; Dr. Charles H. Mayo, Rochester, Minn; Dr. Harry Sherman, San Francisco, Cal.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PEDIATRICS.

Stated Meeting, Held January 9, 1913.

Dr. Henry Dwight Chapin in the Chair.

Remarks Concerning the Need of Psychological Clinics in Connection with the Public Schools.—Dr. L. Pierce Clark said that for years there had been a growing discontent in the mind of the thinking public with the slow advance in individual teaching in our public schools, and one of the comparatively new departures to meet this lack had been the recent establishment of ungraded classes for the so called subnormal children. The work in the ungraded classes had been an astonishingly rapid development. In New York city alone to-day there were 152 ungraded classes, caring for over 2,700 pupils of this subnormal type, and it was now estimated that about 7,000 children in Greater New York were in urgent need of these special classes, which for this city alone would require not less than 427 special classes. Did this indicate that feeblemindedness was on the increase in the public schools? No; it meant that we were awakening to the importance of detecting the defects in pupil material of the common schools. There could be no doubt that this defective material of the schools was everywhere; every public school had it. The general usefulness and importance of the work that had already been done in these ungraded classes could not be questioned. The withdrawal of the mentally unfit or deficient child from the normal class was alike beneficial for the normal and the subnormal. While all these pupils were undoubtedly receiving advantages from these special classes, it was the general conviction that the idiotic and imbeciles in this heterogeneous group of subnormal school children needed special institutional training schools and colony homes where proper habits of living and work for the whole day of life might be taught. This hopeless and slightly educable class must be cleared from the schools. In the meantime, while the State was preparing to meet its burden and duty in this respect, there could be no doubt that defective children should stay in these ungraded classes, gaining as much as possible of the special education which had been patterned after the institutional plan of instruction. More exact psychiatric analyses of these high grade defectives in the special classes should be made. The neurotic or nervous child, the child who had day dreams, was too emotional, had night terrors, or suffered from memory or attention defects, was motorially uncontrolled, as shown in tics and habit spasms, or even had more pronounced nervous or mental disease—one which had psychic episodes of excitements or depression, even leading to mild hysterias, phobias, anxiety states, or psychoeleptic crises and even psychic epilepsy itself—should be studied. This group class was the embryo storehouse of the psychoneuroses and the near individualism of latter life. We as physicians of special neurological and psychiatric training should not be slow in recognizing that this was a special field for study in the prevention of the functional nervous diseases. That we should all look upon this special field as the most important to be opened up was his special plea. Still more fundamental should be the study of the makeup of the neurotic constitution which we were agreed was the essential core of the neuroses. It might be just possible, when this nucleus was fully disclosed, that we should find it acted as a Mendelian unit which was just as transmissible as physical defects were now known to be. Out of this neuropathic constitution in its broadest conception flowed the antisocial traits of abnormal child life, such as lying, stealing, truancy, sex perversion, and a host of others. Lest it might be thought that the nervous child was a negligible factor in the schools, he wished to say that it had been estimated that this class formed from five to ten per cent. of all school children. We knew that a great many of these children grew up into healthy men and women in later life. If it had taken years of painstaking study to evolve a comprehensive understanding and training treatment of the frankly defective child, how much more labor there remained for us to perform before we could understand these defective children of the neurotic type. The whole problem of establishing psychobiological clinics was not a new one. Most large cities had them, but they were not an integral part of the school system. The formation of these psychological laboratories was a step in the right direction, but the psychological clinics needed expert psychiatrists and neurologists to extend and make definite a form of psychoanalytic inquiry commensurate with the newer methods in psychiatry. As in the pronounced insanities, the crying need to-day was not in a lot of cases loosely studied, but a few very carefully and exactly analyzed. The reasons for establishing such clinics in the schools were that the latter had the full confidence of the parents of these neurotic children, and that the schools were a "going concern" and could readily incorporate a complete and properly equipped clinic with their other special schools for the blind, deaf, and dumb, and crippled. Such a clinic should have, 1, a definite record of the child's defect and behavior in a false adaptation or lack of progress in the normal school; 2, a careful research of the family life and environment which might be a contributing cause for the nervousness; 3, an intelligence, judgment, will, and ethical test by trained experts, as well as a thorough physical examination. Then, and not till then, should a prescription of the special school treatment be given. Provision for a follow up record should be made and a reexamination and review of the case should take place after a certain observation treatment had been applied. A system like this called for team work on the part of the trained teacher, psychologist, neurologist, psychiatrist, and sociologist. There was work and honor in such a field of endeavor. It portended much for the future. Such a clinic for the New York city schools was being organized and he trusted it would show some important results in solving the problem.

Etiological Factors in Atypical Children.—This paper by Dr. S. P. Goodhart was published in the Journal for April 12, 1912.

The Mental Defective and Society.—Dr. William Leland Stowell read this paper. He said that by the mental defective he would have understood the feebleminded person. The physician first saw the defective when the family began to realize that the child was not normal. Its defects might be recognized by a failure to grasp objects at the age of six months, a failure to begin walking at the age of one year, to show curiosity or sociability at a year and a half, or to talk at the age of twenty months, and by a continuance of infantile habits beyond the age of two years. At the age of six or seven years the school teacher noted the limitations of such a child. He could not learn the use of objects, could not appreciate form and color, could not tell time or age or count, as the normal child did. If his intelligence never got beyond that of a child of two years he was an idiot; if it reached only that of a child of seven he was an imbecile; if it stopped at the level of a child of ten or twelve years, he was almost up to the standard and was a moron. The feebleminded child could not compete with the normal child because he lacked reasoning power, did not appreciate right and wrong, or the consequences, and was actuated by impulse and suggestion, rather than by design. He lacked imagination, power of initiative, or prolonged application. Such persons had little moral sense and were sexually corrupt. Data carefully collected had enabled us to make a conservative estimate of one feebleminded person to every three hundred normal ones, or 300,000 feebleminded persons in the United States. Thirty thousand of these were in New York State, and less than four thousand of them were in four appropriate institutions. His experience had been gained at Randall's Island where there were now 1,186 aments. They tried to supply a proper environment, to teach the girls domestic employments, and the boys trades and outdoor work. They could not supply gray cells where none existed, and hence the condition was incurable; so that these children should be kept in institutions. The education of the borderline cases had been greatly advanced during the past decade. The special classes maintained by the New York Board of Education now instructed from 2,200 to 2,700 pupils. This was not the work of the public schools, as scarcely one tenth of the children ever rose to the normal grade of these schools. All feebleminded persons should be segregated in institutions where they would have expert physical care and instruction. Adults should be segregated to prevent their becoming parents, and, again, because being unfit to compete with normal beings, they were happiest with their kind. Segregation was especially necessary for feebleminded girls. Most of these girls, if allowed their liberty, became mothers at a very early age. Statistics showed that such defectives were twice as prolific as normal women. The experience of the Salvation Army and the House of Mercy in dealing with prostitutes showed that one third of these girls were feebleminded. The government calmly took the lives of one hundred criminals every year, and yet was slow to prevent these lives beginning. Feeblemindedness was an incurable condition, and not a disease. The condition of the higher grades could be improved by training. They became useful in an institution, but not capable alone. Dr. Caldecot, of Earleswood, had investigated 341 patients who were discharged during fifteen years, and found that 3.25 per cent. were earning wages, 3.81 per cent. were very useful at home, 7.5 per cent. were at home and useful, and the remaining 85.5 per cent. were worthless and should have been taken care of for life. These were all discharged patients supposedly good enough to be out. According to Dr. Wiley the normal average death rate was forty-four years; of 500 cases of defectives and feebleminded studied at Randall's Island, the average age at death was thirteen years. Hence, normal persons lived about three and one half times as long as aments. The mortality tables showed that among the latter deaths from pneumonia and inanition were very numerous, while those from diseases of the vascular system were few compared with the rates for normal individuals. The institutional cost of maintenance for one person was $200 per annum, and the home care would be about the same; so one might calculate that the care of the 300,000 feebleminded in the United States amounted to about $60,000,000 a year. It had been stated that in the Elmira Reformatory thirty-seven per cent. of the criminals were feebleminded. Greater New York's crime bill in 1906 was $35,000,000 and that of the nation $1,075,000,000. If one third of these costs were to be charged to the mental defects of the criminals, the cost of feeblemindedness was certainly very high. If the State could not segregate this class of individuals it should sterilize them. There should be a law that no person in an institution at public charge, who had been properly judged defective, should be discharged therefrom without first being rendered unproductive. Children were not allowed to marry; why allow mental immunes to marry? Asexualization should be regarded just as quarantine, a simple protection against ill to the community.

Dr. Charles L. Dana said that because of the large number of feebleminded among us to-day this was one of the greatest social problems which now confronted us. The feebleminded were a menace to society and an expense to the State, and it was from this stock that considerable proportion of criminals were drawn. The care of the feebleminded should be placed under State regulation, and there should be a State board of control. The feebleminded should be cared for under the direction of this board as the mentally deficient were cared for by the State Commission on Lunacy. Such a board of control should have a census made of the feebleminded, and should establish a bureau of records. The life history of these children should be kept. Before school age the children should be under the care of their parents; after that they should be under the supervision of the State. During the years they were of school age they should be under the care of the Board of Education, but also under the supervision of the State Board of Control. When proved unfit for school work they should be placed in institutions. After passing the school age, when they became most dangerous to society, they should be under State control. During the process of growth some of this class became useful citizens and were able to care for themselves. During the time that such a plan was developing we must go on doing the best we could, and the Board of Education could be of great help. The State Board of Charities recognized this work, and was prepared to more than double the present accommodations in the different State institutions. Perhaps in a short time they would be able to care for fourteen or fifteen thousand of these children, instead of four or five thousand, as at present.

Dr. Charles H. Andrews, of Buffalo, said that we might all believe in the segregation of defectives, but of what use was this measure under the law as interpreted by the attorney general? When a child was able to do anything useful he could be taken out of an institution by his parents or grandparents, and what was the result? A boy who happened to be a firebug might destroy any buildings, or a girl who was weakminded might fall prey to those always looking for such girls. One young girl had gone home from an institution for a three weeks' visit, and when she came back was found to be pregnant by her own brother; this was only one of many similar instances that might be related. What was the use of increasing the number of institutions for the feebleminded if the number of this class increased more rapidly than the accommodations? It was not definitely known what the State of New York would do in regard to sterilization, but records and family histories should be kept, and if the courts approved sterilization might be performed according to the law. Just how soon this was to be done was unknown, but the authorities should be willing to receive suggestions along these lines.

Dr. B. Sachs said that in his opinion no great advances toward the utopian state would be made by asexualization. It was well to adhere to the tangible phases of the question. He would like to say a word about the higher class of defectives. There always were a larger number of these children than we realized. These higher defectives were not proper subjects for care on the part of the State. They were often the unfortunate victims of insanitary and unhealthy environment. After thirty years of study he was not ready to give any conclusions as to whether these slightly defective children were developed as the result of heredity or chiefly from the results of insanitary surroundings. Much could be done by the relatives, the teachers, and the family in efforts directed toward the improvement of the mental condition of such slightly defective children. The environment of the family was a great factor; an unhealthy home atmosphere, unrest, discontent on the part of the mother, and general preoccupation on the part of the father contributed more to the development of the defective child than assumed hereditary factors. There had been a great hue and cry at times against our educational system, but he wished to go on record as saying that there was no one power or force in any American community that tended so clearly toward the prevention of defective and nervous children as did the healthy restraining influence of the average school; the school was the safeguard in the entire social makeup. The schools were excellent places for discipline, and this was the one force that appealed to him in the improvement of the condition of the defective child. The Section in Pediatrics could do an excellent work by pointing out to the Board of Education the absolute necessity of giving to these children such instruction as they could. Defective children should not be in classes with normal children, neither should all defective children be in the same class, as defective children differed greatly in the degree of their abnormality. There should be special schools for defectives, with a series of ungraded classes. We should continue to advocate a system of education for the training of these higher defectives, as many of them became useful citizens. The complete imbeciles and the seriously defective children should be entrusted to the care of the State.

Dr. Max G. Schlapp said that Dr. Sachs was probably referring to feebleminded children when he made the statement that a large percentage of such children could be educated and become useful members of society, but this assertion was not borne out by the facts. In looking over the reports of an institution where this sort of work was carried on he had observed that only a very small percentage of the feebleminded were ever capable of doing any good work or of becoming self supporting. The most serious factor in the problem was the welfare of the community. These children were, without exception, potential criminals; they could easily be led into all sorts of things. Most of them were sexual imbeciles, and time and again they would mislead the normal child. Dr. Stowell had stated that this condition was not a disease. He would like to ask Dr. Stowell whether he considered syringomyelia a disease; whether Basedow's disease, myxedema, Addison's, and similar affections were diseases? Were they not due to some disturbance of the internal secretions? These were the conditions to be found as causes of feeblemindedness. If we considered such conditions as diseases we must consider feeblemindedness a disease. It was the duty of the State to take these people out of the community and place them in institutions where it might be possible to determine the nature of the condition and to get some prophylactic which would prevent its spread. Idiopathic feeblemindedness was due to some disturbance of the internal secretions, though this might not be the only cause.

Mr. Angus P. Thorne, of the Department of Public Charities, New York City, said the most important thing was for the State to adopt some definite policy for the care of the feebleminded, and he believed that the State of New York was practically committed to a definite policy of segregation. At present the State Board of Charities had supervision over all institutions devoted to the care of the feebleminded. He did not agree with Dr. Dana that a State board of control was necessary. If the State would provide the means the State Board of Charities could handle the work. The most important thing in the study of this work should be a scientific investigation which should be undertaken to find out the causes underlying feeblemindedness; not investigations covering one or two months, but a period of years. There was no good reason why the city of New York should support feebleminded persons when their relatives were able to do so. The Randall's Island institution was intended primarily for the indigent, and where an inmate or his relatives were able to pay, in full or in part, for his maintenance, the commissioner of Charities was empowered to collect such a sum and turn it over to the city chamberlain once a month. It was desirable to get all agencies in the city interested in the problem of the feebleminded, and then data could be collected which would be of value and would stimulate the authorities to make better provision for this class of dependents.

Miss Elizabeth E. Farrell, inspector of ungraded classes, Department of Education, New York city, said that in caring for feebleminded children the schools were not doing a new work, but merely adapting their instruction to individual needs. The school authorities had promoted the idea of adequate institutional care for a large number of children in the schools who never could be self supporting and who ought never to be allowed to take a place, however small, in our highly organized city life. The medical inspection of children in the ungraded classes was such that we knew with a fair degree of accuracy the progress made by the children from year to year. When the time was ripe the parent was advised to make application for the admission of the child to an institution if he did not progress properly. Not one parent in ten followed the advice. As things were at present, the parent alone could secure institutional care for the child. As soon as the public understood that we had in the schools of this city children who would need supervision as long as they lived, we would have adequate room and some sort of legal procedure for transferring such individuals to farm colonies. The schools did not want the idiots and imbeciles, but the wisdom of turning them on the streets was questionable. The work which the school really wanted to do, and which it would do as soon as it was relieved of the children who needed custodial care, concerned the high grade defective child who might by proper treatment, medical and educational, be prepared to take a place in the life of the community. They wanted the physicians of the city to regard the schools as laboratories; they wanted to gather such records of school children as would help them in understanding the pitiful cases of psychoses that come to them for intelligent sympathy and help. The time for arguing whether or not the mentally defective child was the concern of the public school was past; we must care for him until society realized its duty to itself and its obligation to the weak.

Mr. Hibberd, ex-commissioner of Charities, New York city, said that the statement made by Van Wagenen, and the reports from the Carnegie Laboratory, as well as from Washington, confirmed this, that there were 400,000 mental defectives in the State of New York, and of this number about 30,000 were idiots, imbeciles, and low grade defectives. This State could never segregate such a large number, but it should care for the low grade cases. At the present time, in New York city, six of the twenty thousand defectives were under public care, being paid for by the State or the various local authorities in the State. They wished to keep these people out of the State, and were trying to help Ellis Island to accomplish this. A feebleminded person with an inherited defective strain was more of a menace to the community than an insane person. We needed most of all that public spirit which would help institutions to get money to enlarge their facilities, so that a large number of these defectives could be cared for. New institutions were especially needed in the western part of the State. It seemed better to avoid these boards of control, as politics were liable to enter into, them. We needed some change in the law; it was quite easy to get a person sent to an institution, but it was often very difficult to keep him there. The reformatory was no place for the defective as he was not benefited himself and interfered with the discipline of the institution. This was a subject to which the Section in Pediatrics did well to turn its attention. It, together with the Department of Education and the Department of Charities, should work together in this matter.

Dr. Clark said he did not think all of these children had criminal potentialities. The economic side of this question was an important one. His opinion in regard to a board of control agreed with that of Mr. Hibberd. We should have a census of these feebleminded persons in order that we could know where they were.

Dr. Goodhart said that the most important class with which we had to deal was that of the high class defectives. They did not require institutional care, and might be a most valuable asset to society, since among them might be found those possessed of special aptitudes, even of a high order. Unless they were recognized early and trained properly they might become truly defective. Feeblemindedness was in some cases a disease in that it might be dependent upon a demonstrable pathological lesion in the brain; it was always a condition affecting social and economic problems.

Dr. Stowell said that in regard to feeblemindedness being a disease he disagreed with Dr. Schlapp. The Board of Education should have charge of all teaching of normal or abnormal children; but the feebleminded should be taught in institutions. The State must realize that accommodations must be provided for many times the number of feebleminded now cared for.

Letters to the Editor.

THE AMERICAN MEDICAL ASSOCIATION OF VIENNA.

Vienna, *April 23, 1913.*

To the Editor:

In reading the Journal of April 5th I was very much surprised to find such valuable space taken up with an article entitled Vienna Caustic, which, although very amusing in some parts, is very untrue in others. It is not the purpose of the writer to answer Doctor Maverick by refuting any of his statements concerning the darker side of Vienna social life, the knowledge of which he seems to possess in a marked degree. On the other hand, I cannot believe, judging from the American physicians I have met here during the past year, that all of the men present here in 1908 were here for pleasure, as the gentleman from Texas would have us believe. My purpose is rather to show that the work in Vienna is not only in "the hands of minor professors, docents, and assistants," but is also in the hands of some of the world's greatest teachers.

Doctor Maverick mentioned a long list of names (Zuckerkandl, Weichselbaum, von Noorden, Fuchs, Chiari, and others), which he terms "the cream of Vienna medicine." Continuing, he writes, "How many of these lecture to American students? None. Sad, but true."

This statement is absolutely untrue and without foundation. Americans, and good, earnest Americans, here to work, and not to spend their time in cafés, are always to be found in the clinics of the above named men in great numbers. *The Bluebook of the American Medical Association of Vienna* gives a list of all the courses, which are recommended to the men coming here to study, such courses having been arranged for by the association. Perusal of the book will show that the above named men give courses open to the members of the association. In the eye, ear, nose, and throat department practically all of the work is given in English, and in very good English. A knowledge of German is requisite to enable a man to get the best work in other lines, but the majority of the men who come here for such work have a good working knowledge of German. Still, there is splendid work for men who know but very little German but are here to work. And how the men do work!

I have never met a more earnest body of physicians devoting so much time and energy to their work as the American physicians doing postgraduate work here in Vienna. Doctor Maverick graced Vienna with his appearance on May 18, 1908, and became a member of the American Medical Association of Vienna. The date of his departure is not certain, for, although members are requested to give notice of their departure, he left very suddenly and, as far as I know, has never been heard of again until April 5, 1913, when he looms up with reminiscences of five years ago. I trust you will give space to this communication in your valuable journal, more to uphold the reputation of the American physicians here than to exploit the postgraduate work of Vienna.

J. J. Cohane, M. D.,
President of the American Medical Association of Vienna.

VIENNA CAUSTIC.

507 Bedell Building, San Antonio, Texas, *May 9, 1913.*

To the Editor:

In looking over the proof of Doctor Cohane's answer to my article on Vienna Caustic it makes me sad to think that a man dignified by the position of a presidency should absorb so little of what he reads. If he had read my article carefully he would have found that I said the *majority* and *not all* the American physicians in Vienna wasted their time. I could not very well say all because I was there myself. When I wrote that men like von Noorden did not lecture to Americans I added that "anyone can mingle with the Vienna undergraduates and attend the clinics of these professors, but what he hears is purely elementary, intended only for the ears of beginners." Doctor Cohane cannot mention any of these leading Vienna men as holding postgraduate clinics for Americans alone. The Bluebook of the American Medical Association of Vienna, which I must confess once contained my name as one of the officers of the association, is very unreliable, because it gives the names of the higher professors and makes the prospective student think that these men give special lectures to Americans, when in reality their courses are really all university courses for undergraduates. The only absolutely reliable information I can find in my copy of the bluebook is in the advertising section, where it says that a certain café sells excellent beer. Doctor Cohane furthermore overlooked the fact that I also had mentioned that in eye, ear, and throat work there were some good lecturers who used English—certainly in no other line of work.

There is no necessity for me to withdraw anything I said in my article; Doctor Cohane does not tell me anything new. The numerous letters I have received from physicians all over the country, who have been in medical Europe, endorsing what I wrote, convinces me that I did not make the dose too strong, even though it proved a little hard to swallow. It certainly pleases me to learn that the American physicians in Vienna at the present time are all sober and industrious. No doubt they will soon be singing hymns and wearing green carnations. The fact that Doctor Cohane finds no trace of me since the time I came to Vienna is not because I have been in jail, as he evidently infers. In fact I stayed in Vienna almost a year and a half, leaving there the latter part of 1909, only a little more than three years ago. I can assure the honorable president of the Medical Association of Vienna that when I left Vienna I did not leave very suddenly, but went on board the Constantinople express, which has never been known to exceed the speed limit. The question as to whether I left Vienna suddenly or not has nothing to do, I hope, with the postgraduate work in Europe. Possibly when Doctor Cohane awakens some blue morning, and sees a vision of the statue of Liberty and the skyline of old Manhattan floating before his eyes, he will leave suddenly himself.

My compliments to Doctor Cohane for whom personally I feel the greatest respect. He would be a poor skipper who did not stand by his Titanic, and this Doctor Cohane so faithfully does.

Augustus Maverick, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Manual of Auscultation and Percussion. Embracing the Physical Diagnosis of Diseases of the Lungs and Heart and of Thoracic Aneurysm and of Other Parts. By Austin Flint, M. D., LL. D., Late Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc. Sixth Edition, Revised and Enlarged, by Haven Emerson, A. M., M. D., Associate in Physiology and Associate in Medicine, College of Physicians and Surgeons, Columbia University, etc. Illustrated. Philadelphia and New York: Lea & Febiger, 1912. Pp. viii-36.

The sixth edition of Flint's widely known manual abundantly justifies itself. Well written, without useless verbiage, the author makes a valuable contribution in Chapters II and IV, in dealing, respectively, with Percussion in Health and Auscultation in Health, while in Chapters III and V, Percussion in Disease and Auscultation in Disease are considered. Normal physical findings are so often left to the student to acquire as best he can, or he is assumed to know it all, and only the pathology is dealt with. Likewise, the author deals with Physical Conditions of the Heart in Health and Disease. Two new chapters have been added to the present work, dealing with the Abdominal Viscera and the Nervous System. These are brief but succinct, and will repay close study. The work concludes with a mere outline sketch of the accessory methods of physical examination and then a systematic plan for making a careful physical examination is submitted. It is the opinion of the reviewer that if every doctor carefully followed such a plan, comparatively few errors in diagnosis would occur, the profession would be saved much opprobrium, and fewer neurasthenics and valetudinarians would be created.

Diseases of the Stomach and Upper Alimentary Tract. By Anthony Bassler, M. D., Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital, Chief Gastroenterologist to the German Poliklinik, etc. Second Edition, Revised and Enlarged. Illustrated with Numerous Half Tone and Line Text Engravings, and 75 Full Page Half Tone Plates Plain and in Colors, from Original Photographs and Drawings. Philadelphia: F. A. Davis Company, 1913. Pp. xviii-870. (Price, $6.)

The second edition of Doctor Bassler's book is a pronounced amplification and improvement on the first. It is now a complete treatise on diseases of the stomach and upper digestive tract. The makeup is most creditable to both author and publishers, containing as it does 870 pages octavo, six inches by nine and one eighth inches, on Kotine paper, on which half tone pictures are readily reproduced, making a compact and easily handled book. Illustrations are numerous: Seventy-five full page half tone plates, plain and in colors, from original photographs and drawings. These afford excellent mental visualizations of clinical procedures and pathological phenomena. The volume compares favorably with others on similar lines, and constitutes a thorough presentation of modern advances. A word must be said in commendation of the author's style. Few medical writers realize how much the integrity and acceptability of the most finished, scientific, and illuminating treatment of a subject is jeopardized by heavy, tedious, involved phraseology. Each chapter and subchapter begins with a clear, succinct presentation of the subject matter to be discussed. The reader is thus led insidiously and pleasantly to the end. No pains are spared to give a comprehensive, practical conception of the stomach and gastroenteron, their maladies and treatment. Individual opinions expressed and personal methods advocated are temperate, wise, and in accord with the best knowledge in this and collateral domains. Certain chapters prove interesting reading to the general practitioner and to specialists in other lines, notably those on organic diseases of the stomach, splanchnoptosia, and the contributions of surgery to internal medicine.

Golden Rules of Surgery. Especially Intended for Students, General Practitioners, and Beginners in Surgery. By Augustus Charles Bernays, A. M., M. D., Heidelberg, M. R. C. S. England, Chief Surgeon of the Lutheran Hospital and for Twenty Years Professor of Anatomy and Surgery in St. Louis, Mo. Second Edition. Revised and Rewritten by William Thomas Coughlin, M. D., Assistant Professor of Surgery, St. Louis University Medical School. St. Louis: C. V. Mosby Company, 1913. Pp. 281.

This small book is intended for students, general practitioners, and beginners in surgery. The complete exhaustion of a large first edition demanded the present issue. The work teems with helpful points and advice based on thirty years' experience in surgery. If it is carefully read many common errors in the practice of surgery will be avoided. The style, consisting of short positive statements, is impressive and conveys to the reader the conviction of authority. The book has a distinct purpose not fulfilled by the ordinary surgical works, inasmuch as it brings together in a compact form rules of procedure and warnings which one would have to search for perhaps in vain through several textbooks. Furthermore, it brings home to the beginning operator, in a clear manner, valuable information relating to practical points of technic and common pitfalls. For the young operator to be left to find out these things for himself means often misfortune for the patient.

Malaria. Cause and Control. By William B. Herms, M. A. Assistant Professor of Applied Parasitology, University of California, etc. Illustrated. New York: The Macmillan Company, 1913. Pp. xi-163. (Price, $1.50.)

Although the material presented in this volume is based on nearly four years of practical study of malaria in California, it, nevertheless, can be applied to any locality where this disease exists. It is full of most valuable advice and contains many suggestions that are indeed most practical. The life histories of the malarial organism and of the mosquito carrier are reviewed, means of control are explained, the methods of crusade are outlined, and numerous statistics give the cost of such procedures. This book should be most useful and can be highly recommended to those living in regions where malaria is found.

The Individual in the Animal Kingdom. By Julian S. Huxley, B. A., Research Associate of the Rice Institute, Houston, Texas, Late Lecturer of Balliol College, Oxford. New York: G. P. Putnam's Sons; Cambridge: University Press, 1912. Pp. ix-167. (Price, 40 cents.)

If the objects of medical culture should include forms of agreeable recreation while losing no time in absorbing information, if also they should embrace stimulation to literary style, then here is a little volume which furnishes all this. That it is highly important for the practitioner to learn what manner of creature man, "Homo sapiens" (Linnæus) really is, where he stands not only in the phylogenetic scale but so much of his characteristics as shall reveal how to estimate his place in the animal kingdom, his individuality, his personality, his human attributes, there can be no doubt. These be the strings of the harp of life on which the conservator of health shall play. Let him read this product of the younger Huxley not once but, as the reviewer hopes to do, oftener. It is good science, it is rare philosophy, couched in charming phrase, rich in literary allusion in classic metaphor, brief, clear, made easy of comprehension by touches of that imaginative quality so wisely recommended to scientists by the elder Huxley.

Disease in Milk. The Remedy, Pasteurization. Compiled by Lina Gutherz Straus. Pp. 221.

This collection of papers, essays, and addresses written by Nathan Straus, is a splendid testimonial of the life work of this rich philanthropist. Whether right or wrong —that is not to be discussed here—it must be admitted that Mr. Straus has at least tried to help man in his fight against the white plague, and he would not have found a more friendly coworker than his wife, Mrs. Lina Gutherz Straus, who has collected and published these papers.

A Manual of Immunity. For Students and Practitioners. By Elizabeth T. Fraser, M. D. (Glas.), Late Assistant Bacteriologist, Glasgow Royal Infirmary, etc. Glasgow: James Maclehose & Sons, 1912. Pp. x-199. (Price, 5s.)

The author rightly concludes that, owing to the almost wanton introduction of new terms, the science of immunity has acquired an aspect of complexity which may well suffice to scare the busy general practitioner from any attempt to study the subject. He deems it the most living branch of medicine, instancing serodiagnosis, vaccine, and serumtherapy, and the Widal and Wassermann reactions as proofs that the physician can no longer remain a mildly interested looker on. Hence the purpose of the book, to furnish the practitioner and student a clear and concise review of the subject, one deprived as much as possible of intricacies and unusual terms. He has succeeded admirably, and the reader may without being submitted to the overpowering fatigue which most works impose, obtain an excellent idea of the structure and properties of the fluids such as the antitoxines, agglutinins, etc.; the cells, phagocytes, etc.; the microorganisms; the immunity reactions such as serum and vaccine therapy; those employed for diagnostic purposes, the Widal, Wassermann, and other reactions; anaphylaxis and chemotherapy. A convenient glossary is also furnished, the book closing with an excellent index. On the whole, Doctor Fraser's little book is a most satisfactory one.

Meetings of Local Medical Societies.

Monday, *May 19th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Elmira Clinical Society; Hartford, Conn., Medical Society.

Tuesday, *May 20th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Medical Society of the County of Westchester; Psychiatric Society of Ward's Island; Oswego Academy of Medicine.

Wednesday, *May 21st.*—New York Academy of Medicine (Section in Genitourinary Diseases); Northwestern Medical and Surgical Society of New York; Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society; Buffalo Medical Club (annual); New Haven, Conn., Medical Association; New Jersey Academy of Medicine, Jersey City.

Thursday, *May 22d.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club; New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association.

Friday, *May 23d.*—New York Academy of Medicine (Section in Public Health); Academy of Pathological Science; New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Italian Medical Society.

Saturday, *May 24th.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society, Lenox Medical and Surgical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 9, 1913:

Banta, William P., Captain. Granted two months and fifteen days' leave of absence on arrival in the United States. **Brooke**, Robert, Major. Granted two months' leave of absence. **Brooks**, W. H., Major. Granted one month's leave of absence about May 7th, with permission to apply for an extension of three months. **Bushnell**, George E., Colonel. On leave of absence, will report to the surgeon general of the army for temporary duty. **Fauntleroy**, Powell C., Major. Relieved from duty in Washington, D. C., and will report to the commanding officer at Fort Monroe, Va., for duty, upon expiration of leave of absence. **Kramer**, Floyd, First Lieutenant. On arrival in San Francisco, will report to the superintendent of the Army Transport Service for duty in connection with transport duty in that city. **Manly**, C. J., Major. Granted one month's leave of absence, about May 7th. **Quade**, Omar H., First Lieutenant. Left Fort Snelling on May 4th on sick leave of absence for one month. **Schreiner**, Edward R., Major. Orders have been amended so as to direct him on the completion of his present course of instruction at the Army Service Schools, Fort Leavenworth, Kansas, to proceed to Boise Barracks, Idaho, for temporary duty and upon completion of that duty to proceed to San Francisco, California, and take the first available transport for the Philippines, and upon arrival in Manila to report to the commanding general, Philippine Department, for duty.

Each of the following named medical officers on arrival in the United States will report to the commanding officer of the posts named after their names, for duty: Captain Henry C. Coburn, Jr., Ft. Douglas, Utah; Captain Theodore Lamson, Ft. Flager, Washington; Captain James D. Heysinger, Fort Casey, Washington; Major H. G. Shaw, Fort Banks, Massachusetts; Captain John W. Hanner, Letterman General Hospital, Presidio of San Francisco; Captain John B. Huggins, Ft. Robinson, Nebraska; Captain E. B. Vedder, will proceed to New York city, and take station at that place for the purpose of a course of instruction at the Rockefeller Institute; Major R. U. Patterson, to Washington, D. C., and assigned to duty with the American Red Cross; First Lieutenant E. F. Haines, Medical Reserve Corps, Ft. Leavenworth, Kansas, for duty with United States Military Prison; First Lieutenant T. W. Penrose, Medical Reserve Corps, to Fort D. A. Russell, for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 10, 1913:

Alfred, A. R., Surgeon. Detached from the Receiving Ship, Mare Island, Cal., and ordered to the Proving Grounds, Indian Head, Md. **Angeny**, G. L., Surgeon. Ordered to the Navy Recruiting Station, Richmond, Va. **Cather**, D. C., Passed Assistant Surgeon. Detached from the *Vermont* and ordered to await orders. **Hart**, S. D., Assistant Surgeon. Ordered to the Atlantic Reserve Fleet. **Lyon**, W. C., Assistant Surgeon, Medical Reserve Corps. Detached from the Navy Recruiting Station, Richmond, Va., and ordered to the Navy Recruiting Station, Galveston, Texas. **Stoops**, R. E., Passed Assistant Surgeon. Detached from the Naval Hospital, Great Lakes, Ill., and ordered to the Naval Training Station, Great Lakes, Ill.

Births, Marriages, and Deaths.

Married.

Galster—McLeod.—In New York, on Wednesday, April 30th, Dr. Henry C. Galster, of Hudson, N. Y., and Miss Katherine B. McLeod. **Schneller—Johnson.**—In Freeland, Pa., on Wednesday, April 30th, Dr. John S. Schneller, of Catasauqua, Pa., and Miss Kathryn Johnson.

Died.

Barr.—In Burlington, N. J., on Monday, May 5th, Dr. Benjamin Barr, of Philadelphia, aged eighty-five years. **Claiborne.**—In New Roads, La., on Monday, April 28th, Dr. Ruffin C. Claiborne, aged thirty-three years. **Coggin.**—In Salem, Mass., on Wednesday, May 7th, Dr. David Coggin, aged seventy years. **Du Bois.**—In Hudson, N. Y., on Tuesday, April 29th, Dr. John C. Du Bois, aged eighty-one years. **Duhring.**—In Philadelphia, on Thursday, May 8th, Dr. Louis Adolphus Duhring, aged sixty-seven years. **Eastman.**—In New York, on Monday, May 5th, Dr. Robert Watts Eastman, aged sixty years. **Edwards.**—In Grand Rapids, Mich., on Thursday, May 1st, Dr. Pembroke S. Edwards, aged seventy-six years. **Fell.**—In Wilkes-Barre, Pa., on Thursday, May 1st, Dr. Alexander Gray Fell, aged fifty-two years. **Ingalls.**—In East Kingston, N. H., on Sunday, May 4th, Dr. George Hancock Ingalls, aged fifty-three years. **James.**—In Medina, N. Y., on Sunday, May 4th, Dr. John Theron James, aged fifty-two years. **Lundy.**—In Portage la Prairie, Canada, on Sunday, April 27th, Dr. John Lundy, aged thirty-eight years. **Mead.**—In Ocean Grove, N. J., on Tuesday, May 6th, Dr. Charles Henry Mead, aged seventy-two years. **Moore.**—In Brunswick, Tenn., on Tuesday, April 29th, Dr. L. Roy Moore, aged thirty-five years. **Myers.**—In Bennett, Neb., on Tuesday, April 29th, Dr. Evans M. Myers, aged thirty-seven years. **Prichard.**—In Harrisonburg, La., on Tuesday, April 29th, Dr. Charles C. Prichard, aged fifty-eight years. **Shepard.**—In Burlington, Pa., on Saturday, April 26th, Dr. Ernest W. Shepard, aged forty-two years.

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Original Communications.

NITROUS OXIDE GAS, ESSENCE OF ORANGE ETHER, AND SEQUESTRATION IN GENERAL ANESTHESIA FOR OPERATIONS IN THE UPRIGHT POSITION.*

Demonstration of the Latest Model of Chair Table.

BY THOMAS R. FRENCH, M. D.,
New York.

The reception accorded the method of operating in the upright position, which was described at the last meeting of this association, must serve as an excuse, if excuse is needed, for our coming before you again to present some facts which, in part at least, have been evolved in the past year. We expressed our belief, a year ago, that through the upright position alone more skillful operative work could be done, that less blood was lost, and that less ether was required than in other positions.

We are now able to state, as a result of the effects of the movements of the new operating table and also as a result of the tests made, in our clinic in the Long Island College Hospital, of various methods of general anesthesia, in the past season, that operative work in the upright position can be done with still less loss of blood, with the need of still less of the anesthetic, and with less disagreeable conditions during recovery from the anesthesia.

The most pronounced effects of the smooth, gliding, jarless movement of the chair table, even when the older methods of anesthesia were employed, have been a noticeable diminution in the loss of blood and a more satisfactory recovery from the anesthesia. This would seem to show that sudden changes in position or sudden disturbances of the body, while the patient is under the influence of a general anesthetic, predispose to shock, the effects of which are manifested both during the operation and during recovery from the anesthesia. After careful study of this phenomenon we became so much impressed with the value of an elevation of the body from the recumbent to the upright position, for all ages of patients, without jarring, that we had the chair table remodelled to make it possible to accommodate, from the beginning, the most diminutive of children, in order to avoid the disturbance of nervous or circulatory equilibrium which was, apparently, caused, in such cases, by the lifting of the body, by hand, to place it upon folded blankets so that the head could be raised to the level of the headrest. By the aid of the new attachment (Fig. 1)[1] all the movements of the body are now made with as great a freedom from jarring and disturbance of balance, with infants and very small children, as has, heretofore, been possible only with larger children and adults; the resulting improvement in conditions leaving no doubt of the accuracy of the observation. Although, of course, we were not conscious of it during the years in which we used the ordinary chair, we believe now that the movement of lifting the patient from the table, or bed, to the chair, the jar and jolt of adjusting the body to the seat and back, and the almost unavoidable jarring in bringing the chair to the upright position, gave rise to nervous disturbances; for in no other way can we explain the improvement in the condition of the patient during and after operation since the advent of the chair table. Our full year's experience with this instrument of precision has provided a sufficient basis for the statement that smooth, jarless elevation of the body, without other disturbances than are absolutely necessary to bend the body from the supine to the sitting posture, must be accepted as of fundamental importance in obtaining ideal results from operations in the upright position.

The other experiences which, in outline, we wish to describe (and this must be regarded as only a preliminary report) are especially in reference to two methods of general anesthesia. They are: 1. Nitrous oxide gas or essence of orange ether sequence, with, for the present, just a few words in regard to the use of ether vapor; and, 2, nitrous oxide gas or essence of orange ether sequence with sequestration of the limbs. At the outset it must, of necessity, be stated that the observations which follow are mainly from the standpoint of the surgeon, and, therefore, not altogether that of the anesthetist.

THE NITROUS OXIDE GAS OR ESSENCE OF ORANGE ETHER SEQUENCE METHOD.

In describing the new upright method last year we said: "The method consists in placing the patient upon the table for anesthetization in the recumbent position, and when the stage of excitement has passed, in converting the table into a chair and bringing the body to a sitting position." In the light of the revelations made in the anesthetic tests of the past season, the statement of the acceptance of the stage of excitement as if it were

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*Read before the American Laryngological Association, Washington, May 6, 1913.

[1] Figs. 1, 3, and 4 show the most important improvements made in the chair table in the past year.

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unavoidable, looked, when we saw it again recently, like ancient writing, so strongly have we been impressed, generally speaking, with its needlessness and harmfulness.

One of the most important and valuable recent contributions to anesthesia methods is the ability to omit, or bridge, the second stage, or stage of excitement, and, judging by the results obtained, we are deeply impressed with the desirability of attaining narcosis without struggle. This can, without doubt, be accomplished, in the period of induction, with nitrous oxide gas; but, in our judgment, it can be done with greater ease and certainty with the essence of orange. It, unquestionably requires a large experience with the administration of nitrous oxide gas to enable one to dovetail it so accurately with the ether which follows that the stage of excitement will be eliminated. It can, however, be done, and when done successfully, if all other things are equal, we can safely predict the best prospect for the operation and the best condition during recovery.

The discoverer of the remarkable effects of the essence of orange as a preliminary to ether, Dr. James T. Gwathmey, of New York, has demonstrated its possibilities in our clinic, and has proved to our satisfaction that, with it, the administration of ether is made far less disagreeable and that it greatly assists in the reduction of shock by bridging the stage of excitement. We have seen the inventor of this method use it repeatedly with perfect success, the patients sinking into complete anesthesia as a child falls to sleep. Our observations thus far have brought the belief that an anesthesia conducted in that way up to the time of raising the body to the upright position, is a contributive factor in reducing hemorrhage, also in reducing the quantity of the anesthetic and in shortening and modifying the anesthetic aftereffects.

In the testing work in anesthesia, more particularly that carried out during the past season, the writer has had foremost in mind the great need of reducing shock. It is generally conceded that the child is more susceptible to shock than the adult, due, in some way, no doubt, to the fact that the child is anatomically and physiologically different from the adult. The tests have, therefore, been applied especially to children in the controlling of hemorrhage and in the administration of anesthetics. We find no variance from the belief among surgeons who have given careful thought to their work upon infants and children, that the losing of blood is a matter of the greatest import to them and that all means should be used to prevent hemorrhage in operating upon them. And we are now convinced that shock from the loss of blood and from the anesthetic can be materially reduced by the *manner* of administering the anesthetic.

According to the observations of the writer of this paper there is, irrespective of all other conditions, a well defined and never failing relationship between the degree of skill in which a patient is anesthetized in the upright position and the amount of hemorrhage which occurs during the anesthesia, for there seems to be no question but that hemorrhage is reduced if the anesthetic, from the beginning, is smoothly administered, the second stage omitted, and the patient brought into full surgical anesthesia without jarring or body disturbance of any kind. The uniform employment of helpful mental suggestion by every individual in contact with the patient up to the time of the induction of anesthesia, to assist in preventing an excessive discharge of nervous energy through fear—which is one of the elements in the "anoci association" of Crile; the administration of morphine to patients who display a marked degree of apprehension; an anesthetizing room free from an atmosphere of excitement and from unnecessary noise; the preliminary use of nitrous oxide gas or the essence of orange and the drop method of ethylchloride, ether, and chloroform, followed by the drop method of ether with an open inhaler and later with an Allis inhaler, will insure, at the hands of a competent anesthetist, the prolongation of the anesthesia after the body reaches the upright position, a reduction in hemorrhage and also reduction in the disagreeable sequelæ.

We have found the closed method of administering ether vapor, or, more properly speaking, ether insufflation, devised by Dr. William C. Woolsey, of Brooklyn, of great value in maintaining anesthesia in long operations. It must be remembered that anesthesia is maintained, for a time at least, after the body has been raised to the upright position, by the position alone. If the induction has been satisfactory the anesthetic not only should be but, in most cases, must be diminished in quantity, or withdrawn, as soon as the upright position has been attained, to prevent the narcosis from becoming too deep for safety. When the reflexes begin to reappear the anesthesia can be continued by the occasional administration of the vapor through the mouth. (We exclude the nasal method, at least for the present, for it is still a question in dispute as to whether the passage of a stream of ether vapor under pressure through the nose is not capable of producing irritation of the various accessory sinuses.) The fact that only a half, or less than a half, of the usual quantity of ether is required to maintain anesthesia with this method should not deceive us into believing that we get only a half of an anesthesia with it, for it is, in reality, a full one, and while the patient is in the upright position a continuous flow of vapor under pressure is, as a rule, not permissible. The only way in which ether vapor can be administered continuously while the patient is in the upright position is with the admixture of oxygen, but this combination, while producing a pleasing color of the face, increases hemorrhage. It is, however, always advisable to have the oxygen tank attached to the vapor apparatus to quickly relieve a narcosis if it should become too deep.

One of the results to be contended for is the avoidance of vomiting after operation to reduce the chances of infection of the wounds in the nose and throat. Of course, if a considerable quantity of blood has been swallowed, vomiting is desirable to prevent irritation of the gastrointestinal tract and, fortunately, most of it is usually ejected without therapeutic assistance. Therefore, if the diet table before operation is properly carried out, the less the loss of blood the less the need of vomiting, and the less the amount of the anesthetic required for anesthesia the less the chances of vomiting both during operation and afterward.

There is, we believe, no more contributive factor in securing a rapid and an uneventful recovery than a well conducted anesthesia. That we are now in a position to be assured that an anesthesia can be well conducted, in the large majority of cases, through the cooperation of an accomplished expert anesthetist, is one of the delightful and satisfying outcomes of specialization in medicine. The day is probably near at hand when, except in emergencies, every operation of importance will be performed with the assistance of an anesthetist who is an acknowledged expert in his field.

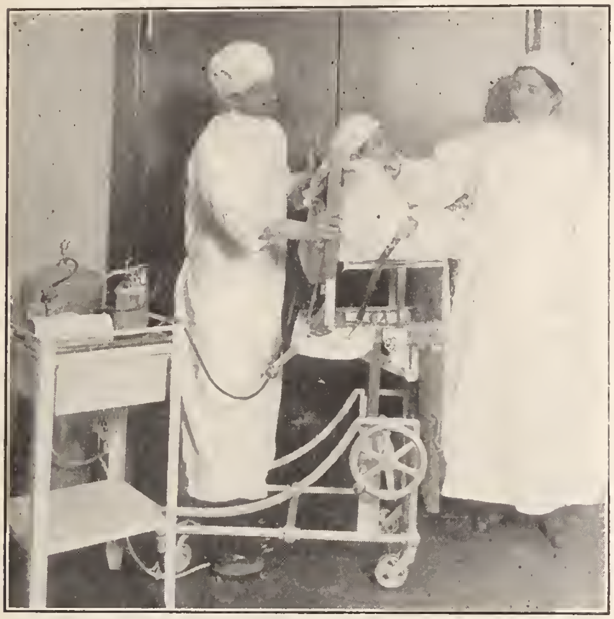

Fig. 1.—By raising the independent seat the chair table can be adjusted for operations upon infants and small children; by raising the chair part of the mechanism to a high level the head of the patient can be placed within easy reach of the operator.

NITROUS OXIDE GAS OR ESSENCE OF ORANGE ETHER SEQUENCE WITH SEQUESTRATION OF THE LIMBS.

This method consists in anesthetizing the patient in the manner just described and at the same time producing congestive hyperemia of the limbs by means of inflated blood pressure cuffs about the thighs and arms (Fig. 2) or thighs alone, to still further reduce the amount of blood in the head. Sequestration of the limbs was, we believe, first suggested by Dr. R. H. M. Dawbarn, of New York, in 1907, to reduce hemorrhage in operations upon the head. In our recent trials of various methods of anesthesia, Doctor Gwathmey advised a test of the Dawbarn method to determine its value in reducing hemorrhage in operative work in the nose and throat. He thought it would be a safe procedure if used with the new table. While contemplating a trial of sequestration we confess to having had a feeling of trepidation lest something should go awry, and especially because of the warning given us by one of our ablest clinicians who thought we would be likely to produce artificial syncope which might be difficult to control. We, therefore, gave the suggestion of such a test long consideration, during which we recalled, among other things, the not inconsiderable number of times in which, on freeing the patient from the chair used in the older method, we had found both arms deeply congested, indeed quite black, from the careless adjustment of the shoulder bandage. Those incidents, however, seemed to have caused neither disturbance during the operation nor harm, in any form, afterward. This gave us a considerable degree of assurance that the reduction in the amount of body tissue to be anesthetized would be free from danger. We relied, however, largely upon the ease and rapidity with which the new table could be tilted in the opposite direction for resuscitation, if conditions should require it. After beginning with a light pressure of the cuffs upon the thighs alone, which was afterward, in other cases, gradually increased, we attained at the end of the first operating clinic, in which these tests were made, as high a degree of pressure as we are using now; but it was not until a later occasion that we felt justified in employing the inflated rings upon all four of the limbs at the same time. In the first case, in which the trial was made, it was found that there was a marked diminution in the amount of blood lost and also that the anesthesia was prolonged, after removing the inhaler at the beginning of the operation, to a much greater extent than we had ever known it to be by any other method. And with very few exceptions—in which the conditions were unfavorable—the same experience has been repeated in every case in which the method has been used. Doctor Gwathmey guided the anesthesia and controlled the blood pressure cuffs in all the early cases in this test, the subsequent cases having been supervised by the hospital expert anesthetist, Dr. A. F. Erdmann.

We said in our paper of a year ago that two of the most important reasons for preferring the upright position were a reduction in the amount of the anesthetic required and a reduction in the amount of blood lost during operation. The sequestration method, in association with the upright

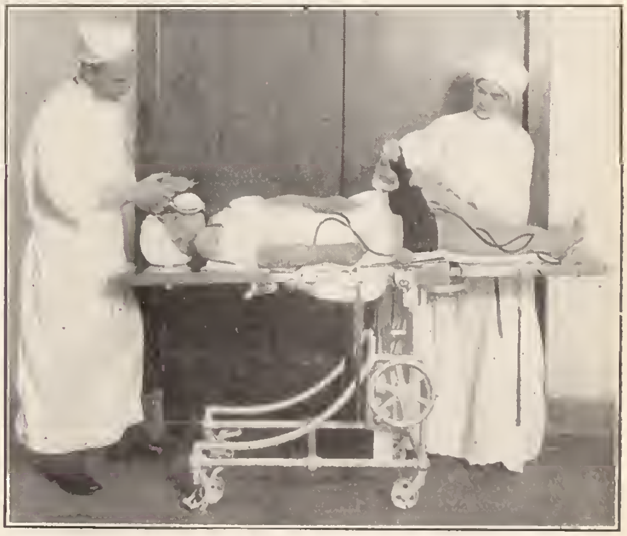

Fig. 2.—The blood pressure cuffs are applied at the end of the induction stage of anesthesia. White cuffs on arms partly inflated and a moderate degree of hyperemia is apparent. Black cuffs being applied about the thighs, but not yet inflated.

position, which has been carried out in fifty-eight cases during the past season, reduces still further the amount of the anesthetic required and still further the loss of blood. That the amount of the anesthetic is reduced is proved by the fact that full anesthesia has often been maintained for fifteen or twenty minutes after the body was brought to the upright position and the inhaler removed. Indeed, after beginning the operation, in most cases in which this method of anesthesia has been used, except for his assistance in other ways, we have been able to dispense with the services of the anesthetist; which is only another way of saying that during relatively short operations the further administration of the anesthetic has not been needed.

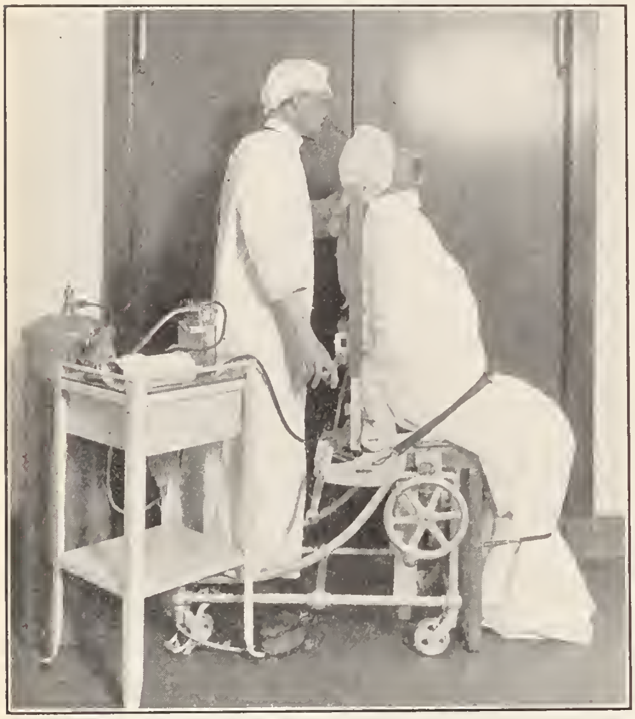

Fig. 3.—The telescopic chair back can now be adjusted to any patient's back however short or long. It can be extended somewhat further than is shown in this illustration. At full extension, as part of the table top in the horizontal position, it will support subjects of great weight.

In quite a number of cases the quantity of blood lost during the removal of adenoid growths and the faucial tonsils (and we use those operations in illustration because the amount of blood usually lost in them is so well known), while sequestration was being applied, was believed to be less than a drachm. In many of the cases the blood loss, in operations in either the nose or throat, could only be measured by the appearance of the sponges; in most cases it was but slightly in excess of that, and in none was the bleeding as free as in the average case, of similar operative character, under the older methods of anesthesia. It may, therefore, be said that the average blood loss with the sequestration method, whether applied to arms and legs or legs alone, is far below that which occurs without sequestration, and that certain operations which with the ordinary methods are usually attended with a large loss of blood, may be rendered practically bloodless by the use of sequestration in the upright position.

We had thought of the possibility of secondary hemorrhage being occasioned by the sudden release of the locked up quantity of blood at practically the same moment that the body was returned to the horizontal position, but, happily, there does not seem to be reason for apprehension on that score, for, after the operations were finished and the bleeding arrested, there was no further hemorrhage in this series of cases.

We have already spoken of the careless adjustment of the shoulder bandage, and desire to call attention to it again in connection with sequestration. If the bandage is adjusted before the body settles into the sitting posture and is drawn too tightly, the patient may be literally hung up by the axillæ, when, of necessity, great pressure must be made upon the axillary arteries. This has not occurred during our tests because the drill of the assisting staff made it quite impossible, but should it occur while sequestration was being applied to both arms and legs, we can imagine the face assuming a hue which would suggest the propriety of tilting the body into the Trendelenburg position. As the "upset" movement can be quickly made with the chair table the conditions, in even such an extreme case, could be easily remedied.

Sequestration would have been used in a much larger number of cases had it not been necessary to make each test with deliberation in order that all conditions during operation could be noted, and, also, to permit the following up of the cases to determine whether injury to the nervous tissues or the musculature of the limbs could have been produced. The amount of pressure made with the cuffs varied from that needed to effect a slight diminution in, to that needed to produce a complete obliteration of, the pulse in the anterior tibial and the radial arteries, and we feared that the firm pressure required to cause an obliteration of the pulse might produce injury to nervous structures; but in none of the cases could any history of untoward aftereffects be elicited. It is quite possible,

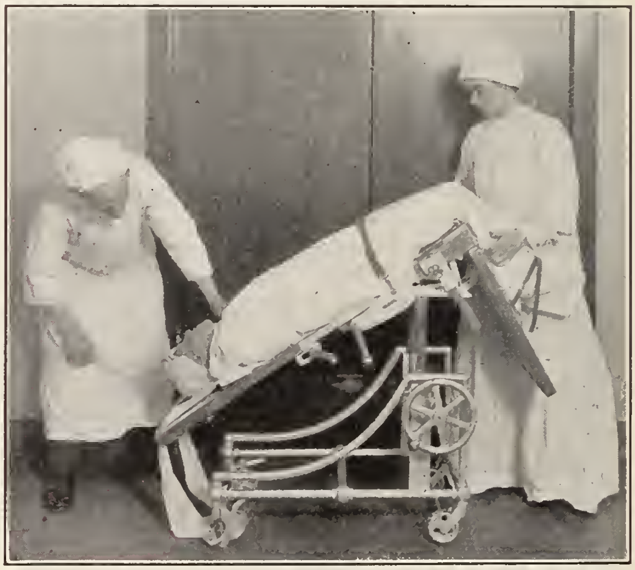

Fig. 4.—Trendelenburg position; footrest of the table dropped for use with heavy subjects; pressure from the hands of an attendant or the footrest straps will keep the legs flexed and hold the body on the inclined plane without other assistance.

perhaps even probable, that this can be explained by the comparatively wide distribution of the pressure and the fact that it was made with a flexible air bag. The pressure was maintained in all but the earliest cases, from the end of the induction stage of anesthesia to the time of completing the operation.

The only patient operated upon since the series of tests of sequestration was begun, who presented symptoms after operation which suggested a previous injury to the legs, was a very delicate child of five years, about whose thighs the cuffs were applied, but which were not inflated. As the patient was an extremely delicate piece of human mechanism and the test was in its earliest stage, we regarded it as unwise to expose it to what might seem to be something of a risk. It would, therefore, appear that we just escaped the reputation of having had one harmful effect from this method of anesthesia.

To be able to administer a smaller quantity of an anesthetic and obtain a full anesthesia; to see the patient enter the anesthetized state without the stage of excitement; to be able to stop the administration of the anesthetic when the body is brought to the upright position and yet have the anesthesia prolonged enough to permit relatively long operations to be performed; to secure a greatly lessened loss of blood; and to insure a reduction in, and in many cases an almost complete abolition of, the disagreeable aftereffects, is, to say the least, something of a gain, and in a large proportion of cases, with the cooperation of a skillful anesthetist, all of these results are obtainable.

Our controlling thought in this work has been, and is, to reduce the necessity for "rough" surgery, and also to assist in the establishment of improved conditions from the standpoint of the patient. Crile—than whom none have done more scientific and humanitarian work in regard to shock—says, in speaking of "anoci association": "Now I am ready to admit that to accomplish this it is necessary to especially train the nursing department, the hospital staff, the anesthetist, and above all to train one's self to act with the greatest precision and only in the interest of the patient, and also I must admit that it immensely increases every one's labors." Such work does require time and much careful attention, but is it not time well spent and is it not in accord with the high ideals of our craft? A number of general surgeons, after viewing this kind of work, have expressed their doubts of its necessity, "for," they have said, "we rarely see surgical shock." They, evidently, think that nothing much counts short of profound shock. Well, there can be no doubt that many things occurring before and during operation contribute to shock, and the cumulative effect of many small shocks may be, and we believe often is, an exhausting discharge of nervous energy. If these premises are correct then, manifestly it is our plain duty to make note of, and carry out, the details and so contribute to the amelioration of the patient's distress. *Surgery has recently made a distinct advance in that, largely through "anoci association," operations have been still further robbed of their terrors.*

150 JORALEMON STREET, BROOKLYN.

RECOVERY IN A CASE OF INFLUENZAL MENINGITIS COMPLICATED BY PNEUMONIA.*

By THOMAS E. SATTERTHWAITE, M. D.,
New York.

While influenza is an affection that spares no organ or tissue of the body, it is usually recognized under one of three types, the respiratory, the gastrointestinal, and the nervous; although, as in the case now to be reported, there is very generally some intermingling of the features of the different types.

In this country, since the great epidemic of 1889, the respiratory type has been the most conspicuous; the others in a less degree and in the order given. In exceptional cases, however, the weight of the disease has fallen upon such special organs as the heart or kidneys, the chylopoietic or the articular system. But it is only of late years that the nervous type has attracted special attention, and even then not so much in its relation to the acute stages of the influenza as to its sequelæ, which comprise a number of nervous disorders, such as motor paralyses or pareses, affections of the special senses, epileptiform seizures, and various mental abnormalities. These sequelæ have sometimes protracted the disease for months or even years, leaving at times a permanent impression on the affected part. For example, many of us have known of instances where influenzal otitis media has left an incurable deafness, or a suppurating focus in an eye has partially or wholly destroyed the sight.

Less attention, however, has been paid to the nervous phenomena which are occasionally features of the acute stage, and which include neuralgias, functional disorders of the special senses, meningitis, cerebral or cerebrospinal, and psychic phenomena such as hallucinations, delusions, or even mania, as in this particular case. Of these only a comparatively small number has been reported, many of them with scanty details, so that the profession at large has not had opportunity to become very conversant with them. On two occasions when I saw such cases in consultation, one being of influenzal cerebrospinal meningitis and the other of the cerebral form, none of the consultants or attendants appeared to have previously seen these particular manifestations. In one, a case of influenzal cerebrospinal meningitis which I saw in Florence, Italy, in the spring of 1893, not one of the two other five physicians, representing four different nationalities, had ever seen it, though no doubt was thrown on my diagnosis. The patient recovered, after an unconsciousness of nine days. The patient in the cerebrospinal case died, after an unconsciousness of three weeks. In a third case, in a patient of mine, the subject suddenly developed mania, was removed to the insane pavilion of Bellevue Hospital before I had an opportunity of seeing him, and died there unconscious. As I have already said, such complications are rare; and yet Davis (*Journal of Infectious Diseases*, 10, 1912), has recently collected sixty cases from the literature and his own experience. Most of these were in children, whose delicate nervous system appears to render them especially sensitive to the toxines of the disease. In fact, most of the reported cases have been in the practice of pediatrists.

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*Read before the American Therapeutic Society at its Fourteenth Annual Meeting, held in Washington, D. C., May 5 and 6, 1913.

Pathologically speaking, the characteristic gross lesions consist of a series of minute hemorrhages scattered throughout the system, often causing such substantial changes in a tissue or organ that its vitality is impaired for a time or forever. And if for any reason the extravasation becomes infected by any of the pus producing organisms, the prognosis is most unfavorable. Such patients usually die, unless there is free vent for the infected material. The majority opinion is that the disease is due to the influenza bacillus discovered by Pfeiffer, which, though it may not always be found *intra vitam* in the blood or secretions, or even by lumbar puncture, will usually be recovered at post mortem examination by diligent search, though it may be associated with other microorganisms, such as the pneumococcus or streptococcus, or may be replaced by them. It is a singular fact that it may not always be found in the fresh spinal fluid drawn by lumbar puncture, and a satisfactory explanation of this failure is much to be desired. A plausible theory is that offered by Leichtenstern, who divides influenza into three classes, only one of which is grippal influenza.

There are several methods by which the poison invades the meninges; by extension, as from an otitis media or from abscess of a sinus, by metastasis, or by general infection of the blood by toxines. That is, in the extension of the disease the poison follows the routes that are pursued by other organisms that produce systemic infection.

Influenzal meningitis is usually ushered in by violent pain in the head, especially in the frontal region and back of the neck, facial neuralgia, and photophobia. There are apt to be also irregular contractions of the pupils, muscular spasms, hallucinations, delusions, unconsciousness, perhaps mania. At first there will be a high pulse rate, perhaps with arrhythmia. In the early stages patellar or ankle reflexes are apt to be exaggerated. Later, if there is effusion into the ventricles or at the base, there will be loss of these reflexes, relaxation of the pupils, stupor, and slow pulse. Judging from the limited number of cases reported, there is a moderate leucocytosis at this stage. In from six to ten per cent. there is said to be albunimuria, but unless there is profound implication of the kidneys the albuminuria should be short lived. There appears to be seldom any diminution in the number of red cells, or in the amount of hemoglobin, both of which may be increased.

Influenza, we should remember, has been and is one of the most dangerous of epidemics, if we include its complications and sequelæ. Hymanson has collected twenty-six cases of simple or purulent meningitis, associated with influenza (*New York Medical Journal*, December 25, 1909), of which five were adults, with only five recoveries, a mortality of about eighty-one per cent. Pisek has collected fifty-eight cases of influenzal meningitis, which also included five adults, with a mortality of about ninety-two per cent. I have collected a series of forty-four cases of all ages, with nine deaths, a mortality of about twenty per cent. In a second series of thirty-four cases, of which all were adults, there was a mortality of ten, or about twenty-nine per cent.

But the prognosis is very different when to influenzal meningitis pneumonia is added. Usually it takes the bronchial form; in other words, it is lobular, and is disseminated, involving the lower lobes, though any lobe may be affected, and even the whole lobe, as in true lobar pneumonia.[1] In the case here reported there seemed to be a mingling of the lobar and lobular. Allusion to such cases has been made by Leichtenstern. It started apparently as an extension of a bronchitis, and in the right lower lobe when first detected was apparently a central lobular pneumonia. In the left upper lobe the deposit occupied most if not all of the lobe, and presented the usual physical signs of the lobar form. The temperature curve was also that of a fairly well characterized lobar pneumonia. Defervescence occurred on the seventh day. Pneumonia occurring in influenza without meningitis has a mortality which is extremely variable. Probably a slight pneumonia from an extension of the bronchitis is tolerably common, but the mortality has reached as high as forty-three per cent. On an average, according to my computation, it is about twenty per cent. Davis, in his sixty cases of influenzal meningitis already alluded to, found that in twenty-six that were examined post mortem pneumonia had occurred as a further complication of the influenza in twenty (seventy-six per cent.), but, of course, in meningitis death may be due to intracerebral effusion, cerebral hemorrhage, abscess, or other causes. In the six out of my thirty-four cases of influenzal meningitis with pneumonia, all I have been able to collect from the literature, five patients died. In the sixth there was an incomplete cure. The patient (Bury, *British Medical Journal*, September 29, 1900) suffered for two years following the attack from aphemia, that variety of aphasia where there is loss of the power to give the names of persons previously known. The attack also left his mentality affected.

The case I am now reporting is, therefore, so far as I have been able to learn, the only recorded instance of a full recovery in influenzal meningitis complicated by pneumonia. It is as follows:

On March 1st of this year I was called to see a young man, twenty-five years of age, of good habits and normal physique. During the previous week he had been suffering from prostration, cough, bronchitis, and the usual manifestations of a mild influenza (grippe), which had kept him indoors, though he had not called in a physician. On the day before, however, he had exposed himself at an open window in his bedroom. Subsequently, and before I saw him, there had been a chill and violent headache. I found him unconscious, with pupils somewhat irregularly dilated and irresponsive; breathing rapid and labored. Temperature by the mouth 103.5° F.; pulse, 138; respiration, 26. Under moderate doses of the bromides, given at frequent intervals, consciousness partly returned in a few hours, when he again complained of severe headache and pulmonary oppression. He was restless, and had twitchings of the right leg and facial muscles; i. e., clonic convulsions. The bromides were given in increasing amounts, and as there were signs of beginning pneumonia, a hygroscopic, antiseptic poultice was applied to the chest. During this day a hundred and ten grains of bromides (bromides of ammonium, sodium, and potassium) were given for the convulsive movements and cerebral symptoms; temporarily the twitchings were controlled. The pain in the neck and head was relieved principally by ice bags and cold fluid applications.

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[1] I was the first to give a comprehensive account of bronchial pneumonia in the adult. The literature had contained only scattered instances of it. I gave twenty cases from my own experience (*British Medical Journal*, December 7, 1889), believing that it merited a classification apart from the bronchial pneumonia of children. All of my cases were proved by post mortem examinations.

On the second day the cough, which had been in abeyance, returned, and signs of pneumonia were easily recognized superficially in the left upper lobe and centrally in the right lower lobe. The temperature, which was taken by the rectum, rose to 106° F.; the pulse to 120, and the respiration to 40. A blood examination gave white blood corpuscles, 27,000; polynuclears, ninety-six per cent. A very grave prognosis was given. The diagnosis of pneumonia was confirmed by two consultants. During the day three hundred grains of the bromides were given.

On the third day there were nausea and vomiting. Highest temperature, 105.2° F.; pulse, 124; respiration, 34. There was moderate diminution of blood pressure tension, as shown by the sphygmomanometer, the amount in millimetres on this day and during the acute stage running on an average below the pulse rate. I judged that this low blood pressure was due either to the loss of blood from the minute hemorrhages or to the intoxication from the toxines circulating in the blood; probably the latter.

On the fourth day the highest temperature was 105.4° F.; pulse, 115; respiration, 42. Vomiting of dark fluid and blood, together with the brownish liquid stools, was taken by me to indicate that the gastrointestinal tract was involved, and that there was now an intermingling of the symptoms of the three influenzal types. Calomel, one grain, was now given daily in divided doses, with a high enema. The sputum was rusty and streaked with blood. No influenza bacilli were found in it, but the diplococcus of pneumonia (Frankel's) was discovered. Ten grains of hexamethylenamine were given, dissolved in a pint of water, and thirty grains of this, in all, were taken during the twenty-four hours. In addition, strychnine sulphate, in doses of one sixteenth grain, was given every few hours.

Fifth day.—Highest temperature, 104.9° F.; pulse, 104; respiration, 48. As a heart tonic there was now given a combination of digitalin, strophanthin, and glonoin, 1/100 grain of each, every four hours.

Sixth day.—Low muttering delirium, as of typhoid. Highest temperature, 104.8° F.; pulse, 106; respiration, 40. Bromides given freely, also on one occasion morphine sulphate 1/8 grain, and atropine sulphate 1/150 grain. Petechial eruption on chest. White blood corpuscles, 17,000; polynuclears, eighty-six per cent.; lymphocytes, fourteen per cent. All food refused. Hexamethylenamine suspended. Patient irrational most of the time; mild delusions; excessive sensitiveness to sounds. Urine normal in amount, but containing a heavy cloud of albumin; involuntary passage of feces. Toward the end of the day the patient took a cup of coffee with milk.

Seventh day.—Camphor, three grains, in aseptic oil, given hypodermically every six hours; strychnine continued. Temperature had fallen to 99° F.; pulse, 84; respiration, 24. Patient slept better, and took his nourishment; rational.

Eighth day.—Yellowish sputum mixed with blood. Desire for food.

Tenth day.—Camphor hypodermics suspended.

From this date on recovery was rapid and uneventful, the pneumonia resolving quickly. On the seventeenth day the patient sat up in a chair, and on the twentieth was up and about the house. The lungs had cleared, and practically all signs of pneumonia had disappeared.

In this instance the temperature followed pretty closely the characteristic curve of lobar pneumonia. It fell abruptly at 99.8° F. on the seventh day. Lumbar puncture was discussed, but not practised. The diagnosis of influenzal meningitis with pneumonia was made on the first day the patient was seen, so that the presence of the influenzal bacillus as a factor in the diagnosis was negligible. Other reasons against lumbar puncture were that in the adult it had not, in my estimation, proved itself of sufficient curative value; that the liberal use of the bromides in massive doses, together with the cold applications to the head, did give relief to the nervous symptoms; and finally, that the influenzal bacillus is not always found even in the fresh spinal fluid. The blood pressure never exceeded 110, and was at first below that figure. Milk, with an alkali, usually Vichy water, plain water, or albumen water, to which the yolk of a raw egg was sometimes added, constituted practically all the nourishment used during the acute stage. Occasionally alcohol was tried, but never more than two drachms at a time, and finally it was given up during the acute stage, owing to the patient's objection to it. Otherwise vitality was maintained by strychnine and camphor. The usefulness of hexamethylenamine was not evident; it was given for several days, but discontinued on the sixth day. Temperature was lowered by the cool bath when it exceeded 103° F. The room was maintained at a temperature of 65° to 68° F., with an abundance of fresh air. In general, the treatment was symptomatic, indications as they appeared being met by established therapeutic measures,

In conclusion, I should be lacking in my duty to those who assisted me in this remarkable case if I failed to record my obligations to Dr. W. H. Porter and Dr. C. E. Nammack, who saw the patient with me in consultation; to Dr. Morris Carpenter and Dr. Allan Carpenter, one of whom was in constant attendance, and to whom, in a large measure, I feel that the successful issue of the case was due; to Dr. Mary Halton, who attended to the blood count and bacteriological examinations of the blood and sputum; and to the tact and skill of the eight male and female nurses employed first and last, all of whose services were unusually satisfactory.

7 East Eightieth Street.

SHOULD AN INTERNESHIP BE REQUIRED?*

By Isadore Dyer, Ph. B., M. D.,
New Orleans,
Dean, Medical Department, Tulane University of Louisiana, etc.

The discussion of an interne year has been active for some time. During the last year the matter has reached the stage of explosion, and the requirement of a hospital year is among the plans of a number of State boards of medical examiners.

The Council on Medical Education of the American Medical Association has seriously under consideration the inclusion of such a requirement for a standard college of medicine and the American Medical College Association has discussed the matter.

There can be no question of the general axiom that a hospital experience is desirable for the man who intends to practice medicine, and there can be no doubt of the more efficient training of the man who undergoes such a service. There is, however, some question as to the expediency of promulgating any rule requiring such service at a time when the likelihood of satisfying the rule is remote. We must assume that the objects aimed at in an interne year are purposeful, and that in discussing the question the important points at issue should be set forth. The main contention seems to be that the present medical graduate is not qualified to engage in the practice of medicine and that one year in a hospital will satisfy the deficiency.

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*Read at the annual meeting of the Federation of State Examining Boards, Chicago, February 25, 1913.

In what particulars do medical graduates lack qualification to practise medicine? The argument must be based upon graduates from the average college, and not from the exceptional colleges, for the latter offer the clinical experience in medicine, surgery, obstetrics, and their allied subjects, covering one or more years of systematic work, which no ordinary hospital experience can replace. More than this, some schools of medicine are so related to hospitals that the instruction is actually accomplished in the hospitals every day, so that, saving actual residence in the hospital, the student enjoys all the privileges and experiences of the hospital.

The average college of medicine, however, has no such opportunities. The clinical side may be taught well, with limited material often, yet the graduate lacks the technical experience with the surgical cases and medical cases needed to equip him for his actual work afterward.

Can the interne year satisfy such a need? We may answer affirmatively only by qualifying the answer with the postulate that the hospital is large enough to provide a variety of service, that the material is systematically arranged, and that the interne has a status permitting actual practical experience.

Are there enough hospitals properly equipped and so administered as to allow this? We cannot answer this question just yet, and may not be able to answer it until the hospitals of this country are studied with a view to their availability for educational purposes. In the meantime, we know that most hospitals are not favorably disposed to construct the administration so as to allow the interne service for any but utilitarian needs, and many hospitals resent the likelihood of association with educational institutions, if there is also likelihood of control by the educational institutions. In other words, many hospitals engage internes because of the service they may be able to render the sick, and the interne is permitted to gather such experience as he may. The experience in many places is limited to the barest assistance, and in few places outside of the largest cities is the service at the hospital systematically organized. The number of hospitals, then, available for interne service promising educational or systematic advantages is limited.

How can the college require an interne year if it cannot direct or specify the sort of service required, and how can the college pass upon a credit for an interne year unless the hospital and the interne are under immediate control of the college? The undergraduate interne services have passed out, and quite properly. If the interne position is open to graduates only, the college must either offer advanced credits for hospital service or keep entirely free of any connection with the interne year requirement. But let us suppose it is agreed to grant *cum laude* credit for hospital service after graduation, on what basis can the additional degree be established? And, further, what class of hospitals (if the same may be selected with discrimination) will be qualified to afford the required service and the required credits?

It would seem that, at all events, the college cannot require the interne year for graduation, for even if the degree were withheld for a year until the interneship had been satisfied, there are enough graduates in many schools who need admission to several hospitals to satisfy their number, and in a variety of hospitals, with a variety of methods, it would be difficult to fix a standard on which graduation could be equitably established. This may come, but as yet it has not arrived.

With the State licensing boards the question is different and, perhaps, simpler—but not yet nearly solved, if the regulation of an interne year is to mean anything more than a perfunctory requirement. State boards, however, have established standards of elementary education, terms, and character of study in the medical college, and it would seem that such boards could bring enough influence or authority to bear upon the State legislatures to enact special laws governing the interne positions and services required at State hospitals. And, thus far, State examining boards may succeed in establishing standards of interneship.

Then, systematic work might be accomplished under regulations of the State, but unless all States acted similarly, there would be no way of calculating the value of an interne year spent outside the State, in a hospital not under like rules.

In other words, *hospitals must either be standardized for educational purposes,* or the interne year accredited upon some basis of service and work, according to which full or modified credit may be allowed. For this step we may hardly be said to be ready.

What should the interne get from one year's service? The lack of a clear definition of an interne year, until now, has made it difficult to discuss the whole matter assuredly. Until the interne year is outlined with some particularity it is going to be hard to make a rule for its enforcement as a standard, either of medical education or for medical licensure. Moreover, at present *it would seem almost impossible to standardize the interne year.*

State boards may formulate the course of the interne in institutions under State control, and they may refuse to recognize hospitals under other forms of control, but the interne would suffer.

The ideal condition must presuppose such an affiliation of the college with the hospital as to allow the direct supervision of the interne while engaged in hospital work.

As an undergraduate it is not possible for the interne to do honest work at college and to satisfy the obligations of hospital services too, so that hospital interne service must apply only to such students as have satisfied the required curriculum of a medical college, and the interneship must be added either as a requirement for the doctor's degree or as earning additional credit. This has already been discussed and the argument points to the latter conclusion.

With the fullest affiliation of college and hospital, the interne year must be arranged upon some basis which will fullfil an arrangement through which the graduate will establish credits for systematic work in medicine, surgery, obstetrics, pathology, and their collateral subjects. At best the division of service will necessitate the arrangement of periods in hospitals, with rotating groups assigned to fields of work in the hospital, changing every three or four months, if all of the clinical branches are to be covered in hospital experience.

The surgical experience should cover the detail of operation and postoperative care of patients, embracing special subjects in surgery, as well as general surgery, and the experience in the field of medicine must include the special work in pediatrics, nervous, and skin diseases, if the service is to be complete.

Such an outline, briefly set forth, means in the best adapted hospitals the willingness on the part of the administration to allow the interne service to be used for educational purposes as the first object, and to make secondary the business of the hospital, for the frequent changes of service among internes can hardly make for the greatest efficiency in administration of the needs of the sick, and even a greater number of internes cannot overbalance the difficulty of order in service.

In hospitals not owned or controlled by medical colleges, the conditions cannot be as well arranged, and the service of an interneship in direct relation to a curriculum requirement must grow less and less valuable as the relationship of the college and the hospital diverges. The efficiency of hospital internes, from the standpoint of administration, grows greater as the service of the interne is concentrated upon divisions of work in which they are the longer trained. The observation of hospitals of varying size and importance argues for longer periods of service of internes in divisions of the hospital and an eighteen months' or two years' hospital interneship makes the interne more useful to the hospital than any shorter period. One year of service is, therefore, of doubtful usefulness to the hospital, and of still more doubtful usefulness to the interne, especially if in such service he is to be harassed by such frequent changes in his assignment as to make of him an untrained man in each.

The interne year, then, if made obligatory for the license, should require service aiming at efficiency in a variety of subjects, and experience argues that one year cannot create such efficiency under existing organization of hospitals nor in the likelihood of a reorganization of hospitals, even when the hospital is willing to adapt itself.

If the graduate needed experience before engaging in the practice of medicine we should incline to argue for a postgraduate clinical year, as more likely to accomplish results than an interne year without proper supervision. More than this, if the clinical year were incorporated as a requirement for graduation and before license, a more systematic clinical training would result, particularly if the clinical training were carried on in fully equipped hospitals and under the direction, in the clinical services, of the college faculty, engaged in systematic instruction to the desired end.

In such a clinical year, the necessary bedside experience in medicine could be had; likewise surgical and obstetrical experience, and in such a fifth clinical year the student could learn enough of the collateral clinical branches to make him practical at the end of the period, as practical as the interne who will have had few, if any more, advantages in experience, with far less opportunity in instruction.

The discussion of the regulations and practices of other countries has so far been avoided, because in the way of an argument it might lead too far afield. We have to deal with conditions which exist in our own country, and no matter what the ideal may be, we can prove no right to make an ideal an obligation when we know it may not be fulfilled.

In Great Britain, for example, especially in London, the medical schools have grown around and from the hospitals; the broader education of the medical man has gradually developed so as to increase the importance of the scientific side added to the more practical beginnings.

It has been easy to fix the interne training as a part of a medical college curriculum, when it has actually been the result of pruning the hospital side of the students' education to make place for the laboratory. This same experience has occurred in some places in this country, and the older University of Louisiana, now Tulane University, with its medical department, is an example. Twenty years ago, the student almost lived his days at the hospital, from the beginning of his first year until he graduated. Between times he sat to listen to didactic teachers and spent his nights in the dissecting rooms.

Medical education changed and the hospital gradually passed out of its engrossing position into a secondary place. Now the maturer reflection must argue to us that perhaps we have gone too fast and that we have sacrificed something in the hurry to make plans for an ideal medical education. We may reach a satisfactory compromise by putting back in a concentrated form the clinical experience absorbed by students formerly unprepared, so as to offer it now to students matured by a scientific and laboratory foundation.

In Germany and Austria, and even in France, most of the hospitals are directly under State supervision, and there is more reason for the required interne year where uniformity in service can be reckoned.

This is submitted, as well as the English system exampled to argue our readiness for a new rule, and not to oppose the proposal entirely.

We should have an interne year when we can offer it adequately; until then we should not make a pretense of requiring what we know will be impossible for the majority to satisfy.

In the meantime, by doing the best we can, we may satisfy the need of the intending doctor and we may save the public in some degree more than formerly.

CONCLUSIONS.

1. The interne year is desirable for license if it can be made systematic, which at this time is not probable. Therefore, any rule requiring an interne year is inexpedient, and if adopted would work a hardship on all but the graduates of a few colleges owning or controlling hospital services.

2. There should be an attempt at the gradual standardization of hospitals to educational purposes, with the future expectation of correlating hospitals and colleges of medicine in each State. This will require extensive education of the lay community.

3. Until such time, a fifth, practical, clinical year should be required of medical graduates, and therefore should be required by State boards of examiners.

4. To make such a clinical year efficient, State boards of examiners should stipulate the detail and amount of practical clinical work in each branch to be certified as a part of the application for a license before the candidate is admitted to examination. Such stipulation should specify each branch of medical and surgical practice and the scope of training required.

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THE MENIERE SYMPTOM COMPLEX.*

By SAMUEL J. KOPETZKY, M. D.,
New York,
Lecturer in Otology, Post-Graduate School of Instruction, Manhattan Eye, Ear, and Throat Hospital.

CASE. Just a year before Mr. M. S. appeared for treatment, he suddenly took sick while at his business, his trouble beginning with an attack of vomiting. He told a story of having dropped to the floor, in a sort of spell, but was not rendered unconscious. His extremities became cold, and simultaneously his left ear began "to work"—in other words, he had an attack of dizziness and tinnitus. He never had had such an attack before. Furthermore, he added, he became deaf during the attack, although he could hear perfectly well before he fell down. The deafness lasted after the attack was over, although there was considerable improvement; that is, he was not so profoundly deaf after, as during the attack, but he never entirely recovered his normal status as regards his hearing. The tinnitus likewise continued, but it varied as to its intensity, gradually improving, and then when subsequent attacks came on—as his further history showed—it again became more intense with each onset.

Following the attack, just described, the patient was comparatively well for three months. Then, while riding on a street car, he suddenly underwent a similar attack, the principal features of which were dizziness, tinnitus, and deafness, accompanied by palpitation of the heart. He was taken in an ambulance to Bellevue Hospital, and after a day in the hospital permitted to go home.

After the second attack, he suffered onsets of this series of symptoms every second week, lately accompanied by slight mental disturbances. He declared himself "without the will to make an effort," was unable to get up and walk, etc. He characterized his dizziness as a *"turning toward the left."*

I had the good fortune to be enabled to study and examine him during one of these attacks. He sat very stiffly erect looking fixedly forward into space. He could, upon command to do so, turn his head toward the right side (healthy ear), but could not or would not turn his head toward the left side. If I forced him to turn his head toward the left side, and if he tried to do so, he had to grasp something to hold himself, or he would drop. There was no spontaneous nystagmus present. Between attacks he felt weak, but not dizzy. The attacks were not preceded by aura.

Here then is a case, typical of a fairly large group of sufferers who exhibit the Ménière symptom complex, and who occasionally reach the observation of a competent otologist, but more often are under the care of a neurologist. Because the study of this class of cases furnishes common ground between us, and because much of the recent advance in diagnosis and differential diagnosis has been won for medicine by otologists, I gladly accepted the invitation to present what small gleanings of truth otology possesses on this subject.

In 1861, P. Ménière published a description of a series of clinical phenomenon which since that time have caused the simultaneous and sudden onset of deafness, tinnitus, and vertigo to become designated Ménière's disease, or, more properly speaking, Ménière's symptom complex.

Considerable confusion arose in the ensuing years in the failure sharply to define and clearly to comprehend just what is meant by the Ménière symptom complex. Cases in which the sudden onset of deafness, tinnitus, and vertigo were recorded resulting from inflammatory changes and processes in the middle ear—cases in which the clinical picture was produced by a sudden stenosis of the Eustachian tube, or the sudden filling of the tympanitic cavity with inflammatory exudates—these were confounded with the cases presenting deafness, tinnitus, and vertigo, and a normal condition of the middle ear. Ménière's clear, clinical observations were acute enough, even in 1861, to recognize that the class of disease, which since then bears his name, presents a normal tympanic cavity. An exception to this statement may be noted in passing, inasmuch as it is possible for a patient to suffer from the effects of a middle ear lesion, and during the course of his middle ear disease, to suddenly present a train of symptoms typical of the Ménière symptom complex—the latter chain of phenomena being wholly independent and existing only coincidently, and actually having no pathological interrelationship with the middle ear disease.

The Ménière symptom complex consists in the domination of the clinical picture by sudden attacks of deafness, tinnitus, and vertigo. Additional reports by other observers have recorded clinical studies wherein additional significant symptoms were noted. Thus Politzer noted a short period of total loss of consciousness just preceding the onset of the classical symptoms. Double vision is noted by Jacobson, while Knapp remarks a transitory clouding of the visual fields; transitory hemiopsia with horizontal separation line noted immediately following on the onset of an attack is the report of Moos, while both Politzer and Guye noted psychic depression and loss of memory during the first week of the disease.

Both Ménière and Charcot record the finding of a semblance to an aura. Whatever the individual case may present, these additional clinical symptoms must find explanation in concomitant conditions, for they find no explanation in the more recent study of the disease, with the newer means at our command, and for our discussion this evening, in the interest of clarity, they will not receive attention. They are mentioned for the sake of emphasizing the fact that a train of *secondary* symptoms may be presented, of subordinate importance to those of deafness, tinnitus, and vertigo, for this train of symptoms points the way toward a localization of the lesion, and it is this aid to diagnosis which most concerns us at this time.

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*Read before the Section in Neurology and Psychiatry of the New York Academy of Medicine, February 11, 1913.

Based on numerous clinical observations and on one autopsy report, additionally substantiated by the experimental work of Flourens, Ménière came to the conclusion that the lesion underlying the disturbed function was to be found in the semicircular canals of the labyrinthine portions of the ear, and our most recent studies and advances in diagnostic aids, fully support this observation.

The literature is not possessed of recent studies of the Ménière symptom complex in the light of findings from exact tests of the labyrinthine functions made *before, during,* and *in the interval* of the attacks of the symptom complex. Here is an open field for further cultivation, and in order that a basis may be laid for subsequent work, permit me briefly to outline our means of diagnosticating labyrinthine and retrolabyrinthine lesions. At the present writing we must content ourselves with saying that not enough material has been studied to justify any conclusions.

As you know the *cochlea* is concerned with the reception of sound waves; i. e., it is concerned with the function of hearing. This portion of the internal ear, we designate the auditory or the acoustic labyrinth. Failure of function in this portion of the labyrinth results in deafness. The *utricle, saccule,* and the *semicircular canals,* considered together as one organ, are concerned in the maintenance of our muscular tone and our equilibrium. This portion of the internal ear we designate the static labyrinth. As the normally functioning acoustic labyrinth is ever awake to send impulses centreward upon the reception of a sound wave, so we must, in a sense, concede that the static labyrinth is never at rest, but always in a state of activity, sending centreward a constant stream of impulses toward the brain centres to keep us acquainted without position in space, and the frequent changes in our relative position. In other words, to give us not only a conception of our position to space, but the relative position of parts of our body, the changes of these, and the idea of motion.

Failure on the part of the static labyrinth to perform its proper function results in a *temporary* or *transitory* loss of balance; transitory, because after the lapse of an appreciable interval of time, varying individually, the brain and cord centres to which these impulses from the normal static labyrinth go, seem to accommodate themselves to the loss of these impulses, and there ensues what we term *compensation.* An example in point is furnished by those deaf mutes whose labyrinths are destroyed by purulent disease in early infancy, and in whom we find later on in life perfect body coordination and balance, due to this act of compensation.

The share which impulses from other sources play in conjoining with the normal impulses from the properly functioning static labyrinth to maintain our balance, and our muscular tone remains as yet undetermined. This much can be stated: All the impulses reaching the centres work *harmoniously* together, either by direct paths, or through reflex paths. Every failure to work harmoniously together, *every disharmony* in these impulses, if severe enough, causes irregular function with consequent disturbances of balance. The nature of this disturbance varies with the physiological characteristic peculiarity of the end organ from which the *reciprocally conflicting* impulse arises.

Our acquaintance with our position in space, and with changes in that position, accelerations or retardations of motion in a straight line, and rotation, come from harmoniously acting impulses from the static labyrinth. With these perceptions of our position and its constant changes, there are awakened reflex stimuli, whose purpose it is to cause the eye muscles and the body muscles to accommodate themselves automatically and unconsciously to the conditions calling these reflex stimuli into being.

When an impulse is started in the static labyrinth so strong that the central checks and balances no longer control it, then there ensues a disturbance of equilibrium whose characteristics depend upon the functional activities of this organ. Hence we have disturbances in our perception of position, sensations of turning, in addition to disturbances of the eye muscles, resulting in the condition known as *nystagmus,* and finally we have disturbances in the body muscles which give rise to the so called *reaction movements.* Furthermore, in the floor of the fourth ventricle, the close relationship of the central vestibular nuclei to the nuclei of the vagus nerve causes a radiation of the impulse from the vestibular to the vagus nuclei, and we have nausea and vomiting as a symptom of such an impulse.

An inharmonious impulse, sufficiently powerful to overcome the normal checks and balances, may be artificially induced in various ways; *mechanically* by rotating an individual around a given axis, or by increasing the endolabyrinthine tensions of the endolymph through the application of air pressure, when a pathological opening is present in the labyrinthine wall; *calorically* by applying hot or cold water or other fluids to the labyrinthine neighborhood; *chemically* by applying substances directly to the exposed membranous semicircular canal; and, finally, *electrically* by applying the galvanic current to the labyrinth. These are the means which we have come to use to test the function or lack of function of the static labyrinth, and from the interpretation of the results of these tests diagnosis and differential diagnosis of labyrinthine and retrolabyrinthine lesions become possible.

From the clinical standpoint, the most important reaction following an inharmonious impulse from the static labyrinth is *nystagmus,* and a brief survey of this symptom is necessary.

Nystagmus may be defined as a rhythmic movement of the eyeball, to and fro, consisting of two components, one slow movement due to the vestibular reflex, and a second faster motion, the result of the effort of the will to fix the eyeball upon a definite object. The nystagmus is named after its faster motion.

When I say that the slow component is of the vestibular reflex origin, I take this to include the cerebellar tracts and centres of the vestibular nerve fibre distribution.

It is to be remarked in passing, that an oscillating movement of the eyeball, equally distant in both directions, and of equal speed in both directions, is of purely ocular origin; and here we have the first differential point in the diagnostic data obtainable from the study of nystagmus. The discussion of ocular nystagmus is not within the scope of this paper.

Labyrinthine nystagmus, composed, as it is, of the two unequal components, occurs in the plane of that semicircular canal which sends out the impulse arousing it. The slow component takes the direction of the endolymph stream.

When an impulse is awakened from the static labyrinth during a state of unconsciousness, as when the individual tested is under narcosis, the slow component alone appears, because the effort of the will, which contributes the rapid component, is absent.

Finally, it is to be remembered that since either labyrinth is in relation with the nuclei of the third and sixth nerves *of both eyes,* an impulse aroused in one labyrinth, even if the other is totally destroyed, is capable of causing both eyeballs to execute nystagmic movements in all planes and with a rapid component toward either the right or the left side. Inharmonic impulses from the static labyrinth produce in addition to the nystagmic movements other phenomena, part of which may be classified as *subjective sensation,* and part of which are of *objective* nature. The former consist, on the part of the patient, of experiences of *being turned,* and of an apparent turning of the objects in the patient's environment. These experiences are in close parallelism to the nystagmus, but are not so constant and uniform as nystagmic movements, and, therefore, form a less trustworthy basis for tests of labyrinthine function. The sensations or experiences just referred to are often most intensely evident to the patient when his eyes are closed.

The *objective phenomena* are termed *reaction movements. The reaction movements* affect the extremities and the trunk of the body. Not nearly as important as is the study of nystagmus for eliciting data of diagnostic value, yet a careful study of these movements adds considerable information as to the status of the labyrinth. The significance of reaction movements becomes of considerable importance when the involvement of the cerebellar centres comes into question.

The movements are not ordinary reflexes. According to Bárány, who first studied them in relation to cerebellar functions, they actually consist in voluntary movements modified in the cerebellar cortex by abnormal, inharmonious, centripetal impulses from the semicircular canals. Ordinarily, motor impulses from the *cerebrum* meet the impulses passing centripetally from the semicircular canals in the *cerebellar cortex* and there results a normal, well balanced, and coordinate voluntary motion. When instead of this the impulse coming from the semicircular canals, is abnormal—is inharmonious—because of disease in the static labyrinth, and such abnormal impulse reaches the cerebellar cortex to meet the motor impulse from the cerebrum, there results a change in the voluntary motion which produces the so called *reaction movements.*

The exercise of the will influences to a certain extent the reaction movements, and we therefore find them most marked in individuals without highly developed muscular and kinesthetic sense. They are most prominent in children.

All the centripetal impulses whose purpose it is to maintain our equilibrium are gathered together in the cerebellum, and speaking in a most general way, the cerebellum is the centre for the static labyrinth. The cerebrum plays a subordinate part to this centre.

Summarizing then, we may consider the cerebellum as a sensory motor subcortical central organ *receiving* centripetal impulses from the static labyrinth and sensory impulses from muscles and joints, in addition to visual impulses from the eyes, and *sending out* motor impulses to the muscles of the head, trunk, and extremities, the purpose of which is the maintenance of our body equilibrium. Certain of these "outgoing" impulses, it must be noted, are under the domination of the will, and these reach the cerebellum from the motor areas of the cerebral cortex.

The connections between the static labyrinth and the cerebellum, between the joints and muscles and the cerebellum, and the cerebral cortex and the cerebellum have been studied. To paraphrase Braun and Friesner (from their recently published excellent book on the labyrinth), these tracts are as follows:

The vestibule and semicircular canals send out impulses which pass through the vestibular nerve to Deiter's nucleus. The pathway from the nucleus leads to the corpus dentatum of the cerebellum. and from this body to the cortex of the worm and cerebellar hemispheres of both sides.

The muscular joints send the sensory impulses into the spinal cord through the posterior nerve roots where the fibres terminate about the cells in Clark's and Stilling's columns at the base of the posterior horn. Fibres from the cells go upward through the lateral tracts of the cord in Flechsig's and Gower's columns, and reach the central nuclei of the cerebellum through the inferior cerebellar peduncles. From the central nuclei fibres finally reach the cerebellar cortex.

Tracing the impulses from the cerebral cortex, impulses originating here pass down through the internal capsule and the crura cerebri to the pons. Collaterals are now given off which terminate in the pontine gray matter, and onward from here, the fibres pass across through the middle cerebellar peduncles to the cerebellar cortex of the opposite side. From the cerebellar cortex, according to Levandovsky, the motor impulse is further to be traced in two channels: 1. From the cortex of the cerebellar hemispheres to the dentate nucleus, then through the brachium conjunctivum to the red nucleus of the tegmentum of the opposite side; from here downward again through Monakoff's bundle across to the opposite lateral tract of the spinal cord terminating about the anterior horn cells. 2. Starting again at the cortex of the cerebellum the impulse passes to the nucleus tecti, from there through the tractus uncinatus to Deiter's nucleus and the ventrocaudal Deiter's nuclei of the opposite side, and continuing onward, the impulse passes down through the Deiter's spinal tract to the posterior longitudinal bundle of the cord to the anterior horn cells. Both cerebellar hemispheres are thus seen to be connected with the anterior horn cells of the same side of the spinal cord. Impulses reach Purkinje's cells in the cerebellar cortex from the vestibular apparatus, the muscles, and the joints, through the intermediation of the cells of the granular layer. Axis cylinder processes of the granular layer cells are distributed to a large number of the Purkinje cells. These Purkinje cells are further found to be joined together by means of the basket cells. Thus an impulse from the static labyrinth is transmitted to a large number, possibly even to all of the Purkinje cells. On the other hand, the impulses from the cerebrum reach Purkinje's cells through the so called *fibres grimpantes,* one of which goes to only one Purkinje cell. The connection is seen to be in this way strictly individualized. From the Purkinje cells the impulses pass down through the motor tracts to the anterior horn cells of the spinal cord.

The impulses concerned in the nystagmus reflex arise in the static labyrinth and pass through the vestibular nerve to Bektereff's and the ventrocaudal Deiter's nucleus. From there they pass to the posterior longitudinal fasciculus of both sides, the fibres passing upward through the pons and midbrain to terminate about the nuclei of the third, fourth, and sixth cranial nerves. From these nuclei, the impulses creating nystagmus reach the ocular muscles.

The pathway for the reaction movements of the body and its extremities are indirect. The impulses are intermediated, and those for the reaction movements of the body differ from those of the body extremities. The impulses arising from reaction movements of the body pass from the static labyrinth along the vestibular nerves to Deiter's nucleus, from where they go to the cerebellar cortex. Then going back, or downward again they reach the nucleus tecti, continuing onward through the tractus uncinatus to cross over to the opposite side to Deiter's nucleus and the ventrocaudal nucleus. From here they pass down in the Deiter's spinal tract to the anterior horn cells, and from there to the muscles of the body.

The pathway of reaction movements of the bodily extremities is from the static labyrinth along the vestibular nerve to Deiter's nucleus and the ventrocaudal accessory nucleus, thence to the dentate nucleus and to the cortex of the cerebellar hemispheres. From here they pass through the brachium conjunctivum to the red nucleus of the tegmentum of the opposite side. From this point, they pass through Monakoff's tracts to the lateral column of the cord on the opposite side, where they terminate about the anterior horn cells.

The pathway of the voluntary element of the reaction movements reach the cerebellar cortex through collaterals given off from the motor tract as it passes through the pons. These collaterals terminate about the cells in the pontine gray matter. These cells send neurons through the middle cerebellar peduncles to the cerebellar cortex (Braun-Friesner).

We have used the foregoing fundamental studies to form the basis of tests which consist inherently in the application of strong stimuli to the static labyrinth, and from the data thus obtained, by comparison of the findings in disease with those in health, we are enabled to localize the lesion more or less definitely in the static labyrinth.

From the tests of the function of hearing, we are enabled to estimate the status of the cochlea, and from the data obtained from the observation of the reaction movements, and the entire series of tests, we are enabled to differentiate cerebellar lesions from labyrinthine, and endolabyrinthine from retrolabyrinthine affections.

It is not my purpose to go into the finer details of all the tests. Time would scarce suffice in the limited space of one paper to do this portion of the subject justice. What I do want to emphasize is a series of practical tests, which, when applied, will give the clinician means more accurately to study the cases grouping themselves under our classification of the Ménière symptom complex.

To test the function of the cochlea, it becomes only necessary to know whether or not a patient can hear *sound* in the suspected ear. To obtain an answer to this, the possibility of sound being heard in the other ear must be safeguarded. To this end numerous "noise apparatus" have been devised. I employ the one devised by Neumann, of Vienna. With this apparatus in the opposite ear and in operation, the hearing may be tested by voice, whistle, or tuning fork. If sound is heard, the cochlea in the suspected ear is functioning.

The tests of the function of the static labyrinth are not so simple. When we remember that the *normal physiological stimuli* aroused in the static labyrinth during ordinary movements of the body produces no visible reflexes, and we call to mind the fact that *an increase* in the *intensity* of such physiological stimuli produces reflex movements in the eye muscles and the muscles of the body and its extremities, then we deduce that *failure to elicit* these *reflex movements,* upon the application of strong artificial stimuli to the static labyrinth means that the end organs in the semicircular canals are either impaired or destroyed.

This is the fundamental law regarding the functional tests of the static labyrinth. We can elaborate further: An increase, or a diminution in the ease with which these reflexes are obtainable, compared with a normal individual, indicates conditions of increased, or diminished irritability of these end organs. Increase or diminution in the intensity and the duration of the reflex is interpreted in the same way.

For purposes of eliciting these reflexes, and studying them particularly with regard to the nystagmus, we ordinarily may employ the following tests of the function of the semicircular canals. We assume that the vestibule is diseased, when we find that the semicirculars are involved.

1. The rotation test.
2. The caloric test.
3. The galvanic test.
4. The fistula test.[1]

Actually the results of stimulation of the end organs by the four methods is the same in all of them. As a result of the application of the stimuli, a movement of the endolymph is set up in the canals, which, displacing the cupula and its hair cells, starts the impulse along the tracts enumerated above.

From the application of these tests we determine whether or not the static labyrinth is functioning and when function is shown, we are enabled to estimate its degree. The technic of the tests is as follows:

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[1] The last named is not of use in the cases we are discussing.

1. *The rotation test.* The patient is seated in a specially constructed chair, and tilts his head forward 30° to bring the horizontal semicircular canals on as near a horizontal plane as possible. He closes his eyes during rotation. He is now turned ten times toward the right, at an even, constant speed. Then the eyes are opened, and the nystagmus is observed, with the eyes directed toward the opposite side to that toward which he was turned, namely, to the left. The duration of the nystagmus is noted. After a short interval, he is now turned ten times toward the left, stopped, and the duration of nystagmus noted.

The rotation test may be applied to the other semicircular canals by bringing them into the horizontal plane, i. e., by tilting the head in various directions. For example, to bring the *right* superior and the *left* posterior canal into the horizontal plane, the head must be tilted 90° forward, and then turned so that the face looks toward the right shoulder. Turing the face toward the left shoulder after tilting the head forward 90° brings the left superior and the right posterior canals into the horizontal plane. Thus there has been worked out a specific position for each set of canals, yet however much such information may be of value from the purely academic standpoint, in the present state of our knowledge, these refinements of the rotation test are of lesser practical value to us in our efforts to make a diagnosis of the condition of the static labyrinth. Those interested further in these details are referred to the recent work of Braun and Freisner for information on this subject.

For our purpose it is important to bear in mind this rule: The finding of a marked difference in the duration of the nystagmus following rotation to the *right,* and following rotation to the *left* indicates *that one side is not functioning;* and the side toward which we turn the patient which results in either absence of nystagmus, or the shorter duration of the nystagmus, is the side in which the disease is located.

2. *The caloric test.* This form of testing the function of the labyrinth enables one to distinguish between a functioning and a nonfunctioning vestibular apparatus. The test is based upon the work of Schmiedkam, Heusen, Cohn, Urbantschitsch, and Bárány.

The patient sits erect, and a stream of cold or warm water—colder or warmer than bodily temperature—is permitted to run through the external auditory canal. There must be no suspicion of the use of force; the stream must be so gentle that no change in intralabyrinthine tension can possibly be brought into being from the pressure of the water column.

Due probably to physical causes, the movement of the endolymph is started by the local change in temperature, and from this a reaction stimulus is started which arouses nystagmus. Using cold water, the nystagmus is toward the opposite ear, while when employing warm water, the nystagmus is directed toward the ear undergoing irrigation. If the static labyrinth is *not functioning, no nystagmus results.*

This outlines the test. There are many refinements of more or less value. Some of the more important to the consideration of our subject, I shall detail. By means of the caloric test it is possible, not only to determine the absence of function in a given static labyrinth, but we can also estimate conditions of relative irritability, conditions of depression, etc. To do this we modify the test somewhat.

We can use measured quantities of water, and determine with how small an amount at a given temperature nystagmus is arousable. If easily aroused, the labyrinth is oversensitive—in a state of irritability. If it requires a large amount of water, the reverse holds true. We can time the duration of the nystagmus after its onset. The more prolonged, the more sensitive the static labyrinth, when the prolongation is found to be beyond what experience has taught us to regard as the normal duration of the reaction.

Finally, we can fix the head in various positions, and thus center the stimuli more prominently on one or the other semicircular canal. This latter procedure has not given much data of practical import, however.

4. *The test by galvanism.*[2] This test is not of great practical value up to the present writing. There are many obscure factors as yet unexplainable by any knowledge at our command. In performing the test, both labyrinths may be tested or stimulated simultaneously, the anode or positive pole being placed over one ear, the cathode or negative pole over the other; or one labyrinth may be subjected to examination alone, one pole being placed over the ear to be examined, and the other pole, over an indifferent portion of the body.

The poles thus arranged, the galvanic current is gradually started and increased in strength until a nystagmus results. The strength of the current employed is noted, and this constitutes the figure to designate the degree of irritability of the vestibular apparatus. In stopping the test, the current should be gradually reduced, and not sharply broken off, in order to avoid the break contact shock to the patient. The resultant nystagmus is of combined variety including rotary and horizontal elements because all the semicirculars on the given side are involved in the stimuli and react to it.

The nystagmus takes direction toward the negative pole if that is placed over the ear. If the positive pole is used at the ear, then the nystagmoid movements are away from the ear under examination. The position of the head does not influence the character of the nystagmus.

There are some additional facts I wish to state regarding the galvanic currents and the reactions to them of the vestibular apparatus.

1. The nystagmus lasts after the current has been withdrawn. In other nerve reactions to galvanism, this is not the finding; the reaction ceases with the stimuli. The labyrinth does not react to faradic currents; other nerves do.

The relationship of the vestibular nerve, the one along whose fibres this stimuli passes to create the nystagmus, to the cochlea and facial nerves, would lead us to assume that these three, situated deeply in the skull, would all be affected by the applied galvanic current. The cochlea branch and the facial nerve are unaffected by the stimuli which arouses reactions from the vestibular nerve and its end organs.

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[2] The fistula test does not concern us in the cases we are discussing to-night, and I forego its technical description.

Finally, when the static labyrinth is totally destroyed the galvanic current still will produce the nystagmoid reflexes, although a stronger current is required than would be the case were the labyrinth intact. In the latter instance a current of from two to five milliampères being sufficient, while with a destroyed static labyrinth one of from five to ten milliampères is necessary to produce a reaction.

Applying the *reaction movements* in the form of tests, we base our knowledge on Bárány's work. If, after producing a nystagmus through rotation, the patient is told to extend his right arm straight in front of him, the arm will be found to deviate to the *side opposite to the nystagmus.* (Care must be taken that the patient is not cognizant of this, or he will correct the deviation and vitiate the test.)

If the caloric test is applied to produce the nystagmus, we note its direction. The arm on the same side as the ear tested will, if pointed in the frontal plane, *deviate always* in the *direction opposite to the nystagmus,* i. e., in the direction of the slow component.

In the presence of a spontaneous nystagmus, the pointing test is applicable too. If there is no spontaneous nystagmus present, we first induce it, by any one of the means already discussed, then we test as follows: Closing the patient's eyes, and resting his arm and forearm in an easy position so that his wrist is easily movable, he extends his index finger so that it just touches the examiner's hand. The patient then flexes the wrist, keeping his index finger extended. He makes contact with the examiner's finger, and then again flexes the wrist and then again straightens out the wrist. The examiner's finger remains in position. With a horizontal nystagmus to the right, which originates in the static labyrinth, the patient's index finger will deviate to the left. *In other words he will point in the direction opposite to the nystagmus,* if the nystagmus is of vestibular origin.

And this test gives us a point in differential diagnosis, in the presence of spontaneous nystagmus between endolabyrinthine and retrolabyrinthine or cerebellar lesions. In the latter instance, the pointing may not be opposite to the direction of the fast *components of the nystagmus.* This test is applicable to all the extremities.

Furthermore, according to Bárány we can differentiate as follows: When there is a lesion in the fibre tract between the cerebellar cortex and the anterior horn cells in the cord, *there is a loss* of the *reaction movements of the extremities.* Since these fibre tracts are collected in a small bundle, the lesion in the tract will affect numerous joints, in many directions. A lesion located in the cerebellar cortex only affects one joint, and the one joint only in one direction. Thus further data of differential value are provided.

A reaction movement of the body is evident only when it affects a plane other than the horizontal. When this occurs the patient falls.

In the presence of spontaneous nystagmus (or for that matter, after induction of a nystagmus by stimuli), the patient is told to stand up, with the feet placed together, and eyes closed. With nystagmus to the right, he falls toward the left. The position of the head alters the direction of his tendency to fall, according to which semicircular canal is brought into the field of testing. Thus with head turned 90° to the left he falls forward.

A loss of reaction movements of the body in the presence of a nystagmus, means disease in the cerebellar worm, or in the tract leading from the worm to the anterior horn cells of the cord, namely through the nuclei tecti, tractus incinatus and Deiter's spinal tract.

Summarizing then, we find that when the labyrinth is diseased, the hearing is lost, and we have in addition disturbances in balance, nausea, etc., and spontaneous nystagmus in the early stage, and later failure to arouse nystagmus upon tests applied to the labyrinth. The pointing tests corroborate the diagnosis of labyrinthine lesion. The disturbances of balance diminish rapidly in intensity. Nystagmus may be elicited by galvanism.

If the lesion affects the eighth nerve, we have disturbances in hearing, and labyrinthine symptoms, but these occur separately and not in combination. The disturbances increase progressively in severity. The static end organ is found less irritable than normal, and the nerve less susceptible to the galvanic test than normally.

If the nerve is involved in an endocranial lesion, tumor, etc., we will find other nerves involved, and the usual signs of increased endocranial pressure.

In *cerebellar lesions* the disturbances of balance do not decrease in intensity as they do in endolabyrinthine lesions, but they become more intense as time goes on. There are the characteristic reaction movements noted above, signs of endocranial tension, and neither the spontaneous nystagmus, the elicited nystagmus, nor the pointing tests follow the rules laid down above. The nystagmus is toward the diseased side instead of the opposite, *and this is pathognomonic.*

Finally, if the labyrinth is destroyed, galvanic tests showed a greater use of current to induce nystagmus. There is total loss of hearing, and total loss of reaction to stimuli from the static labyrinth.

If the vestibular nerve is destroyed in addition, there is no reaction to galvanism.

With all these tests in mind, let us return to the case history which forms my text for this evening's discussion of the Ménière symptom complex.

Upon testing the cochlea branch of the eighth nerve of the patient, it was evident that he suffered great loss in hearing in the left ear (affected ear), and some loss in the right. The difference between them might be stated as follows:

Left ear: right ear::1:5.

There was total deafness for the lower notes in the musical scale, the limit being somewhere above sixty-four double vibrations.

The vestibular apparatus gives interesting data. To the caloric test, the right ear responds normally;

the left ear shows great excursions of the eyeball to the opposite side. The reaction of the right to the left ear in terms of time, of onset of reaction being as follows:

R:L::3:1.

In other words, the affected ear is twice as irritable to the caloric test.

Upon rotation he gives a classical reaction. The rotation toward the diseased side gives the longer reaction. In other words, his disease is localized in the left static labyrinth.

Heretofore it has been customary to consider Ménière's disease as an entity, using the classical description given by the original observer. This was superseded by the use of the term, Ménière symptom complex, as defining a train of symptoms originating in a number of separate and specific diseases and conditions. We still find our literature concerned with this triad of symptoms, as arising from conditions of *hysteria* in which the vertigo is explained as the indirect action of circulating disturbances upon an oversensitive labyrinth. Again, certain abdominal affections, unaccompanied by toxemia, or hysteria, are laboriously worked out to show how they give rise to disturbances of balance. A floating kidney, a low state of blood pressure, being named as causes for the clinical picture. The pneumogastrics and the splanchnics have been held accountable. Biliary and renal calculi, and last but not least, autointoxication accompanying disease of the liver, the stomach, and the intestines are the factors.

Liver disturbances are reported by Stockton to be the sole cause of a given case, and finally gout and rheumatism play their parts in casual relationship, in the older reports in the literature.

What I design to impress, is the statement that the so called Ménière symptom complex, far from being the result of any of these conditions, is rather the *cause* for *symptoms* from the *stomach*, the *intestines*, the *liver*, *etc.* The triad are to be considered *only* in the sense of presenting the *predominating characteristics of a labyrinthine lesion.*

To attempt to classify and define the nausea and vomiting accompanying infections of the appendix, as a separate group of appendicular affections induced by the vomiting and the nausea, would be as logical as some of the reports of so called cases of Ménière's disease of *gastric, hepatic, renal,* or *intestinal* origin. The analogies might be multiplied to substantiate this *reductio ad absurdum.*

We are so wont to think of labyrinthitis in terms of its various infections that we have almost lost sight of it, as the *expression* of a *nonpurulent* disease. The so called Ménière symptom complex is as much a sign pathognomonic of the nonpurulent as it is of the purulent invasions of the labyrinth, and Ménière's symptom complex signifies in our discussion this evening *a nonpurulent labyrinthitis.* Once we clearly understand that a patient who presents the triad—tinnitus, deafness, and vertigo—whether or not he incidentally gives evidence of cardiac, arterial, kidney, or liver diseases (and parenthetically it may be noted that the afflicted are rather advanced in age, and as a class apt to show evidence of these diseases as a result of life's wear and tear), once the fact is comprehended that such a patient is the victim of a lesion in the vestibular nerve tract, which may be situated at any point, from the end organ to the brain and cord centres, but most likely located in the endolabyrinth, then such patients will be carefully submitted to all these differential tests, and a truer study of the Ménière symptom complex will result, and more definite ideas as to the treatment to be employed will be evolved.

At the present time, we have only this one fact: The total destruction of the labyrinth will cause cessation of the symptoms. Nature, often working rather slowly, accomplishes this end, but in selected cases, when a rapid recovery of the individual is necessary so that he may again take up his usual occupations, surgery presents the only positive remedy—by *ablating the static labyrinth.*

To date, this operation has not found favor in this country in the nonsuppurative lesions of the labyrinth, although it has been performed by most of us in the infectious conditions. Abroad, this condition is often operated on. The prognosis regarding life is unusually good, because we are then working in a clean field.

616 MADISON AVENUE.

DIRECT LARYNGEAL EXAMINATION.*

By JOHN A. PRATT, M. D.,

Aurora, Illinois.

One of the great drawbacks to the universal use of the direct method of examination and the treatment of the larynx and its region, has been the want of a simple instrument and a simple technic. In the presentation of the Pratt electric laryngeal speculum we have taken at least a step toward the goal. The instrument is strong, simple, and durable, without too much weight.

It consists of a blade and a detachable handle that holds the cell. The light is a metal filament of strong candle power for its size, which adds to its brilliancy and durability. It can be carried in the pocket or visiting bag, and is as easily sterilized as a tongue depressor. The cell in the handle eliminates the cumbersome battery, and minimizes electrical trouble. In bronchoscopic work it cuts out one battery and one set of cords, and so simplifies our armamentarium.

The blade does not have a hood, for with the proper placing of the instrument it is unnecessary. The light is placed in the centre of the blade, one fourth inch from the end, and is set in the curve of the lip, out of the way of both vision and instruments. It has the advantage over the side lighted speculum that the larynx is perfectly illuminated.

The battery can be quickly changed, costs but thirty cents, and will give illumination for some hours. A switch on the handle allows the light to be continuous or intermittent. The instrument can also be used as a luminous tongue depressor.

Those who have used the Boyce dorsal position will see that the upright posterior position I advocate is simply a Boyce dorsal raised to an upright.

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*Presented at the meeting of the Section in Otolaryngology of the American Medical Association, Atlantic City, June 6, 1912.

By comparing the two illustrated positions, here presented, it will be readily seen which is the easier. The view of the operator and position of the instruments are the same in both positions. The other advantage of the posterior upright position is that both the technic for this and for the dorsal position is the same, while if the anterior position is used it is necessary to learn a double technic. In the posterior upright position the head is steadied against the body and the left wrist of the operator touches the side of the patient's head, thus giving a feeling of security and assurance to both operator and patient.

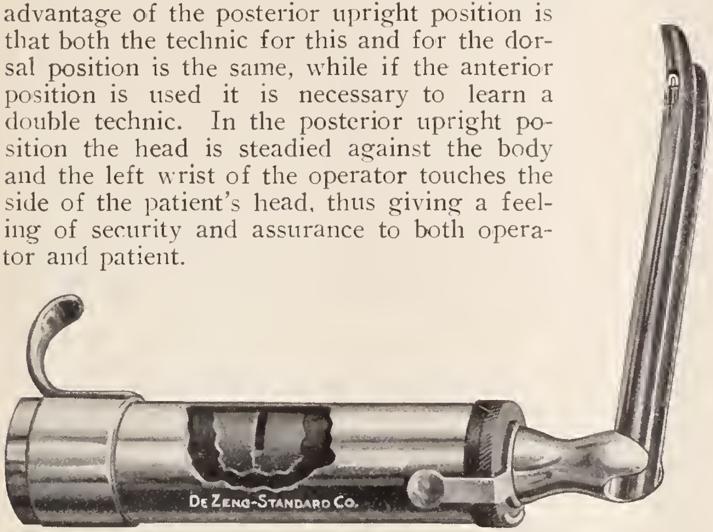

Fig. 1.—The Pratt electric laryngeal speculum.

In making a direct laryngeal examination two things are necessary, cocaine and the confidence of the patient. A four per cent. cocaine solution is applied down to, and including the epiglottis. I advise the beginner to practise the technic in the posterior upright position. The patient is placed on a stool about ten inches high or at a height convenient for the operator when standing behind the patient. The patient is told to look up into the operator's face, which gives extreme extension of the head and allows it to rest against the operator's body. The mouth is now held wide open, easier than closed, and a mouth gag is unnecessary. The speculum is now taken in the left hand with the blade toward the wrist. It is placed in the mouth and, following down the posterior pharyngeal wall, is passed over the epiglottis. The soft parts are then gently but firmly lifted forward by rotating the hand on the wrist, while the wrist rests firmly against the side of the head. The right hand is free to make applications or do operative work.

In the Boyce dorsal position, which is the best for children and anesthetic cases, an assistant is necessary to hold the head in position and keep the mouth open with a thimble mouth gag. Children under five years can be easily examined by wrapping them in a sheet, placing them in the dorsal position, and using the child's size blade.

232-233 Coulter Block.

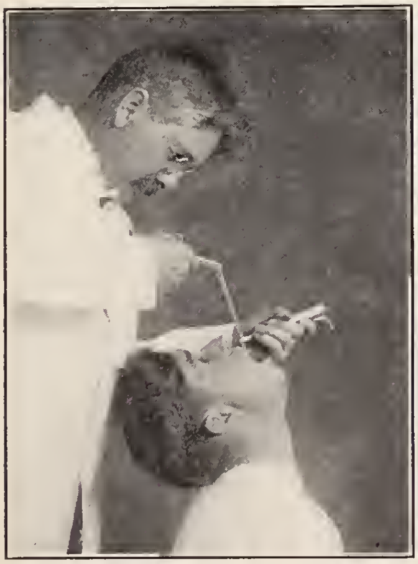

Fig. 2.—Posterior upright position.

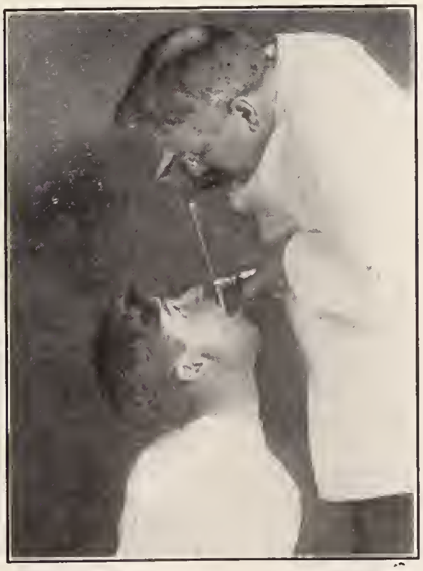

Fig. 3.—Anterior upright position.

THE ENHANCING OF AUDITORY ACUITY BY PSYCHOLOGICAL METHODS.*

By William J. W. A. Maloney, M. D., Ch. B., F. R. S., Edin.,

New York,

Adjunct Professor of Neurology, Post-Graduate Medical School; Attending Neurologist, Neurological Hospital.

Mechanism of hearing: Wittmaack, in 1907, published a series of ingenious experiments. He described how he took groups of guineapigs and exposed each group to one particular tone, so as to produce auditory fatigue for that tone. The tone was sounded in the ear of the guineapig frequently and periodically for many months. The guineapigs were then killed, and their cochlear membranes and nerves were examined histologically. He found that prolonged overstimulation had caused the cochlear nerve fibres to degenerate. The bundle which degenerated varied with the tone; thus, for a tone of high pitch, a certain bundle degenerated; for a tone of low frequency, another bundle degenerated. This degeneration began in the sensory membrane, and spread along the cochlear nerve toward its nucleus in the medulla.

Habermann examined, by histological methods, the sensory membrane and cochlear nerve in cases of defective hearing among workers in noisy trades. He was able to corroborate Wittmaack's results.

Hence when compound aerial waves of sound are converted into nerve impulses at the cochlear membrane, they are resolved into a number of elemental forms, each equivalent to a component tone, and each transmitted along a separate fibre or bundle of fibres of the cochlear nerve to the medulla.

These auditory impulses pass to a destined series of brain cells, in ordered sequence, so that a definite brain area is stimulated; ultimately the highest psychic centres are reached and the sound is perceived or heard.

We do not in everyday life

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*Based upon a paper read before the Section in Otology of the New York Academy of Medicine, February 14, 1913.

perceive the tones which compose a sound. Only a musician analyzes what he hears; even he distinguishes tones seldom and consciously. Others perceive merely the end result of a complex mental process. In the brain the elemental tones, which result from the disintegration of a sound at the cochlear membrane, are grouped and regrouped until the final synthesis is completed. Then we hear. We are unconscious of the various steps in this building up. The final audible pattern we accept as a whole. Its details we ignore. Each sound is to us as a picture, with a more or less dominant feature by which we distinguish and interpret it. This dominant feature is a tone which plays in the sound a part somewhat analogous to that of the fundamental generator in harmonics. This dominant tone is the key to the interpretation of the sound picture; but to interpret the same sound pictures, different people may use different keys. We each may recognize in the same sound a different tone as the dominant tone.

Hearing is thus a complex mental process. A healthy person may not perceive sound waves which impinge upon his cochlear membrane. This fact is known to all of us. We who live and think in noisy cities do so mainly owing to this power to turn the deaf ear; and, when students, we actively exercised this power during many a didactic lecture. We experience daily in ourselves, therefore, a deafness due to distraction, preoccupation, lack of attention. With this deafness a certain amount of hearing persists. A sort of distant rumble mixes with our thoughts. To interpret the rumble a psychic stimulus is necessary. We must, as we say, *pay attention* to the sound.

In all hearing there are therefore two factors, a psychic and a peripheral. Occasionally the psychic functions almost alone, as when imaginary awful sounds pervade the darkness; sometimes, as when our name is mentioned, or when a loud shriek startles us, the peripheral is the more important factor. But, as a rule, the psychic is the greater. We hear, among the sounds wherein we live, only those which we wish to hear, only those to which we devote attention.

At a given moment we may not hear, owing to the competition for our attention. But patients who have a morbidly restricted power of attention may not be able to hear, even when they are listening. When the attention is morbidly limited—a condition which is perhaps seen in its most marked form in hysteria—one gets a deafness which is remarkable, in that it ebbs and flows with the amount of attention which is available for auditory impressions at the moment.

There is thus a form of deafness which we may call *psychic deafness.* By psychic deafness we mean not the "word deafness," or sensory aphasia, of lesions of the temporosphenoidal lobe, but that deafness which has its seat in the highest mental centres—that deafness which might be termed *perceptor deafness,* that deafness which is due to the psychic element in hearing that I have just emphasized, that deafness which exists normally in the preoccupied and pathologically in the hysterical.

The sclerosed arteries of the aged lead to a lack of nutrition in the brain cells, diminish the available cerebral energy, and lessen the power of attention. An old person can attend less to the stimuli from his environment; so he devotes most of his attention to his psychic stimuli—to his own thought. We say that he lives in the past, and recognize this state as natural to his age.

His power of attention varies from day to day, and from hour to hour, according to his freshness or fatigue. With this variation in the psychic element, the degree of deafness rises and falls just as in hysteria.

Together with the limitation and variability of the attention there is also a blunting of the sensory delicacy of the ear in the aged. Peripheral auditory stimuli are in consequence feebler and less insistent. The senile person catches only a word here and there unless he particularly focuses his attention on hearing. To be continually on guard, to strain to catch every sound, is beyond the strength of the aged. After a time the struggle is relinquished, the occasional, disconnected, meaningless, audible sounds are ignored, for it is speech, not isolated words which command attention in adults; and the silence of meditation in which the aged live gradually deepens. Few auditory stimuli, however, are greater to a person than the sound of his own name, or similar sounds intimately related with his personality. Hence, the frequency with which the senile deaf detect things about themselves which they may be not meant to hear, while they require impersonal topics to be communicated by shouting

Otologists are habitually concerned only with mechanical intervention in deafness due to changes in the receiving and conducting mechanisms of the ear. The wonderful technic of such intervention nowadays suffices usually to restore a perfect or a satisfactory degree of hearing in deafness due to obstructive and inflammatory causes. Little is attempted, however, for the relief of nerve deafness. Cases of complete nerve deafness, of complete destruction of the cochlear apparatus, or of total severance of the cochlear nerve are comparatively rare. In them there is no peripheral stimulus to awake the psychic element of hearing. The auditory associations are quickly lost. We, therefore, get in such cases complete psychic added to the complete peripheral deafness.

But some part of the sensory membrane, some fibres of the nerve, as a rule, escape. In nerve deafness, if the lesion is partial and relatively slight we know that usually the high registers are affected; sometimes the low; sometimes, more or less, the whole scale of the human voice. As the hearing retained may be not wholly inadequate for the rougher needs of life, the patient may become more or less resigned to the defect.

If the defect in hearing is more serious, if hearing is too impaired to permit a satisfying amount of communication with the world of sounds, the consequence varies according to the neuropathic tendencies of the patient. Although the lesion is stationary the deafness tends to increase. A certain degree of loudness, a certain imperative quality, is needed before he becomes conscious of sound. Below this threshold uncertainty exists. Uncertainty breeds helplessness, fear, and anxiety, and necessitates a constant strain. A nervous exhaustion may arise, just as in any other prolonged mental strain, and the hearing shares the depression common to all the cerebral functions under such conditions. A definite psychosis may even develop. Or the patient may become resigned to his deafness, as so often occurs among the aged; he then grows more preoccupied with his other sensory impressions, or with his own thoughts, and acquiesces in the contented silence to which his hearing deteriorates. There is a constant tendency for psychic deafness to magnify a peripheral defect.

But Wittmaack's experiments teach us that in all lesions of the auditory nerve, except in the rare condition of its complete destruction, some power of hearing must persist; for the persistence of nerve fibres means persistence of the ability to detect the tones which these fibres subserve.

So few cochlear fibres may escape that their survival may not be detected by ordinary routine methods of examination and the patient may appear totally deaf. Unsuspected by the physician even a sufficient number may persist to allow the reestablishment of a very useful degree of hearing. In spite of the apparent totality of the deafness we may detect surviving tones if we carefully test the patient's hearing throughout the whole range of the scale of the human voice, by means of the Edelmann-Bezold apparatus.

These last cases in which practical deafness is present, but in which examination reveals an ability still to hear certain tones reemphasize the importance of the psychic factor in hearing. In such cases the peripheral apparatus retains a power to hear which the psychic factor ignores. The consequences are that the peripheral lesion appears greater than it actually is, and that to the partial peripheral deafness a total psychic deafness is added.

Just as the two factors, the peripheral and the psychic, are evident in hearing, so are they evident in deafness. Just as the psychic was incontrovertibly the mightier factor in hearing, so is it in deafness also. In the treatment of deafness the greater results may be expected from measures directed toward the restoration of the usefulness of the greater, the psychic factor.

In cases of complete nerve deafness there is complete and irreparable psychic deafness. Without auditory stimuli, hearing is impossible. If there is complete nerve deafness, if there are no healthy fibres, then no tones can be conducted, there is no basis for auditory education, and the only hope of the patient lies in the education of some other sense, either to receive the sound vibrations or to interpret the muscular movements of the speaking person. Helen Keller, the famous blind deaf cripple, is said to hear through her fingers. The usual way is to educate the patient in lip reading. The excellent results which care and patience can achieve in the totally deaf by lip reading are known to all. It spares the patient from complete isolation. But lip reading is often practised unnecessarily.

Good results are obtained by lip reading often in cases of medium deafness. Indeed, Mr. Wright, of the Wright Oral School of New York, contends that lip reading enhances hearing in the deaf. He cites a case of a young lady who was practically deaf and who after training in lip reading thinks she can hear speech better than she can read lips, although she is very proficient in the latter. Another patient of Mr. Wright's, after a few months' training in lip reading, suddenly found she was able to hear the telephone bell which had long been inaudible to her. The improvement in these cases is an improvement in the psychic deafness. These people had sufficient sensitivity in their cochlear apparatus to permit them to hear, but they ignored the auditory impressions. Lip reading taught them to attend to sound. Lip reading demands acute attention. The patient is trained to focus the attention on speech by giving them a fixed point—the lips—on which to concentrate whenever they are spoken to. The attitude of attention to hear comprises muscular movements of the head, neck, and eyes. When we attend to any speaker we look at him. Even the blind often retain this reflex attitude. To see and to hear are twinned as the horse's ear and eye. Indeed an otologist has told me of a cure of slight deafness which he achieved by correcting an error in refraction. Such patients with medium deafness owe their improvement in hearing to their increased ability to attend to what they can hear if they will. This method of inducing attention to hearing by eliminating all save visual distractions is an imperfect method. Properly to focus attention on hearing requires that distraction from every other sense should be eliminated. There should be no exception made, not even of vision.

Inasmuch as lip reading tends to concentrate the attention upon the vision, and to divert attention from whatever auditory impressions are still perceptible, it really imprisons a person and leaves him only a window through which to perceive the world. The seeing of speech cannot adequately replace the hearing of speech. Speech is the stimulus which normally retains attention upon auditory impressions of average intensity. Lip reading tends to discard this normal stimulus, and to produce psychic deafness for auditory impressions of average loudness. Psychic deafness should never be tolerated except in cases of total destruction of the cochlear apparatus. It is through the ear, and not through the eye that the deaf should be taught to hear. Only patients with complete nerve deafness should learn lip reading. For all other cases I think lip reading tends to be mischievous.

We have already too few senses. The exercise of all our senses is necessary to our proper mental balance. We ought jealously to conserve every sensory channel that we may possess. The importance of this may not come within your notice, but it appeals especially to us who are psychiatrists, and who recognize that the madness which sometimes accompanies deafness, and the madness which arises among prisoners in solitary confinement are one and the same process.

If in cases of incomplete deafness we thus repudiate lip reading, either because it conduces to psychic deafness or because it only indirectly tends to alleviate psychic deafness, what more efficacious procedure is available?

We saw that inconstancy was a pronounced feature of the deafness of the preoccupied, the hysterical, and the senile. This inconstancy depends mainly upon variations in the amount of attention which is allotted to hearing, and not at all upon variations in the peripheral auditory apparatus. It is obvious that if we could persistently focus the attention of the hysterical, or of the senile deaf, upon the auditory apparatus so that sound enjoyed a first call upon consciousness, we should cure the psychic deafness and we should maintain hearing at its maximum level.

We could by the same measure make all surviving tones immediately audible in cases of incomplete destruction of the cochlear apparatus. With the senile deaf such effort is not always desirable. With deaf mutes, deaf children, and deaf adults, it is not only desirable, but essential.

The problem of curing incomplete deafness is thus largely a problem of focusing the attention. How can this best be achieved? Let us first consider for a moment the factors governing attention.

Clinicians more or less consciously recognize that attention is an important factor in all deafness. They do not estimate the deafness of an hysterical woman by the degree to which she can ignore sounds; they measure rather her hearing capacity by the maximum acuity which she betrays. Similarly, they do not test the hearing of a person under circumstances in which there is competition for attention; when making auditory tests, they avoid as far as possible all sources of distraction. The cure of all forms of incomplete deafness lies wholly in the training of the patient to devote attention to auditory stimuli.

Every one has noticed in children who are straining to catch every word of a thrilling passage of a fairy tale, and in unsophisticated adults who are being made to marvel, the attitude, the arrest or slowing of breathing, the gaping mouth, the fixity of the gaze, or the closing of the eyes which accompany rapt listening. Attention to auditory stimuli is, therefore, obviously associated with conscious effort, with a feeling of inhibiting thought and all forms of sensory perception save the excepted sound. Consciousness during such attention is focused upon. and limited to the cells of the auditory area. Under such circumstances the activity of these cells is temporarily enhanced, even, may be, to the point of functioning spontaneously so as to produce veritable auditory delusions.

Normally attention is distributed among all our senses. Few of us are conscious of the feel of our clothes, or of the ring upon our finger, as touch stimuli we practically ignore. Of our muscular sense impressions we are seldom conscious. Vision absorbs the giant share of effortless attention. We are conscious of nearly everything we see. To a very much less extent do we attend to sounds. Practically the only impulses which can command attention when they are not of more than ordinary intensity, are the visual impulses. To devote our attention to any other sensory stimuli is again the problem of distraction. We must first liberate, as it were, the enormous amount of attention which is preempted by vision. This we do instinctively. Tea tasters and wine connoisseurs, when they wish fully to appreciate a flavor or bouquet, close their eyes as they taste or smell. I have already remarked the closed eyes or the fixed stare of the rapt listener. This minimizing of visual impressions, this liberating of the attention which is normally mortgaged to sight, enables consciousness to be focussed upon whatever sensory stimuli we wish to perceive.

We attend to what interests us. To say a thing is interesting is merely to say that it possesses the power to command our attention. The thing itself has seldom an absolute power over attention. Our interest in a thing depends upon the competition for attention which is existing at the moment. Thus the insistent aches which arise in the still watches of the night and the obsessing thoughts which pervade the darkness, have an interest for us only then, because of the absence of light, noise, and other external distractions. The obvious inference from these facts is that anything under appropriate circumstances can command attention; that anything can be interesting provided the competition for attention is in proportion to the intrinsic claims of the thing, and that to stimulate interest in anything it is necessary only to exclude distraction by other things. Expediency has made visual impulses interesting to the normal adult. Expediency confers an inherent interest upon touch, pressure, and auditory impulses in the blind. I wish here strongly to urge that training can make auditory impulses so interesting to those who have defective hearing that sound can be made to acquire a monopoly of their effortless attention. All one has to do is to diminish the distraction from the other sensory fields while one is training the patient to permit sound to establish a first claim upon consciousness.

To enhance the value of sound, one must temporarily produce the conditions existing in the blind. The acuity of hearing in the blind is solely dependent upon the principle of conservation of attention. I have found this method of concentrating the attention to be invaluable in the reeducation of tabetics. By blindfolding them, tabetics can be speedily taught to appreciate their residual kinesthetic images, and their surviving muscular sense impressions to such a degree that hopeless bedridden ataxics quickly learn to walk once more. The former treatment of ataxia was to concentrate the vision upon each movement, so that the patient really directed his walking by means of his eyes. That treatment, so often futile, seems to me to be very similar to the treatment of deafness by means of lip reading. The excellence of the result attained by the new method, by concentrating the attention in tabetics, will, I hope, be equalled by the results which will be obtained by applying this same principle to the cure of deafness.

Therefore, to reeducate a patient to hear, one first blindfolds the patient. You will find in practice that this blindfolding should be done about half an hour before each reeducational exercise. This enables the patient to dissociate his attention from what has been occupying his mind, and prepares him suitably, by anticipation, for the tasks which he is about to receive.

But beside thus liberating consciousness and reducing the possibility of distraction by blindfolding, we can further insure attention by making each sound, so far as we can, imperative. In animals the quality of the sound, that of the cries of enemies, etc., doubtless acts as an imperative factor. In man, some remnant of this effective quality doubtless remains, and is often utilized by drivers of urgent motor vehicles. But the main element in a sound which demands human attention is loudness. Hence, these reeducational exercises should be begun with sounds of sufficient loudness to command attention, and only after progress has been made should the sounds be diminished in intensity.

But all concentration will not suffice to render audible the sounds which can no more be conducted by the cochlear apparatus. The tones peculiar to the surviving fibres can alone be rendered appreciable. The others, no matter how imperative they may be made, must remain inaudible. Urbanschitch failed so often in his efforts to cure the deaf by shouting to them, because he did not first distinguish what they could hear if they would. He might shout a tone forever without being heard if the fibres to conduct that tone were destroyed.

Obviously, in all cases of nervous deafness, we should, therefore, first test the patient with the whole range of the tones audible to the human ear. This we can do by means of the Edelmann-Bezold apparatus. We should map out the tones which the patient can still perceive between the two extremes of the scale, B 1 and G 2, and we should then make a chart of these residual tones. Having thus ascertained the tones which are still audible, by concentrating his attention and by giving the tone the imperative quality of loudness, we can train a patient, not only to perceive immediately, but also to detect these surviving tones in any sound picture of which they are components. To educate the patient to make these the dominant tones by which to interpret all the speech he hears is then merely a matter of time and persistence. When few tones survive, very patient education is necessary to make them conscious and useful. But the principle is irreproachable: If a tone can be conducted, it will be heard if it is made loud enough.

When we have so educated a patient that he hears again, we have not changed the quality of the sounds he hears; we have not increased the sensitivity of the cochlear apparatus; we have not enhanced the conductivity of the cochlear nerve. What *have* we accomplished? Why does he hear?

Before the training, which I have just outlined, was begun, auditory messages were passing along the intact fibres of the cochlear nerve. The training has not affected their nature in any way; no mechanical or physical change has occurred in the stimuli. Sounds which he formerly ignored have been brought to his consciousness. The patient was psychically deaf; he now psychically hears.

CONCLUSION.

We have seen in the course of this paper that as separate tones are conducted by separate fibres, complete deafness can arise only in cases of complete destruction of the cochlear apparatus; and, conversely, that if any nerve fibres persist in the cochlear nerve, the power to hear the tones these fibres subserve also persists. Many patients who, in the hurried routine of practice, are dismissed as deaf, may really retain a sufficient sensibility in their cochlear mechanism to permit of a serviceable amount of hearing. In such cases it is the psychic element which conduces to deafness. Psychic deafness always tends to magnify the peripheral deafness. For cases in which any degree of power to hear remains, lip reading is not advisable. The treatment is to remove the psychic element of the deafness.

Every case of deafness should be carefully and thoroughly examined in order to ascertain if any tones are still audible. If there are no audible tones, lip reading must be taught. If there are audible tones, a tone chart should be made. The patient should be blindfolded while the audible tones are reiterated in his ear. At first these tones must be made as loud as is necessary to make them perceptible, and later diminished in intensity according to the success of the educator. Ultimately the patient will perceive them, even when they are uttered with an intensity scarcely perceptible to the normal ear. Then when these tones are thoroughly taught, training in sound pictures, vowels, etc., of which these tones are an element, should be begun. Thenceforward it will be merely a matter of time and patience until a serviceable degree of hearing can be reestablished.

20 East Sixty-ninth Street.

THE TREATMENT OF TUBERCULOSIS.

Encouraging Results with Calcium Cacodylate and Calcium Iodide.

By Algernon Brashear Jackson, M. D.,
Philadelphia,
Surgeon, Mercy Hospital.

In the worldwide crusade made in recent years against man's arch enemy, tuberculosis, the various methods of sanitation, forced feeding, and fresh air treatment have almost completely overshadowed therapeutic attack. Unquestionably, great and good results have been accomplished by the sanatorium methods, but the author believes that too much assurance is given, and too much hope placed therein, and too little attention and too little effort are directed toward seeking for a drug or drugs that will at least *aid* in the struggle.

Hardly is there a drug in or out of the pharmacopeia that has not been employed in the treatment of tuberculosis at one time or another. From time to time investigators have heralded some medicament as a cure for the dread disease, but in the wear and tear of time and proof they have been neglected and cast aside as useless. For a time tuberculin occupied the centre of the stage, but soon lost its prestige because of the enthusiasm with which it was received, and general ignorance in the use thereof. However, at the present time, tuberculin is again coming into its own, because of a better knowledge of its use and limitations. While my firm belief is that when an absolute cure for tuberculosis is found it will be in the form of an antitoxic serum or vaccine, I feel that, in the meantime, diligent search should be made for some drug which will arrest the progress of the disease and aid Nature in her efforts to cure.

It was with this thought in mind that I have endeavored to search for a means by the medical route to arrest the onslaught of tuberculosis, especially in its early stages. For many years having been brought in contact with the various surgical manifestations of tuberculous origin, and in many instances noting the utter futility of the ordinary surgical measures to produce any marked benefit, I was prompted to make these experiments. With the various methods in hand of recognizing incipient tuberculosis, there is hardly any excuse for any carefully observing practitioner failing to detect the disease in its early stages. So much has been written and said about these methods that I deem it unnecessary to go into any detail concerning them. In the citation of cases which follows, mention will be made of the employment of various means of determining the presence of a tuberculous infection in its early stages.

The term "cure" in regard to tuberculosis comes in for much argument, and will not be discussed at length in this article. Most of those rigid "sanitarians" who adhere strictly to fresh air treatment and forced feeding, or better "full feeding," speak of positive "cures." The author willingly admits that he has seen many patients return from tuberculosis sanatoriums who present every evidence of having been "cured." On the other hand, he remembers many patients sent home, bearing the label "cured," who have shortly returned to their sanatorium homes among the hills to die. Much of the sanatorium treatment is a school of instruction, and the result almost always depends upon the receptive powers of the individual, whether he returns home "graduated, cured, and educated." Many of the failures in sanatorium methods of treatment are due to the individuals themselves, who receive knowledge, yet do not heed its teachings, but instead return to old habits, old conditions, and old ignorances. The crusade against tuberculosis must be almost entirely educational, and it is not the purpose of this article to attack the sanatorium methods, but rather to praise them. But I do feel that enough attention is not paid to medication aimed directly at the disease itself. Too much faith is placed in educational sanitary methods alone, and too little—possibly justifiable because of the many failures—in the search for a method of medication which will aid in the cure by fresh air, nourishing food, proper rest, and a trained mind.

For several years I have made an ardent search for such a medical adjuvant. After many failures, both in following out the ideas in others and ideas of my own, some few conclusions have been reached. Naturally, the tendency of the over enthusiastic investigator is to see the result of his efforts through highly magnifying lenses. But on this point I wish to say that this work has been pursued with much painstaking care for a long period of time, in consultation with other medical men and chemists, so that enthusiasm had a chance to cool before this report was made.

After a careful sifting process, the drugs which seemed to aid Nature most in the struggle against tuberculosis were finally decided to be arsenic and calcium. With full regard for all sanitary measures, and in conjunction therewith, these drugs have been carefully tested and employed. The use of Fowler's solution in graduated doses showed such marked results that search for other arsenical preparations was made. Most naturally sodium cacodylate, because of the happy combination with organic arsenic, was chosen. It showed a marked advantage over Fowler's solution in that it could be given over a longer period of time with no distressing results.

Then, mindful of the observations made at autopsies of the lungs of those who had died of diseases other than tuberculosis showing old tuberculous lesions healed and cured by calcification, I turned to the calcium salts and began their administration. After employing the various salts of calcium, it was finally decided that the iodide unquestionably gave the best results. Much difficulty was experienced in getting a pure calcium iodide. Pure calcium iodide differs from the so called iodized lime, in that it consists of the pure binary compound CaI_2, whereas iodized lime contains large amounts of iodate as well as iodide. After obtaining the pure calcium iodide, the method of administration caused much concern, for it is a very unstable salt; but finally it was decided to dissolve it in glycerin. To make the solution more stable a small proportion of ferrous iodide was added. Hence the preparation I am now using contains to the fluid drachm, calcium iodide grains ten, and ferrous iodide grain one and one half, dissolved in glycerin. It will be noticed that the solution contains ferrous iodide to the extent of two and one half per cent., or just one half of the strength of the official syrup of ferrous iodide. Moreover, the sugar in the official preparation has been replaced by glycerin, which has the advantage of being more readily absorbed and better borne by the stomach. Thus we have a glycerolate of calcium and ferrous iodides. Pursuing the calcium and arsenic therapy further, I had made a calcium cacodylate, which is administered in conjunction with the glycerolate of calcium and ferrous iodides. The calcium cacodylate was prepared in sterile solution and placed in sterile ampoules containing three quarters of a grain each, thus facilitating the hypodermic administration of the drug. The calcium cacodylate or dimethylarsenate of calcium was carefully tested for traces of arsenic not in organic or masked form and found to be entirely free from it.

After careful employment of calcium cacodylate in incipient tuberculosis, it was noted that the results obtained were more satisfactory than from the use of sodium cacodylate. This was interesting. Upon investigation it was found that the proportion of organically combined arsenic in the calcium salts amounts to 40.7 per cent., whereas the amount in sodium cacodylate is thirty-five per cent. This difference alone, however, is not sufficient to account for the difference in the therapeutical value of the two salts. Why the calcium salt should appear to do better work than the corresponding sodium salt cannot be explained on chemical grounds.

As to the administration of this combination of drugs it was my intention from the first to inject the calcium cacodylate intravenously. After some time, during which I compared the results between intravenous and intramuscular injections, the conclusion was reached that the intramuscular route was just as satisfactory, less dangerous, less trouble to the operator, and less inconvenient to the patient; although, even at the present time, the intravenous injection is often used. It must be noted that on several occasions, almost immediately after the intravenous injections were made, the temperature dropped. While I regard this occurrence of little or no importance, for there is no clear reason for it, I feel that it is only fair to mention every observation that has been made in this line of work. The method now followed, after a careful analysis of all conditions, is as follows: Daily intramuscular injections of calcium cacodylate, three quarters of a grain each, are administered for one week, and after the first week, injections are given every other day, for a period of four or five weeks, or longer, unless contraindicated by some unusual development. The glycerolate of calcium and ferrous iodides is begun at the same time, giving thirty minims (equivalent to five grains of calcium iodide) in water three times daily after meals, gradually increasing the dose until one drachm of the solution, or ten grains of the calcium iodide, are given. Up to the present time no larger dose has been given, but I see no reason why more should not be given, for it produces no untoward effects and is easily tolerated by the most sensitive stomach. I have even tried giving it before meals on an empty stomach, with the result that it acted as a stomachic and increased the appetite.

Now arises the question, How long shall such treatment be continued? In incipient cases of tuberculosis (including the pulmonary and the surgical type), where the results are most promising, I have unhesitatingly persisted in this line of treatment until the case cleared up, and even thereafter continued occasional medication. For example, injections are given once or twice a week, and thirty minims of the glycerolate are given twice daily. This will be best shown in the report of cases which follows. The method of treatment has been given a complete trial in every variety of tuberculous and mixed infections. In acute miliary tuberculosis the result was positively nil. In mixed infections some improvement has been noted, but there are no "cures" to report. In incipient and surgical cases the results have been indeed brilliant, and it is to this class of patients that we turn with the glad hope, that in calcium cacodylate and calcium iodide there is for them a "cure." It will, however, be understood that in all cases treated the customary rules concerning fresh air, rest, nourishing food, and educational campaign have been thoroughly observed. In the report of cases which follows, a studied effort is made to have them as brief yet explicit as possible, aiming not to go into detailed symptoms which every physician knows to accompany the various phases of tuberculous infections.

Case I. The first case upon which this treatment was tried was a typical one of a rapidly progressive mixed tuberculous infection. The young woman, professional nurse, was under the care of Doctor Minton, who received the consent of her family to try this new method, since all other hope had been abandoned. Injections of calcium cacodylate were given daily for the first week accompanied by thirty minim doses of the glycerolate of calcium and ferrous iodides three times daily. At the end of the first week there were noticed some encouraging results. The morning temperature went to normal, and the afternoon fever was lower than it had been for some time. The patient said she felt better, but we believed this personal observation to be of purely psychic origin. The cough became easier and freer with increased expectoration. Injections were continued every other day, with the same dose of calcium iodide. About the fourth week she began losing ground, which continued until her death, two months later.

Case II. In a young man after an attack of pneumonia (possibly pneumonic phthisis) a cough developed. Examination of the sputum showed tubercle bacillus. Physical examination indicated involvement of the upper portion of the right lung. He was receiving the routine treatment when I received the permission of Doctor Hinson, his attending physician, to institute the calcium treatment. When I first saw the patient the greater portion of the right lung was involved, the cough dry, hard, and distressing, temperature, a. m. from 99.5° to 100° F., pulse averaging 120, and respiration 30. Further examination proved the existence of a mixed infection. He was very weak and exhausted, unable to sleep because of excessive night sweats and cough. Injections of calcium cacodylate and thirty minims of glycerolate of calcium and ferrous iodides were begun at once. At the end of ten days his cough was easier, expectoration free, night sweats had ceased, the morning temperature was normal, and the evening temperature slightly lower, though there was no change in the pulse rate or respiration. The injections were then given every other day and the same dose of calcium iodide continued. His appetite improved, his weight increased, and he felt so much better that he insisted upon sitting up every morning.

For some time he made rather marked improvement, but by degrees he began to lose ground, if the temperature is taken as a guide, for that is now constant. In the right lung he has two large cavities, marked dyspnea, and some pain. Up to this time, however, there is apparently no involvement of the left lung, his weight remains the same, his appetite is good, cough is slight, and that only in the morning upon rising. He says he feels very good, but while the line of treatment is still being carried on, I have not much hope in bringing about anything like a favorable result.[1]

The reports of Cases I and II, though not favorable, I regard as more interesting and essential to a true and faithful account of my experimentations than the favorable ones which follow. Together we are all seeking after truth, and the truth concerning a failure may be more helpful than the truth concerning a success. Undoubtedly some measure of improvement was noted in both cases, but the struggle against a mixed infection is indeed the hardest problem with which we have to contend in tuberculosis. I feel quite certain that the tubercle bacillus unaided is an enemy that can be readily conquered. But it is when it has as its allies other pyogenic organisms, that we are unable to cope with the disease. The strain on human vitality and lowered opsonic index, are too great when the joint foe is met, but with a pure tuberculous infection alone, not of the miliary type, there is a chance for ultimate recovery. Furthermore, success depends almost solely upon the early recognition of the disease, and the hearty cooperation of the patient.

In the reports of patients which follow, all were seen and recognized in the early stages of the disease, and the unfortunates were impressed with the fact that their cooperation was a most essential factor in the cure.

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[1] Patient has since died.

CASE III. Young lady, aged nineteen years, seamstress, came to the office complaining of feeling tired all the time, loss of appetite, afternoon headaches, slight "tickling in the throat," tendency to cough in the morning, and night sweats. There being a tuberculous family history, she felt that she was in the clutches of the dreadful disease. Examination at the time (morning) showed a subnormal temperature 97.3° F., pulse 90, respiration 26, slightly impaired resonance at the apices of both lungs, and moist râles during normal respiration, which cleared up on forced deep breathing. (This last sign I have even noticed in many persons not tuberculous, but who habitually are shallow breathers.) She was given advice as to method of living, told to get weighed, and return that afternoon, at which time her afternoon temperature was taken and found to be 100° F., sputum test was negative, but von Pirquet test showed a positive reaction. The calcium treatment was begun at once, the cough became loose with increased expectoration, in which were found the tubercle bacilli. By the fourth week the cough had entirely disappeared, no night sweats, the evening temperature was normal, although the pulse remained at 90. In six weeks patient had gained ten pounds, enjoyed an increased appetite, felt stronger, and was free from headaches. At the end of eight weeks she appeared normal in every way, both the von Pirquet and Moro tests being negative upon two trials each. The regular routine treatment was carried out in her case, even increasing the glycercolate to fluid drachm one, three times daily. She now reports once a week for observation and seems to enjoy the best of health. It remains to be seen, how long her "cure" will last.

CASE IV. This case is particularly interesting in that two years previous the patient had been discharged from a sanatorium graduated and "cured." A young man, of twenty-seven years, butler, who had a remarkable knowledge of tuberculosis, its symptoms, and various rules for self preservation. He had lost weight, had an afternoon temperature of 99° to 100° F., had a "hacking" cough, dry, and to a mild degree painful, and night sweats every other night. Recognizing his old trouble, he sought my advice about returning to the sanatorium. He was so well schooled in hygienic matters that I prevailed upon him to remain at home and take the calcium treatment. Sputum and von Pirquet tests negative, but Moro test showed a slight reaction. Physical examination showed impaired resonance in the apex of left lung, decided moist râles, and what appeared to be a cavity about the size of a silver dollar, in the left subclavian region. The right side appeared normal except a slight lagging on inspiration, evidently caused by old pleuritic adhesions. The calcium treatment was instituted, and I had the full cooperation of the patient in every detail. At the end of three weeks all his symptoms had disappeared. Treatment was continued for eight weeks all told. He reports once a week for observation and now suffers no further inconvenience.

CASE V. This case records a most complete failure. A man was admitted to the wards of Mercy Hospital with general debility and fever of an obscure nature. Diagnosis of acute miliary tuberculosis was soon made. Calcium treatment was begun at once and continued for two weeks but never at any time were there the slightest signs of improvement. To keep patient longer was considered hazardous to other patients, so he was sent to a hospital for the tuberculous, where he soon died.

Doctor Hinson has kindly kept records of several cases under his care which have been benefited by the calcium method of treatment. The incipient cases turned out well; in one chronic case he reports a marked improvement while the patient was available, but inability to get regular treatment impeded the progress which was being made.

Without citing in detail the many other cases I have treated or had under observation, I wish to sum up in a general way. In the cases of a surgical nature (and it was in such cases that the original experiments were made), particularly those of glandular origin, all patients made excellent progress toward recovery. In incipient cases the patients responded readily to treatment, and showed improvement marked by increased weight, cessation of cough and night sweats, as well as an increased percentage of hemoglobin. Those patients who have been kept under observation have shown no signs of return of the active symptoms of the disease. Even in surgical patients who underwent operation the calcium therapy was carried out, and seemed to hasten recovery and healing of the almost inevitable sinuses usually left therefrom. The experiments were all interesting, none seemed harmful, and many were gratifying as to results obtained. The results are herewith given to the profession for just what they may be worth, with the hope that they will stimulate further research along this line by more acute observers and better trained minds.

I wish at this time to express my gratitude to Doctor Minton and Doctor Hinson for their cooperation in this experimentation, by bringing cases to my notice, their skill in applying treatment and keeping faithful records. I beg to thank Mr. Vanderklede for his untiring zeal in making chemical and toxicity tests and furnishing me the drugs with which to work. Finally, I must acknowledge my gratitude to Miss Whiteman, professional nurse in my employ at the time of these experiments, now head nurse of Mercy Hospital, for the faithful manner in which she went to the homes of patients to give injections and take records of the many cases under our care.

770 SOUTH EIGHTEENTH STREET.

SEXUAL PROBLEMS OF TO-DAY.

With a Case of Hysterical Insanity Caused by Excessive Masturbation.

By B. S. TALMEY, M. D.,
New York.

Harvard's president emeritus, Dr. Charles W. Eliot, asked by the writer for his opinion of *Genesis,* answered that the emphasis upon sex knowledge as a cure for the social evil and the neglect of the ethical side of the question compel him to withhold his approval of the book. Sex knowledge, says the venerable professor, will not have the much vaunted influence, for the medical student, with all his knowledge, is not more chaste than any other young man of the same age.

This thoughtful criticism, which could be directed against every agency for the dissemination of sex knowledge, such as, for example, the Society of Sanitary and Moral Prophylaxis, gave the writer a good deal to think about. Has sex knowledge no intrinsic value whatsoever? Should a book written by a physician in the interest of preventive medicine deal with sexual ethics? After much thought the writer is satisfied that the ethical part is best left to the minister, who is the natural teacher of morality. If the latter, with all the authority of religion, cannot prevent sex irregularities (Rev. J. M. Wilson, in the *Journal of Education,* 1881, says that emotional religious appeals are far from rooting out sensuality and sometimes even stimulate licentiousness), the feeble voice or pen of the physician will surely be powerless. The physician's work should be confined to preventive and curative medicine.

From another side the writer was attacked for preaching in his book the morality of fear. It was objected that "burglary is wrong, irrespective whether the burglar gets or does not get caught." Now the morality of fear is a pretty good working morality. The Bible (*Exodus*, xx, 5 and 12, and xxii, 23, the observance of a command carries its reward and the transgression of a prohibition its punishment) often preaches the morality of fear, and upon the Biblical morality all the western civilizations are founded. Morality is the arrest of the instincts by the intellect, and the intellect always asks for the ethical why. An immoral act must harm somebody. If humanity suddenly perished, there would be no morality. There is no moral precept which is not a social precept, no other duty except toward one's neighbor. If human sanitation and the universal intelligent use of venereal prophylaxis abolished venereal diseases there would be no medical sex problem, although there might still remain some sex problems for the sociologist. But venereal diseases are still here among us, and in teaching preventive medicine we have to show to the violator of the usages of society, not only the harm he may do to others, but also to himself, just as we warn the drunkard and the glutton against excesses in food and drink. This is what the writer has done in *Genesis;* he tried to teach preventive medicine by the dissemination of knowledge and not to teach morality.

But, says our esteemed professor, knowledge does not suffice to suppress the medical student's unchastity. Hence to spread abroad a knowledge of sex would appear to be of doubtful value. In the following paper the writer will try to answer the dilemma.

Three pathological entities have their origin in irregularities of sex: 1. The venereal diseases; 2, neurasthenia; 3, hysteria.

About the first group, the three venereal diseases and their sequels, very little needs to be said. It is common knowledge that they owe their origin to prostitution, open or clandestine. If prostitution could be banished from our planet, the generation following such a happy catastrophe would be free of venereal diseases. But as humanity seems to be now constituted, we shall have to wait a long time for the spontaneous disappearance of this plague.

Even in the ideal state of society dreamed of by our philanthropists or socialists, prostitution will still be in existence. With all due respect to the investigations of our social committees, only a very small percentage of prostitution is due to economic conditions. Poverty and low wages have seldom compelled a girl to embrace this profession. If she is not vicious and deformed in mind, there is not a girl in the large cities, such as New York, London, Berlin, Paris, etc., where there is a chronic scarcity of domestics, who could not find board and lodging and good wages into the bargain within a few hours of search in any employment office, without the need of carrying her body to market. With few exceptions, only the absence of moral principle or will power will make a girl the victim of the white slaver. A surprisingly large percentage of people are of such low mentality that they are incapable of living what is termed a normal life. Hence the thirty-five thousand girls in our city who prefer prostitution to domestic labor. Those investigators who found a variety of circumstances, such as poverty, low wages, improper home conditions, lack of training, desire for amusements, pretty things, etc., responsible for seventy-five per cent. of prostitution were not very critical and were easily deceived. This may happen to the shrewdest investigator. For a moral defect, or frequently the total absence of the moral nature, is sometimes cloaked by an astute intelligence which is invariably perverted and directed toward purposes of ill. Dr. Pauline Tarnowsky (*Etudes anthropométriques sur les voleuses et prostituées*) says of her sisters: "Professional prostitutes are imperfect beings, affected by arrest of development, generally due to morbid heredity, and present mental and physical signs of degeneracy in accord with their imperfect evolution. They accept their abject trade agreeably and do not want to change it. Laziness and absence of moral sense are the principal traits characteristic of the prostitute." Even the few who were originally normal and only forced into this unfortunate profession are loath to leave it. Less than two per cent. of immoral women reform. The voluntary segregation of the prostitute is so complete that she loses all contact with human life, and the influence of the segregated life causes an arrest of her mental development.

Prostitution, therefore, will always be with us as long as we continue to breed mental defectives. With the presence of prostitution, the venereal scourge will rage among us, unless we can convince men to stay away from contamination.

The other disease due to sexual irregularities is the syndrome of symptoms known under the name of neurasthenia. While neurasthenia is by no means exclusively due to sex anomalies, still the percentage of neurasthenia of sexual origin is so large that it is always well in the presence of this anomaly to look for sex as a fruitful source. There is an intimate relation between the genitals and the head.

The two perversities, masturbation and onanism (congressus interruptus of Onan), are oftener the cause of the general breakdown than excesses in normal sex life. Of these two, masturbation is the more dangerous because its practice usually begins in the immature child, and, if indulged in to excess, leads to the fatigue and exhaustion of the central nervous system and of the nerve system of the organs.

Masturbation is often the cause of the third group of symptoms, known as hysteria. In nearly every case of hysteria a primary lesion of the sexual emotional sphere exists. According to the modern theory, especially promulgated by the Freudian school, hysteria is the result of a conflict between the libido and the sexual repression, the hysterical symptom being a compromise between both psychic streams. Hence these symptoms are mostly met with in masturbators who have given up their practices for one reason or another. W. Stekel

(*Sexual Problems,* February, 1913) says that the neurosis seldom breaks out during the period of practising masturbation, but regularly after its repression. One of these rare cases where masturbatic excesses form a prominent symptom of the hysterical attack is the following case:

CASE. Mrs. W., aged forty years, married, mother of two children, had always been well. As a child she had measles and whooping cough. She began to menstruate when seventeen years old and had always been regular. When she was twenty-two years old, a young gentleman used to call on her and frequently took her out to theatres, dances, etc. The parents being Hebrews and fearing that their daughter might become too attached to her Gentile friend asked him to stay away. At that time the patient seemed to be very little affected by his absence. Still she refused to get married, although she had many proposals. She remained single until she was thirty-five years of age, when she married her cousin. Eleven months later her first child, a girl, was born, whom she nursed herself. At that time the mother noticed a certain change in the patient's character. While previously she was very neat and particular as to her personal appearance, she became careless and neglectful of herself. Three years after the birth of her first child she gave birth to a boy in term. Both confinements were normal. The boy was circumcised on the eighth day, and two days later the patient became a raving maniac and tried to kill her nurse, under the delusion that the latter was planning to kill her infant boy. This was the first time she showed any symptoms of mental derangement. When the nurse was sent away and another nurse came to take care of her, the patient became quiet. But frequent attacks of excitement now followed periods of comparative health. Spells of elation with delusions of great riches and a boisterous demeanor alternated with fits of depression with the delusion of living in dirt which she tried to remove by continually washing her hands. Several weeks after her second confinement, while with her mother down town, she suddenly turned to her mother and said: "I wish I could have circumcised my admirer of years ago."

In September, 1912, the husband returning home from business found the patient in the bathroom in the act of violently masturbating. When he asked her what she was doing, she began to cry and accused herself of being a degenerate, that she had been doing it all her life and that her mother knew all about it, which, by the way, the mother denied.

It was now found that the patient was practising masturbation continually for hours in the day or in the night, in the presence of others even, of her mother, husband, or nurse. When her hands were tied she manipulated with her thighs. For that reason she was sent to a sanatorium. She remained there five weeks only and returned home where she gave herself again to her favorite habit. On New Year's day, 1913, the patient was brought to the writer's office for examination.

Status: The patient was a well built woman with regular features, with grayish hair and looked her age of forty years. Her appearance was slouchy, her speech somewhat stuttering which she did not have before her sickness. Her thoughts seemed to be occupied with something else while talking and she answered questions with reluctance. She was looking distrustful and timid, otherwise her behavior was quite normal. Her pupils were of equal size and not dilated, but the pupillary reactions were somewhat sluggish. The knee jerks were normal. There was no ancestral mental taint. She related that her menstruation had set in at the age of seventeen years. About that time she said she had begun the practice of masturbation, but only once a week. Her answers about the beginning and frequency of her practices were somewhat uncertain and indefinite. , There was a certain dullness of memory noticeable.

Examination of the genitals showed the clitoris to be elongated, about three centimetres in size, otherwise nothing pathological was found about the vulva. The uterus was retroflexed, and a small cyst of the size of a hazel nut was felt at the left ovary.

While in the doctor's office the patient's behavior was perfectly normal and ladylike; her entire character changed as soon as she returned home. She was now excited and extremely restless. She ran up and down her room, and tried to tear her hair and clothes and to throw herself out of the window, so that the two nurses were scarcely able to restrain her. Finally she began to masturbate and continued in the practice for several hours until she became entirely exhausted and fell asleep. During her practices she was red in her face, full of perspiration, but seemed to find no satisfaction.

The following day the patient was perfectly normal, but during the night she again had an attack of masturbation that lasted for several hours. She woke up in the morning in a bewildered, confused state. She cried and screeched violently and had the suicidal impulse to throw herself out of the window. She tried to tear everything she could lay her hands on, her clothing, bedding, etc., and she refused to take any food because it was full of dirt. While she was in this state, the writer was sent for. As soon as the patient saw her doctor she became quiet, but her speech was hesitating and she answered questions in monosyllables. She complained of headaches, and a fibrillary trembling of the muscles of the left side of the neck was noticeable. When the commitment to an asylum was urged the patient was satisfied to go.

The night following, the patient was perfectly quiet and slept well the whole night. In the morning, January 4th, she told her mother that she was the Supreme Being and decided to call upon her doctor. In his presence she seemed to be perfectly reasonable. She was informed of the locality and of time and observed everything. Asked whether she really thought that she was the Supreme Being she smiled and answered that she had dreamed it. She seemed to be well satisfied with herself. She was amiable, gay, and obedient, and when she lay down on the operating table she became hilarious, giggled in a silly way, and asked whether she should sing and dance. The retroflexion was corrected and a pessary introduced to keep the uterus in place.

The following few days the patient's behavior was changeable; sometimes she surprised by her reasonable answers to questions requiring judgment, at other times she thought she was very rich, was noisy and obstreperous, peevish, obstinate, and disagreeable. In the night of the seventh of January the patient was sleepless and masturbated continually. When her hands were kept tight by her two nurses, she executed certain movements with her thighs. The following day the patient remained in bed and was apathetic. She did not utter a word, refused to take food, stared at everybody, had a frightened look, and did not seem to recognize her surroundings. Yet when the writer called in the evening, she correctly gave his name, but answered with low voice and very reluctantly. She seemed to have difficulty in recollection. Her countenance was dull and expressionless. As soon as the writer turned to leave her, while still in the hall, she began again to masturbate.

The differential diagnosis between paretic paranoia and hysterical insanity is not very easy in this case; still the fact that in the presence of her physician, to whom she had taken a liking, the patient was more or less rational, shows that we have here a case of hysterical insanity, apparently engrafted on a masturbatic neurosis. The organism weakened by the excesses, only needed the shock of the separation from her admirer to cause the mental breakdown. Still, the repression seems to have been complete until the boy's circumcision, which recalled to her consciousness what could have happened to her admirer, too. All the time, in her subconscious state, she harbored the wish of her admirer's conversion to her creed. If his circumcision could have been effected, there would have been no obstacle to their union. This subconscious argument is partly revealed when she tells her mother of her sorrow at not having circumcised her admirer. Then she would not have married her present husband and would not have the boy, who by his circumcision recalled the entire tragedy to her memory. The subconscious wish is not to have the boy. This wish explains her suicidal inclinations. The law of psychic life, says Stekel, is the law of talion: No one kills himself who did not wish to kill somebody else. The patient's accusation of the nurse's intention to kill the boy only betrays her own subconscious wish. There is a mental conflict in her case, and the resultant compromise of the conflict causes the sexual wishes to be consciously rejected and unconsciously accepted.

This case shows that the hysterical symptoms do not always follow the repression of masturbation as announced by Stekel. But whether the symptoms follow the repression of masturbation or the hysterical patient continues her practices, hysteria, in the majority of cases, owes its origin to masturbation. It is, therefore, quite a mistaken idea to consider masturbation as an innocent pastime to be laughed at, especially when it is practised by young children.

Our missionary work must, therefore, begin in the nursery. The drunkard is not expected to embrace temperance by acquiring the knowledge of the injurious effects of alcohol upon his soul and body. His impaired will can not resist temptation. He must be taught to be temperate before he becomes a drunkard. The same is the case with the boy who has once tasted illicit venery. All the preaching will generally be for naught. Knowledge at this time comes too late. The young man who has gone through all the suffering of gonorrhea and syphillis, as soon as he is cured and sometimes before, forgets everything, under passion fanned to resistless impulse, and associates again with meretricious women. His practical experience, just as the theoretical knowledge of the medical student, is not powerful enough to keep away a man from illicit indulgence, once he has tasted the forbidden tree of knowledge.

Hence the lessons in sex matters must be given quite early. It is very unfortunate that even the cultured public has not learned yet that the young child, even the infant, shows some sex manifestations. The general public is unwilling to be enlightened about the genetic functions of the child. One does not need to go as far as Freud's school and reduce the most innocent infantile natural activities to the emotions of sex; still it is agreed among the keenest observers that, if infants and small children are not carefully watched and protected against themselves, lewd servants, and ignorant mothers, autoeroticism will be established at such an early period that the first lesson in sex instruction will, as a rule, come too late. For masturbation, once it has become a habit, will seldom be relinquished until normal sex relations take its place, instruction or no instruction. Such pamphlets as "What a young boy ought to know" or "What a young girl ought to know" show a touching naiveté. Young boys and girls, if of the age to understand such pamphlets, do not need to know anything, for the simple reason that they know everything, and in a more prurient way than their elders. It is the height of absurdity to give lectures on sex problems before classes in high schools, where a large percentage of the boys have already passed through all the stages of gonorrheal infection and a good many of the girls are addicted to the practice of autoeroticism. After such habits have been acquired, lectures will be of no avail. We must bring up our children in such a way that they will reach puberty without any kind of contamination, either by masturbation or by prostitution.

Only upon such children will lectures on the dangers of sex irregularities have great influence. If the medical student of Professor Eliot had begun the studies on the pathology of syphilis and gonorrhea and had known the dangers of the venereal scourge before he ever had a taste of sex, it is very likely that with the knowledge of the danger lurking, not only to himself but also to those dearest to a man's heart, his future wife and children, he would abstain from the association with meretricious venery. But when the medical student began to gain the knowledge of sex, it was too late for him to resist. Like the habitual drunkard, he had lost the power of resistance.

Hence lessons for boys and girls at the period of puberty, if not preceded by preventive measures during infancy and early childhood and by lessons in the propagation of plants and of animals, are not only of no value, but may even do more harm than good. The descriptions of the sequelæ of venereal diseases make the young people desperate and often cause suicide or wanton recklessness.

Boys who have passed puberty before they have had the opportunity of receiving proper instruction in sex, need altogether another kind of instruction, namely, lessons in personal prophylaxis. The objection that to teach personal prophylaxis against venereal infection would remove the most effective obstacle to sexual indulgence, i. e., the fear of infection, simply shows the ignorance of the elementary force which, indulgence in venery once tasted, drives the boy into the arms of prostitution, fear or no fear. The young man himself, once deflowered of his virginity, is of no concern any longer. All the lessons in personal prophylaxis will not have the least influence upon his conduct in life one way or another. But personal prophylaxis may save his wife and children from a life of invalidism and even death.

The girl, on the other hand, should be shown what she has to expect from the career of prostitution. The average duration of life in the career of the venal woman is eight years. (Clifford G. Roe, in the *Woman's World*, September, 1909, asserts that the average life of these girls is about five years.) If the girl knew these facts it is inconceivable that even the mentally defective girl would prefer this short life of silks and satins and then the morgue to a respectable life even of poverty. These facts have to be imparted, not only to the working or the servant girl, but also to the girl of the middle classes; for Belaschko's statistics show that thirty-four per cent. of these girls belong to the middle class families, and three per cent. of them are college graduates.

Now, what is the task of the societies of sanitary and moral prophylaxis? In the writer's opinion, they have the important office first to instruct parents in the science of sex. The majority of parents have no more knowledge of sex than what is known to every animal by instinct. Mr. Pinard, in *Chronique médicale,* 1903, p. 488, says: "Jusqu'à présent l'acte procréateur n'a été qu'un acte instinctif tel qu'il existait à l'âge des cavernes, c'est le seul de nos instincts n'ayant pas été civilisé. L'acte est accompli à l'aurore du XX^e^ siècle comme à l'âge de pierre." Such instinctive knowledge suffices not to influence the children either by preventive or by positive measures.

The societies of sanitary and moral prophylaxis have the further task of teaching the teachers. Just as the specialist in genitourinary diseases has to make special studies in the anatomy, physiology, and pathology of the genitourinary organs, because his general knowledge as a physician does not suffice, so the teacher, wishing to teach the science of sex, needs special lessons in this science. His general knowledge of botany and zoology will not suffice.

Finally, the societies have the important duty of teaching physicians the dangers of venereal diseases and of sexual irregularities. It may sound queer, but the writer has met with many physicians who think no more of gonorrhea than of a cold in the head, and who consider a chancre a huge joke. Such physicians, and their number is legion, need a pretty good shaking up by the societies.

To conclude, books fit to be given into the hands of boys and girls are of very little value. By the time a child is able to understand such books it knows more of sex than the book can teach. The societies of sanitary and moral prophylaxis have to concentrate their influence upon the imparting of sex knowledge to parents, teachers, and physicians, who in turn must begin to instruct their wards in the science of sex in early childhood. If early lessons have been neglected, moral preaching will have very little influence upon the boy, and he ought to be instructed by his physician in personal prophylaxis. The girl, before she has made the fatal step, has to be shown the great slavery and misery prostitution brings upon those who embrace it as a profession, and that the career of the prostitute lasts no longer than five to eight years on the average. Then come ruin and the morgue.

12 WEST 123D STREET.

A CASE OF TOTAL DEAFNESS FOLLOWING A DOSE OF QUININE.*

By MILTON J. BALLIN, M. D.,
New York,
Adjunct Otologist, Mount Sinai Hospital.

It is a well recognized fact that drugs such as quinine, salicylic acid, morphine, and alcohol, when administered in one large dose, or when given in small doses for a longer period, occasionally exercise a deleterious influence upon the nerves of special sense. These drugs, owing to their toxic action, may, as I have occasionally observed, give rise to pathological conditions in one or more nerves, which partially or totally impair their function, and not infrequently prove of a temporary or permanent nature.

This applies especially to quinine, whose toxic action occasionally produces destructive changes in the terminal filaments of the auditory nerve, which appears to be particularly susceptible to the influence of this drug. The idiosyncrasy of some individuals to the effect of quinine becomes manifest even after the administration of very small doses, in that they complain of flushing of the face, headache, tinnitus of varying intensity, and more or less impairment in the hearing in one or both ears. In almost every case these manifestations disappear within a short time, leaving no harmful sequelæ. It happens, however, that cases are met with in which the deleterious effect of quinine makes itself apparent in pathological conditions in the labyrinthine portion of one or both ears, with the result that there is a temporary or permanent loss of the hearing function, with or without disturbances in coordination.

A very instructive case in which the harmful action of quinine is fully demonstrated was referred to me by Professor Politzer, of Vienna, about two years ago.

The patient was a young lady, twenty-one years of age, an American by birth. Her family history was negative. There was no evidence of any acquired or congenital aural condition in her parents or other immediate relations. During the earlier years of her life she had the usual ailments of childhood, but never had any affection referable to her ears. She was always a robust individual and enjoyed the best of health. Six years ago she had a severe attack of grippe associated with a marked coryza. A kind neighbor, who meant well and thought he could break up her cold, gave her six five grain quinine pills, making, therefore, a dose of thirty grains. This she took within a period of fifteen minutes, the time being about ten o'clock in the evening. Two hours later she complained of an intense headache and severe tinnitus in both ears. There was no disturbance in coordination, but she noticed a marked diminution in her hearing which steadily grew worse, so that perception for all sounds was completely lost by the following morning. She did not seek medical aid immediately hoping that her lost function would in time reestablish itself. Finding that she remained deaf in both ears, she consulted different aurists with the hope that something could be done for her, and finally Professor Politzer, of Vienna, who, after a careful examination, pronounced her case hopeless.

Upon her return to this country she called upon me, and I found, upon inspection, a normal condition of the external auditory canals and tympanic membranes. There were no evidences of a previous aural trouble, and inspection of her nose and throat revealed nothing abnormal. The tuning fork tests showed an absolute loss of perception for all tones in both ears. Perception by air conduction was nil, and the vibrating fork placed against the mastoid, on either side, or on the vertex of the head, was not perceived as a tone, but interpreted merely as vibrations. In other words, there was a complete absence of perception for sounds by air and bone conduction, indicating, therefore, a bilateral, total nerve deafness. That is, we were dealing with a labyrinthine loss of hearing, in which both ears were involved.

In order to ascertain whether the vestibular portions of her labyrinths were functionating, I performed the usual rotatory tests and Bárány's test of injection of cold water into the external auditory canals. I noticed, after a few moments, that there was a slight nystagmus, which allowed me to assume that the vestibular part of the labyrinth was still irritable, and that the static reaction was preserved. This proved of great interest, as it clearly showed that the destruction, if caused by the toxic action of the quinine, was limited to only the cochlear portion of the labyrinth. There had been, therefore, a degeneration of the terminal filaments of the auditory nerve in the cochlear part, resulting in the complete loss of hearing, while the vestibular part had apparently escaped, inasmuch as there were no disturbances in coordination. The perception for speech was naturally also entirely lost, but through practice she acquired such a dexterity in reading the lips that one would hardly believe that she was completely deaf. Examination of the eyes did not show any changes in the fundi. About a year ago she passed through a confinement, bearing a healthy normal child. This in no way influenced her aural condition.

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She received all forms of treatment, that is, injections of solutions of pilocarpine, sweat cures, electric currents, and large doses of iodides, besides local treatment of the ears in the form of catheterization, massage, etc. All these proved of no avail, so that treatment was finally abandoned.

A Wassermann test proved negative. In order to exclude the possibility of a long standing hysteria, or some other neurological condition, I had her thoroughly examined by Dr. S. P. Goodhart, the neurologist, who found no manifestations indicative of such a condition. I was therefore convinced that I was not dealing with a functional loss of hearing, but with a true organic lesion. The patient still clings to a vain hope that her lost function may be restored, and is at present receiving injections of strychnine and electric currents applied to the mastoid regions. There seems to be no change in her condition, as one would naturally expect, and I therefore have given up all ideas of restoring her lost hearing, regarding the case as one doomed to permanent deafness.

The principle upon which this form of lost hearing is based was first advanced in 1881 by Kirchner (1), who undertook a series of experiments on cats, dogs, rabbits, etc. He administered to these animals large doses of quinine, which caused paralyses of the extremities and finally death. The ears were then carefully examined, and Kirchner found hyperemia and areas of ecchymoses throughout the mucous membrane of the middle ear and in the structures of the labyrinth. He attributed these changes to a vasomotor paralysis of the bloodvessels brought about by the toxic action of the drug. He also noticed a seromucous and hemorrhagic exudate, which, according to him, produced secondary destructive changes in the nerve endings, with subsequent loss in the hearing. Whether the changes found by Kirchner were due to the action of the drug, as he believed, is questionable, for it must be borne in mind that these animals received doses sufficient to cause death by strangulation, and this may have produced the conditions found post mortem. It has been repeatedly observed by careful investigators that hemorrhages and hyperemia of the bloodvessels have been found in the ears of animals which have been killed by strangulation alone, and not by the action of poisons.

Among these investigators was Grunert, who undertook a series of experiments on animals. He killed pigeons and mice by strangulation, and found hyperemia and hemorrhages in the mucous membrane of the middle ear and in the structures of the labyrinth similar to those observed by Kirchner. Wittmaack (2), in 1903, likewise investigated this subject and performed a series of experiments on animals by administering large and small doses of quinine. He did not agree with the explanation advanced by Kirchner, although he also found similar changes in the middle ear and labyrinth of his animals. Wittmaack did not attribute his findings to the toxic action of the drug, but was rather inclined to believe that the changes observed by him were due to strangulation and the forced respiratory acts caused by the large doses of the drug. He noticed, on the other hand, that in those animals in which the doses were small, and in which the poisonous effects were mild, these changes were entirely lacking. This would indicate that the conditions found by Wittmaack were not due to the direct or rather specific action of the quinine, but would make one believe that they were secondary.

Wittmaack was also inclined to believe that there is an ischemia of the membranous labyrinth, similar to an ischemia of the retina, brought about by some circulatory disturbance due to the specific action of quinine. This, however, was not based on facts, as it had not been proved clinically or experimentally. Upon further investigation he changed his views. In another group of experiments on animals he found, upon more careful examinations, changes in the cells of the spiral and vestibular ganglions. That such changes take place in these ganglionic cells seems to coincide with the fact that the toxic action of quinine acts upon cells in general. It is, according to Wittmaack, a protoplasmic poison, and he therefore did not consider it surprising that it should attack the very sensitive nerve cells of one of our most sensitive organs. As the changes observed in the auditory apparatus take place so shortly after the administration of the drug, he no longer regarded them as secondary, due to circulatory disturbances, as he at first thought, but rather attributed them to a primary specific action of the poison upon the nerve cells. The primary effect of the toxic action of quinine makes itself manifest, as a rule, in the form of more or less tinnitus. This, no doubt, is brought about by an irritation of the cells of the spiral ganglion. If, on the other hand, one observes an accompanying vertigo varying in intensity, it may be assumed that there is a simultaneous involvement of the cells in the vestibular ganglion. Witmaack therefore concluded that it was the specific action of the quinine and the circulatory disturbances, acting jointly upon the ganglion cells of the auditory nerve in the labyrinth, that most likely produced the loss of hearing in cases of quinine intoxication.

Roosa (3), who is supposed to have observed changes in the ears following the use of quinine, administered from ten to fifteen grains of the drug to several students. In from one to one and a half hours later he asserted to have noticed a redness of the face and auricles and a marked injection of the vessels along the handle of the malleus. He further learned that his subjects had severe ringing noises in both ears. These conditions following so shortly after the absorption of the drug in perfectly normal individuals warranted Roosa in assuming, with justice, that these changes were caused by the toxic and specific action of the quinine. Similar objective changes, however, have not been observed by other investigators.

From the foregoing, therefore, it becomes evident that we cannot regard the changes found in animals as the true cause of this form of deafness in man, and must as yet look upon this matter as an unsettled question. This is readily understood when we stop to consider that the pathological changes which give rise to this form of deafness have not as yet been clearly established, for the reason that our knowledge is based entirely upon animal experiments, and we have no record of any case in which a pathological anatomical or microscopical examination has been made of the ears of an individual who has become deaf from the toxic action of quinine. If the conditions found in animals, after the administration of doses of quinine, cannot perhaps be attributed entirely to the effect of the drug, it neveretheless seems as though it had empirically a selective or specific action on the auditory nerve. For, how are we to explain the aural symptoms and the sudden total loss of hearing in both ears in the case given above? We have here a perfectly healthy individual who completely lost her perception for all tones after taking thirty grains of the drug. She had a perfectly functioning organ of hearing prior to this, and received no other medication at the time.

That the auditory nerve is particularly sensitive to the action of quinine, as already stated, is well known, for one often meets with individuals who complain of tinnitus and a slight impairment in hearing, even after the administration of only a few grains. It would seem, therefore, that in spite of the fact that we have no fixed data except those observed in animals to explain the phenomena, we may nevertheless regard our clinical observations as pointing to a selective or specific action of the drug on the structures in the labyrinth, and must also bear in mind that a personal idiosyncrasy plays an important part. Hence, it behooves us, in prescribing this drug. to exercise precaution, for what may seem a small or medium dose for one individual may prove harmful to another. It is extremely fortunate and also surprising that one does not meet more frequently with cases of deafness following the use of quinine, when one stops to consider the carelessness with which it is used and the quantities consumed by the laity.

Cases of quinine deafness are brought to the attention of the profession from time to time, and mention of such instances are made by Dabney (4), Tiffany (5), Shilling (6), Perron (7), and others. In all these the loss of hearing remained permanent and treatment also proved futile, as in my case.

I was prompted to report this case as I believe it is extremely interesting in that both auditory nerves became simultaneously affected, giving us a total bilateral, permanent loss of hearing. It is furthermore of interest in that the destructive changes, which apparently were due to the toxic action of the quinine, produced irreparable lesions in the cochlear portions of both labyrinths only, while the vestibular parts were evidently not involved. We can surmise this from the fact that the loss of hearing was unassociated with any disturbance of coordination. Although the cases in which the action of quinine exercises a deleterious effect upon the auditory nerve are very rare, and one does not often meet with individuals in whom this drug leaves any unpleasant sequelæ, yet an unfortunate case like this ought to be a warning against its indiscriminate use.

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53 EAST FIFTY-EIGHTH STREET.

GASTROPTOSIS AND COLOPTOSIS TRANSVERSA AS SEEN FROM POST MORTEM EXAMINATIONS.

From the Pathological Department of the University of Pennsylvania.

BY KENNETH M. LYNCH, M. D.,
Philadelphia.

The term gastroptosis signifies falling of the stomach and is so used in this paper, not considering as true ptosis dilatation or displacement due to pressure, and not including prolapse of the various other organs unless so designated by a special term. Since Glenard produced his work on visceroptosis, in which he attempted in particular to establish gastroptosis as the anatomical basis for neurasthenia, many writers have taken up the subject in its various phases. These contributions are largely from the clinical side of the question and statistics are made up largely from clinical diagnosis.

As to etiological factors, there are those who believe in the persistence of the fetal position of the organ, those who look upon it as a reversion to a previous type, those who consider it the result of a congenitally weak constitution with lack of tone, those who name various conditions increasing intrathoracic pressure, Keith with his theory of a vitiated method of respiration where the poise between the thoracic and abdominal muscles is disturbed, and those who describe more or less specific types as resulting from the removal of some extra intraabdominal pressure, as, for example, Landau's post partum gastroptosis, or from the constriction of the waist by the corset.

Statistics on the subject vary with different writers from three to thirty-five, or even a higher per centage, of all persons, with usually the condition about twice as frequent in the female as the male. The main reasons for these differences in statistics will be seen from the fact that the highest figures come from the clinician and the lowest from the pathologist. Naturally with the patient living and with recourse to different postures, many more minor degrees of change in position of the organ may be made out than with the dead subject on the autopsy table. Then, it is possible that dilatation of the stomach with naturally a lowering of the greater curvature may be mistaken for prolapse clinically, since the upper border, on account of its position, is more or less inaccessible to external examination. It is also questionable if minor degrees of variation in the position of a loosely attached organ should be in itself considered pathological.

The apparent disparity in statistics and the desire to find out just what sequence of affairs in gastroptosis can be fairly and reasonably determined by actual pathological conditions has lead to this study of a series of 2,300 autopsies performed in the

Pathological Department of the University of Pennsylvania.

In this series the condition occurred in seventy-five subjects, or 3.3 per cent. (thirty-two males and forty-three females), unassociated with ptosis of any other organ in nine cases, with prolapse of the transverse colon and small intestine thirty-seven times, with that of the liver and intestines twenty times, and with a general visceroptosis in nine cases.

The degree varied, usually in direct proportion to the emaciation of the subject, from very slight to a condition where the lesser curvature lay below the umbilicus. As to position, some showed a fairly uniform falling, some a sagging of the body especially giving rise to a V shape or kink toward the pylorus, while in some the organ was more or less vertical with the pylorus down and to the left. Dilatation was prominent where there was a sagging of the body and exceptional in the other types. Changes in the wall, usually atrophic, while present in some cases, were not the rule.

In age the subjects varied from twelve to eighty years, the majority past forty, and only a few under twenty.

The diseases which presumably caused the death of the subjects were in thirty cases chronic tuberculosis, in twenty-one chronic nephritis with arteriosclerosis, in three arteriosclerosis with aneurysms, in five arteriosclerosis with hemiplegia, in seven malignant tumors, in four chronic valvular lesions of the heart; and in the remaining five chronic gastric ulcer, diabetes mellitus, syringomyelia, general paresis, and progressive pernicious anemia.

In all of the subjects except five, three of whom were very fat and two in a state of good nutrition, emaciation was well marked and many times extreme, with wasting and softening of the muscular system and thinning and stretching of the supporting ligaments of the stomach. This condition is undoubtedly the underlying cause of gastroptosis, operating largely by relaxing the abdominal wall and so removing support from below, but aided materially by the weakening of the gastrohepatic ligament. I have seen this ligament support as much as sixteen pounds before tearing.

Since these diseases commonly produce emaciation and atrophy without gastroptosis, and since in many of the cases where there was marked emaciation the stomach exhibited nothing abnormal but the prolapse, I see no particular reason for laying the primary wasting at the door of the gastroptosis. In those cases exhibiting dilatation and atrophic changes in the wall of the viscus there were, no doubt, digestive disturbances which would lead to exaggeration of the emaciation and the establishment of a vicious cycle.

The clearness of these points tends to lead one to forget those cases of apparent primary gastroptosis in which the symptoms disappear and the patient regains physical condition when the stomach is supported, and of which there may be coincident cases in this series. Undoubtedly in these cases the existing emaciation is produced by the gastroptosis, but I believe the prolapse here to be the sequel of some previous condition in which the changes in the supporting structures were produced. Those cases of gastroptosis without symptoms I would place in this same class, and here the function of the organ has not been disturbed.

Since the majority of cases have been in the middle aged and the senile and rarely in the young, and since the position of the organ in prolapse rarely conforms to anything near the fetal position, it would seem that the theory of persistence of fetal position is not important. Such a cause should have produced cases outside the line of wasting diseases. That the viscus should regain something of its fetal position in prolapse is but natural.

With reference to the longwaisted individual, in whom some consider the condition very common, no doubt the large abdominal cavity will favor the occurrence upon establishment of a cause.

Since the condition was found more frequently in the female than the male it seems that the lax abdominal wall (which is similar in its lack of action to the atrophic wall) produced by pregnancies and removal of large tumors from the cavity, etc., as well as the waist constricting corset, are at least predisposing factors and possibly actual causes in extreme cases.

Increased intrathoracic pressure in itself produces displacement rather than prolapse, and there are probably many such displacements which leave the organ fixed in an abnormal position and upon removal of the pressure produce what is apparently a primary gastroptosis.

In this same series it was interesting to note the occurrence of prolapse of the transverse colon. This condition was present in 120 subjects, 5.2 per cent., of whom fifty-three were males and sixty-seven females. It was unassociated with prolapse of any other organ forty-eight times, with gastroptosis thirty-seven times, with prolapse of stomach, intestines, and liver twenty times, with that of the liver alone six times, and was a part of a general visceroptosis nine times. The diseases in which the condition occurred were practically the same and in about the same proportions as given in gastroptosis. The degree, as in gastroptosis, was usually in direct proportion to the degree of emaciation, and varied from a minor affair to a looped or V shaped prolapse into the pelvis. In a few of the cases the hepatic flexure was prolapsed, as described by Virchow, as the first viscus to fall in visceroptosis, but this did not seem prominent enough to warrant that conclusion. In many of the cases the organ was distended with fecal matter and commonly exhibited pouchlike dilatations and accumulations of scybalous masses as evidence of constipation, and no doubt leading into a vicious cycle from the weight of these masses. This organ being more liable to prolapse than the stomach, because of the weakness of the suspensory ligament and the fact that it lies in no supporting bed and contains weighty contents, especially in constipation, the condition was much more frequent than gastroptosis. That it is practically always present when prolapse of the stomach occurs is natural because of these predisposing features and the added pressure from the stomach, but in a few cases it held its position, and the stomach came down over it.

These features of prolapse of the transverse colon, while important in themselves, undoubtedly make the position outlined above for gastroptosis much stronger.

CONCLUSIONS.

In the light of the findings in these cases it seems safe to conclude:

1. That gastroptosis and coloptosis are secondary conditions and not primary.
2. That the underlying cause in both conditions is a weakening and relaxation of their supporting structures consequent to some wasting disease, supplemented materially in the case of the colon, and to a less extent in that of the stomach, by an actual myasthenia of their walls allowing an accumulation of their contents.
3. That the emaciation is primarily the cause of the conditions, but the establishment of a vicious cycle is likely if the prolapse interferes with the digestive function.
4. That the high percentage of occurrences of these conditions frequently seen in literature is not borne out by post mortem examination.

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Therapeutic Notes.

Various Uses of Sulphur in Skin Affections.—A. W. Brayton, in the *Indianapolis Medical Journal* for February, 1913, points out that in acne vulgaris or rosacea precipitated sulphur, mixed in the ratio of one to four with any ordinary face powder the patient wishes to use, forms a useful dry application. At night the following lotion may be applied:

℞ Zinci sulphatis, . }
Potassii sulphidi, } ....āā ʒii (8 grammes);
Aquæ rosæ, ...℥xii (350 grammes).
Fiat lotio secundum artem.
Sig.: Shake well before applying.

Precipitated sulphur may also be used in ointment of rose, in the ratio of one drachm to one ounce (from four to thirty-two grammes). Sulphur treatment may be continued as long as desired. By scraping off blackheads after washing with soap and hot water, by opening pustules freely with a sharp knife, and by vigorous rubbing with a brush or coarse towel at night before applying the lotion, ordinary acne may be kept under control or even cured.

In the treatment of dandruff and seborrheic dermatitis of the scalp, the latter should be cleansed once a week with tar soap, the lather washed out with water, and when the scalp is dry, a portion the size of the end of the thumb of the following cream well rubbed into the scalp with the finger tips:

℞ Sulphuris præcipitati, ...ʒi (4 grammes);
Acidi salicylici, ...ʒss (2 grammes.;
Unguenti aquæ rosæ, ...℥i (30 grammes).
M. ft. unguentum.

This ointment may also be used for seborrheic dermatitis of the face or of the entire body. White precipitate ointment might be used instead for the limbs and trunk.

The following preparation is very efficient as a keratolytic and destroyer of dandruff:

℞ Hydrargyri chloridi corrosivi,.gr. vi (0.4 gramme);
Acidi salicylici, ...ʒss (2 grammes);
Aquæ rosæ, ...℥ii (60 grammes);
Alcoholis, ...℥vi (150 grammes).
M. ft. lotio.

To each eight ounces of this combination there may be added from one half to one drachm (from two to four grammes) of castor oil or of glycerine. Resorcinol in one to three per cent. strength may also be substituted for the corrosive sublimate. Half an ounce of the preparation should be rubbed into the scalp with the fingers every morning.

In scabies sulphur powder is an effective remedy. The parts should first be washed with sand soap, a brush being used to break up the burrows of the itch mite, a small teaspoonful of the washed flowers of sulphur or of precipitated sulphur dusted over the entire body and then rubbed in. In the case of a child a half teaspoonful of sulphur may be sprinkled in the nightgown or between the sheets at bedtime every other night, and the underwear changed two or three times a week only. By this method no ointment is necessary, and sulphur dermatitis is avoided. One may, however, rub between the fingers, on the elbows and knees, and about the genitals a little of the sulphur cream.

In ringworm of the crotch and armpits a mixture of sulphur with talcum powder constitutes also a promptly effective and cleanly measure.

Treatment of Pulmonary Tuberculosis.—L. G. Pedigo, in the *Therapeutic Gazette* for March, 1913, reports good results from the use of an ointment of oil of eucalyptus. The formula generally used is as follows:

℞ Olei olivæ, ...℥ii (60 grammes);
Adipis benzoinati, ...℥vi (180 grammes);
Olei theobromatis, }
Olei eucalypti, ... } ....āā ℥iv (120 grammes).
M. ft. unguentum.

In the summertime a twenty-five per cent. solution of the oil of eucalyptus in cocoanut oil is used instead. One teaspoonful of either preparation is thoroughly rubbed into the skin until it disappears, the site being changed at each application. The greater part of the fifteen minims of eucalyptus oil thus employed reaches the circulation. Proof of its prompt diffusion through the system is afforded in that the sputum has its characteristic odor on the day after the first inunction has been given.

The sputum, from yellow and viscid, becomes frothy, white, loose, and temporarily more abundant. Later it is reduced in amount, and there is also generally a continued improvement in the cough. The temperature invariably runs a lower and more favorable course; this change usually begins within twenty-four hours. The patient, as a rule, experiences a feeling of well being. The author is inclined to attribute the gross changes in the sputum at least partly to a favorable modification of the bacterial flora of the lungs. Even in far advanced cases similar effects were obtained, the patient being rendered more comfortable and life apparently somewhat prolonged.

Incidentally the author found that good results were produced by the measure in ordinary "colds." The inunctions always proved beneficial and aborted some incipient attacks.

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NEW YORK, SATURDAY, MAY 24, 1913.

A NEW COCAINE LAW FOR THE STATE OF NEW YORK.

The Walker bill, regulating the purchase, sale and disposition of cocaine, eucaine, their salts and preparations thereof, has become a law in the State of New York, taking effect immediately. This law was severely criticised by many New York physicians and has been amended in several respects as the result of this criticism, but the essential features of the original measure are retained. Under the law the physician is required to keep a record of all cocaine and eucaine purchased by him and to record the gross amount disposed of at least once in six months. Where physicians dispense these drugs they are required to furnish a dated certificate to the patient stating the amount of the drug furnished. The possession of these drugs by unlicensed persons without such certificate constitutes a misdemeanor. The druggist dispensing a prescription for such drugs is required to furnish the patient a similar certificate. Before dispensing preparations containing more than one grain in a fluid ounce, or two grains in an ounce of ointment, the pharmacist is required to verify the prescription by consulting the prescriber. Other details of the measure are given in our news columns and should be carefully studied by physicians practising in New York.

It is most unfortunate that the misuse of these drugs has made it necessary in the opinion of the legislature to impose upon physicians the task of keeping such records. The measure is, however, much less objectionable than the absurd Boylan-Kerrigan bill, and in effect will, we believe, not prove burdensome. The medical profession as a whole occupies so high an ethical plane, and does so much for the public welfare without direct compensation, that its members are prone to resent even the slightest legal restriction of their actions. Unfortunately, however, the court records show that there have been a few, happily a very few, men licensed as physicians who, abusing the privileges bestowed by this license, have purchased and sold cocaine for illegitimate purposes. For the sins of these few the many conscientious physicians must suffer the inconvenience of keeping records of their dealings in these drugs. Through the protests of the representatives of the medical organizations this burden has been reduced to what appears to be a minimum, and since the measure has become a law there is nothing left for the physician to do except to comply with its requirements. The operation of the law will be watched with interest, for if it does prove helpful in restricting the illegitimate sale of cocaine and eucaine, similar legislation will probably be enacted in other States.

AN ANTIVIVISECTIONIST'S LIBEL ACTION.

For the third time the methods of antivivisectionists have been publicly discredited in England. Some ten years ago, in an action for libel against Mr. Stephen Coleridge, secretary of the National Antivivisection Society, Doctor Bayliss obtained $10,000 damages for reckless and calumnious misstatements by the antivivisectionists. This was the celebrated "little brown dog" case, and it was in this case that Miss Lind-af-Hageby came to the fore and that her sensational book, "The Shambles of Science," was discredited. Last year, the Royal Commission on Vivisection, after a most exhaustive inquiry, in which most of the prominent antivivisectionists in England appeared to testify, as a result of the evidence before them, discredited practically all the allegations made by the antivivisectionists. Now in an action for libel against Dr. C. W. Saleeby, the *Pall Mall Gazette,* its editor and printer, Miss Lind-af-Hageby has failed to establish her contention, the defendants pleading justification in the truth of their comment.

The history of the case is as follows: On May 7th, 1912, and again on May 10th of that year, Dr. C. W. Saleeby made some comments on an antivivisection shop in Piccadilly, in the windows of which certain ghastly antivivisection exhibits appeared, in which he stated that Piccadilly was made "impossible for decent people by the unscrupulous mendacity of their [the antivivisectionists'] hirelings." He further referred to the "scurrilous lies" circulated by "the critics of vivisection" about Lord Lister after his death. As the shop in Piccadilly belonged to and was maintained by Miss Lind-af-Hageby, this lady insisted that the passages complained of imputed to her that she was "a deliberate and systematic liar and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood." The defendants pleaded in justification the truth of their allegations. The trial lasted sixteen days. Miss Lind-af-Hageby brought forward certain antivivisectionists, some of them medical practitioners, to show that vivisection was useless and cruel. This testimony the defence rebutted by calling Professors Starling, Bayliss, and Waller, who gave evidence from the physiological side; Professor Cushny—late of Ann Arbor—who testified to its value in pharmacology; Sir Victor Horsley, in surgery; Doctors Eyre, Goodall, Caiger, and James Mackenzie, in medicine; Doctor Bullock, in bacteriology; Dr. Alice Corthorn, in plague; and Dr. J. C. Martin, in pathology. One by one, antivivisectionist statements were shown to be reckless and unfounded. A typical example was the statement under a cartoon in the *Antivivisection Review*, of which the plaintiff is editor, alleging that six and a half million deaths from plague in India had been due to inoculation. It was shown that in the period specified there had been only a million inoculations against plague altogether. It took a special jury only twenty minutes to come to a verdict for the defendants.

Perhaps the most gratifying feature of the case is the almost complete unanimity of the press of Great Britain in applauding the verdict and expressing condemnation of the unscrupulousness of antivivisection methods, which one daily paper characterizes as a "campaign of calumny." With such a clear issue as existed in the charges brought against these methods by Doctor Saleeby, after so exhaustive and patient a trial—"marked throughout," as even Mr. Stephen Coleridge admits, in a letter to the *Pall Mall Gazette* of April 24, "by a fine and proper courtesy on both sides"—with so speedy and emphatic a verdict from a jury of men of higher calibre than the ordinary jury, and with such a universal chorus of approval as the verdict elicited, it may be hoped that more scrupulous control over their assertions will in future be exercised by antivivisectionists, even if we must sorrowfully admit that their imperviousness to reason is hardly likely to allow any change in their convictions. Meantime, Miss Lind-af-Hageby is liable in costs, which, it is estimated, will amount in all to about $25,000.

EPILEPSY AS A FACTOR IN ACCIDENTS.

That carriage, automobile, and railway accidents may occur owing to the fact that drivers, chauffeurs, and locomotive engineers may be epileptics, or at least sufferers from one of the many manifestations of *petit mal*, has repeatedly been emphasized in recent years, mainly through the benevolent efforts of a society whose mission is to secure, for persons so afflicted, employment which will prevent their exposing themselves and others to injuries or death. Dr. Matthew Woods, of Philadelphia, to whose humane initiative the movement is due, relates, in a monograph on the subject, instances which clearly illustrate the need of taking this factor into account. A chauffeur who had none other than nocturnal attacks before, for instance, became the cause of an accident in which death and mutilation occurred; another chauffeur, found in the throes of an epileptic fit, did not know he had been suffering from this malady; a coachman who had caused the destruction of his carriage and very nearly the death of three successive employers and himself, finally was found to have suffered from so called "dizzy spells." A locomotive engineer was also found to suffer from short periods of semiconsciousness during which he lost control of things. That some of the calamities ascribed to neglect of danger signals may have been due to this cause is, at least, within the range of possibility. The epileptic nurse who falls downstairs with a child in her arms and cripples it for life, and the epileptic barber who disfigures his customer, but illustrate the varied occupations in which the epileptic may become a source of grave danger to others. As to the dangers to which epileptics are themselves exposed when working as house painters, machinists, engineers, roofers, etc., the not infrequent deaths credited to this cause in newspapers sufficiently bespeak the need of efforts at prevention. Briefly, "many a child has become a cripple because its nurse was an epileptic; many a home reduced to ashes because an epileptic became unconscious while carrying a light or using a fire; many a bread winner for a dependent family has fallen from a scaffold, ladder, or roof and lost his life because he was an epileptic unsuitably employed; many an automobile accident has occurred and will occur because at the critical moment the chauffeur was taken with an attack; many carriage collisions and other casual-ties happen from the same cause, for there are many epileptics who merely lose consciousness for a few moments without convulsions, and thus the disease may go undetected until it develops into spasms or until some mutilating or mortal accident brings the victim to the doctor."

That the medical profession could do much to curtail the loss of life and the instances of injury from this cause is self evident. The case history of an epileptic or of a sufferer from *petit mal*, as in the case of other diseases, mentions his occupation, and this affords the physician the opportunity, in case that occupation involves danger to others or to the epileptic himself, of calling his attention to that danger, and of the need—nay, his duty—to change that occupation. Employers of coachmen, chauffeurs, and engineers would also do much to protect themselves, their families, and their friends, if all persons entrusted with such responsible positions were required to submit to a medical examination before being engaged. Indeed, the time has come when such an examination should be necessary to procure a license as chauffeur, in view of a case related by Doctor Woods. In this instance, an engineer whose body presents evidences of many serious injuries received in the course of epileptic seizures, and averaging four seizures a month, persists, notwithstanding admonitions, in driving his own automobile, which sometimes contains many friends. An individual who thus insists on being a menace to his family, his friends, and the community at large should not possess a license.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN NEW YORK CITY.

The improvement of health conditions in this city of late years, as evidenced by the diminishing death rate, has been marked, and perhaps the most gratifying feature of this is the reduction in infant mortality (effected by the efforts of the health department and of various other agencies working with the same end in view), which has attracted so much attention everywhere. Of very great importance, however, has proved the medical inspection of the children in the public schools for the purpose of excluding from attendance those showing any signs of contagious disease and of discovering physical defects impairing, or likely to impair, the health or capability of the pupil. This work, commencing in a very limited way, has gradually increased in usefulness as larger appropriations for it have been granted by the municipal authorities. Last year the amount available for the purpose ($265,000, or thirty-eight cents for each child), although considerably smaller than the sum asked for by the health department in its budget, was larger than in any previous year.

At a meeting of the Section in Neurology and Psychiatry of the New York Academy of Medicine, held last week, which was devoted to the general topic, "The Relation of the Physician to the Welfare of the Public School Child," Dr. S. Josephine Baker, chief of the division of child hygiene of the health department, read a paper in the course of which she gave an interesting account of the school inspection work during the year 1912. Among the other results accomplished, she said, was a very marked reduction in the number of cases of eye and skin affections among the children, and whereas in 1909 the proportion of pupils suffering from defective nasal breathing amounted to eighteen per cent., in 1912 this was only seven per cent. Our ophthalmological confrères frequently complain, and with reason, that at present the examination of the public school children's eyes is inadequate, asserting that such examinations should be made only by expert specialists; and this certainly ought to be the case. The health department, however, has to do the best that it can with the limited means at its disposal. Ideal conditions are not to be expected just yet, and in the meanwhile the school inspection is accomplishing much.

We learn from the reports of the department that during 1912, 288,469 children were physically examined by the medical inspectors, and that of this number, 87,361 were found to be suffering from one or more untreated physical defects interfering with their general health; while, in addition, no less than 119,359 were found to have defective teeth, though otherwise normal. The character of the defects and number of children suffering from each were as follows: Defective vision, 15,075; defective hearing, 888; defective teeth, 123,163; defective nasal breathing, 13,863; hypertrophied tonsils, 19,549; malnutrition, 6,106; cardiac disease, 1,242; pulmonary disease, 299; orthopedic disease, 547; nervous disease, 660. Of the total number of these affected children, 57,062 received treatment as a result of the efforts of the school nurses, who visited the homes of the children and urged their parents to take them to the family physician, or, if unable to pay for treatment, to some public clinic. As has previously been mentioned in the Journal, the health department during the year established six children's clinics in localities in the city where adequate facilities for clinical treatment had been lacking. These are designed exclusively for public school children whose parents are totally unable to pay for medical treatment, and it is stated that they have been crowded to their capacity.

DENGUE.

E. R. Stitt reviews the history and symptomatology of this disease in the *Bulletin of the Johns Hopkins Hospital* for April. He considers the most important points in the differentiation of dengue from yellow fever to be: 1. The normal urine of dengue and the albuminuria of yellow fever; 2, the striking blood picture of leucopenia (3,200 cells as the average in 100 cases) and low percentage of polymorphonuclears (fifty-one per cent.) in dengue, with normal findings in yellow fever; 3, the jaundice appearing almost always the third day in yellow fever and the characteristic eruption in dengue showing itself from the third to the fifth day. As for the slow pulse said to be characteristic of yellow fever, the author was more impressed by the constancy of a slow pulse in dengue than by any other symptom. Glandular enlargements were very rarely noted by him in dengue. He considers the evidence of the transmission of dengue by the mosquito convincing.

LARGE CORPORATIONS AND HYGIENE.

The *Journal of the Telegraph*, which appears as a monthly in its forty-seventh volume, is the official bulletin of the large electric, telephone, and telegraph companies of the United States. These large institutions have, like various others, come to the conclusion that it is for their best interests to see to the health of their employees—a step in the right direction. Similar action was taken by the great steel corporation of which we spoke in our issue of March 29th. To accomplish this aim, the telegraphic journal has therefore created a medical department under the direction of Dr. Alvah H. Doty, under whose guidance articles will appear in this official journal pertaining to the preservation of health and protection against disease. In the articles which have so far appeared there have been treated such subjects as the air, water, and food. Kept by the employees, these short essays will, when the series is completed, form a good reference book covering practically the entire subject of hygiene.

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Obituary.

E. L. SHURLY, M. D.,

of Detroit.

Dr. E. L. Shurly died suddenly on May 10th in Harper Hospital, Detroit. Born in Buffalo, sixty-seven years ago, he studied medicine in his native city and, after graduating and having had some experience in hospital work, entered the army as an assistant surgeon. In 1870 he resigned, and then practised for three years in Manistee. Next he removed to Detroit, where he had practised since then. Doctor Shurly was an active worker and was connected with many public institutions. He was one of the founders of the Detroit College of Medicine, in which institution he held the chair of professor of laryngology for many years. He was one of the pioneers in Detroit in the fight against tuberculosis. He was president of the American Laryngological Society and of the Michigan State Medical Society. He was also the author of several medical books.

News Items.

Changes of Address.—Dr. Robert Pettit, to 544 West 157th Street, New York.

Endowment Fund for Medical Research at the University of California.—Announcement is made of a gift of $1,000,000 to the University of California, by Mrs. George William Hooper, of San Francisco, for the establishment of an institute for medical research at the university. The gift was made as a memorial to the husband of the donor.

American Dermatological Association.—At the thirty-seventh annual meeting of this association, held in Washington, D. C., on May 6th, 7th and 8th, the following officers were elected: President, Dr. James M. Winfield, of Brooklyn; vice-president, Dr. S. Pollitzer, of New York; secretary and treasurer, Dr. Oliver S. Ormsby, of Chicago; member of the council, Dr. William A. Pusey, of Chicago. The association will meet next year in Chicago.

Meetings of Philadelphia Medical Societies.—During the coming week meetings of medical societies will be held in Philadelphia as follows: Monday, May 26th, Section in General Medicine, College of Physicians; Tuesday, May 27th, West Philadelphia Medical Association and the St. Mary's Hospital Clinical Society; Wednesday, May 28th, County Medical Society; Friday, May 30th, Medical Club Reception.

New Officers of American Pediatric Society.—The following officers were elected by this society at its annual meeting, held in Washington, D. C., on May 5th, 6th, and 7th: President, Dr. Samuel M. Hamill, of Philadelphia; vice-president, Dr. Matthias Nicoll, of New York; secretary, Dr. Samuel S. Adams, of Washington, D. C.; treasurer, Dr. C. H. Dunn, of Boston; editor and recorder, Dr. Linnæus E. La Fetra, of New York. Next year's meeting will be held in New London, Conn.

American Society of Medical Sociology.—A meeting of this society will be held on the evening of May 24th, at 8:45 o'clock, at 12 Mount Morris Park West. The topic of the evening will be Eugenics and Euthenics, or the Relative Influence of Heredity and Environment on the Individual and the Race. Papers will be read by Mr. William English Walling and Dr. William J. Robinson, and a general discussion will follow. All who are interested are invited to attend.

Medical Society of the County of New York.—This society will hold a stated meeting on Monday evening, May 26th, in Hosack Hall, New York Academy of Medicine. The programme will include the following papers: Summer Plans of the Department of Health in Combatting Diseases of Children, by Ernst J. Lederle, Ph. D., commissioner of health of the city of New York; Modern Classification of Summer Diarrhea in Infancy, by Dr. Henry Koplik; Prophylaxis of Summer Diarrhea, by Dr. Charles Gilmore Kerley; Medicinal Treatment of Summer Diarrhea, by Dr. Walter Lester Carr; Configuration of the Colon of the Infant, by Dr. Henry Dwight Chapin.

Alumni of Bellevue Hospital College Hold Reunion.—The class of '98 of the Bellevue Hospital Medical College held their fifteenth reunion on the evening of May 10th. Dr. Anthony Bassler was toastmaster, and addresses were made by Dr. E. E. Smith, Dr. Reginald Rawls, Dr. G. W. Jean, and Dr. J. Bruder, of New York; Dr. S. R. Blatteis, of Brooklyn; Dr. W. Freile and Dr. C. H. Finke, of Jersey City; Dr. A. C. Sanford, of Newport, R. I.; Dr. W. H. Grinnell, of Danby, Vt.; Dr. W. E. Park, of New Milford, Pa.; Dr. M. A. Wardwell, of Penobscot, Me., and others. The next dinner of the class will be held in the year 1918.

Literature on the Treatment of Fractures.—The American Surgical Association's Committee on the Treatment of Fractures of the Long Bones is desirous of obtaining recent literature on the treatment of fractures. They wish to secure two reprints of all papers dealing with the nonoperative or operative treatment of open or compound fractures which have been published within the last five years, also papers dealing with the medicolegal relations of radiography to the diagnosis and treatment of fractures. If authors of papers on these subjects have no reprints, the committee would be pleased to receive memoranda of the places of publication of such papers. Address all communications to Dr. John B. Roberts, 313 South Seventeenth Street, Philadelphia, who is chairman of the committee.

Certificates of Health to Accompany Marriage Licenses in Orange, N. J.—It is reported that the clergymen of the various denominations in the Oranges, N. J., will in future require that prospective brides and bridegrooms furnish certificates of health along with the marriage license, before the marriage ceremony will be performed. The Ministerial Association of the Oranges has sent a formal request to the Orange Medical Society asking that the society send two physicians to take part in a discussion of the subject at a conference to be held in Orange on June 16th. Dr. William B. Graves, of East Orange, and Dr. Richard D. Freeman, of South Orange, have been appointed to represent the society at this conference.

Resolution on the Death of Doctor Morrow.—The medical board of the City Hospital records with sorrow the death of Dr. Prince A. Morrow. Doctor Morrow was appointed dermatologist to the City Hospital, then called the Charity Hospital, in 1884, and was connected with the dermatological department of that institution up to the time of his passing away, the last few years acting as consulting dermatologist. The medical board wishes to express its appreciation of Doctor Morrow as a fellow member, and its sense of loss in his death, and extends to the immediate members of Doctor Morrow's family its sympathy and sorrow.

William B. Pritchard, M. D., President.
Daniel H. Wiesner, M. D., Secretary.

At a meeting of the medical board of the City Hospital, held on May 1, 1913, it was directed that this resolution be drawn, copies sent to the family of the late Doctor Morrow, to the *Medical Record,* and to the *New York Medical Journal,* and that it be spread on the minutes of the meeting.

New Cocaine Law for New York.—The Walker bill, restricting the sale and dispensing of cocaine and eucaine, their salts, and preparations, has passed the New York State Legislature and been signed by the Governor, to take effect immediately. The law requires every registered physician, veterinarian, or dentist, who may have in his possession any of these substances, to make a record of the amount of each in a book to be kept for that purpose, stating the place in which it is kept. If the amount on hand of any of these drugs is more than one and one eighth ounces, a report must be made in writing to the State Department of Health within thirty days, and thereafter it will be unlawful for any physician, dentist, or veterinarian to have in his possession at one time more than one and one eighth ounces of cocaine or eucaine or their salts. Each hospital or dispensary is required to designate some one individual as authorized to purchase and keep in his possession such of these drugs as may be required, the amount not to exceed five ounces at any one time, which drugs shall be used exclusively for such hospital, shall be kept within the hospital, and the authorized purchaser shall keep a record of purchases made, and of the disposition made of these drugs. Physicians, dentists, and veterinarians must make a record of all cocaine, eucaine, and their salts purchased by them and shall at least once every six months record the gross amount of such substances disposed of by them. The pharmacist is not permitted to dispense prescriptions containing an excess of one per cent. of these drugs until he shall have verified the prescription by inquiry of the prescriber. The pharmacist must retain the prescription, may not refill it, or give a copy, except where the content does not exceed one grain to each fluid ounce, or, in the case of ointments, two grains to the ounce. The dispenser must also deliver to the purchaser with the medicine a certificate stating his name and address, the name and address of the prescriber, the date, and the amount sold. The possession of these substances without such certificate, or in excess of the amount named in the certificate, is illegal, and the certificate does not legalize the possession for more than ten days after its issuance, except where the prescriber makes a written statement that the use of the drug is necessary for a longer period, which period must be named. After a personal examination of the patient, a physician may prescribe and dispense such substances himself, but must deliver to the patient a certificate just as is required of the dispensing pharmacist. All the records named herein shall be open for inspection by duly authorized officials, and shall be kept for at least five years. Failure to keep such records constitutes a misdemeanor, and the illegal disposal of the drug, by sale or gift, a felony.

American Gynecological Society.—The thirty-eighth annual meeting of this society was held in Washington, D. C., on Tuesday, Wednesday, and Thursday, May 6th, 7th, and 8th, under the presidency of Dr. Henry C. Coe, of New York. Officers for the ensuing year were elected as follows: President, Dr. J. Whitridge Williams, of Baltimore; vice-presidents, Dr. Thomas J. Watkins, of Chicago, and Dr. Howard C. Taylor, of New York; secretary, Dr. LeRoy Broun, of New York, reelected; treasurer, Dr. J. Wesley Bovée, of Washington, D. C. Next year's meeting will be held in Boston.

Civil Service Examination.—Among the positions for which examinations will be held on June 14th by the New York State Civil Service Commission is that of physician to the New York State Training School for Girls, at Hudson, N. Y. The position is open to women only, who are licensed medical practitioners in the State of New York, who have graduated from a registered medical school and who, since graduation, have had one year's experience on the resident medical staff of a general hospital or in a State hospital or institution, or who have been engaged for three consecutive years in the practice of medicine. A vacancy exists at present in the position of assistant physician, with a salary of $1,000 and maintenance, increasing to $1,200; and in the position of physician at a salary of $1,200 to $1,500 and maintenance. Intending competitors, who must be citizens of the United States and at least twenty-one years of age, must execute application blanks and file them in the office of the commission on or before June 6, 1913.

American Therapeutic Society.—At the fourteenth annual meeting of the American Therapeutic Society, held in Washington, D. C., on Monday and Tuesday, May 5th and 6th, under the presidency of Dr. Noble P. Barnes, the following officers were elected to serve for the ensuing year: President, Dr. Howard Van Rensselaer, of Albany; first vice-president, Dr. Robert T. Morris, of New York; second vice-president, Dr. Francis M. Pottenger, of Los Angeles; third vice-president, Dr. J. Madison Taylor, of Philadelphia; secretary, Dr. Lewis H. Taylor, of Washington, D. C.; treasurer, Dr. A. Ernest Gallant, of New York; council, Dr. Frederic H. Gerrish, of Portland, Me., Dr. John Blake White, of New York, Dr. Thomas E. Satterthwaite, of New York, Dr. Clarence J. Blake, of Boston, Dr. Francis P. Morgan, of Washington, Dr. Edward D. Fisher, of New York, Dr. A. Ernest Gallant, of New York, Dr. J. Madison Taylor, of Philadelphia, Dr. James C. Wilson, of Philadelphia, Dr. Alexander D. Blackader, of Montreal, Dr. Reynold Webb Wilcox, of New York, Dr. Spencer L. Dawes, of Albany, and Dr. Lewis H. Taylor, of Washington.

Personal.—Surgeon L. L. Williams, of the United States Public Health Service, assumed the duties of chief medical officer at Ellis Island on May 15th, relieving Dr. George W. Stoner, who has been assigned the command of the United States Marine Hospital at Stapleton, Staten Island. Doctor Stoner has completed a twelve years' detail at Ellis Island, having been reassigned twice by the surgeon general. Doctor Williams was in charge of the medical work at Ellis Island in 1900 and 1901. He has had a wide experience in immigration and public health work in this country and abroad. He has been in command of a number of marine hospitals and was at one time assistant surgeon general in charge of the marine hospital division.

Dr. Franklin D. Barker has completed ten years of service in the medical department of the University of Nebraska, and has been made a full professor, having charge of the work in medical zoology and parasitology.

Dr. Hans Zinsser, professor of bacteriology in Leland Stanford University, has been appointed professor of bacteriology in Columbia University, filling the vacancy caused by the death of Dr. Philip Hanson Hiss.

Dr. Richard P. Strong, of the department of tropical medicine of Harvard University, accompanied by two assistants, has gone to South America to study verruga, a disease peculiar to the valleys of Peru. On his return from Peru, Doctor Strong intends to go to Brazil to study beriberi.

Dr. Albert A. Mendez, of Brooklyn, has been appointed chief medical officer of the Contagious Disease Hospital on Swinburne Island, and Dr. John R. Hicks, of New Brighton, has been appointed chief medical officer of the Detention Hospital on Hoffman Island.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

March 6, 1913.

Mucous Membrane Lupus in the Nose.—Walb believes that tuberculosis of the nasal mucous membrane is often the cause of a beginning of skin tuberculosis of the nose, with which at any time it may be complicated. The infection may have been digital, respiratory, or circulatory, and in frequency is in direct proportion to the presence of other foci elsewhere. We have chiefly to deal with tuberculous disease of the cartilaginous portions of the nose, while the bony skeleton is usually spared. The operative removal is done best by the conchotome. The aftertreatment should consist of regular applications of gauze strips that are saturated with mercury bichloride 1:1000. This is very important, since certain persons remain carriers for the rest of their lives.

The Presence of Typhoid Bacilli on the Tonsils of Typhoid Patients.—F. Schütz and L. Schütz state that not even in a single case of persons having typhoid was it possible to obtain the baccilus from smears of the tonsils. In prophylaxis, therefore, the chief attention is still to be given to the urine and feces.

Tuberculous Infection in Children.—Arent de Besche. out of fifty cases of tuberculous children from whom the bacilli were obtained in pure cultures, found the human type in forty-five, the bovine type in three, and bacilli of an undifferentiated type (mixed viruses of the English tuberculosis commission), in two. Accordingly, they infer, tuberculosis in man is in from ninety-two to ninety-six per cent. of the cases due to human infection.

Operative Treatment of the Kidney Inflammations.—P. Hertz thinks that the healing of a renal inflammation cannot be hastened by the operative procedures of decapsulation and nephrotomy because usually both kidneys are involved. However, the above mentioned operations have given good results in renal coli, so called essential hemorrhages, anuria and uremia, following in the wake of acute and chronic nephritis.

Case of Cured (?) Mordus Addisonii.—Teschemacher reports that as the result of a continued adrenalin therapy there resulted a complete disappearance of the bronze discoloration of the skin and marked improvement of the general condition.

Good Effects of Salvarsan; Treatment of Pregnant and Nursing Syphilitic Women.—M. Holth found that salvarsan treatment of pregnant women caused the birth at term of children free from all symptoms. In one case the good effect of the milk of a mother treated with salvarsan could be seen upon the child born with all the symptoms of congenital lues.

March 13, 1913.

Hyomandibular Fistula, a New Form of Congenital Fistula.—H. Küttner reports the case of a girl of eight years who had had a moderately discharging fistula since birth under the angle of the jaw, on the anterior border of the right sternocleidomastoideus. When it closed, as was the case at times, pus exuded from the external auditory meatus. The microscopical examination of the extirpated fistulous passage, which also showed cartilage of the hyoid arch, testified to the clinical diagnosis of a lateral congenital fistula of the neck, communicating with the external meatus, due to arrest of hyomandibular development in fetal life.

The Isolated Action of the Active Substances of the Hypophysis Cerebri.—H. Fühner was able to isolate eight different substances from the infundibular portion of the hypophysis, of which four only exerted the well known action upon the uterine musculature. A hypophysin has been prepared by a sterile mixture of these four substances, and thus it has become possible to give with precise dose the active principles of the hypophysis. Furthermore, experiments on cats, rabbits, rats, and guineapigs have shown that hypophysin possesses a specific action upon the uterus and that action upon respiration and blood pressure occurs only with relatively high doses.

Incubation Period in Acute Paralysis of Children (Heine-Medinsche Disease).—C. Schoug says the carrying of this disease from one infected section to a place free from it has made it possible to place the incubation period at from four to, at most, ten days. No evidence is furnished for the assumption that blood sucking insects play a rôle in the transmission.

Phosphorus for Epileptics.—P. Leubuscher reports that the administration of phosphorated oil (0.1:1000) to epileptics gave at times improved results, while some cases showed no marked change. In some of the improved patients the withdrawal of the phosphorus therapy caused a relapse in the symptoms.

Ulcus rotundum ventriculi and Lymphatismus.—E. Stoerck says that pathological anatomical experiences point to the fact that gastric ulcer in young individuals is due to a general lymphatismus. In these there is often found the condition known as *état mamelloné* of the mucous membrane of the stomach, which furnishes the basis for the development for the ulcer. What rôle the defective protective agencies play, namely, vagotonia and hypoplasia of the vascular system, is still an undecided question.

Copper Treatment of External Tuberculosis.—A. Strauss says that the local use of the copper treatment, combined with lecithin salve, generally employed by means of injections and inunctions, has not only an elective caustic action on lupus tissue, but also a specific action on the tubercle bacilli.

Syphilitic Reinfection after Salvarsan; the Bad Effects of Severe Salvarsan Intoxications.—Antoni asserts that true reinfections occurred in seven cases after combined treatment with salvarsan and calomel. The retention of salvarsan in the blood destroys the oxygen carrying property of the latter, and deaths after the use of the drug are the result of a severe kidney lesion. Therefore, every salvarsan injection demands the minutest control of the kidney function.

March 20, 1913.

The Question of Parasyphilis.—S. Schoenborn and W. Cuntz say that the conception of parasyphilis, first brought out by Fournier, is not tenable to-day. This is as true of the heart, liver, and kidney affections, following in the wake of a syphilitic infection, as for tabes and paralysis, although the finding of the spirochæta in such cases must be considered a rarity. When dealing with a regular syphilitc infection the process can be proved from the history, from a Wassermann reaction, positive, from the positive proof of a simultaneous syphilitic lesion in another part of the body.

Adrenal Gland and Fat Metabolism.—M. Landau found that the content of lipoids in the adrenal cortex is of secondary nature; for its increase or decrease it is dependent upon the more or less abundant presence of lipoids in the whole body. The adrenal cortex is therefore not a focus for the production of lipoids, but represents rather a storehouse for it.

Etiology of Rickets and Calcium Metabolism.—W. Dibbelt, in contradistinction to Ribbert and Kassowitz, who assert that rickets is due to a special toxine traceable to bad air, etc., emphasizes the important rôle of a disturbance in the calcium metabolism, which is, of course, more pronounced in the growing skeleton, with its increased demand on calcium consumption. The factors which are capable of producing this disturbance, appear to be of a manifold nature.

Intraperitoneal Oil Application.—Momburg says that, against a somewhat doubtful therapeutic action of oil introduced intraperitoneally for the purpose of combating peritonitis, cases can be cited in which the oil so introduced has actually produced peritonitis, or at least stimulated one already commencing. That this state of affairs can become fatal for patients in a weakened condition is shown by one of the author's cases cited in detail. He therefore warns against the intraperitoneal application of oil and encourages the use of hot air treatment, which is to be commenced three hours after a laparatomy and employed for half an hour three times a day.

March 27, 1913.

Serological Examination in Lepra.—B. Möllers explains that where tuberculin preparations are employed the serum of persons suffering from mixed or tuberculous lepra shows in at least ninety-five per cent. a positive absence of the complement building reaction. The proportion is less in other forms, or at least in the anesthetic form. In cases of cured lepra the reaction is negative.

Gunshot Wounds of the Joints.—L. Schliep reports his experiences in cases from the Servian and Turkish battlefields, particularly with gunshot wounds of the joints, among which there were forty-eight involving the large joints. The general rule guiding surgical cases on the battlefield was found to be the best here also, namely, that conservative therapy is the best. Of the joint wounds, 10.2 per cent. were infected; in these congestion hyperemia proved an excellent means, both prophylactically and curatively, and, together with immobilization, produced good results.

WIENER KLINISCHE WOCHENSCHRIFT.

April 3, 1913.

The Biological Effects of Radium.—L. Arzt and W. Kerl conclude from a large number of experiments that induced radioactivity has a certain, though weak, bactericidal effect. Changes appear to be produced in lecithin by irradiation, as differences are found in the activation of the hemolysis of cobra venom by lecithin that has been irradiated and such as has not. Radium in substance has a bactericidal action of its own, as can be shown in animal experimentation.

April 10, 1913.

Mercury and Salvarsan.—E. Finger reiterates the position he took two years ago that salvarsan, together with mercury, is preeminently suited for the abortive treatment of the primary stage when the Wassermann reaction is negative, and is particularly indicated in the tertiary stage when we wish to obtain a rapid effect, but that in the primary stage when the Wassermann test is positive, as well as in the early secondary stage, it is well to omit the salvarsan. We know that the onset of a hemorrhagic encephalitis is not to be prevented in this manner, but we do not yet know the fate of patients treated with salvarsan who have paralysis, tabes, and aortitis.

The Influence Exerted by Benzol upon Metabolism, and the Use of this Agent in Leucocythemia.—I. Sohn believes he is justified in the conclusion that benzol influences metabolism in the sense of changing the process of oxidation in the organism, as it increases the quantity of neutral sulphur. The only benefit obtained in leucocythemia from the administration of benzol is a reduction in the number of the white blood corpuscles, but even this he believes to be apparent rather than real, and not to correspond to an improvement of the pathological condition. As benzol is productive of unpleasant digestive troubles, as it causes necrotic changes in the liver and kidneys, and as the results of his experiments indicate that it causes a considerable reduction in the process of oxidation and an acidosis of the organism, he protests against its use in large doses for long periods of time in this disease.

April 17, 1913.

Organic Ferments in Thyroid Serum Used in Endemic Goitre.—Julius Bauer says that ferments coming from the tissue of the thyroid gland may be demonstrated in many cases of endemic goitre, not only in persons in whom the thyroid gland is noticeably enlarged, but in others also. Such individuals as a rule present various clinical symptoms referable to a disturbed activity of the gland. The quantity of such ferments corresponds neither to the intensity and number of the thyrotoxic symptoms, nor to the symptoms presented by the thyroid gland itself. He thinks it would be better to call the condition under discussion endemic dysthyrosis, rather than endemic goitre, because the functional disturbance of the thyroid gland produced by the agent may apparently exist without any enlargement of that organ.

April 24, 1913.

Chancre of the Caruncula lacrimalis.—Fanny Jampolsky reports a case in which a midwife was infected by receiving in her eye some of the amniotic fluid of a patient she was confining. A month later she began to suffer severe pain in the eye, from which, a week later, came a considerable purulent secretion, while the lids were red and swollen. When seen, at the end of two months, the caruncle was swollen, hard, ulcerated, and covered with a gray coating. The swelling encroached somewhat on the neighboring tissues and involved the plica semilunaris. The bulbar conjunctiva was edematous, the preauricular gland was as large as a hazelnut and moderately painful. *Spirochætæ pallidæ* were found in the ulcer. Jampolsky was able to find only six other cases of chancre of the caruncle reported.

ZENTRALBLATT FÜR CHIRURGIE.

April 12, 1913.

Osteotomy for Flatfoot with Great Deformity of the Bones.—Perthes proposes first to remove a wedge shaped piece of bone with its base outward from os naviculare, then to chisel through the calcaneous at a certain point and bend the foot over until the cut sides of the naviculare approximate, leaving a gap in the calcaneous, which he fills with the wedge cut from the other bone. He has done this operation on eight patients—on both feet of four of them. The results in all seem to be good, but too little time has yet elapsed to permit of final judgment.

LYON MÉDICAL.

April 6, 1913.

Correction of Deformities of the Nose.—Garel and Gignoux laud the use of the intranasal route in operating for nasal deformities. All external scarring is avoided, and the procedure is both easily carried out and affords ready access to the osteocartilaginous framework of the nose. Under local anesthesia an incision is first made in the vestibule on its alar side and the skin then reflected, exposing the underlying structures. In saddle nose, the result of traumatism, the septum is frequently crushed in and its uppermost deviated portion or crest can conveniently be used, as in one of the authors' cases, as a cartilaginous graft to make up for the lacking bony support of the bridge. Another plan is to use a fenestrated, malleable plate of aluminum, which can be bent in the desired shape. In either case the flaps of the wound can readily be brought together, and prompt healing takes place.

PRESSE MÉDICALE.

April 19, 1913.

Lymphatism and Other Diatheses.—J. Galup would substitute for the term "scrofula," which infallibly suggests a tuberculous condition, that of "lymphatism," which is thus made to designate a special individual susceptibility to infections, pyogenic or tuberculous, and also a peculiar mode of reaction to these infections. The author adduces evidence to show that both lymphatism and arthritism ("exudative diathesis" of the Germans) represent in reality an anaphylactic condition of the organism. Both anaphylaxis and immunity are defensive reactions, but they may have pathological consequences, and these are believed by the author to be the so called "diathesis." The latter, in turn, may promote disease by favoring infections or metabolic disturbances, and a vicious circle is thus formed. The features distinguishing different diatheses arise either through extrinsic factors, such as the nature of the pathogenic agent, the age of the individual, and the tissue resistance, and through intrinsic causes. In "arthritism," the symptoms continue throughout life and seem to involve simple anaphylactic reactions alone; the complications are chiefly metabolic. In "lymphatism," on the other hand, the symptoms are generally limited to the earlier stages of life, and there are associated reactions of immunity and anaphylactic reactions, the latter localized or general; the complications consist especially of secondary infections. Eventually, either the attempt at securing immunity fails and generalized tuberculosis ensues, or the immunity becomes complete and the anaphylactic state alone persists, the patient's condition then becoming one of "arthritism."

April 23, 1913.

Hydrogen Dioxide in Local Anesthesia for Dental Work.—G. Mahé and P. Vanel report the results obtained with an anesthetic mixture consisting of equal parts of five volume hydrogen dioxide solution and one per cent. cocaine or four per cent. novocaine solution. The chief advantage of such mixtures is avoidance of the untoward effects of epinephrin, while the bloodless operative field, and increased anesthetic power of cocaine or novocaine effected by epinephrin are nevertheless retained. The injections should be made superficially and slowly, with a tepid solution, and stopped as soon as the tissues become pale. The solutions referred to are especially indicated for the extraction of teeth in nervous individuals, children, old persons, diabetics and pregnant women.

REVUE DE CHIRURGIE.

April, 1913.

Recent Fractures of the Os calcis.—P. Soubeyran and A. Rives lay stress on the anatomical construction of the calcaneum, more particularly the arrangement of the cancellous trabeculæ, as a determining factor of the situation and extent of fractures of this bone, and propose a new classification of such fractures in accordance with this idea: (a) Atypical fractures, comprising those in which there are multiple lines of fracture, extending indiscriminately in all directions (these including the occasional cases of fracture where force has been directly applied), and the rather rare sagittal fractures; (b) typical fractures of the articular portions of the bone, i. e., its anterior two thirds, comprising fractures by crushing of the thalamus or neck of the bone, transverse fractures of its body, and fractures of the lesser and greater tuberosities; (c) typical fractures of the nonarticular portion or posterior third of the bone, comprising fractures of the posterosuperior angle, epiphyseal detachment, transverse fractures behind the neck, isolated fractures of the plantar tubercles, impactions of the body of the bone into its tuberosity, and avulsions of the tubercle of insertion of the peroneocalcaneal ligament. The treatment is at first the same in nearly all cases: Elevation of the foot in a well padded trough, and the application of heat and light massage. In about ten days a decision will have to be made concerning subsequent treatment. In fractures without displacement and with merely impaction of the bone and sprain, as well as in comminuted fractures with pronounced impaction of the astragalus into the calcaneum, nonoperative treatment is advisable. A plaster cast should be applied, with the foot in the overcorrected position, and walking not allowed for sixty days. Where, on the other hand, there is deformity of the arch of the foot, joint injury or deformity predominates, the insertion of the tendo Achillis is interfered with, or pain continues after the initial period is over, operation is indicated.

Hemorrhage from Rectal Polypi.—Pierre Mocquot describes the results of histological examination of a rectal polypus, and concludes that bleeding from pedunculated polypus occurs from the tumor itself—not from the adjoining mucous membrane, as some have maintained; and that it is often due to intermittent torsion of the pedicle and takes place both interstitially and at the surface of the growth.

Burns of the Stomach Following Ingestion of Acids.—X. Delore and L. Arnaud report three cases of ingestion of mineral acids in which, although the stomach was found more or less extensively cauterized at operation, the esophagus was but slightly or not at all injured. They discuss at length the indications for operative intervention. Early intervention is desirable only where, notwithstanding the undoubted entrance of acid into the stomach, vomiting does not promptly occur and, in addition, neutralizing fluids cannot for some reason be administered or the stomach washed out. Under these conditions, gastrotomy, evacuation, and irrigation are indicated. In other cases operation is not justified unless copious and repeated bloody vomiting later appears, or there is reason to believe perforation imminent. Under these conditions, if there is necrosis of the gastric wall, the sphacelated area should be brought up to the exterior, and gastric rest and alimentation secured by means of a jejunostomy. If the area cannot be exteriorized, resection is necessary. On the other hand, where there is no necrosis, the stomach being hyperemic and bluish, jejunostomy by the Eiselsberg-Witzel technic should be practised. On the whole, the occasion for early intervention is only infrequently presented. Oftener, a secondary operation is necessary because of continued gastric intolerance; but this operation should not be delayed after it is plain that serious injury to the stomach has been produced. Where diffuse cicatricial changes are found present, or are about to become established, jejunostomy is the procedure of choice, though gastroenterostomy may prove sufficient in some instances. Exclusive feeding through the jejunostomy opening will often lead to such improvement in the general and gastric conditions that posterior gastroenterostomy and restoration of oral feeding can later be effected. Where the cicatricial changes are found limited to the pyloric region, the stomach being dilated, gastroenterostomy is alone necessary.

Epigastric Pain in Appendicitis.—Sante Solieri refers to the pain which patients with appendicitis feel at a point between the xiphoid and the umbilicus, and which is referred by them to the stomach. He has noticed in performing appendectomy under spinal analgesia that the patients, while not feeling pain upon incision of the skin and peritoneum, experience the characteristic epigastric pain when the appendix is pulled upon or compressed between the fingers. After the mesoappendix is cut, the pain can no longer be elicited. Sometimes after the pain has been produced nausea and vomiting occur. The author denies the assertion of Lennander that the appendix is insensitive under both normal and abnormal conditions, and concludes that the epigastric appendicular pain is a reflex phenomenon provoked in the domain of the pneumogastric nerve by acute or chronic inflammatory or mechanical irritation of the nerve terminals of the appendix. The gastric dyspepsia of chronic or recurring appendicitis is likewise explained by reflex disturbance of secretory, motor and vasomotor conditions in the stomach through the vagus.

BRITISH MEDICAL JOURNAL.

May 3, 1913.

The Present Evidence for and against the Use of Tuberculin as a Specific Cure.—H. Batty Shaw reviews the evidence for the belief that tuberculin is capable of curing a tuberculous animal, and sums it all up in the statement that there is none but Koch's. He goes further, and shows that even this "evidence" from Koch is invalidated because the animals used (guineapigs) may be spontaneously tuberculous and may spontaneously cure themselves. This fact is admitted by bacteriologists to be true, but it is one which cannot be established until the death and complete dissection of the animal. It is noteworthy that tuberculin is never used to cure infected cattle, for if it were in any way capable of accomplishing this end it would be in very wide use. Shaw contends, further, that we have absolutely no proof of the curative action of tuberculin in man, for our methods of analyzing our results are wrong. He says: "The fact is that as a profession we are wrong in our methods of estimating 'cures' in the only sense a layman wants to hear of them—real 'cures,' complete eradication of the cause. We have too long judged of 'specific' cures without allowing for the *post hoc, propter hoc* fallacy. We cannot afford to do so any longer, because our statements are being revised by skilled mathematicians; our 'impressions' of proof of cure have been put into the scales and they are found wanting." We physicians have failed to establish by our own death certificates, or our own methods of inquiry, any improvement due to sanatoriums, dispensaries, or the use of tuberculin. Pearson has shown that the improvement was due to a natural process of which we have been unmindful. Shaw has met practically all of the points advanced in favor of the use of tuberculin to cure the disease with counter explanations, and reiterates the statement that the tuberculin cure of human tuberculosis is far from proved.

Prognosis in Pulmonary Tuberculosis.—J. B. H. Holroyd applied the Arneth leucocyte counting method to thirty cases of tuberculosis and obtained results which confirm the original contentions of Arneth to the effect that in unfavorable cases there is an increase in the relative number of cells with one or two nuclei.

The Epiglottic Suture; Its Value in Indirect Laryngoscopy.—Cyril Horsford describes the method of passing a suture through the epiglottis and improved instruments for the operation. Cocainizing of the region is the only preliminary, and the procedure is simple, without any ill effects, while it affords a greatly increased field of vision and is a great aid in many throat operations. Horsford advocates its employment in any case in which the epiglottis in any way hinders a delicate intralaryngeal manipulation.

Cheilotomy; a Function Restoring Operation in Crippling Traumatic Arthritis of the Hip Joint.—W. Sampson Handley and C. Preston Ball describe what they believe to be a new operation. In certain cases of traumatic arthritis of the hip there is an osteoarthritic lip developed around the head of the femur. This limits the motion of the limb. The authors enter the joint and, by the use of appropriate bone cutting instruments, remove the lip of new bone. From the Greek word for lip the authors have derived the name of their operation. In the two cases in which the operation was performed the result was excellent. The authors warn against the use of the operation in cases of osteoarthritis in which a constitutional or toxic element predominates.

Classification of Tumors of the Pituitary Body.—Gerhardt von Bonin offers the following as being easy because it rests upon histogenesis and considers the physiology of the tumors. Epithelial tumors, even when malignant, lead to hyperpituitarism, while those arising from the stroma lead to hypopituitarism.

I. Heterotopic tumors.
    1. Tumors of the craniopharyngeal duct.
    2. Teratomata.
II. Homoiotopic tumors.
    1. Epithelial tumors:
        (a) From anterior lobe { Chromophile / Chromophobe / Combined } Cubic cell adenoma. / Round cell adenoma. / Carcinoma.
        (b) From pars intermedia.
    2. Tumors developed from connective tissue:
        (a) From anterior lobe and pars intermedia { Fibroma. / Sarcoma.
        (b) From posterior lobe—Glioma.
    3. Mixed tumors—Fibroadenoma.

The tumors classified as heterotopic are those which arise from a tissue not normally present in the pituitary.

LANCET.

May 3, 1913.

Birth Palsy; Subluxation of the Shoulder Joint in Infants and Young Children.—H. A. T. Fairbank calls attention to the fact that in all typical cases of birth palsy, excepting those in which the injury was slight and recovery rapid and those in which the plexus has suffered so severely that the paralysis continues, a tendency, at least, to posterior displacement of the head of the humerus would seem to be invariably present. The displacement is brought about by a combination of factors. The arm hangs vertically at first, and in a position of extreme internal rotation. The injury to the nerve supply of the internal rotators of the arm is either incomplete or is less than to that of the external rotators, so that before the latter begin to recover there is shortening of the internal ones. This being the case, the external rotators can never recover completely. The diminished support at the back of the joint favors backward displacement of the head, and this is aided by a shortening of the anterior portion of the capsule, so that the condition becomes permanent. The treatment of the condition is by reduction, with or without opening into the joint, and retention of the arm in an apparatus for a sufficient time to allow the stretched tissues at the back of the joint to recover and contract, followed by active and passive exercises. A splint for this retention, which gives the ideal results, is made out of tin and is shaped like the letter T. The cross piece, being broad, is intended for application to the chest, while the stem is moulded to support the arm at a right angle to the chest and the forearm in turn at a right angle to the arm. This is used only in the cases reduced without open operation.

Protozoalike Structures in the Blood in a Case of Black Water Fever.—Alfred C. Coles found a small number of granular bodies in the blood late in the course of the disease. These were almost always spherical and had a very definite outline; often a thick capsule seemed to surround them. Their protoplasm stains blue, and spread irregularly through it are from forty to 200 small chromatin staining red granules. The bodies have no nuclei and vary in size from five microns to seventeen by ten microns, with an average size of 11.2 by 10.7 microns. Cole suggests that these bodies may be some form of protozoal parasite, resembling Koch's blue bodies in certain respects and the chlamydozoa of Prowazek in others.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

April 1, 1913.

Bronchooidiosis.—Aldo Castellani discusses the various types of bronchitis and bronchoalveolitis, due to fungi, occurring in the tropics. The symptoms are somewhat similar whatever fungus are the cause. In mild cases there is slight bronchitis with mucopurulent expectoration in which the fungi are found, while in severe cases the patient presents all the symptoms of phthisis with hectic fever and hemorrhagic expectoration. The infection may take place from man to man and also probably by the fungi living saprophytically in Nature. The diagnosis is based on the sputum findings. Cultural methods are necessary to identify the fungi. All the species of *Monilia* grow fairly well on gelatin. Mild cases and those of medium gravity respond quickly to potassium iodide, ten to twenty grains, three times daily. When this salt causes severe iodism, saiodine in the same dosage, in cachets, may be given. In the malignant cases the author has seen no improvement from many treatments attempted. The iodide should, however, always be tried in these cases, as well as balsamics. The diet should be nourishing and tonics given.

April 15, 1913.

Factors Influencing the Health of Europeans in Uganda.—A. R. Cook refers in particular to the disadvantages of the small diurnal range of temperature prevailing in Uganda. The cutaneous arterioles become unresponsive, and cold baths must be abandoned, as no "reaction" follows, chilliness and depression are experienced, and a latent malarial infection may be temporarily roused to activity. Other unpleasant results of the relative evenness of temperature are abnormal nervous sensitiveness to slight stimuli, a tendency to sleeplessness, low blood pressure, tachycardia, and bladder irritability. With regard to malaria, Cook deprecates the use of large doses of quinine. The maximum dose in a day should be thirty, or even twenty grains. This should be continued for a few days, then reduced to ten and five grains. The hydrochloride of quinine gives, on the whole, better results than the sulphate. Occasionally even five grains of quinine produces insomnia, muscular tremors, or indigestion; combination with a bromide may prevent this. In children, euquinine is of great value, even in serious attacks; it can easily be given in jam or butter. To adults it can be given in slightly larger doses. The best method in malarial prophylaxis is to take five grains daily, just as one takes a lump of sugar in a cup of coffee in the morning; this can be continued for months or years without the least harm. The taking of ten grains of quinine twice a week is not at all sufficient in subtertian malaria. No system of prophylaxis can with certainty ward off blackwater fever. In malaria in infants, Cook administers quinine by rectum.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 8, 1913.

Cholecystitis and Cholelithiasis Associated with Pregnancy.—Robert M. Green says that there seems to be a definite causal association of cholecystitis and cholelithiasis with pregnancy. Symptoms due to either of these conditions may occur during pregnancy, during the puerperium following labor at term, or after miscarriage. The existence of gallbladder disease is not in itself a cause of miscarriage, but a miscarriage may induce the development of active symptoms from a process previously latent. The prognosis of these conditions when they occur during convalescence from miscarriage is the same as when they occur otherwise, and they should receive the same surgical treatment.

The Abuse of the X Rays in the Treatment of Skin Affections.—John T. Bowen asserts that a great many cases of unnecessary disfigurement, more obvious than the original affection, are caused by an improper use of the x rays; that the cases suitable for this treatment can be selected only by those who have some considerable knowledge of skin affections; that this method of treatment requires special study and training, and should not be regarded as an easy and safe procedure by those unskilled in its use.

A Statistical Study of Remissions in General Paralysis.—Harlan L. Paine shows from a study of unselected and consecutive cases of general paralysis admitted to the Danvers State Hospital during a period of thirty-four years that only one case with a history of paralytic seizure showed a remission, and only six cases with a history of any form of cerebral insult showed a remission. Inversely then it may be said that if a case of general paralysis in its early stage has a paralytic seizure, the chances are very small that such a patient will have a remission.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 10, 1913.

The Carbohydrate Treatment in Diabetes.—Hermann Strauss explains that this treatment consists in the use of one sort of carbohydrate in nutrition, to the exclusion of the other sorts; aiming at the diminution of the glycosuria and an increased tolerance. The other (noncarbohydrate) articles of diet may be occasionally varied, but, as it is desirable to reduce the quantity of protein, meat is not given and only a small quantity of albumin. At one time it was thought necessary to replace the sugar lost in the urine of diabetic patients, and this gave rise to the milk cure, which occasionally gives very good results, especially when the form of diabetes is neurogenic. The milk method acts well as it is a form of low diet, because with many people the milk sugar is so slowly split that it is only gradually absorbed by the bowels, and because through the Karell method the milk allays both hunger and thirst. The albumin of milk, moreover, is not an irritant. Withal, it is necessary that due regard be taken for each individual case, as the tolerance for milk varies greatly. The rice, the potato, and the oatmeal treatments are outlined and discussed by the writer, and also his recent use of inulin. A certain quantity of carbohydrate agrees with the diabetic patient better the more slowly it is absorbed. In estimating the tolerance of diabetes to inulin notice was taken not only of the glycosuria but also of the acidosis. In grave cases it was found that inulin was better digested than the same quantity of wheat flour, and that in most cases the acidosis was markedly diminished during the inulin period. The various modes of exhibiting inulin are detailed by the writer, who adds that a carbohydrate treatment can only be used periodically, and then only in grave cases of diabetes; the lighter cases being treated both on the old and tried methods. Rational therapy demands that we find not only that preparation of carbohydrates, but also that sort of carbohydrate of which each individual patient can tolerate the greatest amount without secreting a large quantity of sugar. While this complicates the dietetic treatment of diabetics, it also makes for greater success.

Pellagra; Some Facts in Its Epidemiology.—R. M. Grimm, while engaged in the pellagra field work undertaken by the U. S. Public Health Service, observed 323 cases of pellagra with a view to collecting data which would show the character of the home environment of the pellagrins and the nature of the conditions under which the disease was developing; to make a study of the disease from a hygienic standpoint. From the facts obtained valuable conclusions were drawn. It was found that more cases developed among the whites than among the negroes, the females of both races suffering more than the males, and the larger number of cases developed between the ages of twenty and forty years. Among the married and widowed pellagrins the females predominate; the single pellagrins are sexually equally divided. The months of May and June yielded more cases than other months, and there were more in 1911 than in any previous year. Under conditions of poverty more cases developed than under those of comfort, and more under conditions of comfort than of affluence. More cases developed in the vicinity of other cases than otherwise It could not be demonstrated that pellagra is hereditary. A possible etiological factor was the food used by the people in whom pellagra is prevalent and developing, and by the writer this is considered the most promising field for the investigation of the etiology of the disease.

MEDICAL RECORD.

May 10, 1913.

The Functions of the Pineal Gland, with Report of Feeding Experiments.—Preliminary researches on the functions of the pineal gland have been made by Charles L. Dane and William N. Berkeley, which seem to prove that this gland is the vestigium of a speial sense organ of vision in invertebrates and certain low vertebrates, while in man it has practically lost all the structural characters of a sense organ and has those of a glandular body undergoing some involution at about the seventh year. The writers believe that in the early period of life it influences bodily nutrition, including the development of the genital organs, the deposit of subcutaneous fat, general growth, and mental progress. Extracts of the pineal gland of bullocks, when injected into the veins of dogs, do not affect the blood pressure. The same extracts when fed to babies cause an increase of metabolic activity, as shown by an increase in nitrogen elimination by the urine. A case of tumor of the pineal gland reported by the writers would seem to show that in adult life entire destruction of the gland does not affect metabolism. Feeding experiments with the use of bullocks' pineals, perfectly fresh and rubbed up with milk sugar till extinguished, have been made by H. H. Goddard and W. S. Cornell in the cases of about fifty children, divided into twenty-four groups. They found that in certain cases of retarded development in children pineal gland was a remedy of value. Their explanation of its action, although entirely hypothetical and on account of the minute amount of it in a normal individual, is that the secretion of the gland acts as a ferment, or catalytic, facilatating the exchange of nutrient material in the brain cells. Where total idiocy and gross physical defect presented, the gland was without effect; in proportion as the patient is less characterized by physical stigmata, the greater benefit is reaped from pineal medication.

The Dissolved Albumin Test for Gastric Cancer.—F. W. Ralph emphasizes the value of this reaction, first brought forward by Ewald and used in his hospital clinic. The function of the stomach is to prepare soluble albumin through the combined action of its hydrochloric acid and pepsin. When one or both of the latter are absent we would naturally expect to find no soluble albumin in the material withdrawn one hour after a simple Ewald test breakfast. This is true in cases of simple achylia, but where we have gastric carcinoma, with absence of free hydrochloric acid, we obtain almost as much soluble albumin as we do in the normal stomach. Three reasons are advanced for this: (*a*) The presence of ferments in the cancer itself, similar to the peptid ferment of Neubauer and Fischer; (*b*) albumin secreted from the growth; and (*c*) the diminished absorption on account of the secondary gastritis. The method of performing the test, as detailed by the writer, is very simple. The test, however, has been criticized because it is quite useless in diagnosticating very early cases of cancer; but, as the writer says, we must differentiate between the ideal and the real diagnosis of the disease, and the test will often be found helpful as an aid in distinguishing between a benign and a malignant achylia.

Exophthalmic Goitre Cured by X Ray.—Sinclair Tousey reports a case of exophthalmic goitre cured by the x ray, no treatment having been required and no return taking place for seven years after treatment and cure. The treatment consisted in applications of the x ray and high frequency currents from a vacuum electrode over the thyroid gland, three times a week, for about three months. The internal treatment was by arsenic and strychnine, but only for a short time. Within a year she was subjected to great anxiety by the illness of her little daughter, but the disease did not return. Yearly examinations have shown that she was each time absolutely normal. The writer's new x ray generator is in effect a dynamo producing a constant direct current of from 10,000 to 110,000 volts, which allows greater speed and safety in radiography and ability to secure simply the penetrating rays for deep seated lesions, instead of the mixture of rays produced by previous induction coils and transformers.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

April, 1913.

High Arterial Pressure; High Pressure Hypertrophy of the Heart.—David Riesman points out the fact that high arterial pressure and arteriosclerosis are not synonymous, though often so considered, the latter conveying the idea of an anatomical lesion, a terminal event best studied post mortem, while the former indicates at once a vital functional alteration with a direct bearing upon symptoms. To know whether the blood pressure is high or not requires the knowledge of normal standards. Doctor Woley, in a stud of 1,000 healthy individuals, found the average to be 115 millimetres between the ages of fifteen and thirty years, 127 millimetres between the ages of thirty and forty years, and 130 millimetres between the ages of forty and fifty years. The writer considers a pressure of over 145 abnormal, and a pressure over 150 pathological, meaning that such a patient should be kept under observation and the cause of the rise in blood pressure ascertained. Bright's disease, particularly the chronic interstitial variety, is closely related to excessive tension of the parenchymatous type. It also raises the blood pressure, and with this excessive tension in nephritis hypertrophy of the heart is a constant feature. Arteriosclerosis is another cause of persisent overtension, the general process being the most active, as local arteriosclerosis may often be intense and yet be unaccompanied by a rise in blood pressure. The cases of most interest and importance are those without notable thickening of the superficial arteries and no renal changes of importance, but with marked overtension. This type is common in men and comprises a rather large proportion of women of middle age who are stout to obese, usually robust, and past fifty years of age, and is not due to syphilis or alcohol. Hypertrophy of the heart is always present, and is not due to valvular disease. The course of these cases depends largely on the state of the heart. As long as compensation exists all is well, but the heart finally yields and decompensation, or angina pectoris, brings about death. High pressure is compensatory and reparative, and any attempt to depress the blood pressure to the normal for the individual is irrational and harmful, but we may reduce it when excessively high to a point where symptoms cease, and keep it there. Rest is first and foremost, especially mental rest, in the treatment. The nitrogenous and purin c ontaining food must be restricted, together with tobacco and alcohol. The iodides and venesection are valuable in this affection. Freedom from care and worry, regular hours, and a frugal diet are the main elements of successful treatment.

The Value of Massage in the Treatment of Various Disorders of Children.—John Phillips calls attention to the value of massage in the treatment of malnutrition, rickets, and various other disorders of children, a method which has been largely neglected, but which yields better results in the majority of instances than in the adult. Patience and skill should be possessed by the operator, who should also have had considerable experience in the nursing care of children. Massage mechanically excites the vessels to action, quickening the circulation and emptying the lymph vessels. The nourishment of the muscle cells is improved by forcing out the waste products and keeping them bathed in a constantly renewed stream of arterial blood. The rate of the heart beat and respiration are slightly increased, and all the bodily functions are stimulated. The acceptibility of this treatment to the children depends largely upon the personality of the masseuse, but after the first treatment the manipulation is apparently a pleasure to the child. The sitting should not be longer than twenty or thirty minutes, given daily during the first two weeks, and then three times a week. The best results are noticed in cases of malnutrition, with anorexia, weak, flabby muscles, and distinct pallor, and is illustrated by a case reported by the writer. Excellent results are obtained also in rickets, where we have flabby muscles, sluggish circulation, and emaciated extremities. Because of this weakened condition the child takes no exercise. Massage replaces the latter effectively. The writer has seen excellent results from massage in many deformities, such as bowing of the legs. The paralyzed muscles of the later stages of acute poliomyelitis and the spastic contractures in cases of polioencephalitis or upper neuron destruction are markedly benefited by massage. In the constipation of children and in nervous children we may expect much from massage. In the latter cases, rest in bed, a carefully supervised diet, and massage cause great improvement. In cardiac lesions and the sequelæ of acute rheumatism, rest in bed is imperative for weeks or months. Massage, with first passive and then resisted movements, is advised after the febrile period.

Some Hematological Findings in Pellagra.—O. S. Hillman has found by experiment that there occasionally exists in pellagra a variable degree of chloranemia, which, however, is not a prominent feature of the attack. Pellagra, apparently, may exist for some time without causing any anemic changes. The writer finds it difficult to determine whether the anemia is due to the actual existence of pellagra or is the result of an indefinite train of conditions antecedent to the inception of the disease. Many patients are perfectly well up to the onset of the attack. In connection with the leucocytes one of the most noteworthy features is the not infrequent presence of a leucocytosis, which appears to be inexplicable in the light of our present knowledge of pellagra, but suggests the possibility of an infectious etiology of obscure origin or some complicating disturbances. The lymphocytosis is of interest, and is probably in line with the general cachectic condition of most pellagrins, who are also often affected with gastrointestinal disorders. The writer's investigations would seem to show that characteristic or constant variations in the large monouclear leucocytes and eosinophiles are lacking.

ARCHIVES OF INTERNAL MEDICINE.

April, 1913.

Method for the Quantitative Determination of Pepsin.—C. H. Neilson and E. Bonnot describe a new method for estimating the pepsin in gastric juice, based on the time required for the clearing of a colloidal suspension of egg albumen when the gastric juice is added to it. The points in favor of the procedure are that the material used is easily obtained, the colloidal albumen solution readily made, the technic simple, the time of making a complete determination under one hour, and the results constant.

Heart Size and Heart Function in Children Showing Orthostatic Albuminuria.—M. H. Bass and H. Wessler, from a study of thirty-six cases with the aid of the orthodiagraph, conclude that in a series of cases of orthostatic albuminuria, selected at random, a considerable number will present evidence of relative cardiovascular insufficiency. Usually there is no cardiac hypertrophy or dilatation. On the contrary, the heart is, in many cases, smaller than normal. Although these hearts do not dilate after exercise, a considerable number of them fail to become smaller under these conditions. The so called "juvenile heart," or *Wachstumshypertrophie*, occurred three times among the author's cases, while in thirty per cent. of the cases the hearts were of the "drop" (or vertically drawn out and narrow) type, especially in association with other stigmata of constitutional maldevelopment. The conception of pulse or heart instability must be restricted to a tendency of the pulse to become smaller and impalpable after exercise, a condition which the authors found very common in their cases.

Effects of Strychnine and Digitalis on Man.—David Marvin reports experiments made with these drugs on healthy students. Strychnine was given hypodermically in doses of 1/40, 1/30, and 1/20 grain, and digitalis by mouth in a dose of the tincture corresponding to about fourteen minims of a tincture of standard strength. The strychnine had no effect on the rate of respiration, except in the dose of 1/20 grain, which produced an average increase of one per minute; this effect varied markedly in the different students, a drop in the rate occasionally occurring without apparent cause. A slowing of the pulse rate resulted from all doses of strychnine, and a marked increase in blood pressure from the 1/30 and 1/20 grain doses. Digitalis had no effect on the respiratory rate, but caused a slowing in the pulse rate of eight beats each minute and a marked increase in blood pressure, which reached its maximum in five hours; the pressure then gradually returning to normal, fifty hours after the exhibition of the single dose.

Study of Respiration and Circulation in Epilepsy.—L. J. Pollock and W. L. Treadway conclude, from a study of forty-four patients, that there are present in many cases of epilepsy rhythmical variations of blood pressure other than those due to respiratory movements. Before a convulsion there occurs a preliminary rise of blood pressure, followed by a sudden drop of blood pressure, and then a period of apnea. The blood pressure was relatively low during convulsions of petit mal type. The pulse was rapid during the convulsions. The findings in some cases suggested that the site of discharge in epilepsy is in the medulla and pons (the "lowest level of fits" of Hughlings Jackson). The study also pointed to the medulla as participating in the discharge in all cases of epilepsy, whether this discharge originates there or not.

Modification of Russo's Urinary Typhoid Fever Test.—Lester Neuman and E. B. Behrend describe a modified test advantageous in that it simplifies the preparation of the reagent, obviates the necessity of using exact quantities, and gives a larger quantity of fluid by which the correct color may be judged. The technic is as follows: Make an aqueous solution of methylene blue of such concentration that, when thoroughly mixed, it will just be translucent. In an ordinary test tube place enough of the solution to rise just above the bowl; then fill the tube with urine, mix thoroughly, examine against good daylight, and note the color reaction. Emerald or mint green indicates a positive reaction, while any tinge of blue renders it negative. In a series of one thousand different cases in which this test was made the only diseases showing a constant. positive reaction were typhoid fever and malaria, though a few positive reactions were obtained in other diseases. The authors conclude that the test is of marked corroborative value in typhoid fever. A negative reaction is very good evidence that the condition is not tphoid fever. Its prognostic value is to be doubted, but its continued appearance in severe cases and reappearance in relapses are important. The differentiation of the true green colorations from the bluish greens is a matter of practice and experience. The very early appearance of the reaction will aid in isolating a suspected patient at once and instituting general prophylactic measures.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

April, 1913.

Dangers of the Adenoid Operation.—W. E. Grove discusses in particular the infectious complications, including fever, general sepsis, endocarditis, acute rheumatism, the acute infectious diseases of childhood, tonsillitis, adenitis, torticollis, lung infections, meningitis, and ear infections. He reports two cases of postoperative infection of the nasal accessory sinuses, special features of which were that they both occurred in the second decade of life, i. e., after the sinuses had fully developed; that both occurred in sinuses which drain into the middle meatus; that neither was observed until two or more weeks after operation; and that in one case the operation had been incomplete, a small portion of adenoid tissue at the roof of the pharynx having been allowed to remain. Concluding, Grove advises that removal of adenoids should be done when no local infectious processes are present in the nose, nasopharynx, and ear, and should be avoided during epidemics of the acute diseases of childhood. The patients should be kept under observation after operation longer than has hitherto been the case. The patient's head should be slightly flexed during the operation, as the posterior wall of the nasopharynx then becomes practically a plane surface from which the adenoid tissue can be entirely removed, whereas when the head is extended a pouch is formed above the projecting body of the atlas.

Transplantation of Rib Cartilage into Skin Flap.—J. S. Davis concludes from experimental work and clinical experience that the procedure referred to is a safe and promising one. Cartilage can be used with advantage in otoplasty. In rhinoplasty the cartilage support can be placed in a double faced skin flap from a distant part. It is especially advantageous in saddle nose. The cartilage is properly nourished and does not act as a foreign body. There is practically no absorption and there are no signs of degeneration.

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Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of the Bronx, Held February 3, 1913.

Dr. NATHAN B. VAN ETTEN in the Chair.

Chronic Pancreatitis.—Dr. HENRY ROTH reported two cases, one of chronic pancreatitis and the other of acute pancreatitis. The first was that of a male, forty-three years of age, who was admitted to Lebanon Hospital on

June 27, 1911. He stated that he had been well up to seven weeks before that time, when he became jaundiced and was attacked with pains in the upper part of the abdomen, which became localized in the right hypochondriac region. At the same time the stools became clay colored and the urine dark brown. Since the beginning of his illness he had lost thirty pounds. On examination, the skin was found to be yellow, with scratch marks all over the body, and the conjunctiva and sclera were also markedly stained yellow. The pulse was slow and of fair tension, and the temperature was practically normal. The inguinal lymphatic glands were enlarged, but the spleen and kidneys were not palpable. There was no rigidity or tenderness over the abdomen. Hepatic dulness began in the fourth interspace and extended three inches below the costal margin, and the edge of the liver was palpable and found moderately hard and smooth. In the right hypochondrium could be felt a tense and smooth oval mass, which extended from the ribs down to the level of the umbilicus. This was apparently connected with the liver and moving with respiration. The patient was operated upon on July 7th. An exploratory incision was made through the upper part of the right rectus muscle, directly over the mass described; when the gallbladder was found to be very much enlarged and tensely distended with very dark, thick green bile, but no calculi were discovered. There was, however, a hard mass in the head of the pancreas. The gallbladder was drained by means of a dressed rubber tube. Examination of the fluid obtained from the gallbladder revealed the presence of colon bacilli. There was considerable bleeding after the operation, and on July 12th it was deemed advisable to inject fifteen c. c. of horse serum. A second injection, of thirty c. c., was given on the following day. Five days after the operation the temperature rose to 103° F. An abscess developed on the thigh which was opened four weeks later; after which the temperature went down to normal. Jaundice quickly disappeared, and there was a free discharge of bile from the gallbladder, though the stools continued clay colored. The patient went on to gain in weight, and it was decided to close the fistula. A second operation, cholecystoduodenostomy, was performed on October 13th. The abdomen was opened, and, after a dense mass of adhesions had been separated, the gallbladder was isolated. When the pancreas was palpated the same hard nodule was found to be present in its head. On account of the adhesions, it was impossible to raise up the duodenum in order to do a suture anastomosis, and a Murphy button was used instead. Within twenty-four hours after the operation bile appeared in the stools. There was no leakage from the wound, and the patient was discharged on December 1. He continued to gain in weight and strength, but some months later he contracted lobar pneumonia and died.

The history of this case, the speaker said, was characteristic of obstruction of the common duct by something other than a calculus. Progressive jaundice, loss of weight, clay colored stools, and a large, distended gallbladder, with normal temperature, suggested chronic pancreatitis or carcinoma of the pancreas. On operation, the gallbladder and ducts were found to be free from calculi, while in the head of the pancreas, as stated, there was a hard mass. This was of the size of a walnut, and was looked upon as of malignant nature. After the cholecystostomy the jaundice cleared up, though the stools continued to be clay colored. The bleeding following the operation was rather alarming, but it ceased after the horse serum injections. After the patient began to gain weight it seemed reasonable to infer that the condition in the pancreas was due to chronic inflammation, rather than cancer, and he was anxious to have his biliary fistula closed. In view of the fact that he still had obstruction of the common duct, the only procedure feasible was either a cholecystoduodenostomy or a cholecystocolostomy, and the first of these was considered preferable on account of its allowing the bile to enter the small intestine and thus enabling the system to utilize it in a normal manner. Furthermore, in cholecystoduodenostomy there was less danger of infection of the gallbladder from the intestinal contents. Whenever possible, the anastomosis should be made with needle and thread, although a button anastomosis was quite safe, as was shown in this case.. Doctor Roth went on to say that the injection of horse serum was resorted to on account of the prostration resulting from the bleeding after the first operation. Although it did no harm in this instance, he had made up his mind never to employ an animal serum again, on account of the danger of anaphylaxis. He referred to a case in which horse serum was used after a similar operation, and although the bleeding was checked, he believed that anaphylaxis was ultimately responsible for the patient's death. Human serum, on the other hand, he said, was just as simple, and absolutely safe, as had been urged by Dr. John Edgar Welch, of New York. It not only tended to check hemorrhage, but also served as one of the best nutrients for the body. In former years he had been accustomed to make use of calcium lactate and calcium chloride, but had never seen any benefit from these agents. As a rule, cases of chronic pancreatitis were due to colangeitis. Some years ago he had operated in a case in which the condition of the pancreas seemed, as in the present instance at the time of the cholecystostomy, to indicate carcinoma of the organ, and the patient was sent home to die. To his surprise, however, recovery took place, and he thought it possible that a very small calculus had become imbedded in the pancreas, which, in consequence of the manipulation incident to the operation, had become dislodged. After that there was nothing to prevent the pancreas from returning to its normal condition.

Acute Pancreatitis.—The second case described was that of a male patient, twenty-five years old, admitted to Har Moriah Hospital on November 1, 1912, who three days previously had been taken ill with severe diffuse colicky pains in the abdomen. On the day following, the pain became localized in the right iliac region, and on the day before admission, according to his statement, he had chills and fever. His bowels had not been moved for three days, but he did not vomit at any time. He also stated that, three months before, he had had an attack similar in character, but of shorter duration. On admission his temperature was 101° F., and pulse 88. The urine was normal, and blood examination showed 18,000 leucocytes and eighty-four per cent. polymorphonuclears. No jaundice or cyanosis was present, and liver dulness was not diminished. There was some distention in the upper part of the abdomen, and marked rigidity in its right upper quadrant and in the epigastric region. Tenderness was most marked on the right side, about the level of the umbilicus, but no masses were palpable in any part of the abdomen. The patient was admitted with a diagnosis of acute appendicitis. This diagnosis was questioned, however, as the physical signs pointed rather to some diseased condition in the upper abdomen, such as an acute infection of the gallbladder or possibly a subacute perforation from gastric ulcer. Laparotomy was done through a right rectus incision, and as soon as the peritoneal cavity was opened a large quantity of bloody fluid escaped. This immediately suggested the presence of an acute pancreatitis. The gallbladder was not distended and did not contain calculi, and there was no ulcer of the stomach or duodenum. There was a free escape of bloody fluid from Morison's pouch and from the foramen of Winslow. The transverse colon was very markedly distended, and its wall thickened and greatly congested. Most of the visible peritoneum was also decidedly hyperemic, and there were many distinct pinhead sized areas of fat necrosis in the upper portion of the omentum. The gastrocolic omentum was bluntly divided, and when the pancreas was exposed it was found to be distinctly enlarged and hard to the touch throughout its entire extent. Cigarette drains were placed along the whole gland and brought out through the lower part of the wound, and a tube drain put into Morison's pouch and near the foramen of Winslow. Before the abdominal cavity was closed, as much of the exudate as possible was removed. Since most of the infection was confined to the upper portion of the abdomen, no other incision was deemed necessary, and the wound was closed down to the drains. After the operation there was a free discharge from the wound for a few days. The temperature fell to normal, and the general condition improved very rapidly. Repeated examination of the urine failed to reveal the presence of sugar or other abnormal constituent, and the patient was discharged cured.

This case, Doctor Roth said, was much milder than those generally met with. Acute pancreatitis, as a rule, was a very grave disease. Frequently it caused rapid collapse, with subnormal temperature and marked cyanosis of the abdomen, as well as of the rest of the body. On examination there were found tenderness and rigidity all over the abdomen, but most pronounced in its upper portion; where there was also considerable distention. Very often there was some tumefaction in the right iliac fossa, leading to the erroneous diagnosis of appendicitis; and this was due to an accumulation of exudate, which traveled down to this locality. These cases, if allowed to go on, terminated in a general diffuse septic peritonitis. Before operation the diagnosis was very difficult, as the symptoms presented so closely resembled those of acute appendicitis, acute cholecystititis, and perforation by a gastric or duodenal ulcer. Acute pancreatitis, as a rule, was secondary to some condition in the gallbladder or biliary passages. There had been described different varieties of the affection, as hemorrhagic, suppurative, and gangrenous pancreatitis. As a matter of fact, however, these were all merely different stages of the same pathological process. Neither acute nor chronic pancreatitis was of very common occurrence, but we now knew that both were more frequent than was formerly supposed to be the case, and it should be borne in mind that whenever in a case the symptoms and physical signs were more particularly located in the upper abdomen there was a possibility of the presence of pancreatitis.

Dr. Edward Wallace Lee said he had seen many cases of gallbladder disease, but only two in which the condition was associated with pancreatitis. In one of these the diagnosis before he operated was obstruction of the common duct. The patient made a good recovery and had now remained well for five years. In the other case the symptoms were similar. Unfortunately, infection occurred from the opening of an abscess in the pancreas, and death resulted from general peritonitis.

Dr. Samuel Floersheim said that in the last few years much light had been thrown on the subject of pancreatitis. In the diagnosis of chronic pancreatitis two things aided us: The more or less constant presence of glycosuria and the rapid loss of weight. The diagnosis of acute pancreatitis was the most difficult problem we had in medicine. He had known of nine or ten instances in which the diagnosis of this affection had been made where, upon operation, the pancreas was found to be normal. He had also seen the same result in several cases where the diagnosis of chronic pancreatitis had been made.

In reply to a question from Doctor Lee as to the cause of the abscess of the thigh in his case of chronic pancreatitis, Doctor Roth said that this occurred at the site of the injection of horse serum. In reply to a question from Dr. J. Milton Mabbott as to weather there had been an autopsy after the death of this patient from pneumonia, he stated that he was unable to say, as he had not heard of the man's death until a considerable time after its occurrence. He went on to say that he should have laid a little more stress on the presence of bloodstained fluid in the abdomen. When this was found upon opening the abdomen, pancreatitis was the first thing that we should think of, and we should lose no time in getting at the seat of trouble. These were generally desperate cases, and any prolonged manipulation was liable to result fatally. Another valuable sign of pancreatitis, upon opening the abdomen, was the presence of fat necrosis. As to the time for operating in acute pancreatitis, most surgeons were agreed that this should be done as soon as possible, though some were in favor of delaying until the condition had become subacute. There was, however, no means of knowing whether it would become subacute or would progress rapidly to a fatal issue. It seemed to him that this was an acute affection which required immediate attention. As to some of the aids to diagnosis, glycosuria was sometimes found to be only temporary. A great deal had been expected from the Cammidge reaction, but this was probably of little or no value. Besides, it took too long to carry out to be available in a pressing case.

Two cases, with specimens, were reported by Dr. A. E. Munson:

Uterine Fibromyoma.—Mrs. G. S.; had had five children and three abortions. No menstrual disorder up to one year ago. At the age of forty-five years had a severe hemorrhage. Was taken to Union Hospital, where examination revealed a large uterine tumor, freely movable, over which there was a distinct thrill, resembling that of an aneurysm. No hemorrhage at this time, but moderate leucorrhea. No pain. Patient slightly anemic; weight 168 pounds. Hysterectomy was performed, and five large intramuscular fibromyomata were found. Complete recovery.

Submucous Fibroid.—Mrs. A. W.; married; sterile. Menstruation began at the age of fifteen years, but was irregular for the first three years. At twenty years she began to suffer from dysmenorrhea, and at twenty-eight years was confined to bed during menstrual periods, but refused vaginal examination. This condition continued for ten years, by which time the periods lasted over two weeks. At the age of forty-two years she submitted to an examination, when an abdominal tumor, the size of a large grape fruit, was found. The vaginal cervix was closed. Patient anemic, emaciated, and very feeble. Hysterectomy was done, and a large submucous fibroid found. Death resulted in two days.

Uterine Fibromyoma, Atypical Symptoms.—Dr. J. Lewis Amster presented the specimens from this case. The patient was an unmarried woman of forty-three years who applied to him on October 15, 1911, stating that she had been treated for a long time, without benefit, for intestinal indigestion. Menstruation had commenced when she was fifteen years old, and had for the most part been regular. She first sought medical advice in November, 1910, when she complained of nausea and gastric distress, accompanied by palpitation and gaseous eructations. She suffered from constipation, which became more and more pronounced, and at times from attacks of acute indigestion which kept her confined to bed for several days. Inspection of the abdomen revealed a bulging over the bladder region, and by conjoined manipulation, abdominal and rectal (the patient being unwilling to submit to vaginal examination), a very large and hard movable mass could be felt which he had no hesitancy in pronouncing a subperitoneal uterine fibroma. On opening the abdomen (on October 21st) this diagnosis was confirmed. The right ovary was found to be calcareous and the left ovary cystic, while the appendix was firmly bound by adhesions to the right ovary and tube. As the patient was approaching the menopause, he concluded to do a complete hysterectomy, together with the removal of the appendix. At the end of seventy-two hours the patient was out of bed, and in two weeks from the date of the operation was discharged from the hospital. He had seen her on numerous occasions since. Her constipation and indigestion had entirely disappeared, and the outcome of the case was altogether satisfactory. Doctor Amster said that this case showed that all instances of uterine fibroids do not necessarily present all the cardinal symptoms of the textbooks, and that it was of special interest, not only on account of its being atypical so far as the subjective symptoms were concerned, but also because the patient was originally treated for eleven months for some remote ailment, while the underlying source of trouble remained unrecognized. In the attacks to which reference had been made the abdominal pain was general, but especially over the lower right quadrant and pelvic region, and they were no doubt secondary to fecal impaction, which, in turn, was more or less due to pressure from the immense uterine fibroid.

Fibromyoma Uteri—Occurence; Complications: Necessity for Operation.—This paper, by Dr. William P. Healy, was published in the Journal May 3, 1913.

Dr. Howard C. Taylor said that since, as a rule, uterine fibroids appeared in women of over thirty years, it seemed more natural to attribute the cardiac conditions to which reference had been made to arterial changes, rather than to the anemia resulting from the hemorrhages caused by the fibroids. When operation was required it was often desirable to give the patient a period of rest preparatory to this. In a woman with fibroids recently admitted to Roosevelt Hospital for operation the blood pressure was found to be over 200. To operate on her at once would have been to subject her to unnecessary risks. After a few days of rest in bed and suitable diet, however, the pressure had now fallen to 170. While this reduction of pressure had not been as great as could have been desired, the rest had put the patient in much better condition. As far as he was able to see, there was no relation between uterine fibroids and the number of children a woman had borne. Fibroids seemed to affect those who had had several children just as much as those who were sterile. He also doubted very much whether there was any relation between them and pyosalpinx. At the Roosevelt Hospital many negro women were treated, because many of the race lived in its neighborhood, and among them were a large number of cases of pyosalpinx, as well as of uterine fibroid; but this, he believed, was merely a coincidence. Negresses, it was well known, were peculiarly subject to both these affections, but in other classes of women the two were not so often found in conjunction. As to certain changes supposed to take place in fibroids, particularly sarcoma, this apparently depended largely on the observation of the pathologist making the examination of the tissue. When abroad last summer the speaker had been told at one of the clinics in Berlin that in from eight to ten per cent. of the women with uterine fibroids treated there sarcoma occurred. Dr. Francis Carter Wood had remarked that it was not fair for a pathologist to pronounce judgment on only small pieces of tissue, and the late Doctor Freeborn had once told him that, while he had heard of fibroids changing to sarcoma, he had never seen a case of this kind. The treatment by the x ray had not been spoken of in the paper. This method was now being very largely employed in a number of clinics in Germany, and apparently with very fair success. Fibroid tumors extending as high up as the umbilicus were reported to have become reduced below the symphysis in six or eight weeks under the treatment. It seemed to him that in cases in which it was not advisable to operate it was the best form of treatment we had. It was not, however, entirely without danger. In one patient in whom it did not produce the desired result many adhesions, caused by the action of the x rays, were found when the case finally came to operation. The German gynecologists were not very consistent, for if one case in ten changed to sarcoma, that would be sufficient indication for operative interference.

Doctor Lee said that Doctor Munson had noted in one of his cases a bruit or souffle, which might have been mistaken for that heard in pregnancy. Such a sound, synchronous with the heart's action, he thought, was quite generally met with in the case of large uterine fibroids, and it was sometimes difficult to make a differential diagnosis between these and pregnancy, as they might be attended with nausea, the breast signs, and other characteristics of that condition. It had been his observation that a very large proportion of cases of fibroid (perhaps eighty per cent.) occurred in women who were sterile or who had been pregnant only once or twice; so that instances where the woman had had a considerable number of children were exceptional. To take an illustration from comparative pathology, he had been informed by those who were familiar with the subject that the female mule, a hybrid incapable of becoming pregnant, was peculiarly subject to uterine fibroids. It would seem that the uterus, when debarred from giving vent to its activity in one way, would do so in another. The real operation for fibroids was hysterectomy, for a uterus from which one fibroid had been removed, without the extirpation of the whole organ, would be extremely likely to go on developing other similar tumors. The "fibroid habit" would persist, and it was better therefore to remove the entire uterus. He would like to ask Doctor Healy whether, in doing a hysterectomy, there was a likelihood of injuring the ureters. Personally, he had never met with an accident of this kind, but one man had told him that no one had a right to perform hysterectomy without first catheterizing the ureters.

Dr. J. Milton Mabbott congratulated Doctor Amster on the highly successful result of his case, and also on the fact that he was able to get his patient out of bed in seventy-two hours and discharge her cured in two weeks. It was a great aid in the restoration to health of such a patient to have her out of bed as early as possible.

Dr. Lewis M. Silver said that last year he had had occasion to examine a lady, forty-two years old, who had been married twenty-two years, but had never had any children, and he was puzzled to know whether she was pregnant or not. He called in his brother, Dr. Henry Mann Silver, and afterward Dr. J. Clifton Edgar, and they, too, were in doubt in regard to the case. It was decided to wait for a month, and at the end of that time the conclusion was reached that she was in the fourth month of pregnancy, in addition to having a large uterine fibroid. She was in great pain, and the tumor appeared to be shutting off the circulation. It was therefore removed. The growth was as large as a child's head, and attached to the right cornu. Fortunately, the pregnancy was not disturbed by the operation, and the patient went on to full term; when she was delivered of a living child.

Dr. Ransford E. Van Gieson said he had been wondering why no reference had been made by Doctor Healy or others to the use of ergot. This drug, given either hypodermically or by the mouth, had for many years been considered of service in uterine fibroids.

Doctor Healy, in closing, said he had not gone into the matter of blood pressure because he did not have sufficient data upon which to base any conclusions. While the blood pressure was generally considered to be higher than in other conditions, in the cases in his own series in which there were heart complications the pressure was low for patients with fibromyomata. As to catheterism of the ureters, he had never found it necessary to resort to this procedure. We did not now seem to meet the class of cases in which the ureters were involved, though some fifteen years ago Kelly had laid considerable stress on this matter. Of course, in the case of a broad ligament fibroid ureter, catheterism would be a desirable precaution. In regard to the use of ergot, this agent might be employed for a time, when necessary, like other palliatives, such as tamponing, curetting, etc. The question of when to allow a patient to get up after a laparotomy was an important one. He had known of one instance where, although the patient had been kept strictly in bed, the wound broke wide open at the end of nine days. It was now the practice of many surgeons to employ nonabsorbable sutures, and allow them to remain for ten days. In any case where there was cachexia this plan gave the best results. In animals it had been found that it required ten days to get any kind of union which could be regarded as solid. Up to this time there was practically no firm tissue growth.

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Letters to the Editor.

TYPHOID VACCINE.

705 East Genesee Street, Syracuse, N. Y., *May 8, 1913.*

To the Editor:

In view of the discussion which has taken place in the pages of the Journal with reference to typhoid vaccine, the following report of my personal experience may be of interest. In November, 1910, I received a prophylactic injection of 300,000,000 killed bacteria. Within a few hours I began to feel ill. I had headache, ached all over, and felt as if I were coming down with an attack of grippe. The temperature began to rise, and the following day I was confined to bed. The fever each afternoon was higher than the day before, reaching 103° F. by the middle of the week; after which there was a gradual decline, until at the end of the week the temperature was again normal. The spleen was enlarged, as shown by percussion, and there was some question of a slight enlargement of the liver. The urine showed a very high degree of acidity and a great excess of indican. The local reaction about the site of injection over the deltoid muscle was very pronounced. It commenced a few hours after the injection and advanced rapidly. By the end of the third or fourth day the area of inflammatory swelling extended nearly from shoulder to elbow, and involved half the circumference of the arm. A few days later it had entirely disappeared. At the end of the first week a bronchitis developed, accompanied by moderate cough and slight expectoration. In all, I was confined to bed nearly two weeks; after which I took a two weeks trip away from the city, spending most of my time in Atlantic City and Lakewood. The cough immediately improved with change of climate, and upon my return to Syracuse had completely disappeared. By that time, four weeks after having received the vaccine, I felt as well as ever.

I am unable to explain the severe reaction which I experienced. The same preparation of vaccine was used without untoward effects a number of times both before and after I received it. As far as I knew, I was in good health when the vaccine was administered. Apparently the bronchitis was not of a tuberculous nature, as it disappeared very quickly with change of climate and has remained permanently absent. I am, Very truly yours,

Joseph R. Wiseman, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Interpretation of Dreams. By Professor Dr. SIGMUND FREUD, LL. D. Authorized Translation of the Third Edition, with Introduction, by A. A. BRILL, Ph. B., M. D., Chief of the Neurological Department of the Bronx Hospital and Dispensary, Clinical Assistant in Neurology and Psychiatry, Columbia University, etc. London: George Allen & Company, Ltd., 1913. Pp. xiii-510.

The authorized translation of the third edition of Freud's book, which has become so widely known, has been very well done with the exception of a few minor mistakes such as unsoured instead of unleavened bread, etc. Doctor Brill has produced a very good book; his foot notes in which he explains some germanisms are well carried out. While we do not want to speak of the original, which was reviewed in these pages before, we only wish to state here that we think that Freud has been carried away by his scientific enthusiasm. Five thousand years ago the orientals founded the pseudoscience of astrology and dream interpretation, trying to lift the veil from the future. During the Christian era the interpretation of dreams lost its importance among the educated, while with the other strata of society it has kept its hold to the present day. It was left to another oriental to start the swing of the pendulum into the opposite direction, that is, to look at the dreams as a revelation of the past. We know we will be attacked for this unorthodox point of view in comparing Freud with the ancient interpreters of dreams, for Freud has found many followers. While there is much truth in explaining the dreams by past impressions, his permanent searching for sexual causes of dreams leads him certainly to false conclusions. The immense amount of labor the originator of this theory has devoted to building up his school could have been much better spent in other directions.

Textbook of Ophthalmology. In the Form of Clinical Lectures. By Dr. PAUL ROEMER, Professor of Ophthalmology at Greifswald. Translated by Dr. MATHIAS LANCKTON FOSTER. With One Hundred and Eighty-six Illustrations in the Text and Thirteen Colored Plates. Volume III. New York: Rebman Company, 1913. Pp. xx-573 to 896. (Price, $2.50.)

This, the third and concluding volume of Roemer's textbook, completes one of the most interesting textbooks on ophthalmic science that has been issued in recent years. The chapters on the pupil, the ocular muscles, and the neurology of the eye are particularly well adapted to the needs of ophthalmic students. One hundred and twenty-four pages are devoted to this phase of ophthalmology and, strangely enough, but ten pages to the whole list of chorioidal diseases. Just why this should be so does not exactly appear, excepting that throughout the three volumes Roemer has dwelt much upon the phases of ophthalmic science that interest him most and has perhaps somewhat slighted some rather important chapters. To diseases of the optic nerve and retina are devoted fifty-four pages of delightfully clear text, which only the more emphasizes the seeming lack of interest in chorioidal conditions. Functional testing of the eyes is fully treated, and these chapters show the influence of Doctor Foster, the translator, in adapting this portion of the book to the needs of American students. As in the preceding volumes, the illustrations are ample and for the most part of a high order of excellence. The three volumes form one of the most suggestive and stimulating textbooks on ophthalmology offered in the last decade. It is no formal statement of the known facts in ophthalmic science—it represents the convictions of an author and investigator who prefers to emphasize certain aspects of our science and to lead the student into new paths of thought. If, as Emerson says, the hardest task any one may set himself is to make men think, then Roemer has more than succeeded, for no one can read these volumes without thinking much. Whether the reader agrees with the author or not signifies little. That he has been made to ponder the deeper facts of our science signifies much. Author, translator, and publisher all deserve praise for this contribution to ophthalmic literature.

Précis pratique d'électricité médicale. Electrologie et instrumentation, rayons x et courants de haute fréquence. Par G. GEIGER, docteur en médecine de la Faculté de Paris. Paris: Jules Rousset, 1913. Pp. 409.

Although much has always been expected of it, electricity as a therapeutic agent is largely discredited by the medical profession, or employed only for its "psychic effect." This is due in a large measure to its general adoption by irregular practitioners, and more especially to the fact that comparatively few physicians have taken the trouble to learn thoroughly the physics of electricity and the physiological and physical effects of all the different modalities when applied to the living organism. With this fact evidently in view, the author has devoted by far the greater part of the volume to the description of apparatus and the explanation of the various electrical modalities. In the latter part of the book about seventy pages are devoted to therapeutics, and here the different diseases and conditions are arranged alphabetically, with an exposition of the particular methods of electrical treatment adapted to each. The entire subject is presented in a concise and precise manner, and the work should serve well as an elementary textbook.

Pathology. A Manual for Teachers and Students. By W. T. COUNCILMAN, M. D., Shattuck Professor of Pathology, Harvard Medical School. Boston: W. M. Leonard, 1912. Pp. 405.

This volume is a presentation of the method of teaching pathology in the Harvard Medical School. The idea is, that opportunity shall be given the student to acquire knowledge of the subject by the exercise of his own powers; consequently comparatively little information is given. It does not seem probable that this book will be very widely purchased as it has what appear to be certain serious drawbacks when considered in the light of general usefulness. To begin with, its avowed purpose is to give the students of a particular school an outline of the work that they are to get. Many other schools may not be inclined to that particular method, or may not have the necessary facilities. Then, too, illustrations have been omitted, on the ground that, as a rule, they represent areas carefully selected for the illustration of a point; the author believing that it is much better that the student should make his own illustrations from the objects studied. The reviewer disagrees with that idea. He holds that a picture of a typical lesion is almost essential in order that the student may have something for comparison. The book, however, is of value to the teacher of pathology in suggesting a course of instruction and in presenting experiments useful in demonstrating various lesions.

Handbook of Diseases of the Ear. For the Use of Students and Practitioners. By RICHARD LAKE, F. R. C. S., Eng., Surgeon, Diseases of the Ear, etc., to the London School of Clinical Medicine, etc. With Four Colored Plates and 77 Original Illustrations. Fourth Edition. Revised and Enlarged. New York: William Wood & Co., 1912. Pp. xiii-287. (Price, $3.)

In the fourth edition of Lake's valuable handbook (the first edition having been published in 1903) the author has increased the amount of matter over the third edition by thirty-one pages, and over the first edition by forty-eight pages. There are eleven new illustrations added to those found in the previous edition, together with four pages of colored plates showing in an excellent manner the various pathological conditions (both acute and chronic) met with in the examination of the tympanic membrane. Chapter three of the previous edition is divided into three parts in the present one, thereby giving two additional chapters, one on the estimation of acuteness of hearing and one on general therapeutics, with the use of instruments. The chapter on the internal ear has been rewritten in its entirety to bring it into accord with the latest views on this rapidly developing subject. While the functional tests are of necessity not developed to the extent they are in more complete treatises, they nevertheless give the student and practitioner much valuable information. The same is likewise true of the descriptions of the operative technic. The plates are clearer than in the former edition and are entirely satisfactory. The list of formulæ for use in various ear conditions is continued in the new edition, together with a valuable index. The book is an improvement over its predecessor, and is of decided merit alike to student and practitioner.

Maladies des Méninges. Par HUTINEL, professeur à la Faculté de Médecine de Paris; KLIPPEL, médecin de l'Hôpital Tenon; H. CLAUDE, professeur agrégé à la Faculté de Médecine de Paris; ROGER VOISIN, ancien chef de clinique à la Faculté de Médecine de Paris, et LÉVY-VALENSI, ancien chef de clinique à la Faculté de Médecine de Paris. Avec 49 figures intercalées le texte. XXXV. Nouveau Traité de Médecine et de Thérapeutique, publié en fascicules sous la direction de MM. A. GILBERT et L. THOINOT. Paris: J. B. Baillière et fils, 1912. Pp. 379.

This volume is number thirty-five of the series "Nouveau Traite dé Médecine et de Thérapeutique" edited by A. Gilbert and Thoinot, and consists of cyclopedic monographs contributed by the different authors. Thus Hutinel and Voisin present acute meningitis; Klippel, chronic meningitis, pachymeningitis, etc.; and Claude and Lévy-Valensi deal with affections of the spinal meninges. The entire subject is presented in a thorough and systematic manner, and, while the authors have maintained a conservative and judicial position, their work, on the whole, represents well the present day status of the subject. The value of lumbar puncture is emphasized throughout the book, especially from the standpoint of diagnosis, and complete descriptions of the technic are given. One hiatus which occurs, that of a detailed consideration of syphilitic affections of the meninges, is explained by the fact that this subject is presented in volume No. 32 of the same series.

Investigations on Epidemic Infantile Paralysis. Report from the State Medical Institute of Sweden to the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., 1912. Stockholm: Nordiska Bokhandeln. Published by the State Medical Institute Pp. iv-271.

This report is based upon material gathered from the last and largest epidemic of acute poliomyelitis in Sweden which occurred in 1911 and during which about 3,800 cases were observed. The greater part of the work is devoted to experimental and pathological investigations including transmissibility epidemiology, as well as clinical and pathological research concerning the disease in man and its experimental production in monkeys. The English translation is good, and, although nothing new of importance is presented, the report is an able and extensive study of a great epidemic and as such an important contribution to the literature of poliomyelitis.

The Protein Element in Nutrition. By Mayor D. MCCAY, M. B., B. Ch., B. A. O., M. R. C. P., I. M. S., Professor of Physiology, Medical College, Calcutta. Illustrated. London: Edward Arnold; New York: Longmans, Green & Co., 1912. Pp. xv-216. (Price, $3.) (International Medical Monographs. General Editors, Leonard Hill, M. B., F. R. S., and William Bulloch, M. D.)

This work is the product of a careful and prolonged investigation to determine the amount of protein required in nutrition. Living and teaching in India, Professor McCay adduces a vast amount of evidence which clearly indicates that the process of growth, to be fruitful in the production of virility and activity, demands a high protein ratio. The author reaches a conclusion which may be said to apply to many other departments of medical science nowadays, viz., that the views held by the older writers on nutrition are sounder and more in accord with the findings of careful scientific study than are those of the newer school. "Voit, who may be taken as a distinguished representative of the former," says the writer, "stands to-day absolutely vindicated; while the earnest plea put forward by Chittenden, for a lowering of the protein and caloric value of dietaries by large amounts, cannot be regarded as longer possible, in the light of the accumulated evidence of the ill effects that follow in the train of chronic underfeeding." The work is a valuable contribution to scientific dietetics. It may be said also to vindicate the teachings of practical experience as against the more elaborate and often misleading and too dogmatically expressed conclusions (unlike our modest Chittenden's) based purely on laboratory researches.

Meetings of Local Medical Societies.

MONDAY, *May 26th.*—Medical Society of the County of New York.

TUESDAY, *May 27th.*—New York Psychoanalytic Society; New York Dermatological Society; Metropolitan Medical Society; New York Medical Union; New York Otological Society. Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York; Alumni Association of Seney Hospital, Brooklyn; Buffalo Academy of Medicine; Rome, N. Y., Medical Society.

WEDNESDAY, *May 28th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

FRIDAY, *May 30th.*—Hospital Graduates' Club, Brooklyn; Audubon Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 14, 1913:

Austin, H. W., Senior Surgeon. Relieved from duty at Stapleton, N. Y., and directed to proceed to Detroit, Mich., and assume charge of the Marine Hospital at that port. **Carrington,** P. M., Surgeon. Detailed to represent the Service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, held in Washington, D. C., May 8th and 9th. **Gardner,** C. H., Surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Buffalo, N. Y., and assume charge of the Marine Hospital at that port. **Gillespie,** J. M., Assistant Surgeon. Relieved from duty in Manila, P. I., and directed to proceed to Hongkong, China, for duty in the office of the American Consul General. **Hasseltine,** H. E., Assistant Surgeon. Directed to proceed to Charlestown, W. Va., for conference with the county health officer relative to an outbreak of smallpox in that vicinity. **Nydegger,** J. A., Surgeon. Detailed to represent the Service at the annual meeting of the American Association for Promoting Hygiene and Public Baths, held in Baltimore on May 13th, 14th, and 15th. **Schereschewsky,** J. W., Surgeon. Designated to serve on the Committee on Rural Nursing of the American Red Cross Society. **Stoner,** G. W., Senior Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Stapleton, N. Y., and assume charge of the Marine Hospital at that port. **Williams,** L. L., Surgeon. Relieved from duty at Wilmington, N. C., and directed to take charge of the medical examination of arriving aliens at Ellis Island, N. Y.; order granting leave of absence, without pay, for three months from March 16th, 1913, amended to read "for the period March 16 to May 6, 1913."

Appointments.

The following physicians have been commissioned assistant surgeons in the United States Public Health Service: Francis A. Carmelia, Luther W. Jenkins, Liston Paine, Lionel E. Hooper, Moses V. Safford, and Ernest W. Scott.

Casualty.

Acting Assistant Surgeon E. M. Small died April 20, 1913, at Eastport, Maine.

Boards Convened.

Board of commissioned medical officers which was convened to meet April 7, 1913, at the Bureau, Washington,

D. C., for the examination of applicants for appointments as assistant surgeons, reconvened to meet July 9, 1913, for the same purpose.

Boards of medical officers convened for the physical examination of applicants for appointment as Assistant Surgeons and for the presentation of questions for the written examination to meet June 9, 1913, as follows:

Marine Hospital, Boston, Mass., Senior Surgeon Fairfax Irwin, chairman; Surgeon H. W. Wickes, recorder.

Marine Hospital, Chicago, Ill., Surgeon J. O. Cobb, chairman; Passed Assistant Surgeon Hugh de Valin, recorder.

Marine Hospital, St. Louis, Mo., Surgeon P. M. Carrington, chairman; Acting Assistant Surgeon H. C. Wakefield, recorder.

Marine Hospital, New Orleans, La., Surgeon J. H. White, chairman; Passed Assistant Surgeon A. D. Foster, recorder.

Marine Hospital, San Francisco, Cal., Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon J. R. Hurley, recorder.

Board of medical officers convened to meet at Galveston, Tex., at the call of the chairman, for reexamination of alien Torko Nieman. Detailed for board: Surgeon G. M. Guiteras, chairman; Surgeon L. P. H. Bahrenburg, recorder.

Board of medical officers convened to meet at Boston, Mass., at the call of the chairman, for reexamination of aliens Jamel Haddad and Francisco J. Dias. Detail for board: Surgeon H. W. Wickes, chairman; Assistant Surgeon M. V. Safford, member; Acting Assistant Surgeon A. J. Nute, recorder.

Board of medical officers convened to meet at Fort Trumbull, New London, Conn., upon call of the chairman, for the examination of cadets of the Revenue Cutter Service to determine their physical fitness to be commissioned Third Lieutenants. Detail for the board: Passed Assistant Surgeon H. J. Warner, chairman; Acting Assistant Surgeon J. G. Stanton, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 17, 1913:

Carr, William B., First Lieutenant. Honorably discharged from the service of the United States, with one year's pay. **Crosby,** W. D., Colonel. Arrived at Fort Sam Houston, Texas, May 9th, for duty as department surgeon of the Southern Department. **Hanner,** J. H., Captain. Leave heretofore granted extended twenty days; authorized to wait at Nagasaki and return to the United States on transport leaving Manila on May 15th. **Kennedy,** James M., Major. Relieved from duty at Fort Shafter, H. T., and will return to San Francisco, Cal., on the transport leaving Manila on June 15th. **Lavanture,** Lewis A., First Lieutenant Medical Reserve Corps. So much of paragraph 11, Special Orders No. 67, March 22, 1913, as gives direction to proceed to Fort Sam Houston, Texas, is revoked, and at end of present leave of absence will proceed to Fort George Wright, Wash., for duty. **Maddux,** Henry C., First Lieutenant. Relieved from present duties and will rejoin his proper station, Fort Moultrie, S. C., on or about June 1st; granted leave of absence for ten days, effective about June 15th, and upon expiration of leave will proceed to San Francisco, as heretofore ordered. **Page,** Henry, Major. Upon completion of course of instruction at the Army Field Service School, Fort Leavenworth, Kansas, will proceed to the Walter Reed General Hospital, Washington, D. C., for duty. **Patterson,** R. U., Major. Granted leave of absence for five days. **Perley,** H. O., Colonel. Having been found disqualified for active duty on account of disability incident to service, is retired. **Sandall,** Laurel B., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his service no longer being required. **Stallman,** George E., Lieutenant. Granted leave of absence for three months, effective about July 1st. **Truby,** W. F., Major. Left San Francisco, May 6th, on one month's leave of absence on surgeon's certificate of disability, with permission to apply for an extension of three months. **Wilson,** James A., Captain. Granted leave of absence for twenty-four days, effective about May 21st. **Woodruff,** Charles E., Lieutenant Colonel. Reports on sick leave of absence at Bayonne, N. J., May 13th, from Nauheim, Germany.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 17, 1913:

Benton, F. L., Surgeon. Detached from the Marine Expeditionary Force and will await orders. **Cottle,** C. F., Passed Assistant Surgeon. Detached from the Naval Hospital, Great Lakes, Ill., and ordered to the Naval Training Station, Great Lakes, Ill. **Davis,** R. G., Assistant Surgeon. Detached from the Naval Proving Grounds, Indian Head, Md., and ordered to the Asiatic Station. **Hough,** F. P. W., Passed Assistant Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **Koltes,** F. X., Passed Assistant Surgeon. Detached from the Naval Training Station, Great Lakes, Ill., and ordered to the *New Jersey.* **Melhorn,** K. C., Passed Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the *South Dakota.* **Robbins,** I. W., Assistant Surgeon. Detached from the *South Dakota* and ordered home to await orders. **Robertson,** G. E., Assistant Surgeon. Detached from the Marine Expeditionary Force, and ordered home to await orders. **Rose,** M. E., Acting Assistant Surgeon. Ordered to the Navy Yard, Philadelphia. **Sullivan,** N. R., Assistant Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **Zalesky,** W. J., Passed Assistant Surgeon. Ordered to the *Helena.*

Births, Marriages, and Deaths.

Born.

Kennedy.—In Fort Shafter, Honolulu, H. T., on Tuesday, April 22nd, to Major James Madison Kennedy, Medical Corps, United States Army, and Mrs. Kennedy, a son.

Married.

Donnelly—McGarrity.—In New York, on Tuesday, May 6th, Dr. James Francis Donnelly to Miss Mary Irene McGarrity. **Jackson—Ransom.**—In New York, on Monday, May 12th, Dr. Frank W. Jackson and Mrs. Mary E. Lennox Ransom. **Manion—Connors.**—In Newport, N. Y., on Wednesday, May 14th, Dr. Edyard B. Manion, of Ilion, and Miss Margaret Connors. **MacMichael—Anthony.**—In Malden, Mass., on Tuesday, May 13th, Dr. Earle Haggett MacMichael and Miss Grace Miles Anthony. **Vander Veer—de Murias.**—In New York, on Monday, May 12th, Dr. Albert Vander Veer, Jr., and Miss Sylvia A. de Murias.

Died.

Belknap.—In Rochester, N. Y., on Tuesday, May 13th, Dr. Edward B. Belknap, of Wyoming, aged fifty-five years. **Bert.**—In Chicago, on Thursday, May 8th, Dr. Eddy Bert, aged seventy-three years. **Brooks.**—In Newburgh, N. Y., on Tuesday, May 13th, Dr. Edward F. Brooks, aged thirty-eight years. **Cabaniss.**—In New York, on Monday, May 5th, Dr. James E. Cabaniss, aged forty-five years. **Carhart.**—In Brooklyn, on Thursday, May 15th, Dr. Edward William Carhart, aged fifty-six years. **Heffernan.**—In Dubuque, Iowa, on Wednesday, May 7th, Dr. Thomas Henry Heffernan, aged forty-five years. **Henry.**—In Brooklyn, on Saturday, May 17th, Dr. Jesse William Henry, aged eighty-four years. **Kemp.**—In Callicoon, N. Y., on Monday, May 5th, Dr. Simon A. Kemp, aged sixty-six years. **Kyger.**—In Kansas City, Mo., on Monday, May 5th, Dr. John William Kyger, aged sixty-four years. **Meredith.**—In Quakertown, Pa., on Friday, May 9th, Dr. William Henry Meredith, aged sixty-nine years. **Murphy.**—In New York, on Saturday, May 10th, Dr. Richard F. Murphy, aged fifty years. **Rugh.**—In Pittsburgh, Pa., on Saturday, May 10th, Dr. Wilson J. Rugh, aged sixty-five years. **Short.**—In Rolla, Mo., on Monday, May 12th, Dr. John L. Short, aged sixty years. **Shurly.**—In Detroit, on Saturday, May 10th, Dr. E. L. Shurly, aged sixty-seven years. **Stearns.**—In Stony Creek, N. Y., on Wednesday, May 7th, Dr. Phineas L. Stearns, aged eighty-three years.

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RESTORING MOBILITY AFTER BONY ANKYLOSIS OF THE JOINTS.*

(*Second Paper.*)

By R. Tunstall Taylor, M. D.,
Baltimore.

This paper is a continuation of some preliminary work reported before the Clinical Congress of Surgeons of North America at Philadelphia in 1911 (*Surgery, Gynecology, and Obstetrics,* April, 1912, pp. 327-337), which the writer has done in the Kernan Hospital for Crippled Children, St. Agnes's Hospital, and the University Hospital at Baltimore, since June, 1911, and the final conclusions as to its value should be withheld until more time has elapsed. Suffice it to say, that the results so far attained afford ample encouragement to continue the study, modify and improve the technic, and extend the investigation.

Joints made stiff by inflammation and the formation of intraarticular bridges of bone growing between the components or by periarticular collars, locking motion, are so numerous and from such common causes, that one with the opportunity is stimulated to endeavor to find a solution of the problem, which most often by methods hitherto employed by our predecessors have proved valueless or even detrimental or fallen short of the benefit hoped for. Medical literature upon this subject is vast and voluminous and investigations numerous, such writings dating from the beginning of the last century. I will, therefore, simply mention the leaders or originators in the different methods which lead up to our modern conception of the subject.

Naturally, in our research one finds many cases reported in which surgeons have endeavored to give relief for ankylosis of the jaw, which interfered materially with nutrition, or at least deprived the sufferer of the power to masticate solid food, with the attendant absence of stimulation afforded thereby to the digestive function, aside from gustatory pleasures. Those whose lower limbs were ankylosed in flexion or adduction, and those whose upper extremities were stiffened in extension, so that the hand could not reach the face, head, or pocket, most often begged for alleviation.

Louvrier, of Paris, and Langenbeck, of Hanover, have their names associated with originating the procedure known as *brisement forcé* or the forcible breaking up of the adhesions in joints, or, as they termed it, the *redressement* of the joint. This method used by them and their followers, even when often repeated, resulted in the reformation of bony adhesions, leaving the patient sooner or later often in a worse condition than before, except in those mild cases where the stiffness was due solely to a synovial agglutination. Next we find the name of Rhea Barton, of Philadelphia, who, in 1826, sawed through the femoral neck for the relief of this condition, and who was followed by Rogers, in 1830, removing a disc; Sayre, in 1869, of a "roof shaped" piece from the same region; and Berard, in 1838, of a disc from the inferior maxilla, without ultimate success. Many others, including Diffenbach, Esmarch, Schuh, and Rizzoli, tried it and failed.

This procedure was followed by J. M. Carnochan, of New York, in 1840, interposing bits of wood and cotton between the cut ends of bones to prevent readhesion, and these naturally sloughed out, as did the nonabsorbable substances, celluloid, zinc, rubber, silver, cambric, and collodion, and the absorbable magnesium, ivory, and bone chips used by Chlumsky, in 1902.

Verneuil, in 1860, acting upon the hypothesis that often we see nonunion between bone fragments following traumatic fracture from muscular or fascial interposition or misplacement and a pseudoarthrosis resulting, successfully interposed, *with a nutritive pedicle,* muscle and fascia after arthrotomy for an ankylosed jaw. His most enthusiastic followers have been Albert Hoffa, of honored memory, and John B. Murphy, of Chicago, who has written much of late in the *Journal of the American Medical Association* concerning this, and has often had encouraging results.

We next come to Föderl who, in 1903, used as an interposing substance animal membrane, bladder, or the walls of ovarian cysts, heterogeneous materials which frequently caused suppuration, fever, and ultimate extrusion, with sinus formation and reankylosing of the joint. Baer, in 1909, reported similarly the use of chromicized pig's bladder and cargile membrane, with good results.

Finally, we find Thorn recently reporting the use of detached autogenous or homogenous membrane. He dissected out flaps from the fascia lata of the patient to serve as the interposing substance to go in the new formed articulation. Thus, we can

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*Read, by title, before the Southern Medical Association at Jacksonville, Fla., November 14, 1912.

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classify the methods mentioned with my own, which is to be described, into six groups, viz:

1. *Brisement forcé.*
2. Interposition of foreign nonabsorbable substances.
3. Interposition of muscle and fascial flap with nutritive pedicle.
4. Interposition of heterogenous fascia or membrane.
5. Interposition of autogenous or homogenous fascia or membrane without nutritive pedicle.
6. Interposition of absorbable animal substances.

Groups 1 and 2 can be dismissed as obsolete. Groups 3 and 4 I can speak of only from my own experience and that of my orthopedic and surgical colleagues as only partially satisfying, on account of the length of the operation and the pain following, fever, suppuration, sloughing, sinus formation, and the reformation of adhesions in some cases. Groups 5 and 6 are still under advisement and time and numbers of cases will best show us what to expect.

Cases of ankylosis, like cases of other affections, vary much, so that a prognosis for mobility after operation must depend on the joint involved, the degree and nature of the involvement, the causative condition or disease, and changes in adjacent parts. Atrophy, osteoporosis, deformed articular ends, thickening of capsules, shortening of ligaments, tendons muscles, etc., influence materially the results in a given case.

It is needless to say acute cases or active chronic cases should not be touched or even considered for stereoarthrolysis. In June, 1911, the writer began laboratory and animal experimentation to determine something absorbable, an animal substance that could be sterilized, injected by syringe between the denuded ends of the bones entering into the proposed newly made articulation, and that would immediately solidify in such manner as to prevent contact for some six or eight weeks before absorption.

The idea was that this liquid would fill every nook and cranny of the joint and then solidify. On injection the liquid was to be at a temperature that would not scald, and the congealed substance was not to be absorbed before the denuded bone ends healed. Various fatty, waxy, and gelatinous substances were experimented with in regard to melting point and congealing point, and the rapidity of absorption was determined by injecting various mixtures and proportions subcutaneously into rabbits.

To make a long story short, yellow wax, 1 part and lanolin 5 parts, were the chief substances, this proportion determined on after careful study, melting at about 130° F.

Research in recent years aided by asepsis, in conjunction with the x ray and the employment of innocuous absorbable substances within stiff joints has conferred upon arthroplasty a new hope and boon to the very large number of those afflicted with stiff joints from tuberculosis, gonorrhea, osteoarthritis, rheumatoid arthritis, trauma, infections, etc.

Caution should be observed in not operating on an ankylosis due to an infectious arthritis until all inflammation has ceased and the joint has been quiescent a year or more. In the use of wax mixtures great care should be used in sterilizing in the autoclave at fifteen pounds pressure for thirty minutes, two days in succession, before introduction into the newly formed joint.

The employment of an *excessive amount* of wax in the articulation is also a mistake, as it is likely to cause such intraarticular pressure that the sutures may open, and *only sufficient* should be introduced as to separate or coat over the eroded bone areas. Traction by Buck's extension may be employed on the lower extremities after the first week in plaster of Paris, to increase, as far as possible, the intraarticular spaces or, preferably, the cast is left on a month. One must bear in mind that joints long unused and ankylosed become flat, not rounded, so that if we can prevent the reformation of ankylosis and adhesion, we can count upon use and functioning, according to Wolff's law, to reproduce *to a certain extent* a rounded articular surface with progressively increasing range of motion with the improved muscular power, which we at the time of the operation could only do imperfectly. This, however, does not mean that we should simply make a linear osteotomy between the component bones, but *each should be fashioned concave or convex* as nearly as possible like the normal articulation. This can be done by chisels and gouges of proper width and by special articular curettes or draw knives, such as the writer's.

For the acetabulum and femoral head special burrs should be employed, the former being only a trifle larger than the latter to allow for the interposing substance. The jigsaw or Gigli saw can only be used when articular ligaments can be avoided, as one must prevent flail joints. The more perfectly the joint is fashioned, the greater the liability to a good range of motion. All ligaments and as much capsule, bone, and cartilage as is possible are to be preserved.

The advantages of his method, the writer maintains, are, primarily, *the prevention of the reformation of bony adhesions* in properly done cases; the absence of pain, none of the cases reported below requiring any anodyne; the speedy, *voluntary* ability to move the joint as compared with other methods: the absence of fever and suppuration; the hemostatic value of the wax and absence of hematomata and ecchymoses afterward, and the rapidity with which the operation can be done, makes it a preferable procedure as compared with other methods.

OPERATIONS.

OPERATION I (rabbit No. 9).—Under ether and morphine anesthesia the left front leg was opened with strict asepsis at the elbow and the entire articulating surfaces were removed from the humerus and ulna down to the bone, so that with fixation and without the interposition of any substance, experimental ankylosis would result under ordinary circumstances. In this instance arthritic wax, composed of yellow wax 1, lanolin 5, was interposed, the capsule and synovial membrane and skin were sutured and the wound was sealed with collodion. The limb was splinted and strapped to the thorax for two weeks, when it was found the wound had healed *per primam,* there was no tendency to adhesions and there was free motion in the joint. At the present time, three months after the operation, the rabbit has good use of the joint and free movement in it.

OPERATION II. B. L., aged nine years, white, female; diagnosis: Infectious osteoarthritis (rheumatoid arthritis). Family history: Father died of pneumonia; four brothers and sisters died, cause unknown; mother and five sisters

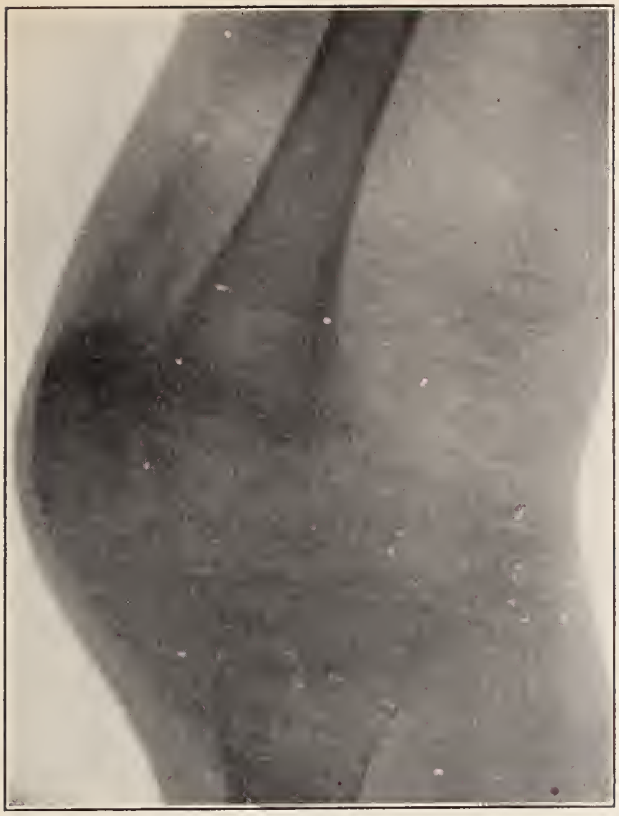

FIG. 1.—Ankylosis as a result of infectious arthritis of the knee before operation.

living and well; otherwise negative. Past history: Had had measles and scarlet fever; no other sickness.

Present illness began in 1909, following scarlet fever, with swollen joints which were very painful. No redness; no sweats; slight fever at times. Swelling began in left ankle; later, left wrist became involved. Shortly after, patient had swelling in both knees and elbows which gradually grew worse.

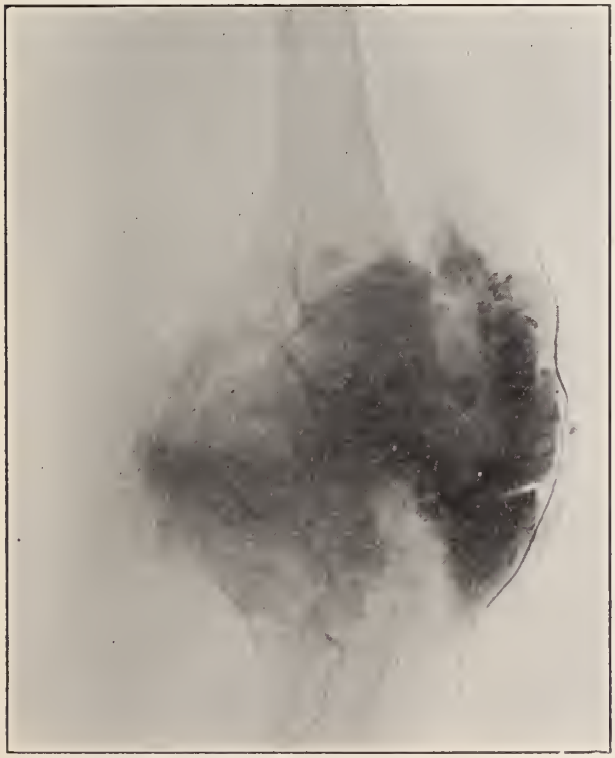

FIG. 2.—Infectious arthritis of the knee after Operation III, containing yellow wax, tallow, castor oil, and bismuth.

Physical examination: On patient's admission it was noticed that she was fairly well nourished, but anemic and hyperesthetic. Pupils reacted to both light and accommodation. Mucous membrane fair color. Breath fetid. Two carious teeth (right upper premolar and left lower premolar) and two alveolar abscesses shown by x ray. Teeth were extracted and abscesses drained. Tonsils not enlarged, but congested, were dissected out by blunt dissection; both found diseased and cheesy and an appreciable amount of pus at the base of the right one was noted. There was an exacerbation of the symptoms in the joints after this for two weeks. Throat was well formed; expansion fair. Lungs clear throughout on percussion and auscultation. Heart not enlarged. Slight precordial heaving. No thrill. At apex a blowing systolic murmur was audible, heard over whole heart area. Abdomen negative as to abnormalities. Both knees ankylosed and flexed at 30°. Patellæ adherent and immobile. Ankles partly ankylosed, very painful on slight manipulation. Little swelling, local temperature not elevated. Hipjoints negative. Shoulder joints negative. Both elbows nearly completely ankylosed, left had about 20° of motion and right about 10°. Both wrists slightly swollen and painful on manipulation, as well as the carpometacarpal articulations. Slight ankylosis in both regions. Metacarpophalangeal joints were involved, as was second joint on middle finger of right hand. Spine was partly ankylosed in cervical and upper dorsal vertebræ, involving the costal articulations also. It was determined to try to give mobility to the right knee.

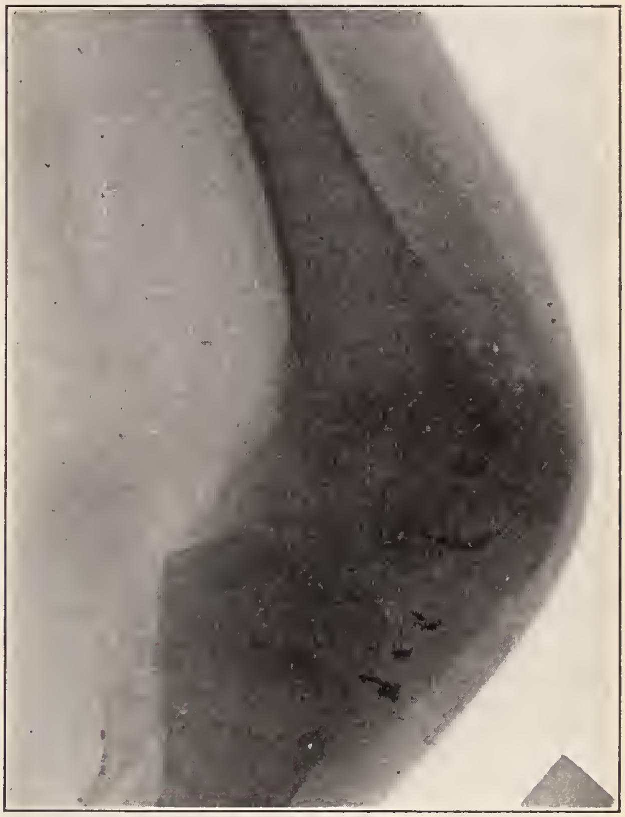

FIG. 3.—Infectious arthritis of the knee; result of Operation II.

Operative technic, September 5, 1911. After the usual most scrupulous preparation, two incisions were made, one on each side of the patella, about eight cm. long, extending through the skin, fascia, and adipose tissue down to the thickened capsular ligament, the latter being opened, as was also the remains of the synovial membrane, now fibrous tissue. It was found that both surfaces of the membrane adhered and contained no synovial fluid, save a

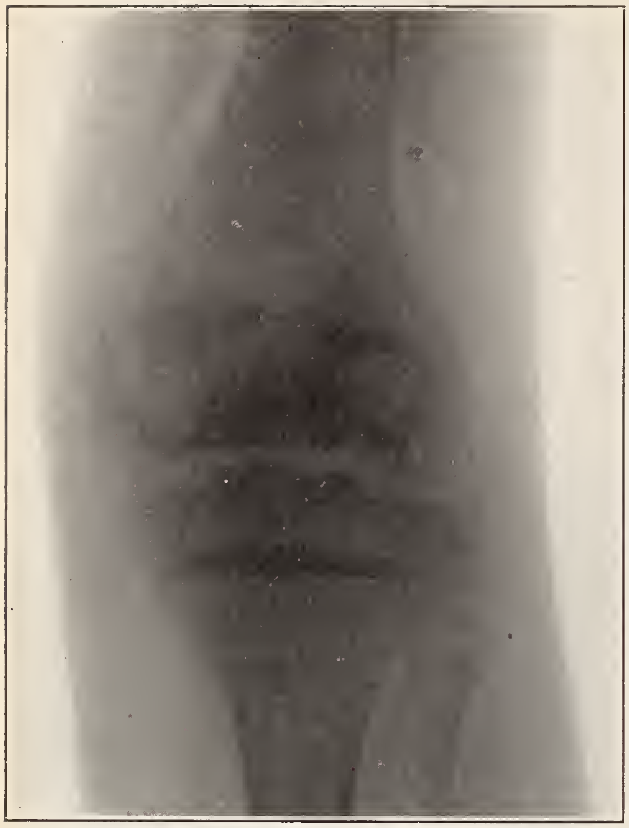

FIG. 4.—Tuberculous osteitis of the knee. Case R. M., before ankylosis (Operation IV).

pocket just above the patella. Bony ankylosis was found between the femur, tibia, and patella on each side. By means of an osteotome and periosteal elevator the ankylosis was broken up, after which the necrosed bone was curetted away at the eroded points, also the diseased cartilage. No attempt was made to remove enough bone and remaining cartilage to permit of normal range of motion. The leg was flexed at an angle of about 45° and the bones pulled apart as far as possible, after which the articulation was filled with a mixture of wax, 1, lanolin, 5, cooled down to about 108° F., an abundant supply being put between the patella and femur, after which the joint was held at an angle of 45° until paste hardened, when the synovial membrane was sutured (also capsular ligament) with continuous silver wire. The wax mixture was sterilized, in a covered agate jar, previously melted and brought to the operating table in a water bath at the time of injection. A sterile thermometer was put in the wax and a second thermometer in the hot water. Injection was made with a urethral syringe, the temperature being also tested on the operator's arm.

After suturing the skin subcutaneously with silver wire, the wound was covered with silver foil and proper dressings, and leg put up in a plaster of Paris cast, at an angle of 45°. This cast was allowed to stay on for one week, then taken off, and the leg manipulated under anesthesia, after which patient was put up in traction. At the end of the second week, primary healing having occurred, all dressings were removed and extended manipulation was attempted, but this was too painful, so at the end of the third week the patient was anesthetized the second time and knee manipulated, it being found that there were only about 35° of motion, but the patella was freely movable and the limitation of motion between femur and tibia was due to malformation and transformation of the articular ends of the bones, and not to adhesions.

As this was not satisfactory, except in regard to the patella, and much of the limitation of motion was due to bone malformation, the previously thickened capsular ligament and close apposition of the bones not permitting enough wax to intervene, it was determined to reopen the joint, correct these errors, obtain free movement of the bones upon each other by sufficient excision, and to use a harder wax.

OPERATION III, October 27, 1911. On same joint, the right knee, the incision was made on inner aspect of the line of the scar of the previous operation, exposing the inner side of joint. The patella was found to be freely movable. On manipulation of the joint a small amount of wax preparation could be squeezed out of the deeper portion of joint cavity. A greater part of the wax preparation that had been injected during the previous operation had been absorbed. Some of the articular cartilage of both femur and tibia had been removed at the previous operation, but these bones were in too close apposition when joint was opened the second time to permit of any marked degree of motion.

There had been apparently some regeneration on the part of the femur; both the external and internal eroded condyles were found to have incapsulated in them the paste mixture which was injected at the previous operation; otherwise there were slight signs of regeneration.

A second incision was made on the inner side of knee, similar to one on outer side, and the entire knee joint exposed, after which a large portion of articular surface of the internal and external condyle was chiseled and curetted away, also a small portion of the articular surface of the tibia, leaving a gap of over one cm. on both inner and outer margin of joint. A large part of the capsular ligament was also cut away, but the crucial and lateral ligaments were preserved. The joint cavity was then filled with paste preparation, which filled every part of joint, as it was injected as a liquid. The paste consisted of the following proportions: Yellow wax, 1 part; mutton tallow, 2 parts; castor oil, 2 parts, with 15 grains to the ounce, by weight, of the mixture of bismuth subnitrate. This arthritic wax melts at 140° F. (60° C.) and is semisolid and begins to congeal at 128° (53° C.). (The mixture should be drawn up in the syringe again and again to get

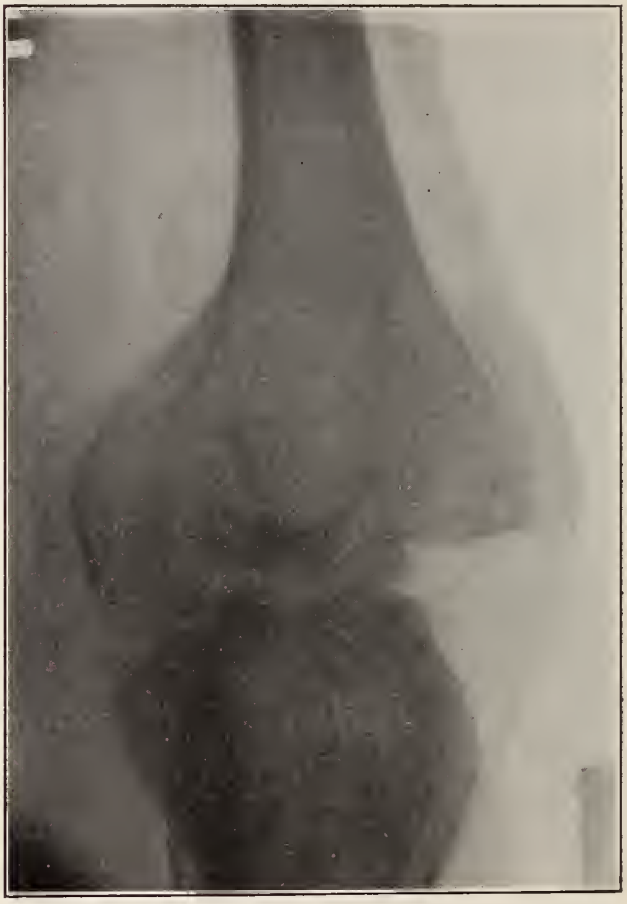

FIG. 5.—Tuberculous osteitis of the knee, showing bony ankylosis between patella and femur and tibia and femur. Case R. M., lateral view.

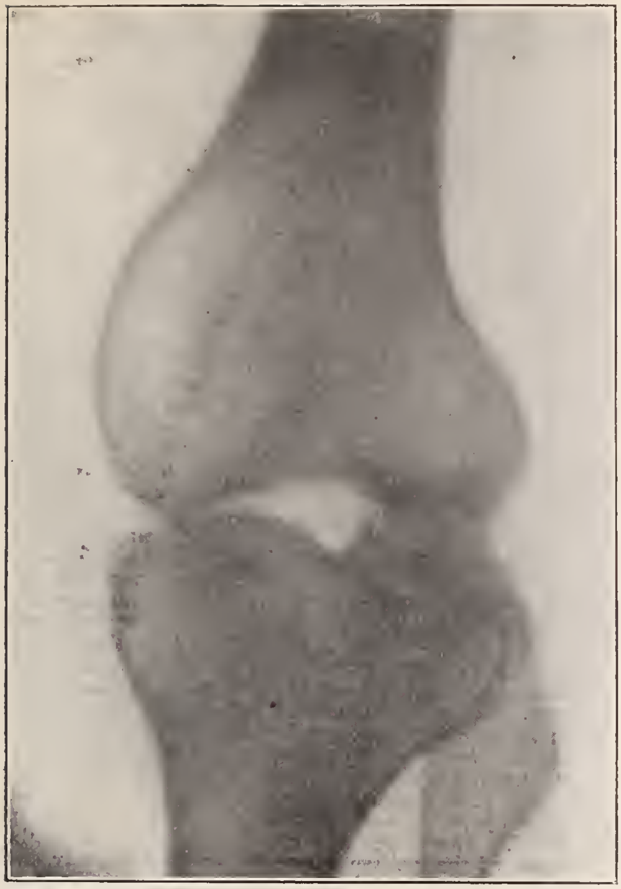

FIG. 6.—Tuberculous osteitis of the knee. Case R. M., after ankylosis, anteroposterior view.

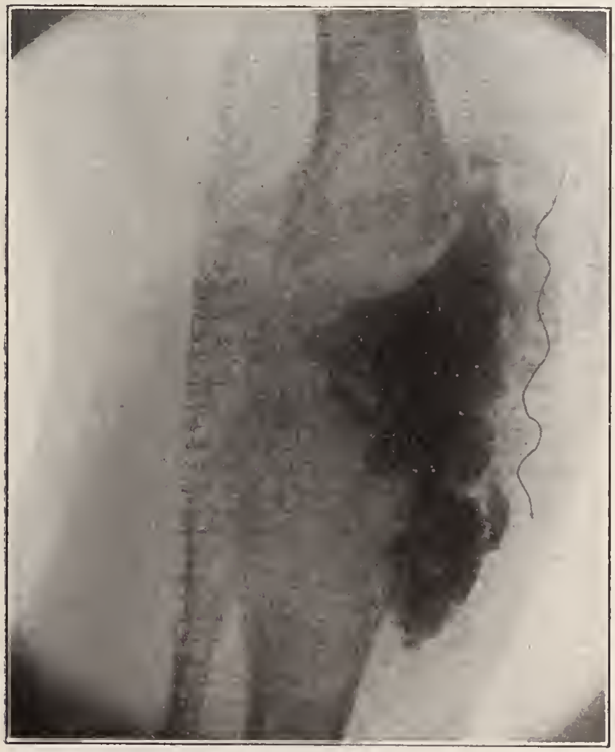

FIG. 7.—Tuberculous osteitis of knee. Case R. M., after operation, containing yellow wax, lanolin, cacao butter, and bismuth.

a uniform suspension of the bismuth and for cooling purposes.)

The leg was held in full extension with traction while the paste was injected and remained in that position while the paste was hardening, after which the wound was closed with silver wire, etc.

The leg was put up in full extension by means of plaster of Paris. An identical operation was then done on the left knee. At the end of ten days the casts were taken off and the leg manipulated; and they were found to have good motion and no adhesions. The legs were put up in extension by means of traction, a five pound weight being used on each and the patient encouraged to move the joints actively, several times a day. Three weeks after the second operation, patient had between 40° and 50° of voluntary flexion with little pain, and the remaining motion was simply restricted by voluntary muscular contraction and connective tissue formation. These operations were undertaken upon an active rheumatoid arthritis, although this acute condition could not be fully appreciated until the joints were opened and the extreme degree of osteoporosis was recognized. Reshaping the articular ends was easily done, owing to the still active chronic process; at the end of three weeks the patella was free and there were from 40° to 50° of motion in flexion, whereas, at the time of operation, there was none between the femur and tibia, and a true bony ankylosis with the patella existed. The continued activity of the disease caused a rethickening of the periarticular structures subsequently with loss in the gain made by the operation and the case is cited as a caution against attempts to restore mobility in any joint that has not been long quiescent. (See x ray pictures, Figs. 1, 2, and 3.)

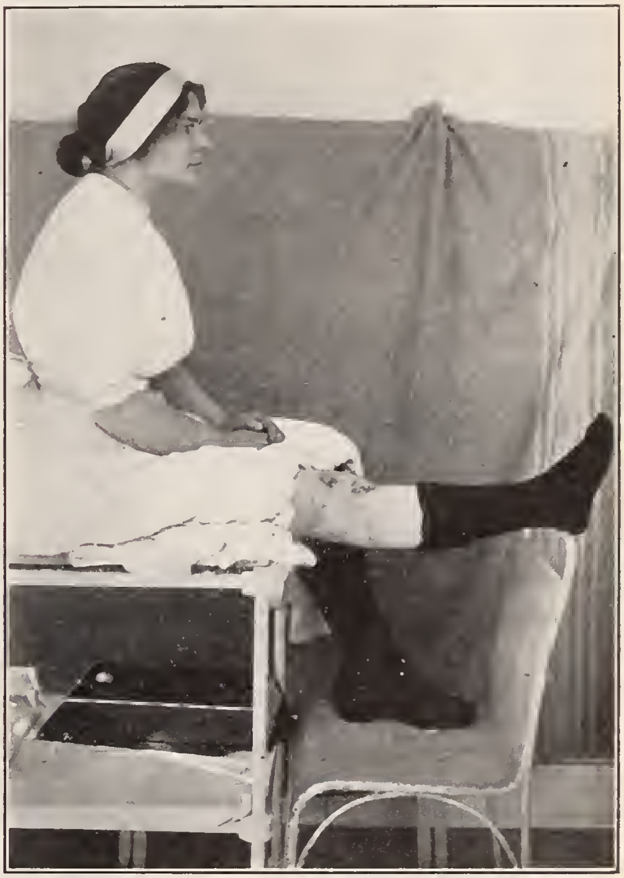

FIG. 8.—Case R. M., after operation, showing full extension.

OPERATION IV. R. M., aged seventeen years, white, girl. Diagnosis: Tuberculosis of right knee, which was ankylosed firmly in full extension. Family history: Father died of phthisis; mother living and well; one brother, two sisters, living and well. With exception of father, no other history of tuberculosis. No history of

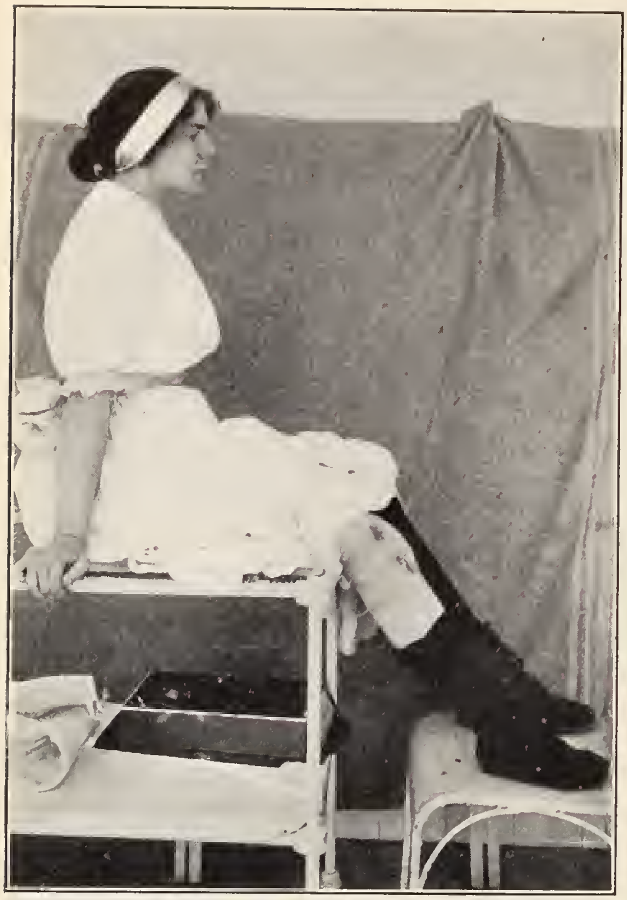

FIG. 9.—Case R. M., after operation, showing voluntary flexion to 45 degrees.

joint or nervous diseases; no malignancy. Past history: Always healthy, except tumor albus (in 1900). Birth normal. Walked and talked at two years of age. No history of measles, mumps, whooping cough, or diphtheria. No tonsillitis. Patient subject to bronchitis. Gastrointestinal and genitourinary diseases negative.

Present illness: In 1900, patient had tuberculosis of right knee, which was treated, in the best environment, by bed traction and later by plaster fixation. It became ankylosed. Now no acute symptoms for several years.

Physical examination: Well nourished. Skin good color; tongue slightly coated. Lips and mucous membrane good color. No pain on mastoid pressure. No tophi. Eyes reacted to light and accommodation. Few cervical glands palpable. Thorax well formed. Inspection, palpation, percussion, and auscultation showed no pathological changes in heart and lungs. Abdomen negative. Extremities normal, with exception of right knee, which was completely ankylosed in extension.

Operation, October 20, 1911. A longitudinal incision about 10 cm. in length was made over anterior aspect of right knee, just to outer side of patella, and the joint readily exposed. The prepatella bursa contained a rather large amount of yellowish, caseous material which was curetted out before attempting to open the joint. The joint capsule was definitely thickened and there was a fair amount of granulation tissue about the same. This was cut away, as was the capsule, as far as possible. There was definite bony ankylosis of the joint of a marked eburnated character and this was more marked on the external portions. The patella was firmly ossified to the femur. The character of the bone in this case was in a marked contrast to the preceding case, in which the articular ends of the bones could be easily removed with a curette to the depth of 0.5 cm. The patella was first freed by osteotomy, and showed marked pathological changes, having more or less a wormeaten appearance, and the articular portion was easily rongeured away. An attempt was then made to render the joint movable, which was accomplished by chiseling away the articular portion of the external condyle of the femur and also a large portion of the articular surface of the tibia. At this time the knee could be flexed to almost 90°. After drying the wound thoroughly the cavity was filled with wax preparation consisting of the following proportions: Yellow wax, 1 part; cacao butter, 2; lanolin, 2; 15 grains of bismuth to the ounce of mixture. Melting point 130° F. The wound was closed with silver wire, silver foil, and dry dressings. The leg and foot were put up in a plaster cast in a position of full extension.

Four days after the operation the cast was taken off and the leg held in extension by traction, ten pounds being used. At this time the leg was slightly manipulated and found to be free from adhesions. On the tenth day after the operation the dressings were removed and the wound was found to be healed, save a small part of the incision at the lower end where the silver wire suture broke. Leg was manipulated under anesthesia and no adhesions were found. Afterward it was not necessary to give an anesthetic to manipulate the leg, as *the patient had been daily giving her joint frequent* active and passive movements. On the fifteenth day patient was allowed to walk on leg, she being able to flex the leg on thigh. One month after the operation, the patient had voluntary flexion of about 60°. There was a slight leakage of wax at the lower end of the incision where the suture gave way, but this readily healed and subsequently, one year after the operation, again reopened for a few weeks and then healed.

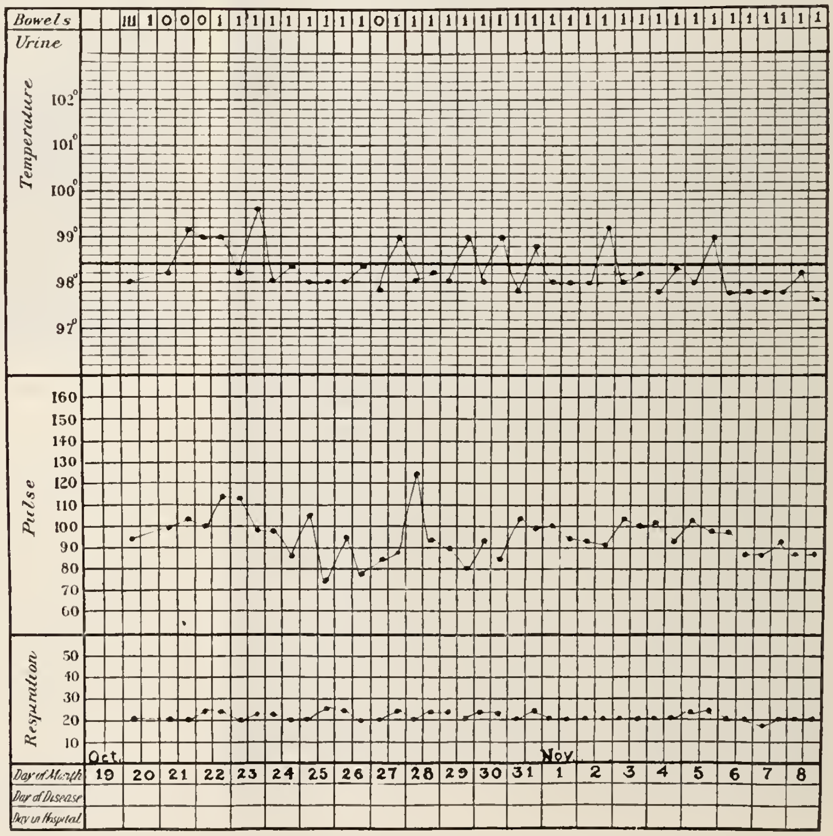

FIG. 10.—Chart, showing temperature, pulse, and respiration in Case R. M.

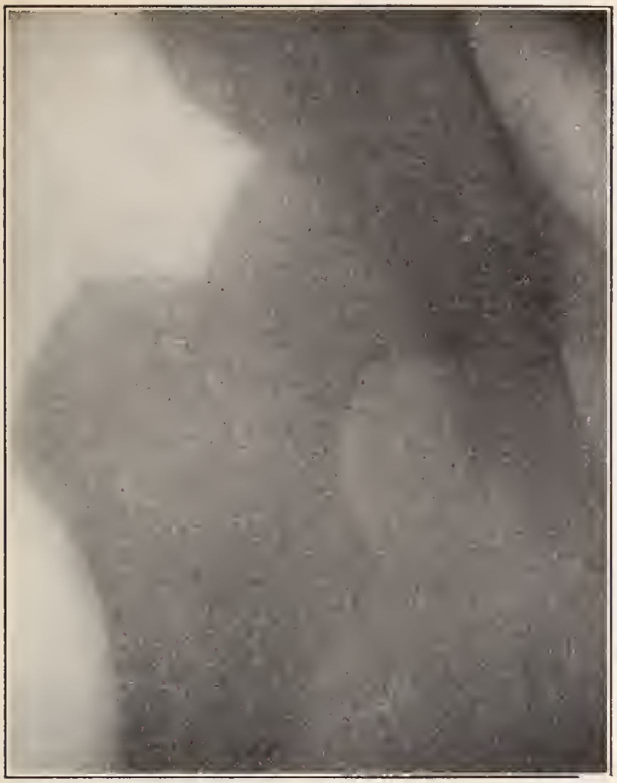

Fig. 11.—Case H. H. H. Normal hip.

The x rays and pictures of this case (Figs. 4 to 10) show the condition of the joints before and after the introduction of the wax.

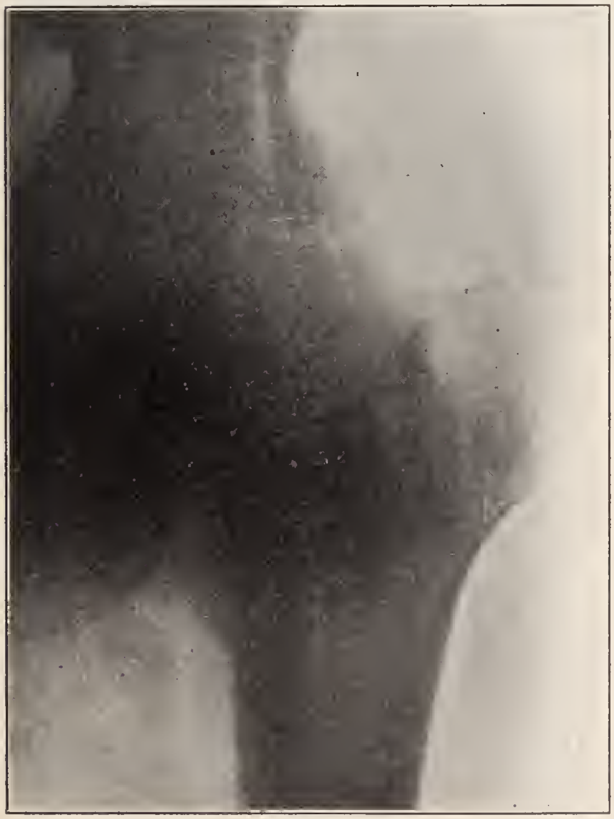

Fig. 12.—Case H. H. H. Traumatic ankylosis of right hip before operation; note the proximity of trochanter minor and ischium.

Operation V, November 15, 1911. H. H. H., man, aged thirty-five years, had traumatic ankylosis of right hip of eleven years' duration (see Figs. 11, 12, and 13). The family history and personal history of this patient were negative in relation to his ailment. The traumatic history was incident to his occupation of consulting electrical engineer, as he had .had two injuries to the same hip joint, one dating back eleven years, when a large piece of pipe fell in a building, striking him on the right trochanter and producing an impacted fracture and ankylosis for which he was treated in a hospital by traction in abduction for eight or ten weeks. The ankylosis hampered him in his work and the affected leg seemed a trifle longer and led to frequent stubbing of his toe, The second accident happened less than a year before the writer was consulted, and consisted of a fall from a building stage, of some fifteen feet, and striking on his right hip. On admission the leg was in full extension, but adducted 20° and there was an apparent shortening of 4 cm. and no motion in any direction. (The x ray picture made at this time, Fig. 12, shows the adducted position very well, as the trochanter minor is close to the tuberosity of the ischium and the crack in the head of the femur, as a result of the fall, is also shown. Comparison with the normal left hip, Fig. 11, makes this striking.) The patient was of a large frame and muscular type, and it was concluded that the anterior incision was preferable. Under ether anesthesia after a skin incision of 21 cm. extending vertically downward from the anterior superior spine, the tensor vaginæ femoris and gluteus medius were retracted outward and the sartorius and biceps retracted inward, and this gave a clear view of the capsule and neck of the femur. With an osteotome and large gouge, after incision of the thickened capsule was made on its anterior aspect, the femoral head was separated from the acetabulum, as close to the latter as possible, and the head rounded. The acetabulum was deepened as much as possible with curettes. Yellow wax, 1, and lanolin, 5, were injected, the capsule was sewed with three interrupted catgut sutures and the skin wound with continuous subcuticular silver wire. The healing of the wound was uninterrupted. A plaster spica to the toes was used for ten days and traction for a month. Three months after the operation the patient had voluntary flexion, 75°; abduction, 45°; adduction, 30°; outward rotation, 45°; inward rotation 45°. There were no adhesions and no shortening. Fig. 13 shows this re-

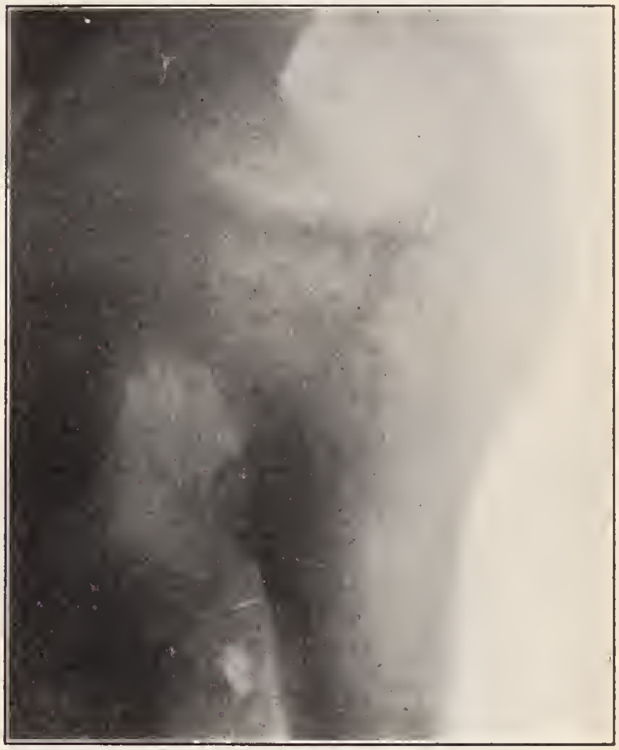

Fig. 13.—Case H. H. H. Traumatic ankylosis of right hip after operation; note new joint and separation of trochanter minor and ischium. Flexion 75 degrees. Adduction and abduction 45 degrees.

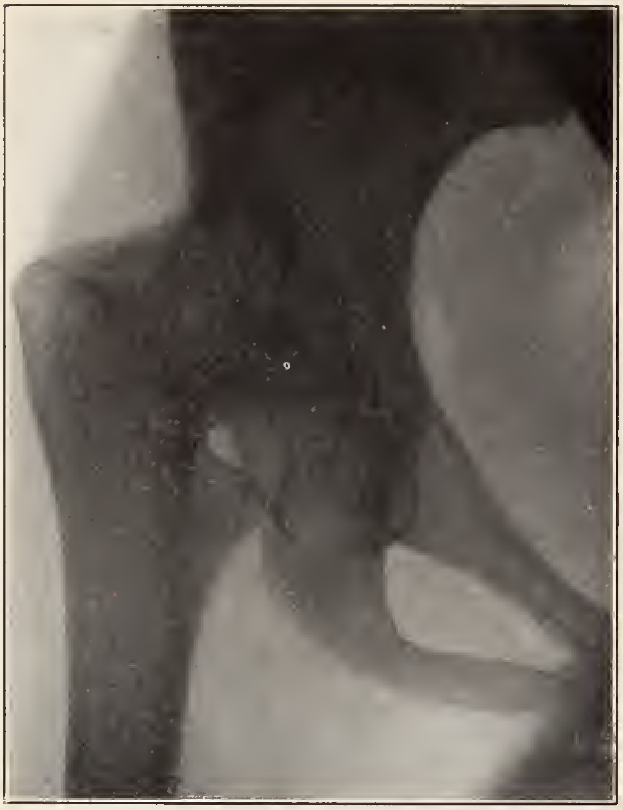

FIG. 14.—Case M. E. Tuberculous ankylosis of hip; position of flexion, 30 degrees; no motion; adduction, 20 degrees.

sult well, with the increased distance of the trochanter minor from the ischial tuberosity and the line between the femoral head and neck and new formed acetabulum.

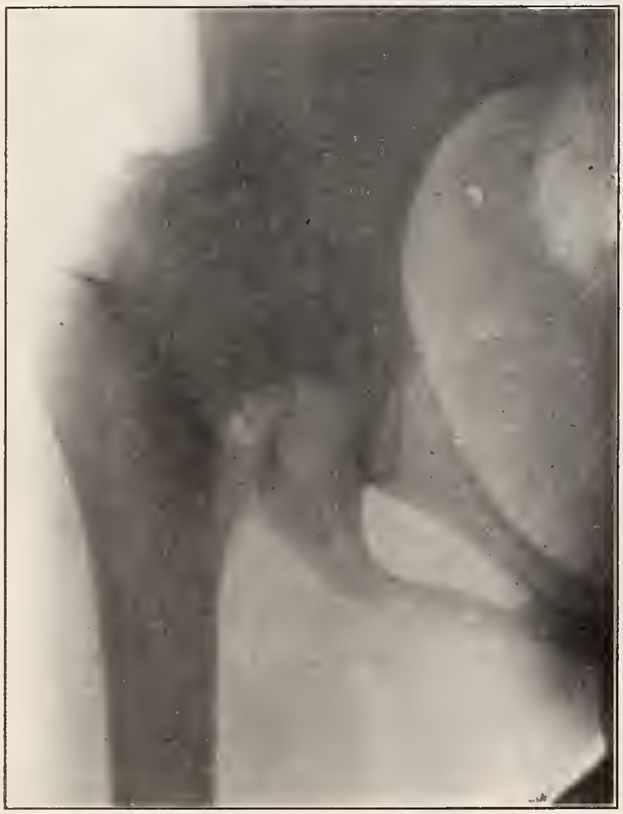

FIG. 15.—Case M. E. Tuberculous ankylosis of hip, after operation. Motion, flexion 45 degrees.

OPERATION VI. M. E., girl, aged fourteen years, had tuberculous ankylosis of the left hip, of six years' duration. There had been no acute symptoms for three years. Family history was negative with the exception of her father, who had died of pulmonary tuberculosis. Personal history: The patient had had the usual milder exanthemata of childhood and only slight traumatisms which could have been remotely related in a causative capacity with the hip disease. When eight years old the left hip became painful, an abscess developed, and for three years the patient was off and on in various hospitals and summer homes for treatment, which consisted of bed traction, the use of traction splints and spicas. The patient on admission was a tall, thin girl with fair color, showing an extreme limp from the ankylosis of the left hip in a malposition. There was an apparent shortening of 12 cm. and the thigh was held in 30° of flexion and 20° of adduction. No motion in any direction. Under ether anesthesia (Feb. 19, 1912) the posterolateral incision was used, the curved lateral incision extending through the skin about 21 cm. from the anterior superior spine to the trochanter and then down the shaft of the bone and at its mid point a posterior incision about 10 cm. directly backward. Some fibres of the gluteus medius were cut and the other muscles, being retracted forward, gave a good view of the femoral neck and the remains of the head. With osteotome and gouge the ankylosis was cut through and head and acetabulum shaped, after which yellow wax, 1, and lanolin, 5, were injected at about 125° F. After the deformity was overcome, the leg—as in Operation V—was put straight in a plaster of Paris spica at first and traction used later. The healing was uninterrupted and the result, five months after the operation, was: Right leg, 84 cm.; left leg, 83 cm.; motion in voluntary flexion, 45°; rotation in and out, 25°; no adhesions can be made out and the malpositions in flexion and adduction are overcome. (See x ray pictures and photographs, Figs. 14 to 17.)

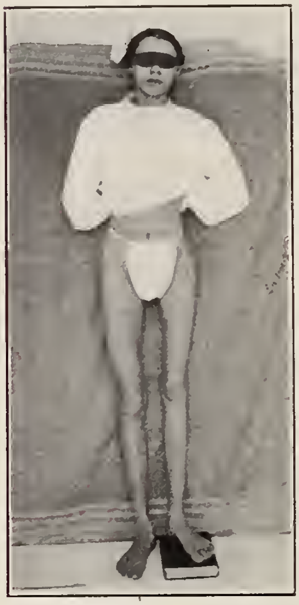

FIG. 16.—Case M. E. Result of operation, legs parallel; no position of flexion or adduction.

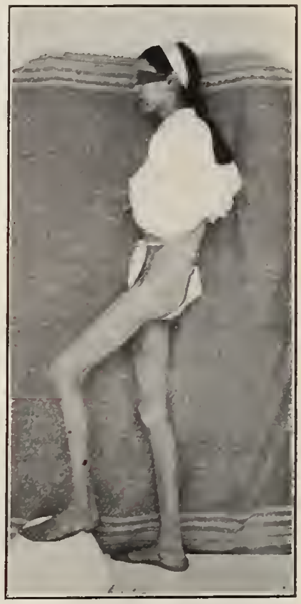

FIG. 17.—Case M. E. Motion in flexion 45 degrees.

This operation was undertaken in this case in preference to the usual Gant's subtrochanteric osteotomy for the relief of the deformity and shortening with the hope of helping the motion somewhat, also.

OPERATION VII. E. W., boy, aged six years, had on admission firm ankylosis of the right hip, following tuberculosis. The disease dated back three years and there had been no acute symptoms for one year. The thigh was held at 90° with the body and there was no motion, and extreme limp forced the patient to stoop forward until the

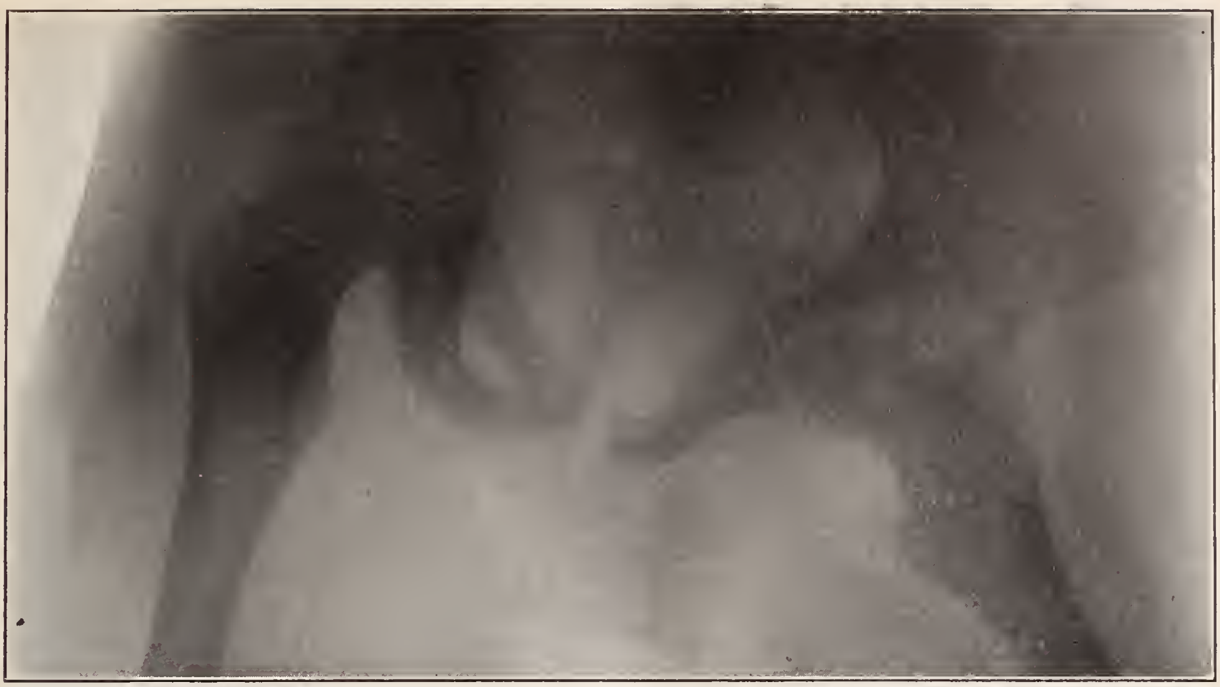

FIG. 18.—Case VII, E. W. Tuberculous ankylosis of hip, before operation.

body was parallel with the floor at each step attempted with the right leg. There was some 45° also of fixed abduction.

The family and personal history had little bearing on this case. The child had been treated elsewhere by spicas in abduction. February 19, 1912, a posterolateral incision was employed and this patient was treated as the one in Operation VI, with the exception that no amount of bone that could be avoided was removed from the femoral head for fear of interfering further with the epiphyseal growth.

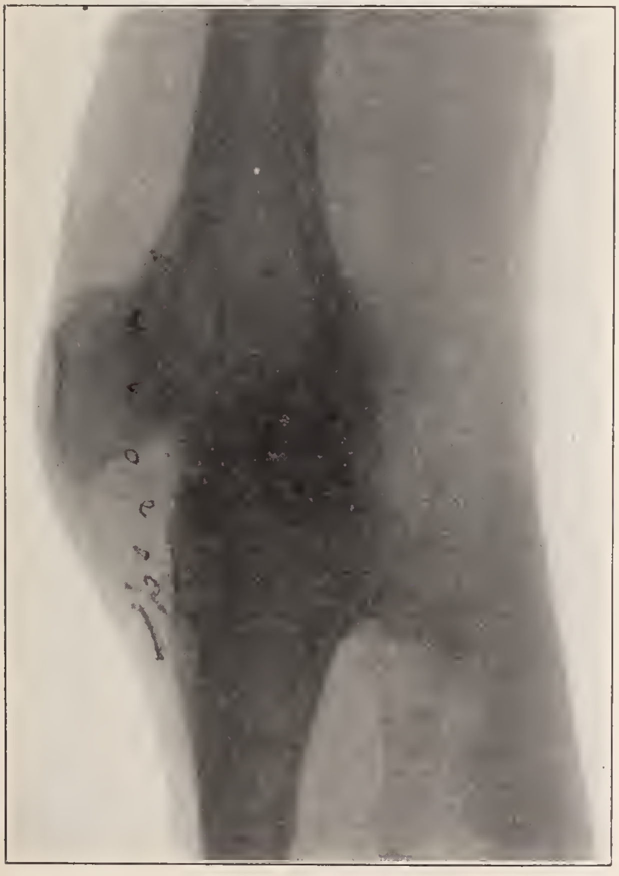

FIG. 19.—Case VIII, W. K. Tuberculous ankylosis of knee, after erasion, before operation for arthrolysis.

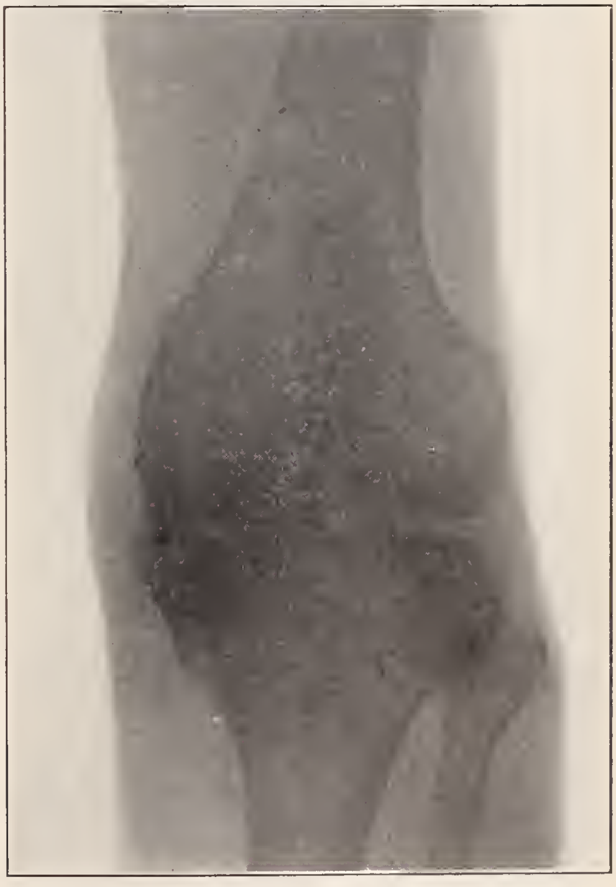

FIG 20.—Case VIII, W. K. Tuberculous ankylosis of knee, after erasion, before operation for arthrolysis.

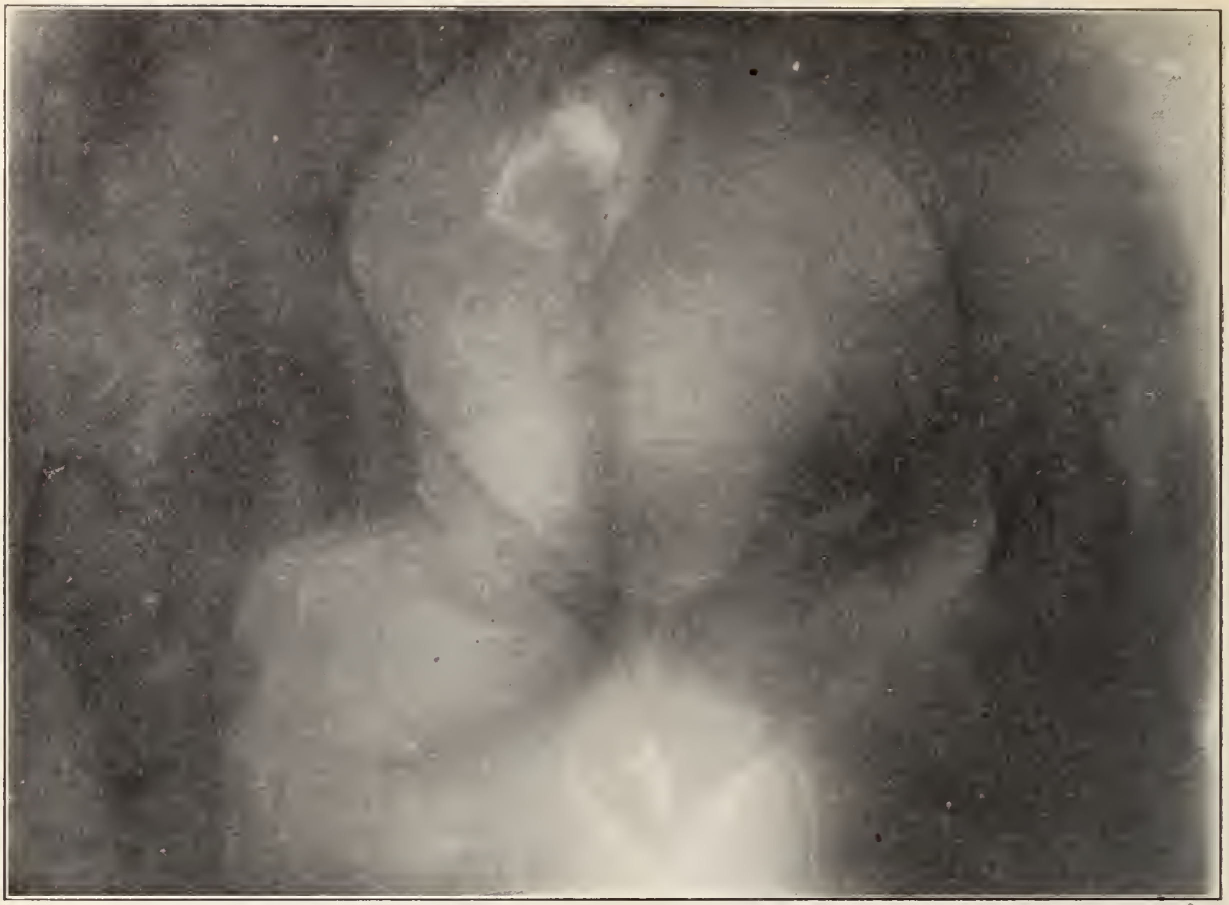

Fig. 21.—Case M. K. Tuberculous ankylosis of the hip before operation. No motion. Position of flexion, 45 degrees; position of adduction, 30 degrees; result, motion, 60 degrees flexion.

The arthrolytic wax was used as in the last case and the same aftertreatment employed. The abduction and 60° of the flexion was overcome and this correction persisted. Six months after the operation there was 20° of motion in flexion with no reformation of adhesions. This patient will be kept under observation and further efforts made to improve motion and correct the remaining position of flexion of 30° in this very unfavorable case. (See x ray photograph, Fig. 18.)

Operation VIII. This was undertaken February 7, 1912, on a man, W. K., aged nineteen years, who had had a tuberculous ankylosis of the right knee in full extension for six years, the knee trouble dating back ten years, only in the first four of which did he have acute symptoms. His mother died of phthisis, otherwise his family and personal history was negative. He was a well nourished young man with good color. His knee, prior to admission for the restoration of mobility, had been treated in years gone by, by traction and fixation in plaster casts and also by an erasion the scars of which operation were visible on each side of the patella, as were the buried silver sutures in the capsule shown in the x rays picture. Under ether the old incisions were opened and much fibrous tissue was found which was dissected away with the exception of the lateral ligaments. The patella was chiseled free and the tibia and femur were cut apart. Owing to the change in shape from flattening of the ends of these large bones, it was not possible, without extensive articular destruction, to get more than 30° of motion at the time of the operation and from fear of rekindling the tuberculous process. The wax lanolin mixture, 1 to 5, was used and three months after the patient had 20° of flexion with no recurrence of ankylosis between the patella and femur or femur and tibia, but with some leakage of wax through the inner incision. (X rays, Figs. 19 and 20.)

Operation IX. M. K., girl, aged eighteen years, had had tuberculous ankylosis of right hip, of eight years' duration. Her hip trouble was thought by her family to have followed antitoxine injection for an attack of diphtheria, as a child. Her family and personal history was negative otherwise, and her physical examination showed an apparently normal girl other than the affected hip.

On admission, the position of flexion of the right hip was 60°; right leg was 87.5 cm. and left leg 93. cm. Apparent length measured from the umbilicus, right leg 96.

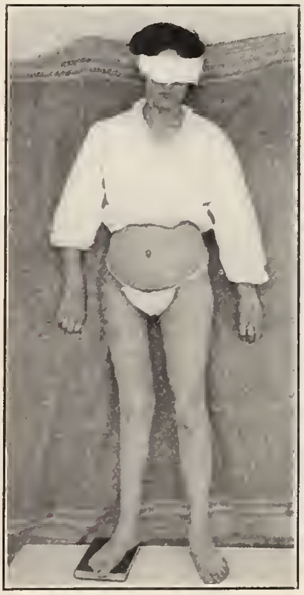

Fig. 22.—Case M. K., after operation, front view.

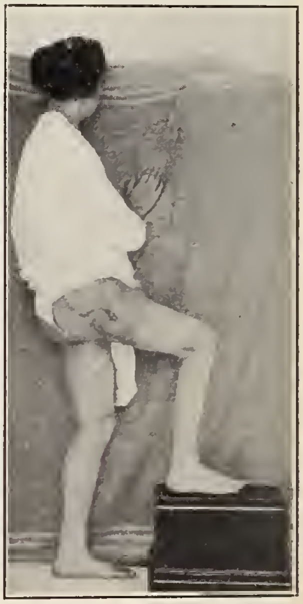

Fig. 23.—Case M. K., after operation, lateral view.

cm. and left leg 104. cm. Distance between anterior spines 27 cm. Right leg apparently adducted 30°. Right trochanter 4.5 cm. above Nelaton's Line.

November 4, 1912, under ether, an incision was made four cm. posterior to the anterior superior spine, extending in a curve down the thigh, convex posteriorly, for a distance of fifteen cm. and extending through the adipose tissue to the gluteal muscles. A posterior incision was made from the mid point of the lateral incision, extending downward and backward five cm., exposing the gluteal muscles. The fibres of the gluteus maximus and medius were separated, exposing the great trochanter. The top of this bone was chiseled off, exposing the neck of the femur. About one fourth of the head of the femur was resected, removing with a curette a considerable amount of osteoporotic bone. After this the acetabulum was smoothed with a curette. This allowed free motion of the ankylosed joint in all directions. The cavity was swabbed out dry and a mixture of paste, containing lanolin, 3 parts, and beeswax, 1 part, was injected. The capsule was closed with silk sutures. The great trochanter was fastened in place with silver wire. A silver foil dressing was applied, and the patient returned from the operating room in good condition.

Four months after, position of flexion was 0°; position of adduction, 10°; motion, 60° in flexion. (Figs. 21, 22, and 23.) There was some leakage of wax, which was too hard.

In subsequent operations to be reported later, it was found that patients do better with softer wax mixtures in the proportion of one of wax to ten of fat.

2000 Maryland Avenue.

THE CARE OF THE TUBERCULOUS EMPLOYEES BY THE CORPORATIONS AS EMPLOYERS.

By Alvah H. Doty, M. D.,
New York.

Those who are engaged in welfare work and in the advancement of preventive measures, and who have learned the importance of the early detection of tuberculosis, not only for the purpose of securing prompt treatment for those who are infected, but also to prevent the extension of this disease, are confronted with the very limited means provided by the various States and municipalities for the care of these patients. Even where public sanatoriums exist, the number of patients waiting to enter is so large that it is practically impossible to secure a reasonably early admission to these institutions. As a result, only a comparatively small number of applicants are able to obtain the benefits of early treatment, which is so essential to the recovery of the patient.

The most effective and certain means of eliminating tuberculosis is by isolation. There are numerous measures, it is true, which, if carried out at home, will aid in the recovery of the patient and diminish the danger of infection. But the class of people that constitute the greatest menace to the public health are those who live in restricted quarters where overcrowding and bad sanitation exist, and whose very limited income calls for the most rigid economy; besides, they have conditions to deal with which, from their standpoint, take precedence over matters relating to individual or public health. Therefore, under these circumstances, preventive measures receive but little attention, except through the persistent efforts of the welfare worker. In numerous instances the tuberculous patient may be one upon whom the family depends for support, and therefore cannot afford to give up his work in order to secure the benefits which a sanatorium extends. Still, there are many who are willing to supply financial help, and render in various ways substantial aid in saving the lives of these people, if proper facilities are provided for their care and treatment.

Institutions for the care and treatment of tuberculosis should, so far as practicable, be under State or municipal control, for, aside from the responsibility which the public must assume in protecting against this disease, this policy insures modern and uniform treatment and better discipline, and even though the service may not in all instances be free from expense to the patient, it is in any event reduced to the minimum. The inadequacy of the measures provided for the care and treatment of tuberculosis throughout the country is not by any means due to indifference on the part of the medical profession, and particularly health officials, who have labored long and earnestly to secure more satisfactory results in this direction, but is due chiefly to the lack of State and municipal appropriations for this purpose, and no one, who has had any practical experience in this direction, doubts that this condition will continue indefinitely, and that if further progress is made it must come largely through outside aid.

In recent years the crusade against tuberculosis has been practical and effective, and various companies and corporations, which have large numbers of employees under their direction, have been called upon to extend aid in this important work, and to closely observe their employees, in order that cases of tuberculosis may be early detected. There has been a very general and satisfactory response to this on the part of the employer, but he very pertinently asks, What shall be done with the cases of tuberculosis after they have been discovered? To this public health officials make no satisfactory answer, because they cannot furnish sufficient facilities for this purpose. This situation will not encourage employers in carrying out preventive measures. It cannot be expected that, in addition to other welfare work, they shall also build sanatoriums for the care of their employees who suffer from tuberculosis, when it is largely the duty of the State and municipal authorities to take care of these patients, as it is with other infectious or communicable diseases. Even if employers were willing to do this, it would result in the establishment of many private institutions, both good and bad, and with various methods of treatment and questionable discipline; furthermore, it would give rise to all sorts of criticism, and would be a constant source of worry to those who were responsible for their erection and maintenance.

I believe that the most important factor to bear in mind in connection with this subject, is that the elimination of tuberculosis depends chiefly upon isolation, and that so far as possible or practicable we should work in this direction. Even though incipient cases may not generally act as a medium of infection, it is very difficult to decide when the danger line is reached. The fact remains that if more extended facilities were provided for the care and treatment of tuberculosis many more lives would be saved.

It would seem that under the circumstances presented the most practical and economical means of securing additional accommodations for the isolation and care of tuberculous patients, would be to allow individual companies, or corporations, to erect and equip, on the grounds of the State or municipal sanatoriums, cottages, or small buildings capable, for instance, of holding eight or ten patients, similar in construction and appearance to those already in use, or modified as the State or municipal authorities might direct, and solely for the care of employees of such individuals, companies, or corporations; *provided that the employees were also residents of the municipality or State supporting the sanatorium in question, and therefore equally eligible with others for admission whenever a vacancy should occur.* The advantage secured under this plan consists in the certainty with which the beneficiaries may promptly enter the sanatorium, without remaining indefinitely on the waiting list. Furthermore, this in no way interferes with the admission of others who are applicants for care and treatment in the said institution through the ordinary channels. Neither the individual or the company constructing these buildings, or the employees occupying them, should be entitled to receive any additional privileges, or a voice in the management of the institution. The patients sent in by the company would be under the same discipline and jurisdiction as those entering in the ordinary way. It would simply mean that those who were selected for treatment in the companies' buildings would secure prompt admission.

As these employees would also be eligible to admission to the institution on account of their residence, there would seem to be no just reason why any special charge should be made for their maintenance, provided the general service were free. Still it is not improbable that if it were required, those erecting the cottages would be willing to pay the estimated cost of the food supplied their employees, which would probably not be more than four or five dollars a week, and probably less. The comparatively small increase in the expense of the administration under this plan should very properly be borne by the sanatorium itself, for its usefulness as a public institution would be increased.

The advantage of this plan, so far as the State or municipality is concerned, consists in providing increased facilities at a much diminished per capita cost. For the employer it secures the advantage of a sanatorium for the prompt care of those in whom he is particularly interested, without the annoyance or expense of an administrative department, in the way of physicians, nurses, etc. A modest cottage or building for this purpose could probably be constructed and equipped for from $150 to $200 a bed, and the only maintenance charge, if any, would be that for the food already referred to. Furthermore, when no patients were under treatment there would be little or no expense involved. I believe this plan to be entirely practicable, and that it would bring about a closer relationship between the public and the employer. Moreover, by stimulating cooperation in this important matter it would lead to more far reaching results in the prevention of tuberculosis. There might be some slight technical legal objection to this plan on the part of municipal or State governments, but these could undoubtedly be removed by legislation if not in a more simple way.

66 West Fifty-eighth Street.

THE PHILOSOPHY OF PREVENTIVE MEDICINE.

By Alfred C. Reed, M. D.,
New York.

Few persons of intelligence would brave without concern the dangers of a smallpox or yellow fever camp. No one who has helplessly watched the death agonies that diphtheria forces on its victims will heedlessly expose himself to a similar peril. The hazards of pneumonia and typhoid are not to be lightly met by one who realizes how perfect is the title of each to the appellation, "the captain of the men of death." Even the disease to which John Bunyan first attached this appellation, tuberculosis, is worthy of severe respect from one who risks the chance of contracting it.

So we could go on through the list of those terrible enemies of humankind whose deadly menace we too often disregard or even scorn—until their venomous fangs strike near us. To see our own dear ones in the clutches of some disease monster, fighting ever so bravely a losing fight for mere life, for air to breathe, for existence itself—this tears to rags our smug assurance that disease is in the thought alone that pictures it. We come sharply to dagger's point with brutally naked reality. We appreciate that the primeval instincts of man are true. We know that some terrible force or energy or mind, terrible in its inexorable pursuit of cause with effect, inexorable in its obedience to some absolute law—we know that some such power has been set in operation by some cause which we may but imperfectly understand.

Such knowledge brings with it also the knowledge that, if we would control the operation of the great laws of Nature as they express themselves in disease, we must work in accord with those laws. We must understand the processes of disease, and so look for its secret sources and springs. We must learn to avoid setting in motion processes which will work out disastrously, and instead initiate processes and conditions whose unfolding and development will be beneficent and constructive.

Here is the philosophical location and function of the science of preventive medicine epitomized: Learn the natural history of disease, then for the conditions originating and favoring disease substitute conditions hostile to the seeds of disease and fostering the vitality of health. That is the science of preventive medicine. All the brave heroes who have paid with their lives for some advance in our knowledge of the natural history and favoring environment of disease, were soldiers under the white flag of health. The enemy has sadly torn the battalions of this peaceful army, but the ranks are closed up and the fight never falters.

McClintic swept clean the Bitter Root Valley of spotted fever. What matter that his own was the last fatal case of the disease last summer in Montana? Carter, Lazear, Agramonte, Carroll, and Reed fought yellow fever in its stronghold and conquered it. Of what moment is it that three of them succumbed? Their work was glorious and their work will endure. What though the artificer fall, if he hath reared a structure worthy and fit, if through his work life is made safer, the world made cleaner?

Preventive medicine can be labelled and classified and put in pigeonholes. One of these is the prevention of communicable and epidemic diseases. One is the elimination of disease producing features from industries. One is the prevention of infant mortality. One is persuading people to live sanely and hygienically, in order to avoid premature senescence and decay. Another is teaching healthful sanitation, hygienic personal habits, and regard for the welfare of one's fellows. A very large pigeonhole is devoted to mental hygiene, and the maintenance of peace and poise of mind, preventing insanity, worry, morbid thinking, and despondency. All of them help us to reach a graceful, satisfying, and increasing old age, and prepare us systematically to enter with a calm and happy anticipation on our last slow pilgrimage.

Preventive medicine has this ideal, too, a eugenic ideal, of making each generation better than its predecessor, of racial and national development, of man's improvement measured in centuries. The motto of this ideal is education. Education in the principles of preventive medicine does not mean the mental accumulation of a conglomerate mass of details. It means an increasing and growing ability to live a clean physical and mental life, unconsciously and unhesitatingly obeying the simple rules of health. Knowledge of personal hygiene must become ingrained, instinctive, intuitive. It must regulate a man's conduct, not as an arbitrary restriction from without, but as an intrinsic desire for health and happiness.

There is one feature of preventive medicine of very recent growth which already is deserving of first rank in the attention of those interested in social betterment from any standpoint. This is the field of mental hygiene, a new science which seeks to control and prevent the present alarming increase of insanity and mental disorders of all sorts. A large propertion of insanities is due to well understood and entirely preventable causes. Insanity itself of whatever form is a disease, with as individual and distinct an entity as typhoid fever or tuberculosis. To do away with preventable insanity, to standardize and improve the care and treatment of the insane, and to foster eugenic principles of preventing the reproduction of the mentally unsound is the heroic burden of the national movement for mental hygiene.

The national committee of this movement has its headquarters in New York and its field activities directed by Dr. T. W. Salmon. It is hoped that soon each State will have an organization similar to the present Connecticut State committee. The work for New York State and city is being conducted by the committee on mental hygiene of the State Charities Aid Association. The mental hygiene movement is attempting with great success to meet the national need, by a campaign of education in the nature, cause, and prevention of insanity, urging earlier skilled treatment and advice for all mental patients, and furnishing preventive social service to persons threatened with or actually suffering from mental collapse.

The formal sanitarian and constituted public health officer must take the lead in securing public measures and legislation favoring better public health. It is his function to make detailed intensive investigation into the causes of disease, and from the standpoint of an expert to advise measures for its eradication and prevention. He must protect the intelligent and reasoning minority from the blind prejudice, ignorance, and indifference of the unthoughtful and careless majority. He must do this by the medium of education, since knowledge is the best remedy for narrowness, vice, social wrong, and preventable disease.

The concept of preventive medicine had its roots in the origin of society. One man alone needs no science of preventive medicine. Neither has he social relations or obligations. The development of society and relations between man and man brought at first mutual antagonisms, and the remedy for these was found in organization and social cooperation. This meant the elevation of the common or general welfare above individual and personal interests. Such an ideal, at first not consciously realized, was operative in respect to tribal or national self protection, in respect to the dealings of exchange and commerce, was evident in the development of religious conceptions, and laid the foundations for the modern dogma and science of public health and preventive medicine.

By the fourteenth century this slowly unfolding idea of public health protection suddenly leaped into prominence, strangely enough not as an altruistic social measure, but purely for commercial reasons. The prosperous Milanese and Lombardians of this period owed their affluence to the great Italian commerce with the Levant, but their vessels from the East had brought them also that dread visitor, the black plague. At first, persons having the disease were left alone in large fields to live or die by themselves. Death and confiscation of property penalized disobedience to the law which required this. In 1475, a Venetian sanitary council of three nobles was charged with the direct responsibility of preventing the entrance of epidemic diseases. Persons ill, or coming from infected ports, were then detained in lazarettos for forty days (*quarante diei*), whence came quarantine, and our splendid modern quarantine system. Quarantine, which thus sprang from an almost latent public health sense, has now become a humane and efficient instrument for preventing the spread of contagious disease. The Venetians regarded it as a means toward fostering commerce. We are coming to regard it as a social duty, necessary for the health and happiness of the community.

Some new term should be constructed to include all that belongs to the science of preventive medicine. The name is itself a misnomer. Too often are its principles criticised, only because the meaning of the word is not comprehended. Nothing narrow will do; nor will a name suffice that does not sweep into its signification every agency and influence which contributes to man's uplift, to his moral, ethical, and esthetic development, as well as to his intellectual and physical perfection, for *that* is the goal of preventive medicine.

358 WEST TWENTY-NINTH STREET.

HOSPITAL URANALYSIS.*

Methods for the Rapid and Accurate Examination of Large Numbers of Urine Specimens in Routine Hospital Work.

By VICTOR C. MYERS, M. A., Ph. D.,
New York,
Professor of Pathological Chemistry, Post-Graduate Medical School and Hospital.

For nearly two years, we have satisfactorily employed methods for the routine examination of a large series of morning urine, averaging forty to fifty specimens and amounting in certain instances to a hundred samples a day. These methods, we believe, have greatly aided in the rapidity with which the examinations could be made, without sacrificing the accuracy of any of the tests employed.

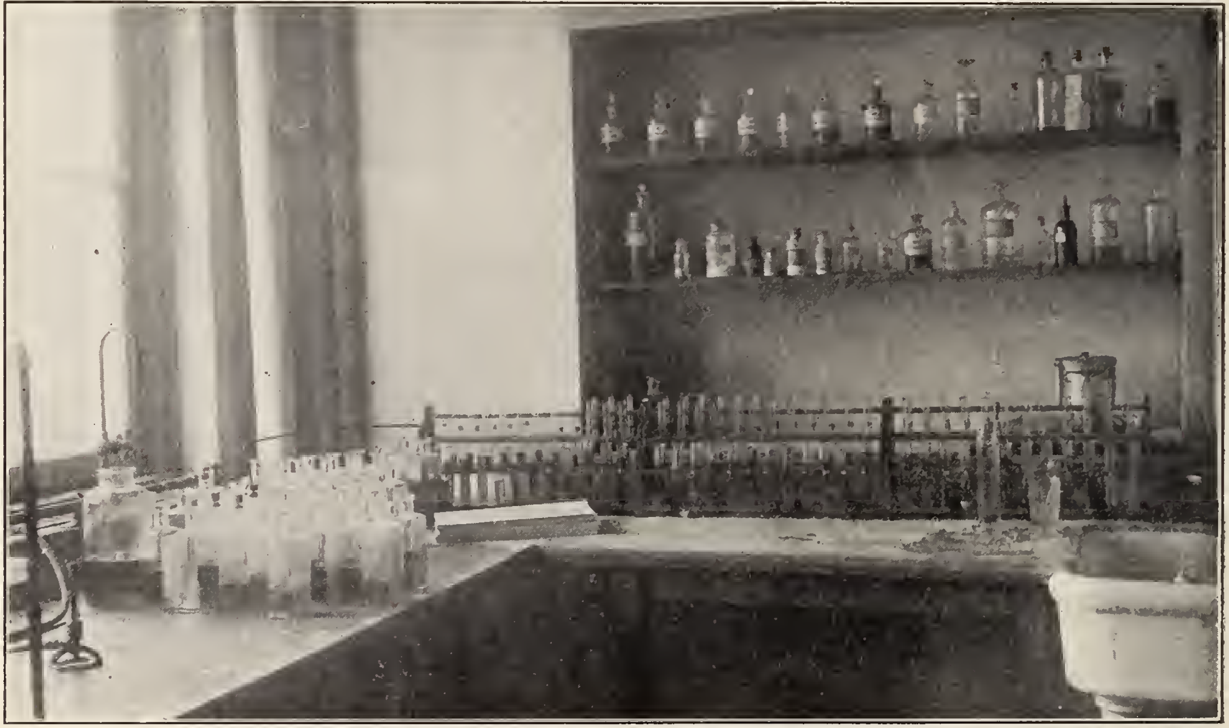

FIG. 1.—Showing test tube racks and carrying box used for collection of specimens of urine.

Collection of specimens. Each ward in the hospital is provided with a carrying box (Figs. 1 and 2) arranged to hold fourteen uniform twelve ounce bottles. With these, the various specimens are brought to the laboratory at 7 a. m., and arranged in order according to wards, except that the specimens from patients for morning operation are set aside for first examination. The bottles bear a label with a blank space for the following items: Date, ward, name, amount in twenty-four hours, by catheter, rush for operation, and special requests. The urine of patients to undergo operation is labeled in red ink.

Arrangement of specimens. Upon beginning work, the interne having charge of the urine work arranges a series of report pads to correspond with the number of wards from which specimens have been received. A carbon sheet is inserted in each of these pads and the carbon copy kept on file in the laboratory office, according to ward and date.[1] After the specimen bottles are arranged in order according to the wards, the names of the patients and the twenty-four hour volumes,[2] if given, are recorded on the charts, numbered, and the large test tube (Figs. 1 and 2) in the rack having the corresponding number three fourths filled with urine. In this way, work may be begun on a large series of examples of urine without any confusion.

Special test tube rack. The racks as shown in Figs. 1 and 2 are arranged for three series of test tubes, the lower of which holds heavy tubes, one inch in diameter, in which observations of the color, reaction, and specific gravity are made, and from which samples of urine are taken for the tests for sugar and albumin, or other tests desired. The second series of tubes is employed for the qualitative sugar test, while the upper row is used for the albumin test.

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*This scheme comprised the demonstration of the Laboratory of Pathological Chemistry of the New York Post-Graduate Medical School and Hospital on November 12, 1912, to members of the Clinical Congress of Surgeons of North America.

[1] As soon as reports are finished they are at once sent to the laboratory office, and the original copies taken to the wards by the laboratory messenger, who makes the rounds of the wards at regular and frequent intervals to collect specimens and return reports. For emergency specimens, the messenger is on telephone call at any time during the day.

[2] When special quantitative determinations are desired, the whole twenty-four urine samples are sent to the laboratory in appropriate two and three litre bottles.

Color, reaction, specific gravity. After samples of the various specimens have been removed to the large tubes in the racks, the reaction is taken by tearing off small pieces of litmus paper and dropping in the whole series of tubes. When a specimen is observed to be alkaline, the tube is tipped by pulling the upper part of the tube outward. The color, reaction, and specific gravity are then recorded in the whole series of tubes, the color charted according to the Vogel scale, the reaction recorded as acid if the tube has not been tipped, otherwise alkaline, and the specific gravity taken with a urinometer in tube 1, carefully drained, and then placed in tube 2, etc. In this way, the volume, specific gravity, color, and reaction may be charted very rapidly.

Albumin and sugar. The cold nitric acid test is employed for albumin, and Benedict's test for sugar. One c. c. of concentrated nitric acid is poured in each of the upper series of test tubes and five c. c. of Benedict's qualitative solution in each of the middle series of tubes. A small bulbed pipette with a rough edge at the tip (simply a small unannealed glass tube) is taken and about one c. c. of urine in tube 1 drawn up, then inserted into the corresponding nitric acid tube to a point slightly above the urine, and gently allowed to flow out. In this way, a perfect stratification may be obtained very quickly without removing the tube from the rack and inclining.[3] At the same time about eight drops of the urine are added to the corresponding tube of Benedict's solution. After washing out the pipette with water in a cylinder conveniently placed, the operation is repeated in tube 2. When this operation has been carried out on the first twelve tubes, the results of the albumin test are recorded.[4] This will allow from three to five minutes, about the right length of time for the development of the ring in case only a trace of albumin is present. Upon completing the albumin tests, the tubes of Benedict's solution,[5] to which the urine has been added, are agitated and inserted in their numerical order in the numbered place in a special copper rack (Fig. 2). The tubes are then immersed below the level of the Benedict solution for two minutes in a bath of saturated calcium chloride,[6] which has just been brought to the boiling point, and the flame is removed. At the end of the two minutes, the rack is removed and the numbers are noted on any tubes which show a positive reaction. Record is made of these tubes in the charts and the other tubes are recorded negative. Where the qualitative tests have indicated much over a half per cent. of sugar, the amount is estimated quantitatively, either with Benedict's volumetric method or the polariscope.[7]

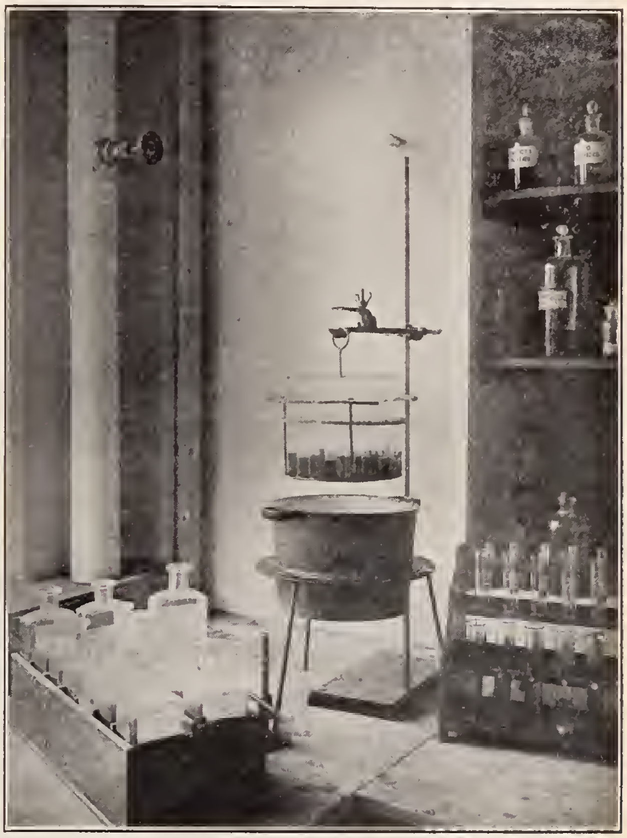

FIG. 2.—Showing special copper rack used in applying Benedict's test.

Acetone and diacetic acid. When sugar is present acetone and diacetic acid are routine tests.[8] Rothera's test for acetone is employed as follows: To five to ten c. c. of urine are added a gramme of ammonium sulphate and a few drops of freshly prepared aqueous sodium nitroprusside and then from two to three c. c. of strong ammonia. The presence of acetone is indicated by the development of a characteristic permanganate color. For diacetic acid the simple Gerhardt test is employed. This consists in the addition drop by drop of aqueous ferric chloride to five c. c. of the urine under examination, when in the presence of diacetic acid a Bordeaux red color develops. This color is sometimes masked by the precipitate of ferric phosphate, in which case this should be removed by filtration and more ferric chloride added.

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[3] For further details and other tests for albumin, see Myers and Fine: *Post-Graduate*, xxvii, p. 800, September, 1912. For the quantitative estimation of albumin, the Purdy method as here described is generally employed.

[4] Not infrequently, turbid urine is observed, in which case it is necessary to filter before applying the albumin test. If simple filtration through good filter paper does not accomplish clarification, this may be brought about by shaking with diatomaceous earth and again filtering.

[5] Benedict's qualitative solution deserves more than passing notice in this connection. It is a permanent single solution, about ten times as sensitive to sugar in urine as Fehling's or Haines's solutions, but, unlike these latter, it reduces less readily and is not appreciably affected by creatinin, uric acid, chloroform, or the simple aldehydes. Because of these properties it is necessary to boil the solution for from one to two minutes after adding the urine, rendering the test available for carrying out a series of tests as described. The appearance of a positive reaction is slightly different from the older copper solutions. When glucose is present, the entire body of the solution will be filled with a precipitate, which may be *red, yellow*, or *green* in color, depending upon the amount of sugar present. The solution is composed of 17.3 grammes of copper sulphate, 173 grammes of sodium citrate, and 100 grammes of anhydrous sodium carbonate (double the weight of the crystalline salt may be employed) made up to one litre with distilled water. In the preparation of the solution, the copper sulphate should be dissolved separately in about 100 to 150 c.c. of distilled water and then added slowly with constant stirring to a filtered solution (about 800 c.c.) of the other ingredients and finally made up to one litre. For further discussion of the test, the following references may be consulted: Benedict: *Journal of Biological Chemistry*, v, p. 485, 1909; *Journal of the American Medical Association*, lvii, p. 1193, 1911; Myers: *Münchener medizinische Wochenschrift*, lix, p. 1494, 1912; Myers and Fine: *Post-Graduate*, xxvii, p. 912, 1912; Hawk: *Practical Physiological Chemistry*, fourth edition, p. 328, Philadelphia, 1912.

[6] Dr. Jonathan Wright, director of the laboratories, urged that to save time we devise some scheme by which it would be unnecessary to boil the sugar tests singly, and suggested that a saturated salt solution might give the desired temperature. Upon this suggestion, the foregoing method was devised.

[7] For discussion of clinical methods of accurately estimating sugar, see Myers: *Münchener medizinische Wochenschrift*, lix, p. 1494, 1912. Benedict's volumetric method is very simple, requires no expensive apparatus, is rapid, and, as we have found, very accurate. Description of methods is given by Myers and Fine. *Post-Graduate*, xxvii, p. 914, 1912.

[8] The tests we employ are further described by Myers and Fine: *Post-Graduate*, xxvii, p. 1135, December, 1912.

The degree of acidosis, if present, may be simply determined by the estimation of the ammonia by the formaldehyde titration method.[9]

Charting of qualitative tests. For the sake of uniformity, all qualitative reactions, albumin, sugar, acetone, diacetic acid, indican, etc., are described as follows: *faint trace* (albumin), *trace, small amount, moderate amount, large amount, very large amount.*

Microscopical examination. When the chemical tests have been completed and recorded, the sediments in the specimen bottles of urines 1 and 2 are poured into two centrifuge tubes, appropriately marked and centrifuged for a couple of minutes, whereupon the supernatant urine is poured off and the sediment spread over slides of double width and examined under the microscope with low power objective, high power eye piece, and greatly reduced light. While the sediments of urines 1 and 2 are being examined and recorded, 3 and 4 are being centrifuged, etc. The following terms are employed to apply to both organized and crystalline sediments and to give a good idea of the relative abundance of the constituents reported: *an occasional* hyaline cast, *a few* uric acid crystals, *a moderate number* of pus cells, *many* finely granular casts, *very many* calcium oxalate crystals.

The ward reports give the attending physician at a glance the condition of the urine of the various patients of the ward upon which the routine examinations have been made. They are subsequently copied in the individual case histories.

DEPARTMENT OF LABORATORIES.

ENCHONDROMA OF THE SCAPULA.*

By WILLIAM D. MININGHAM, M. D.,
Newark, N. J.

Because of the extreme rarity of large enchondromata of the scapula, this case is of sufficient interest for publication.

CASE. The patient, R. T., male, aged twenty-five years, was referred to me in October, 1912, with the following history: Twenty years ago a growth appeared on the dorsal surface of the right scapula. The tumor was painless and grew slowly until two years ago, since which time the patient thought it had been stationary. Upward and backward movements of the arm were restricted. For ten months there had been a deep ulcer on the most posterior portion of the tumor, which showed no tendency to heal under treatment. Examination showed a large hard nodular mass, the base of which extended over the entire length of the scapula and laterally from the vertebral border to the neck of the bone. The overhanging portions projected well beyond these limits. The weight of the tumor produced a lateral curvature of the spine and a marked depression of the right shoulder. He had been exhibited many times before medical societies as inoperable, and was rejected from three hospitals.

In view of these facts I naturally hesitated about operating. Dr. Edward J. Ill gladly consented to see the patient, and he strongly advised me to excise the whole mass, leaving just enough of the scapula, if healthy, to preserve the shoulder joint. Doctor Ill also very kindly assisted me with the operation at St. Barnabas Hospital, and to him I give all credit for a happy outcome.

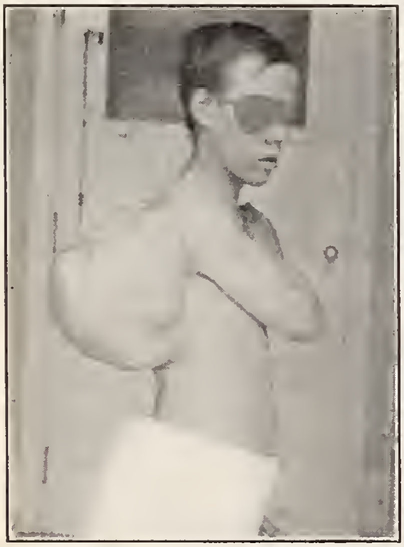

FIG. 1.—Left lateral view of patient.

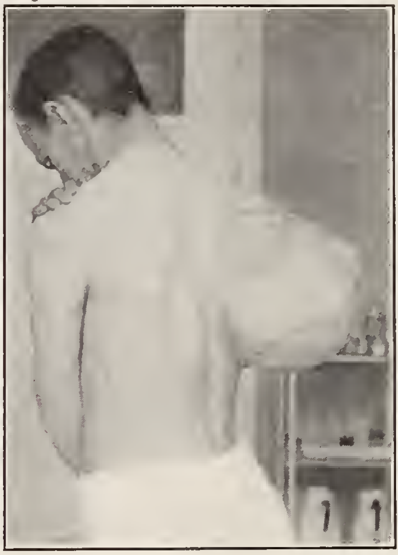

FIG. 2.—Right lateral view of patient.

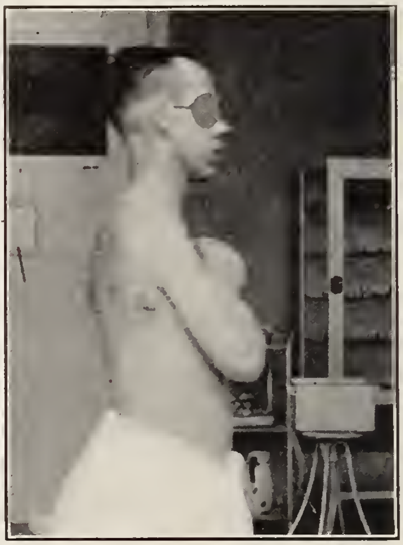

FIG. 3.—Patient two weeks after operation.

OPERATION.

An elliptical incision was made around the tumor (roughly estimating a sufficient amount of skin to cover the raw area) and the skin dissected well backward around the base. By means of a Zweifel ligature carrier, a silk thread having a Gigli saw attached was drawn under the neck of the scapula. The bone was then easily sawed through. This procedure mobilized the entire mass, which was then separated from above downward without any difficulty. Many muscles had to be severed and hemorrhage was sharp for a moment, but easily controlled. The subscapularis muscle was then sutured over the remaining portion of the scapula and the skin wound was closed.

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[9] For technic see Myers and Fine: *Post-Graduate*, xxvii, pp. 712 and 1133, 1912.

*Reported before the Surgical Section, Academy of Medicine of Northern New Jersey, December 17, 1912.

Healing by primary union was complete in ten days. The tumor weighed seventeen pounds. Dr. Harrison S. Martland reported the tumor to be an enchondroma, showing extensive deposits of lime salts. Dr. Charles F. Baker made some excellent x ray plates of the case, and I herewith wish to express my thanks.

The patient is now perfectly well, and since the operation he has been employed as a carpenter and driver of a delivery wagon. All movements of the right arm are good, except motion in a backward direction and abduction in a straight line.

448 High Street.

PYLOROSPASM WITH GASTRIC TETANY,

Cured by Gastroenterostomy.

By Robert L. Pitfield, M. D.,
Philadelphia,
Physician to St. Timothy's and Chestnut Hill Hospitals.

Case. Mrs. C., married, thirty-five years of age, and mother of two children, had been invalided by a curious recurring nervous disorder which had been increasing in severity during the year previous to her coming under observation. Always since a little girl had she been a sufferer from indigestion, and she remembered while a small child, descending to her father's apothecary shop from her bedroom for something to relieve her.

At one time she was quite fat, weighing over 180 pounds; but after two abdominal operations, one for the removal of her myomatous uterus, and another for a thickened appendix, she began to lose weight, and nervous spasms of her muscles developed. Superficially there were several things about these attacks to make her surgical attendant think that they were manifestations of hysteria; and associated with them there was recurrent vomiting, occurring after most of her meals. Sometimes she would empty her stomach after dinner, only to eat more and then have to vomit again. From this cause she became emaciated, and her weight was reduced to eighty-two pounds; her skin became muddy; acne covered her face, and at times her lips would become livid.

During her nervous attacks there were several regular features occurring each time; the arms and legs became overextended, her feet assumed the position of talipes equinus and were abducted; the fingers of each hand were thrust straight out, and her thumbs were drawn strongly across the palms of her hands—the "obstetrical hand," as it has been termed. Her head would then be drawn back, her neck was rigid, all the face muscles became tense, her lips would purse up as if for whistling, the eyes became fixed and staring, and, if the attack was a severe one, she would exhibit delirium; she became incoherent and screamed constantly in an hysterical fashion, fitfully and disorderly. Her respiratory muscles partook of this spastic condition, as was evidenced by the breathing difficulty and cyanosis.

For several hours, Mrs. C. would be in this condition, and generally at night these attacks would come on. Morphine or chloral was often resorted to to allay the spasms and quiet the delirious crying out. After recovering her normal muscular tone she would be sore as if pounded, and bedfast from exhaustion and pain. Sometimes lightning pains in the vagina added to her misery. At any time it was possible to elicit Trousseau's phenomenon by grasping her arm above the elbow and tightly squeezing it, whereupon her hand would slowly assume the posture described in a state of spasticity. On tapping her facial nerves, the muscles controlled by them would become spastic (Chvostek's sign). Erb's and Hoffman's signs were not looked for or elicited. For several years gastric lavage was resorted to in order that the distress in her stomach might be alleviated thereby. And that there was a strong connection between this gastric distress and the tetanic condition of her muscles, was shown by the fact that sometimes this tetany could be averted by this manœuvre. Hardly a day passed in which she had not recourse to the stomach tube.

On inflating her stomach it was found to be very distensible, filling the whole upper segment of the abdomen completely from the xyphoid cartilage to below the navel, and from one costal margin to the other. At rest the abdomen appeared flaccid, pendulous, and wrinkled; the costal angle was acute, and the tips of the tenth ribs were freely movable; the liver, while somewhat low, was negative otherwise. Habitual constipation always annoyed this patient; sometimes for ten days her bowels would not be emptied.

On stroking the epigastrium, the stomach walls could be seen to stiffen, and marked peristaltic waves appeared. The pylorus could not be found, but the stomach stiffenings of Cohnheim were evidence of some obstructive lesion at this orifice. On overinflating the stomach the air would cause much distress; finally the pyloric sphincter would allow it to pass to the intestines, filling one loop after another in a very graphic way.

Feeling that there existed a dilated as well as a ptosed stomach, a test meal was given, and at the end of an hour about 400 c. c. stomach contents were extracted. This was acid and smelled offensively. It speedily separated, the solid parts floating to the top. An analysis showed that it had the following chemical components: Free hydrochloric acid, 30; total acid, 63; combined acid, 25; no free or occult blood, no lactic acid, starch granules, oil globules, nor Oppler Boas bacilli found.

After taking the test meal the stomach became distended, tense, and evidently distressful to the patient. On stroking, the peristaltic waves appeared.

A radiograph made by Doctor Pancoast revealed a ptosed, vertical organ, occupying the left half of the abdomen, with the lower curvature about four inches below the umbilicus, and the pylorus at this landmark. The exposure was made six hours after taking the bismuth meal, and the picture showed marked retention. The horizontal line bounding the pyloric portion of the stomach is called Holzknecht's line, and indicates pyloric obstruction.

It was felt that there was a mechanical cause for obstruction, and a gastroenterostomy was advised by Dr. Joseph Sailer, who saw her in consultation. Her physical condition at this time was very poor. From the fact that very little water was absorbed the urine was exceedingly scant and very highly colored, but was otherwise normal. Her blood examination showed a marked anemia of the chlorotic type: Hemoglobin, 34 per cent.; red cells, 2,980,000; white cells, 7,000; lymphocytes, 28 per cent.; polynuclears, 70 per cent.; hyaline cells, 2 per cent.

Dr. John G. Clark, who also saw the patient in consultation, concurring in the same view, operated. On opening the abdomen the stomach was found to be empty, collapsed, and small, occupying the epigastric region, and exhibiting no signs whatever of past misconduct. There were no scars or strictures about the pylorus, nor were there any evidences of old ulcers in the stomach or duodenum. The gallbladder was empty and healthy. In spite of the normal appearance of the stomach, and reviewing the history of vomiting, obstruction, emaciation, and all the ills following in the train of the pylorospasm, Dr. Clark wisely decided to continue, feeling that the dilatation and the tetany were due to some reflex contraction of the pylorus beyond medicinal control. Accordingly a posterior anastomosis of the stomach and jejunum was quickly done, the pylorus being tied off and severed, the ends sewed in. After the operation the patient rallied well, vomiting ceased in twenty-four hours, and she partook of liquid food by the mouth. Tetany vanished absolutely, and it is now impossible to elicit Trousseau's or Chvostek's sign.

The patient gained twenty pounds in six weeks, could eat anything, and at the end of eight months was quite restored to health. Vomiting of bile colored fluid occasionally happened, especially if the arms were raised above the head.

It is held by some observers that the great reason why gastroenterostomy does good in cases of excessive acidity, is that the regurgitation of the alkaline duodenal juices into the stomach neutralizes the excess of acid, allays pain, and diminishes hyperesthesia, spasticity, and stiffening.

From the foregoing narrative it is evident that the tetany was of gastric origin, and that it is wise to operate to relieve a functional as well as a mechanical disability; pylorospasm being as strong an indication for gastroenterostomy as stricture is.

5211 Wayne Avenue, Germantown.

MITRAL STENOSIS.

By Maximilian Schulman, M. D.,
New York,
Instructor in Therapeutics, College of Physicians and Surgeons, Columbia University; Chief of Clinic, Department of Applied Therapeutics, Vanderbilt Clinic.

In what follows I shall not take up signs, symptoms, etc., in orthodox sequence, but try to make clear a few matters connected with mitral stenosis, which I have reason to believe are not entirely clear in the minds of many. Yet the points I shall touch upon are of sufficient importance to make a clear understanding of them desirable, and an aid to intelligent treatment.

The mechanical disturbance which results from a *stenosis* of the mitral orifice produces a difficulty in *filling* of the left ventricle. It is here to be borne in mind that the mechanical disturbance which results from a *regurgitation* at the mitral orifice, on the contrary, causes a difficulty in *emptying* of the left ventricle (in the proper direction). In the case of a pure mitral stenosis (without accompanying regurgitation), the left ventricle has no difficulty in emptying itself of the normal proportion of its contents, and in the normal direction, i. e., into the greater circulatory tree.

The statement is commonly made that a regurgitation at the mitral orifice superadded to a stenosis diminishes the mechanical embarrassment by diminishing the obstruction. But we have noted above that stenosis reduces ventricular filling, and in consequence does not permit of a sufficient auricular emptying. The result is a supernormal auricular content and pressure during auricular relaxation (and ventricular systole). Again, when the mitral orifice is incompetent, the left ventricle, during systole, forces some of its blood backward into the left auricle, thus in another manner causing a supernormal auricular content and pressure during auricular relaxation (and ventricular systole). I believe it thus becomes apparent that superadding a regurgitation at the mitral orifice to a stenosis already existing is merely adding to the embarrassment of the left auricle, for both lesions hamper it in the same direction, though by different mechanisms. While it is true that *anatomical* stenosis may be reduced in degree by a shrinking of the free edges of mitral cusps which have produced stenosis by their lateral adherence, the *functional* embarrassment of the left auricle is in such manner not at all reduced, for the extra quantity of blood given entrance to the ventricle during its diastole is quickly returned to the auricle through the now incompetent valve during the following ventricular systole, and the *peripheral circulation* is not improved.

The same arguments hold true in regard to the functional effect of the superaddition of stenosis to an existing mitral regurgitation, and I cannot understand such statements as, for example, the following by Krehl: " . . . Indeed, we may say in general that the stenosis which so often follows a valvular insufficiency may be of advantage in that it may limit the amount of blood which regurgitates!" As a matter of fact, a pure mitral stenosis without accompanying regurgitation of greater or less degree, is comparatively rare.

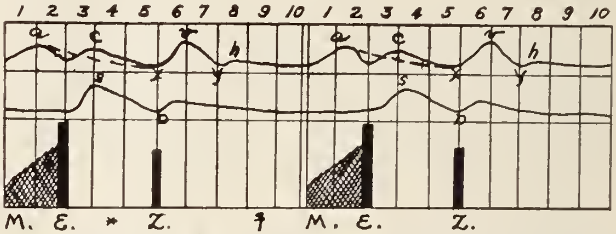

Fig. 1.—Representing two heart beats at the rate of 60 a minute, each space one tenth of a second; *space E to Z, short pause; † space Z to E, long pause, ventricular diastole (actual time occupied by diastole is a little less than here indicated); illustrating *crescendo* auriculosystolic murmur. E, first sound; Z, second sound; M, auriculosystolic cresendo murmur. Upper tracing, jugular vein; lower tracing, artery.

The pressure in the left auricle and resistance at the mitral valve ahead being abnormally high, the auricle hypertrophies, in order to compensate for this excessive resistance. This is the first compensatory or secondary change that occurs. By the older methods of physical examination it was not easy to detect this, for the auricle must be considerably enlarged to present clear evidence of enlargement to percussion. (I mean percussion by the ordinary mortal with only a prosaic imagination.) Then dullness in the second intercostal space, to the left of the sternum, gives evidence of the enlargement of the left auricle. The electrocardiogram, however, gives very distinct evidence of auricular hypertrophy in an enlargement of its P wave—the wave of auricular complex—and shows it at a time when this state could be determined positively, in no other way. The amplitude of this P wave of auricular complex may reach and even exceed one fifth the amplitude of the R wave of the ventricular complex, while the normal amplitude of P is one tenth that of R. It may be of interest to note that the left auricle, which has

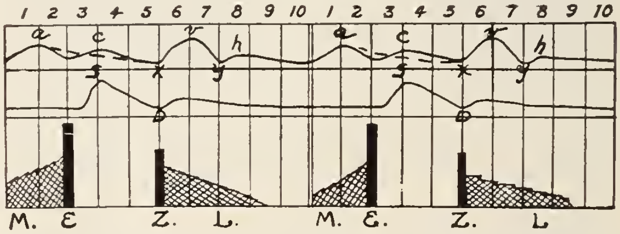

Fig. 2.—Same as Fig. 1. L illustrates the *decrescendo* murmur, separated from M by a pause; sometimes L runs into M without any pause between them. When the auricle is paralyzed or fibrillates, and the A wave has disappeared from the jugular curve, M disappears, while L persists. Upper tracing, jugular vein; lower tracing, artery.

a normal capacity of about sixty c. c., late in the disease may be enlarged to such an extent that it may hold as much as from 2,500 to 3,000 c. c., or about half the total quantity of blood in the body. It is not surprising that such an auricle may give signs of thoracic aneurysm, even to symptoms of pressure on the left laryngeal nerve.

When the increased pressure in the left auricle is no longer entirely compensated by the auricular hypertrophy, there results an abnormal degree of resistance to the entrance of blood into the auricle from the pulmonary veins, with a consequent rise of pressure in the pulmonary veins and entire lesser or pulmonary circulation. The next step back is a rise of pressure in the pulmonary artery, to balance which the right ventricle must hypertrophy. This is the state of affairs in the early stage of decompensated mitral disease. When the tax on the right ventricle becomes too great for it and it dilates, we get a functional stretching of the tricuspid orifice, with secondary tricuspid regurgitation, increased pressure in the right auricle, excessive resistance to emptying of the venæ cavæ, with venous stagnation in the greater or systemic circulatory tree, and all the phenomena dependent on a failing right heart. This is the late stage of decompensation.

Now, in all said above, the condition of the left ventricle was not considered, but it does not fail to suffer in mitral stenosis. In cases of pure stenosis the quantity of blood entering the left ventricular chamber is reduced, and its nutrition suffers because it lacks opportunity for the full exercise of its muscle power. Also the blood supply to the muscle is reduced. Thus the left ventricular muscle atrophies to some extent, becoming smaller and weaker. When regurgitation accompanies the stenosis, depending on the degree of the former, we get more or less transverse enlargement of the left ventricle.

In all cases of valvular disease the heart muscle also suffers, and this is true to a very great extent in mitral stenosis. As a consequence of this, and because of the marked tax put on the auricle in this disease, a state of auricular fibrillation is a common event in the late stages of mitral stenosis. The junctional tissue between auricle and ventricle, the so called bundle of His, is also very commonly the seat of disease, and both these factors are of much importance in determining the prognosis of the lesion under consideration.

SYMPTOMS.

Patients with mitral stenosis may for many years be ignorant of their condition, just as may patients with other valve lesions, because it gives them no symptoms and causes no functional disturbance of any part of the body. Such patients usually have a color of the face and lips which makes the initiated suspicious. They may be perfectly well nourished, and have what at first glance looks like an excellent color of the cheeks, but which, on closer scrutiny, particularly in diffused sunlight, proves to be a purplish red. The color of the lips is a shade or two too dark—a cherry red.

Patients with only a little more disturbance of circulatory function may, for no apparent reason, get frequent attacks of bronchitis. This is really a mild congestion of the bronchial mucosa, either entirely due to circulatory disturbance or predisposed to by circulatory disturbance, and excited by minimal degrees of extraneous irritation or infection. This same process carried further results in more symptoms of early decompensation, from excessive accumulation of blood in the lesser circulatory tree. Now the patient suffers from more marked cyanosis, varying degrees of dyspnea, and troublesome cough, accompanied by a blood streaked or bloody expectoration, and in severe cases hemoptysis which may even be copious. These cases with cough and blood expectoration as their main symptoms, are too often mistaken for cases of pulmonary tuberculosis and seriously mismanaged, often for some years. This error is the more readily committed because the physical signs of mitral stenosis are notoriously inconstant, as will appear below.

The further advance of the process leads finally to a giving way of the right side of the heart, often accompanied by auricular fibrillation, with all the train of well known symptoms dependent on right heart failure, such as edema of subcutaneous tissues; enlargement, tenderness, and expansile pulsation of the liver, ascites, hydrothorax, usually of the right side, and orthopnea. Of these, hydrothorax and orthopnea require a word of explanation.

Hydrothorax. It would ordinarily be expected that a pleural transudate dependent on circulatory failure should be bilateral, but, as a matter of fact, in the large majority of cases hydrothorax is unilateral and right sided. This is probably due to pressure on the great azygos vein by the enlarged right heart. This vein drains the pleural sac, and its obstruction and stagnation in its tributaries are predisposed to by the oblique entrance of the great azygos into the vena cava superior. Some standard textbooks still make serious mention of a greater frequency of lying on the right side as a predisposing factor to the accumulation of pleural transudate on this side.

Orthopnea. Although in the sitting posture, compared with the reclining, the venous circulation in the trunk and extremities is slowed and dropsy in the parts is increased; the difficulty in breathing which the patient experiences in the flat position is considerably diminished by the assumption of a sitting posture. In fact, the reduction in the rate of return of venous blood to the right side of the heart which this posture favors, reduces the amount of venous blood thrown into the lungs, and gives what does get there a better chance for aeration. It also reduces the tax on the relatively feebler left ventricle, permitting it more effectively to aspirate the blood from the lungs. Furthermore, with the head up, the return of venous blood from the base of the brain is favored by gravity, diminishing the stimulation of the respiratory centre by excessive carbon dioxide, and so reducing dyspnea. It is also probable that gravitation of the abdominal viscera away from the thorax, which the sitting position favors, by reducing the crowding on the heart and lungs, gives these organs freer play, and reduces respiratory difficulty.

PHYSICAL SIGNS.

We shall not consider all the physical signs of mitral stenosis, but only such as demand some explanation. Characteristic are the pulse, the thrill, and the sounds and murmurs audible over the precordium.

Pulse. The pulse, except in the stage of auricular fibrillation, is relatively not as rapid as in other valve lesions. This is a conservative process, because it requires a long diastolic period for the left ventricle to be filled through its narrow mouth. The pulse is small, because of a diminished volume of blood entering and leaving the left ventricle. With a gradually increasing stenosis and diminishing volume of blood driven into the aorta and its branches, the vessels are accustomed to an increasingly smaller blood stream, and accommodate themselves to this bv a gradual vasoconstriction. In this manner the systolic blood pressure in the arteries may be maintained at a normal level, while the diastolic pressure rises and the pulse pressure (the difference between systolic and diastolic pressures) falls. The pressure in the systemic veins also is reduced. When auricular fibrillation sets in, the pulse becomes very rapid and disorderly, with no definite rhythm and no constant force. It is also common knowledge that the rate at the heart may be greater than at the pulse, because some beats are too feeble to propagate a wave to the wrist. The precaution of counting the beats at the heart and comparing with the pulse rate should never be omitted when examining patients with decompensated hearts, no matter what the lesion.

Partial heart block, as manifested by a prolongation of the A to C interval, is a not infrequent event. Whenever the heart becomes slowed down to sixty-six or less, this manifestation should be carefully watched for. As noted in the beginning of this article, disease of the auriculoventricular bundle is not uncommon in mitral stenosis. With a slow heart and the auricle beating regularly, a prolonged conduction period may be made out by auscultation, with some little confidence. This is possible by noting the interval between the *crescendo* auriculosystolic (presystolic) murmur, which is the index of auricular contraction—corresponding to the A wave of a jugular pulse tracing—and the snappy first sound following it, which is the index of ventricular contraction—corresponding to the C wave. When the patient is frequently examined, especially when he is on digitalis medication. the prolonged interval may sometimes be determined in such manner with a fair degree of certainty. But great caution should be observed in risking this interpretation, for one must be certain that he does not mistake a *decrescendo* early diastolic murmur for a *crescendo* auriculosystolic murmur, since the former is no index of auricular contraction at all. Hence, when suspecting a prolongation of the A to C interval, it is much safer, if deemed important. to make polygraphic tracings.

Thrill. The thrill of a rumbling nature, palpable over a limited area of the precordium, is dependent on the same factors as the stenotic murmurs, and its qualities correspond closely to those of the murmurs. It is quite characteristic of this lesion, when manifest, and undergoes changes during the course of the disease which correspond with the changes which the murmurs undergo.

Sounds and murmurs. It is my experience that the earliest auscultatory evidence of mitral stenosis manifests itself in what seems like a prolongation of the first sound. I have seen individuals with only this evidence, or this plus a small pulse, in whom history counted for nothing, because they were applicants for life insurance and so could not be trusted to admit illness that might impair them as insurance risks, the issuance of whose policies I recommended to be postponed and whom I had opportunity to examine again at a subsequent time, when I found a clear, short, rumbling, auriculosystolic murmur. Sometimes the murmur can be brought on by having the patient exercise, or sometimes by his assuming the recumbent position. The effect of exercise or change of posture holds true as well in more manifest cases. It is not clear to me why a murmur is sometimes heard best with the patient in one position, sometimes in another. There is no constancy about it and explanations offered do not satisfactorily answer for all cases. The auriculosystolic murmur is oftener developed by changing to the recumbent position than by exercise. If this were constant we could accept the reasoning that the slowing of the heart in this position favors the appearance of the murmur, because diastole is lengthened, while making the heart beat more vigorously by exercising does little, because the auricle has comparatively little muscle and hence cannot be made to beat much more vigorously by the exercise.

Another early auscultatory manifestation of mitral stenosis, which later is found replaced by the more characteristic murmur, is a *laboring* first sound. It gives one the impression of straining, thus: . . . eh-h! It is as though, while one cannot clearly hear a murmur, one vaguely senses it nevertheless. I should compare it to the feeling one often has that he is being looked at, although the person looking at him is not in the field of clear vision, but somewhere in the peripheral field of the retina.

The particularly characteristic auscultatory phenomenon is a *crescendo* rumbling murmur, heard late in diastole, commonly called presystolic, but better named, because more descriptively, auriculosystolic. The murmur runs up to and terminates in a sharp snappy first heart sound. It is audible over a limited area at and about the apex. The second sound at the apex is usually relatively feeble, while in the pulmonic area it is accentuated. When there are no complications the second aortic sound is relatively weak, and this because of a weakened left ventricle. In fact, throughout the disease the quality of the second aortic sound is an index to the condition of the left ventricle. The *crescendo* murmur is dependent on the systole of the left auricle, squeezing the blood through a narrowed mitral orifice with a pressure which increases from beginning to end of the systole. Hence, when late in the disease the auricle is paralyzed or fibrillating, the crescendo murmur disappears, as do the corresponding thrill and the evidence of auricular contraction in a jugular or electrocardiographic record.

The short, sharp, snappy, valvular quality of the first sound which follows close upon the crescendo murmur is dependent on the stiffening of the mitral flaps, and is quite characteristic.

When the mitral orifice is considerably narrowed and the pressure in the pulmonary circulation well raised, there is added another rumbling murmur, which, however, appears earlier in diastole, is not quite so loud, and is *decrescendo* in character. This murmur may run right up to and be continuous with the above described crescendo murmur, or it may be separated from the latter by a short interval, particularly when the heart action is slow. It does not depend on auricular contraction and therefore persists when the auricle is paralyzed or fibrillating, and when the short crescendo murmur has disappeared. It may be the only auscultatory evidence remaining to indicate the character of the valve lesion. It is produced during the early part of diastole by the forcible propulsion of blood from auricle to ventricle through a much narrowed passage, and because of the high pressure in the lungs and left auricle which the stenosis has brought about. It is decrescendo in character because as the blood escapes into the ventricle, the pressure on the auricular side of the valve progressively falls. This murmur also is limited in distribution to the area of the cardiac apex.

There may also be a soft blowing diastolic murmur, heard at the apex and a short distance above it on the left side of the sternum, sometimes as high as the third left space, but not in the aortic area, not over the sternum on the right side, and not replacing the aortic second sound. This murmur is most likely due to a relative incompetency of the semilunar cusps in the pulmonary artery, resulting from a dilatation of the right ventricle. It requires great care not to mistake this for evidence of aortic regurgitation, and this will be touched upon again, below.

The mitral systolic murmur from accompanying mitral regurgitation, and tricuspid systolic from secondary tricuspid dilatation, need no discussion. The cause of accentuation of the second pulmonic sound is equally clear.

DIAGNOSIS.

It is much commoner to fail to recognize mitral stenosis when present than to diagnosticate it when it is not present. I want again to emphasize the frequency and gravity of diagnosticating pulmonary tuberculosis instead of mitral stenosis.

As noted above, it may be difficult to differentiate from physical signs at the heart, mitral stenosis from aortic regurgitation. In both conditions there may be a blowing diastolic, a rumbling presystolic, and a blowing apical systolic murmur coexistent. In aortic regurgitation, however, the diastolic murmur is usually loudest in the second right interspace or over the middle of the sternum, propagated toward the apex, and replacing the second sound at the aortic area. The pulse of aortic regurgitation is large, the diastolic pressure is low, and the pulse pressure is increased; all conditions exactly the contrary of those which obtain in mitral stenosis. Capillary pulsation is also found in the former and not in the latter. Also, it has been determined by Hill and Rowland that in normal conditions, with soft arteries, the systolic blood pressure in the arm and leg of an individual in the horizontal position is the same or vary within a very few millimetres of mercury, while in cases of aortic regurgitation, with the patient in the same posture, the pressure in the lower extremity is, on the average, from forty to forty-five mm. higher. This finding is diagnostic of aortic regurgitation and may be determined with the usual blood pressure apparatus.

TREATMENT.

I shall mention only a few features in the treatment which apply particularly to cases of mitral stenosis, as distinguished from other valvular lesions.

In the early stages, these patients rarely need digitalis. When it seems that they need digitalis, then they need rest even more urgently, and it hence follows that patients with mitral stenosis should not be given digitalis, even in small doses, unless they are bedridden.

When digitalis is properly given, to a patient who needs it and that is staying in bed, it is safe to get the pulse down to a lower rate than in aortic lesions. This because a long diastole is needed to permit as much filling of the ventricle as is possible through the retarding auriculoventricular orifice. The predisposition of these patients to heart block should never be lost sight of, however, and functional heart block from digitalis avoided.

When the case has gone on to a stage of auricular fibrillation and the symptoms characteristic of that condition have appeared, the patient will of course be in bed, and digitalis must be administered in large doses.

When hydrothorax appears, it should be promptly reduced by aspiration. If a hydrothorax is permitted to persist too long, the lung remaining compressed over a considerable period, loses its elasticity and will not expand promptly enough nor to sufficient extent, on removal of the transudate. The consequence is, that the thorax refills very readily. On the other hand, many patients become accustomed to the disturbed anatomical conditions resulting from the hydrothorax, and suffer no dyspnea of any consequence, though the right chest may be half full of fluid. When one meets a patient in whom the thorax refills over and over again as soon as the chest is emptied, it is likely that the lung is quite inelastic or even has become adherent in a corner of the thoracic cavity. In such a case it is useless to continue aspirating the chest, unless it is clear that the patient suffers distress or added distress in direct consequence of the mechanical interference of the fluid.

229 West 111th Street.

THE OLD METHOD OF TREATMENT OF SYPHILIS VERSUS THE NEW.*

By MIHRAN B. PAROUNAGIAN, M. D.,
New York,
Adjunct Professor of Dermatology, New York Post Graduate Medical School and Hospital; Dermatologist, Gouveneur Hospital, Outpatient Department; Consulting Dermatologist, Gouverneur Hospital, and St. Luke's Hospital, Newburgh, N. Y.

With the literature of the present day replete with the wonders of arsenotherapy of syphilis, we are but too prone to lose sight of the incontrovertible fact that even before these new potent remedies were at our disposal syphilis was a disease generally controllable in skillful hands. It is not my purpose in any way to cast reflections upon salvarsan, nor to deprecate the marvels I have seen it perform. Indeed, the greatest skeptics are now convinced of its high efficiency. In the following short paper it shall be my endeavor to compare the new with the older remedies and to outline, in the light of the comparison, what I deem the present rational treatment of syphilis.

The first reference which we find to mercury as a remedy for syphilis occurs in the immortal poem of Hieronymus Fracastor, to whom, indeed, we are indebted for the first accurate description of the clinical phases of syphilis, and who has given to us the name of the disease. In the prose translation of this fifteenth century masterpiece we find the following interesting paragraph:

> At the beginning, mercury was employed associated with lard; later it was combined with the turpentine of Epirus and with the resin of the majestic birch. Certain physicians to-day combined it with horse fat or bear's grease, or bdellium, and with the juice of cedar; others with myrrh, with male incense, with mibium, and with burning sulphur. For my part, I prefer to alloy it with a mixture of black hellebore, orris root, galbanum, asafetida, and oil of mastic and oil of native sulphur. Patients, a truce to the disgust which may be caused by this remedy! For if it is disgusting, the disease is still more so. Besides, your cure is at this price. So, without hesitation, spread this mixture on your body and cover with it your entire skin, with the exception of the head and of the precordial region. Then, carefully wrap yourself in wool and tow; then get into bed, load yourself with bed covering, and thus await until a sweat bathes your limbs with an impure dew. Ten days in succession renew this treatment, for ten entire days you are to undergo this cruel trial whose beneficial effect will not cause you to wait.

Here one has the expounding of a treatment which, with slight modification, has come down to us through almost four centuries as an ideal method of combating syphilis. Besides recommending mercury as an inunction, Fracastor also recommended its use by method of fumigation or inhalation. This method, as you know, enjoyed excellent repute up to the middle of the last century.

It was but natural that early excellent results of mercurial treatment in this form should have been followed by its use internally in the form of pills and in combination as mercury salts. The internal administration of mercury has been perhaps the most commonly accepted form of treatment. It enjoyed a preference over all other methods of treatment in the last century, and indeed the foremost living syphilographer of to-day, Sir Jonathan Hutchinson, still maintains its supremacy over all other methods. While personally I do not believe that this is the ideal form of treatment, I acknowledge that, in careful hands and with due proper choice of the mercurial salt, the internal administration has many great advantages, particularly in infants and children. Here the time honored remedy hydrargyrum cum creta still enjoys well deserved supremacy. In the last twenty years two salts of mercury have been extensively employed in the internal administration, and I take this occasion to decry their use emphatically. These are, the biniodide and protoiodide. They readily control the symptoms of the disease, but I have yet to see the case permanently cured by these remedies, and a large proportion of the late recurrences which have come under my observation have been treated early in the disease by one of these two remedies. Of considerably greater value, however, may be mentioned, in passing, the tannate of mercury. In my experience this salt has proved second only to the bichloride. In this last salt, I believe, we have the most efficacious of all in the internal administration. At the outset permit me to say that the average practitioner does not use sufficiently large doses of this particular salt, customarily employing from 1/32 to 1/20 grain as a dose. The proper dose to effect permanent results with the bichloride should be from 1/10 to 1/5 grain.

In the last quarter of the nineteenth century mercury was employed in France in the form of injections: here, also, as in the internal administration, the various salts have been lauded one above the other. I may state that in the opinion of the most eminent syphilographers of the present day the insoluble salts are capable of controlling the disease with far greater ease, with less personal inconvenience to the patient, and with less care on the part of the physician than the soluble salts. In order that the soluble salts of mercury may be effective, they must be employed in injections daily. Employed thus, it must be admitted that they are very efficacious, but there are few patients who are able to stand the financial strain of such a course of treatment, not to mention the loss of time and the discomfort. In justification of my previous statement, I may say that next to those under the biniodide and protoiodide, the most frequent relapses have occurred in my experience when patients have been injected with the soluble salts, administered insufficiently.

I cannot pass from the subject of mercurial treatment without alluding to the inhalation method of treatment, which at certain spas still enjoys excellent repute. While good results are often obtained, the method does not commend itself on account of its impracticability. The method of inunction, however, differs but little from the inhalation method, for it has been conclusively shown by German investigators that the chief benefit derived from this method lies in the volatilization of the mercury and its subsequent absorption into the lungs, very little if any mercury being absorbed through the skin itself. The chief objection to this method lies in the fact that one cannot estimate the dose, and the undeniable fact that stomatitis is far more common than with other methods. However, it is still an efficient and at times the most practicable form of administration.

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*Read at the annual meeting of the First District Branch of the Medical Society of the State of New York, held at Poughkeepsie, October 4, 1912.

Within the past two years the medical and lay world has been startled by the introduction of a new and powerful remedy for syphilis, and, thanks to the untiring efforts of Professor Ehrlich and his colleagues, we have in salvarsan and the but lately evolved neosalvarsan the possible means if not of eradicating, at least of controlling syphilis with a single treatment. At first it was hoped that the remedy was entirely specific, that is, that its single application sufficed to eradicate the disease for all time. Beautiful in theory, the fact must be sadly admitted that such is not the case. The remedy readily controls the symptoms of the disease, but a single injection seldom if ever eradicates it. We now know that salvarsan, in order to effect a cure, must be repeated time after time, in order to effect that which only after many years yet to elapse we may term a cure.

METHODS OF ADMINISTRATION.

At first salvarsan was injected intramuscularly in neutral suspension, into the buttocks or the muscles of the back between the scapulæ; later in the form of oily emulsion, etc. On account of pain, sloughing, and necrosis, as well as painful infiltrations, remaining for months and years in some cases, this method is now practically abandoned. For the intravenous method we dissolve the contents of the ampoule (0.6 gramme) in 300 c. c. of freshly distilled, sterile warm water, add about twenty drops of fifteen per cent. solution of sodium hydroxide, the last drops of this solution being added very cautiously so as to obtain a clear solution of salvarsan without an excess of the alkali. Injection is made into an arm vein, either by means of a syringe or, as I prefer, directly from a burette. I strongly advise against the dissecting down on the vein, as the remaining scar will brand the patient as syphilitic for the rest of his days. Besides, for the future injections, the dissected vein will be useless. The method of administration of neosalvarsan differs in the following respects: It is given in less water, twenty c. c. of water for each 0.1 gramme of neosalvarsan (no sodium hydroxide to be added), and given in water of room temperature.

CASES REPORTS.

Case I. Ulcerated throat about five months, unable to take solid food, received eight intramuscular injections of salicylate of mercury, without appreciable improvement. On September 2, 1911, one intravenous injection of salvarsan; the following day was able to eat a hearty dinner and in less than one week there was no trace of lesions in the throat. Patient refused further treatment, believing that he was "cured." No recurrence of throat manifestations, though Wassermann examination, July 18, 1912, gave positive results.

Case II. Infection about four years, no lesions, Wassermann reaction positive, in spite of active mercurial treatment with injections and internal medication; salvarsan intravenously six weeks after; Wassermann reaction, positive. After another course of mercurial injections and two more salvarsan injections, April 13th and May 17th, Wassermann examination, August 2nd, gave negative results.

Case III. Patient had gumma of the liver, Wassermann reaction positive. Salvarsan, September 13, 1911; within a week liver was reduced to its normal size, while before the injection enlargement could be seen at a distance. Patient was discharged from the hospital and could not be followed up.

Case IV. Infection about one year; treated with mercurial injections; Wassermann reaction positive, November 21, 1911, salvarsan and one course of mercurial injections. March 15th, Wassermann reaction positive; another salvarsan injection, March 31, 1912, and a mercurial course, Wassermann reaction September 20, 1912, positive. No lesions.

Case V Infection about one year; had two courses of mercurial injections and some internal medication; Wassermann reaction, November 24, 1911, positive. Salvarsan, December 2, 1911; six week later, Wassermann reaction negative; since then two other Wassermann examinations showed negative result, almost nine months after salvarsan; no mercurial treatment since salvarsan was given.

Case VI. Initial lesion and roseola; was given three neosalvarsan injections in one week; two months later, Wassermann reaction negative; no other treatment; no lesions.[1]

Case VII. Patient with extensive papulotubercular eruption; Wassermann reaction positive. Salvarsan, July 17th; in less than a week roseola practically cleared up.

Case VIII. Infection about five years, last two years under my care; had four courses of mercurial injections; October 24, 1911, Wassermann reaction positive. After another course of mercurial injections Wassermann reaction became positive, March 26, 1912. On April 13th received salvarsan and three mercurial injections and some potassium iodide. Wassermann reaction, September 17th, positive; no lesions.

Case IX. Infection about three years, had four courses of mercurial injections; April 28, 1912, Wassermann reaction positive. May 10, 1912, neosalvarsan. No mercurial treatment after salvarsan. July 16, 1912, Wassermann reaction negative, October 29th.

Case X. Infection sixteen years (patient was an out of town case); about a year ago was seen with a papulosquamous patch below the knee; received one course of mercurial injections; lesions healed up; Wassermann reaction, April 23, 1912, positive. Salvarsan, August 13, 1912; no other treatment; Wassermann reaction, September 27, 1912, positive.

Knowing, then, gentlemen, what a potent remedy mercury has shown itself through the ages, and believing that in salvarsan we have perhaps a more potent remedy than mercury, the question arises, what is the proper method of treating any given case? The fresh case of syphilis, in an adult, I should treat thus: After demonstrating spirochætæ, by India ink, dark field, or any suitable stain, excision if possible of the primary sore, particularly before the eruptive stage, as this would remove an important focus of spirochætæ. If the excision is not practicable, inunctions of calomel ointment, thirty-three per cent., should be applied to the chancre. 2. Injection (intravenous) of three or four doses of salvarsan, if possible in rapid succession, and then, notwithstanding the absence of clinical symptoms and a possible negative Wassermann reaction, I would subject the patient to a vigorous course of mercury, let us say perhaps corresponding to one half the amount and time which would have been devoted to this form of treatment had salvarsan not been given at all.

For those having the advantages of large clinical and hospital facilities, and who can follow their patients for years, the treatment with salvarsan alone may suffice; but by the average general practitioner, who sees patients in a more transient way, the combination treatment should be used.

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[1] A Wassermann examination on this patient, made October 15 1912, five months after the salvarsan injection, again showed negative results.

That is, the patients should be given the chance of cure which salvarsan holds out, but should not be denied the benefits which we know follow the use of mercury. Moreover, if for any reason it were incumbent upon the practitioner to choose between the two remedies—in the light of the experimental stage of salvarsan at the present day, and in justice to the time honored remedy, which has survived for four centuries—I believe mercury should be given the choice, at least for the present.

133 East Twenty-ninth Street.

REPORT OF THREE CASES OF EPIDEMIC SEPTIC SORE THROAT IN ONE FAMILY.*

By Murray B. Gordon, M. D.,
New York.

Case I. P. B., age sixteen months, well developed and nourished, was suddenly seized with convulsions on a train and hurried to the nearest drug store. Seen by Dr. J. Sarnoff, of Bath Beach, and sent by him to the Sunshine Sanatorium. The convulsions were checked by the doctor and the child fell into a well deserved sleep. On admission, the temperature was 103° F. (rectal); pulse, 150; respiration, 32. The next day I was called, as I was the family physician, and from then on I treated this patient conjointly with Doctor Sarnoff. The condition of the child had practically undergone little change, though the temperature had gone up to 105° F. (rectal). Pulse was 120; respirations, 36. Physical examination was negative except for a congested throat, which was evidenced subjectively by a difficulty in swallowing. The stools were green in color and loose, and led us to believe that we were dealing with a probable enteritis, inasmuch as the culture which had been taken from the throat was returned as negative regarding the diphtheria bacillus, and all other physical signs were negative. In the next two days the child did not improve under treatment directed to the enteritis and sore throat, the latter consisting of irrigations. As the right ear drum appeared congested, a paracentesis was performed, a small quantity of serum but no pus being obtained. Unfortunately this serum was not examined. The child in the meantime had been given quinine, acetphenetidin, and cinchona derivatives with no results. The temperature had been running from 103° to 101° F. and then from 105° to 101° F.; making two or three such excursions a day and the rise from 101° to 105° F. being sudden, while the fall was gradual. The pulse varied between 120 and 150, being stimulated by champagne; the respirations were about 30. A uranalysis at this time was negative except for some hyaline casts The child was bright, sleeping a great part of the time, but sometimes awaking with a cry as if he were in pain. The glands of the neck were swollen, but the throat itself was negative. On October 1st the right side of the face swelled somewhat; there was also some tenderness over the right side of the abdomen. The child was much exhausted. The initial sore throat, enlarged cervical glands, the swelling of the right side of the face, with a congested ear drum on that side, appeared to point to a lateral sinus thrombosis, and accordingly a blood culture was made by the pathologist, Dr. S. Blatteis, who reported a sterile culture.

The child was becoming weaker and the temperature still made its excursions. Antipyretics, sponges, baths, were all useless in checking it. A stock vaccine of influenza bacillus was given, as some observers had reported cases of infantile influenza which ran courses similar to this. A lumbar puncture showed an increased amount of lymphocytes, with an increased globulin reaction, but no chemical or bacteriological changes. The fluid was clear, and it flowed through the cannula without any increased pressure. In the opinion of Doctor Blatteis, it showed a meningismus, but not a meningitis. By this time the baby was very restless, throwing itself from side to side. The stools, which had become normal, now showed a returning enteritis, with a tendency to the formation of gas, and this interfered with the respirations, which became labored and rapid. At times the extremities were cyanosed. A uranalysis at this time showed granular, hyaline casts, white blood cells, and albumin. A bronchopneumonia then set in and later laryngeal stenosis occurred. Another culture from the throat for diphtheria bacillus was taken, and found negative; but ten thousand units diphtheria antitoxine were given as an empirical measure. The stenosis became so marked that intubation was necessary. The child died on October 10, 1912. No autopsy was made.

Case II. J. B., age three and a half years; a brother of P. B., family history, negative. Past personal history: Full term child, difficult labor, forceps delivery. Had an hypertrophied tongue, which had somewhat diminished in size by the eleventh month. Weight at birth, nine pounds: first sat up at five and one half months; crawled at nine months; walked at fourteen months; teeth appeared normally; spoke at one year; speech thickened on account of the hypertrophy of tongue. Was put on thyroid medication at eighteen months, one third grain three times a day; the dose being progressively increased as the child grew older; was taking three grains a day consecutively, with intermission periods of ten days. The tongue was practically normal, the speech was not quite perfect, but there were no symptoms of delayed or impaired mentality; on the contrary he was a precocious child. On October 6, 1912, while the first child was still in the sanatorium, he took sick with fever, sore throat, and enlarged cervical glands on both sides; no membrane being present on the tonsils or pharynx. This condition persisted until the 11th, when a slight bronchitis developed. On the 16th he was seized with chills which lasted about an hour, his temperature jumping up to 105° F. (rectal) by the next day. On examination, a patchy pneumonia was found, the tonsils were still hypertrophied and the glands in the neck enlarged. The lung condition subsided by the 28th, but the throat condition remained the same, the temperature running between 100° and 101° F. He had been off the thyroid medication, and, thinking that perhaps we had a case of acute follicular tonsillitis of rheumatic origin, I decided to resume the gland treatment, and accordingly put him on three grains of thyroid a day; giving salicylates at the same time. The temperature remained down for two days, when there was a sudden rise to 105° F. in the morning, with a gradual decline to 98° F. by evening. A culture was taken from the throat and examined for diphtheria bacillus with negative results. The sudden change in the temperature curve caused me to suspect a condition similar to that in the first child, and accordingly a blood culture was taken. Even though no diphtheria bacillus were found, he was given an injection of 3,000 units of antitoxine. Separate cultures were taken at the same time from each tonsil and from the fauces. Doctor Blatteis reported that the blood culture was negative, but that a colony of pure streptococci was obtained from the left tonsil, while the cultures from the right tonsil and fauces showed streptococci and some other unknown organism. He was instructed to prepare an autogenous vaccine, but in the meantime, on November 2nd, I gave the child an injection of stock streptococcus vaccine, twenty-five million. An erythematous rash over the entire body appeared two days after the injection of the diphtheria antitoxine, and prior to the administration of the vaccine; lasting for one day. The temperature became subnormal the same evening, and the next afternoon there were chills and a subsequent rise to 104.6° F. The next day, November 4th, there was an interesting occurrence. The temperature had been slightly lower for the day but, after the painting of the tonsils with pure tincture of iodine there was a sudden rise to 104.6° F., which was accompanied by a filling up of the cervical glands. This subsided by evening, the temperature dropping to 96.4° F. I attributed the phenomena to the fact that the child was a thyroid baby and that the local application of iodine produced a sudden increase in the iodine content of an already enlarged thyroid gland, a condition which is common in these children in tonsillar affections. On November 5th, three days after the injection of the stock vaccine, the temperature was normal during the day and subnormal in the evening, the glands were somewhat smaller and softer, and the patient was cheerful and bright. During the day, however, three blood clots were passed from the bowels. The question of a streptococcic infection of the bowels, with a possible formation of a membrane was uppermost in my mind, but this was probably not the case, for the condition lasted but one day. It was most likely a hemorrhagic colitis. On the next day, fifteen minims of an autogenous vaccine, containing 100 million bacilli, was administered, and was followed by a rise in temperature to 101.4° F. The general and local condition improved, no medication being given except an alkaline gargle. On November 10th I put the child on elixir of iron, quinine, and strychnine, and on December 1st this was changed to syrup of ferrous iodide, five minims every four hours.

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*Read before the New Utrecht Medical Society, January 7, 1913.

Case III. C. B., age five and one half years, brother of the other two patients. Past personal history negative, except for an attack of possible anterior poliomyelitis last year which was characterized by high temperature, vomiting, diarrhea, prostration, delirium, and pains in the limbs. There was no resulting paralysis. His brother, J. B., it is interesting to note, was similarly affected at the same time. On October 11, 1912, he was taken sick with acute tonsillitis, the tonsils being markedly hypertrophied; cervical glands enlarged; temperature 103° F. Was treated with tincture of ferric chloride internally and alkaline gargles. Acute condition subsided in two days, the tonsils remaining markedly hypertrophied and the enlargement of the cervical glands persisting; temperature 99° F. On October 30th he was given 1,000 units diphtheria antitoxine as a prophylactic, his brother being given 3,000. He was bright, playful, and energetic. After the streptococci were found in his brother's throat, it was thought advisable to make cultures from his also. This was done and the same organisms were found. On November 5th he was given a dose of ten million streptococcus vaccine, which was followed by a slight rise of temperature, with a subsequent drop to subnormal. On the 8th the glands in the neck were still found enlarged, especially on the left side; the tonsils were very much hypertrophied with a thin translucent membrane on each tonsil. He also was placed on elixir of iron, quinine, and strychnine. The enlargement of the glands still persisting, I decided to have an autogenous vaccine made, in the hope that this would reduce them. On November 16th cultures were made from both tonsils and fauces, the organisms found being streptococci of a lessened virulency. After cultivating three successive growths, Dr. Blatteis was finally able to make an autogenous vaccine 1 c. c. of which, containing 100 million streptococci, was given on the 24th. In three days the glands were appreciably smaller, though the tonsils were still very much hypertrophied. Both this and the preceding patient are now in the best of condition.

A careful consideration of these three cases cannot but make one think that the last two were analagous to the first. The profound sepsis present in the first case showed conclusively that we were dealing with a highly virulent organism. Diphtheria can be ruled out, for at no stage of the disease were there any diphtheritic symptoms except possibly when the baby was moribund and a laryngeal stenosis developed. From the light shed by the later cases, I would unhesitatingly say that the stenosis was caused by a streptococcic membrane, and not a diphtheritic. Several cultures taken for diphtheria were negative. No pus was found on puncturing the ear drums, and I doubt if any streptococci would have been found in the serum obtained by the paracentesis. The throat was clean, that is, macroscopically clean. Local cultures may have shown the presence of streptococci, as in the other two brothers, for though a blood culture in the second case was negative, still organisms were found locally which were virulent enough to produce general havoc.

The three cases being, then, streptococcic infections, the almost simultaneous appearance forces us to consider them as epidemic. If epidemic, where was the source? If through the milk, water, or any other similar supply, why were not others in the neighborhood, the Bedford section of Brooklyn, affected? The family had been using the same milk supply for the past two years, but changed, on my advice, after the outbreak of the cases. The Commission on Milk Standards of the New York Milk Committee, in its last report, states that there have been several epidemics of this disease (septic sore throat, as it terms it) in the past few years which were traced to the milk supply. It recommends that this be regarded as a reportable communicable disease, and tabulated and recorded as such by the health authorities. The infection of the milk may be due to either udder infection of the cow or else contact with infected persons.

In conclusion, I wish to emphasize the importance of taking cultures from every suspicious case of sore throat, and not to be satisfied by a negative report as to the diphtheria bacillus. A streptococcic infection is a more dangerous foe in that we are apt not to awake to the seriousness of the case until most of the damage has been done. Blood cultures are good in their way, but when the bacteria have already entered the blood stream it is probably too late; early cultures from the fauces and both tonsils separately will tell us definitely where the site of the trouble is, and if conditions are such that autogenous vaccines cannot be made for financial reasons, recourse can be had to stock vaccines which are being sold at prices within the reach of everyone. Local boards of health should provide the public with the same precautions and treatment as in diphtheria.

4402 Twelfth Avenue, Brooklyn.

THE CARE AND AFTERCARE OF THE CONSUMPTIVE,

*With Special Reference to New York City.**

By Bruno S. Horowicz, M. D.,
New York,
Chief of the Tuberculosis Clinic of the Good Samaritan Dispensary.

A study of the reports of the Department of Health of the City of New York shows that there were about thirty-five reported cases of pulmonary tuberculosis in 10,000 of the population in 1900, and about forty-four in 10,000 in 1912, or an increase of over twenty-six per cent. The deaths in 10,000 of the population were 23.7 in 1900, and 16.6 in 1912, a decrease of thirty per cent. However, the increase in the morbidity of tuberculosis is probably more apparent than real. While even now many physicians are sadly deficient in their sense of duty toward the community, and delay their reports of tuberculosis cases until they are nearly ready to sign the death certificates, the various antituberculosis agencies are constantly on the lookout for cases, and more of them are reported than formerly. The falling off in the death rate, however, is so marked as to suggest the presence of further causes. It is undoubtedly due to the vigorous antituberculosis campaign waged within the last decade. If the decrease were to continue at the same rate, tuberculosis would probably soon cease to be a disease of the masses But I believe that this apparent decrease will not continue long, and that it will soon reach its limit, because, as a matter of fact, the deaths are only postponed a few years. The lives of thousands of patients may have been prolonged as a result of proper care and treatment, and of the educational propaganda, but the number of permanent cures is small, except among those patients whose lesion when detected was so slight that it would have been practically impossible to prove its existence beyond a doubt. It has been estimated by Doctor Knopf that the fight against tuberculosis costs the City of New York $2,000,000 annually. In spite of this enormous outlay of money, as well as the vast amount of labor and energy expended by physicians, nurses, social workers, and others, the results obtained are by no means proportionate. Unquestionably much good has been accomplished, but a great deal more remains to be done.

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*Read before the New York Physicians' Association, February 27, 1913.

Under the present measures adopted for the supervision of tuberculosis in New York city, registration at the Department of Health of all cases of tuberculosis is compulsory. Private physicians' cases are not interfered with by the health department, provided that the physician holds himself responsible for the observance of the necessary sanitary precautions. Practically all other tuberculosis cases are taken care of by the clinics belonging to the Association of Tuberculosis Clinics, which includes in its membership all the health department clinics. Comparatively few cases are treated by dispensaries which are not in the association. Each clinic has its allotted district and treats only residents of that district.

Not very long ago a block of model tenements was erected in New York by a well known philanthropist who had recognized the fact that the hotbed of tuberculosis was the overcrowded, insanitary tenement. The intention was to offer a dwelling with all modern conveniences and a maximum amount of air and sunlight to families having a member who was ill with tuberculosis, but not ill enough to enter an institution, or to let such dwelling to one who had returned from a sanatorium. The rents in these model tenements are low when the equipment and conveniences are considered, but unfortunately they are too high for most families which they were intended to benefit. It is earnestly hoped that this charity will be carried a little further, even if such houses should have to be conducted at a loss.

Four ferry boats, whose use in the transportation service has been abandoned, are employed as day camps for consumptives and as schools for tuberculous children. Children whose sputum contains tubercle bacilli are excluded from public school attendance by the Department of Health, and are referred to the day camps. Tuberculous children whose sputum is free from tubercle bacilli may attend public school, or, if desired, may be sent to the day camps. One of the boats has sleeping accommodations for patients who work during the day or are on waiting lists for sanatoriums. The Vanderbilt Clinic has a day camp situated on the roof of the clinic building. The New York Nose, Throat, and Lung Hospital has a tuberculosis night camp.

Patients attending clinics are visited by district nurses who look after the home conditions and recommend necessary changes. Auxiliaries to the various clinics, as well as the large charitable organizations, such as the Charity Organization Society, the Association for the Improvement of the Condition of the Poor, and the United Hebrew Charities, look after the wants of needy patients and their families. Patients not attending clinics are kept under the supervision of Health Department district nurses. Those whose presence at home constitutes a menace to the health of their families, and who are unwilling to enter hospitals, are removed by the Health Department to Riverside Hospital and detained there until conditions improve. Homeless patients are likewise kept there.

Tuberculous patients applying at clinics, or coming to the notice of the Health Department through complaints or requests for diagnosis, are attended to in the following manner: Incipient cases are referred to out of town sanatoriums immediately after the diagnosis has been made. Moderately advanced cases are sent, according to the extent of the lesion, to some of the sanatoriums or hospitals for tuberculosis, or, if for certain reasons patients are unable to leave the city, they are treated at tuberculosis clinics or day camps. Advanced cases are sent, whenever practicable, to hospitals.

There are several sanatoriums outside of the city. The New York State Hospital for Incipient Tuberculosis at Ray Brook, Essex County, New York, is intended for incipient cases only, and can accommodate two hundred and sixty patients. The New York city Sanatorium at Otisville, Orange County, New York, is for incipient and moderately advanced cases. It has a capacity of five hundred patients. Applicants must be residents of New York City, and, with certain exceptions, in the case of women and minors, aliens are not accepted while there are citizens on the waiting list. The Montefiore Country Home at Bedford Hills, New York, provides for incipient and early second stage cases. Its capacity is one hundred and eighty. Preference is given to Hebrews. In Stony Wold Sanatorium, Lake Kushaqua, N. Y., only incipient cases are admitted. It has a capacity of one hundred and six, of which twenty-nine beds are available for free patients. Adirondack Cottage Sanatorium, Trudeau, N. Y., has a capacity of one hundred. Cases must be strictly incipient; and both male and female patients are taken. Charge, $7.00 a week; for needy patients only. At Loomis Sanatorium, Liberty, N. Y., early acceptable cases are cared for in the annex for $5.00 a week. The Preventorium at Farmingdale, N. J., accepts children predisposed to tuberculosis, but not actually tuberculous. At present, with some exceptions, only citizens are admitted. Applicants must come from a home in which they have been exposed to infection.

There are eleven hospitals for tuberculosis in New York city, with a total capacity of about 3,500 beds, including the new Sea View hospital on Staten Island. Admission to the sanatoriums and city hospitals, with the exception of the Montefiore Home, Loomis Sanatorium, Stony Wold, and the Adirondack Cottage Sanatorium, is obtained through the Hospital Admission Bureau, conducted jointly by the Departments of Charities, Health, and Bellevue and Allied Hospitals. If, after proper investigation and examination, an applicant is rejected because he is not suitable for the institution for which application has been made, he is advised to enter one where he is acceptable. A patient can be referred to the Hospital Admission Bureau direct, or through the tuberculosis clinic of the district in which he lives. It is, as a rule, easy to have an incipient case admitted to a sanatorium, although occasionally the waiting lists are long. The difficulty arises when it is desired to dispose of a moderately advanced case. The patient is up and around and feels fairly well, but, because of the extent of his lesion, he is not suitable for a sanatorium. He refuses, however, to enter a hospital, stating, not without reason, that his is not a hospital case, and that a stay in the hospital will not benefit him. He may say that what he needs is country air. It is quite obvious that the moderately advanced and advanced cases are the real sources of infection, and if left at home make it practically impossible to eradicate the disease.

As previously stated, the Department of Health removes tuberculous cases by force if it can be shown that they are a menace to the health of those about them. But what consumptive is harmless in the squalid surroundings of a congested tenement in which misfortune and poverty have placed him? How then can we induce these patients to leave the home and to enter an institution? There are several matters to be considered. In the first place, we ought to make these institutions so attractive as to obviate any necessity for argument or persuasion on the part of the medical adviser. If we can tell the patient that he will be admitted to an out of town sanatorium, holding out the hope or possibility of a cure, argument will be necessary in but few cases. In addition, adequate provision for the support of the patient's family should be made during his absence from home. The principal need, therefore, is a sufficient number of sanatorium beds to accommodate all tuberculous patients who can be induced to take advantage of them. Again, only patients in the last stages of the disease should be admitted to hospitals within the city. At the present time a patient, after admission to a sanatorium, is kept there from three to twelve months; in very exceptional cases a little longer. This may be sufficient in a small percentage of cases, particularly those whose lesion is extremely slight and whose sputum was free from tubercle bacilli when entering the sanatorium; but rarely will it be of lasting benefit in well defined cases of tuberculosis with demonstrable lesions and positive sputum. Experience has shown us, over and over again, that a great many of these cases when returned to the city as arrested, or even as apparently cured, will suffer a relapse sooner or later. To get more permanent results, patients should be kept in sanatoriums much longer than at present. Their stay should be determined by their physical condition, and those whose lesions are merely arrested should not be discharged and told that they will probably get along well enough in the city, for it is reasonably certain that in the old environment their trouble will reappear and they will again become active sources of infection. Patients ought to be kept in sanatoriums until they can be pronounced apparently cured. Then they should be placed in industrial or farm colonies, which can be conducted very economically, and possibly even made self supporting. Such a colony has been established in the vicinity of Baltimore, and is reported to be quite successful. After a prolonged stay in one of these colonies, always under medical supervision, they may be discharged practically assured that they are cured, and in a condition to resume their vocation. Perhaps they may have, in the meantime, acquired a liking for farm work or gardening, and may be willing to devote themselves to it in the future rather than to return to commercial or manufacturing pursuits in the city.

Patients who do not improve in sanatoriums, or who grow worse, should be persuaded to enter institutions of an intermediary nature, such as sanatorium hospitals, also situated in the country. In these institutions the rest cure, rather than the work cure, should prevail. If the patients should continue to grow worse and the prognosis becomes hopeless, they should be transferred to hospitals and under no circumstances be allowed to return home, since at this stage they are most dangerous from the point of view of infection. The city hospitals should be limited to the admission of far advanced cases only. Graded institutions located in the country are, to my mind, the *sine qua non,* the essential weapon in our fight against tuberculosis. It is a plan, which however difficult of realization it may seem, would prove of lasting benefit to the entire community.

The methods here outlined are most urgently submitted for the consideration of all those organizations and individuals who have awakened to the danger, and stand ready to stamp out the scourge of tuberculosis.

230 West 112th Street.

ACUTE INTESTINAL OBSTRUCTION.*

By Richard A. Barr, M. D.,
Nashville, Tenn.

The term intestinal obstruction is a somewhat unfortunate selection for the purpose it serves, since it emphasizes and magnifies the importance of a symptom and tends to distract our attention from the pathology. However serious occlusion of the lumen of the bowel may be, its deleterious effect upon the patient is slowly developed, compared to the rapidly fatal tendency of gangrene, due to strangulation of a coil of intestine. There are many conditions that interefere with the passage of the bowel contents along its lumen, and the difficulty of differentiating between these has, more than anything else, led to the general use of the expressions "locked bowels" and "intestinal obstruction." The selection of an obvious symptom for descriptive diagnosis makes the latter a matter of superlative ease, but does scant justice to the abdominal pathology, which may vary from an evanescent paresis to a gangrenous process, involving, possibly, the major portion of the intestine, large and small.

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*Read before the Middle Tennessee Medical Association at Shelbyville, Tenn., November 21, 1912.

The diagnosis of the special condition leading to intestinal obstruction is one of unusual difficulty, and at the same time one of special interest and importance to the surgeon. To him it is of value to determine whether the failure of bowel action is due to some interference with the dynamics of the bowels (central disturbance of nerve function, handling of the peritoneum during operation, toxemia of extraabdominal origin, toxemia from intraabdominal infection, etc.), or whether, on the other hand, it is due to some one of the many causes of mechanical occlusion of the bowel lumen. It is only by making this differentiation that he can determine the propriety of surgical intervention in the given case and decide the proper time for its adoption. Until this differentiation is made, it is of prime importance that nothing be done in the way of treatment that may cause harmful results in any of the many conditions that may prove to be the cause of the obstruction. In this connections, I want to emphasize the fact that locking of the bowel, which can be unlocked with a purgative, does not threaten a patient's life. Bowels that are mechanically locked cannot be opened with any such key.

In both abdominal infections and mechanical obstructions, the administration of purgatives by the mouth is usually injurious, so certainly in the last condition that their use deserves to be classed as malpractice. Is it possible to imagine a more atrocious procedure than the administration of a large dose of Epsom salts, for instance, to determine whether locked bowels are due to septic paresis, or to mechanical occlusion? Such a test is not only fallacious, it is almost certain to do injury, no matter which condition is present. Should the case be one of peritonitis, with unprotected primary focus, peristaltic movement will certainly disseminate infection, while in mechanical occlusion it will increase the damage being done to the involved and proximal gut. In both instances, the pouring out of fluid into the lumen of the bowel increases the activity of the intestinal bacteria. Fortunately in either condition purgatives administered by the mouth are usually promptly rejected by the stomach, and the patient is afforded protection in this way. Unbelievable as it may seem, the purgative test for differentiation is still used. I have seen it used in this year, 1912, and probably some of you have. A much more common practice at the present time is the careless use of purgatives, without determining their possible injurious effect. Let us get impressed upon our minds that locking of the bowels is merely a symptom. When the symptom is due to an abdominal infection or to a mechanical occlusion of the bowels, purgatives are contraindicated before operation, and just as much so in one condition as in the other.

It is rare indeed that a diagnosis of obstruction cannot be narrowed down to these two conditions. An occasional pneumonia, or other extraabdominal condition may mislead us, and such a mistake may be beyond any effort on the part of any but the most expert to prevent, even by careful examination. It is, however, within the reach of any man's intelligence to learn the danger of purgation, and yet how seldom do we see either paralytic or mechanical ileus that has not been treated in that way. The diagnosis has usually been made with sufficient accuracy to exclude the thought of such a plan. In this one particular our diagnostic ability seems to have outrun our therapeutic intelligence. Patients with any type of acute ileus are seldom saved, either before or after operation, by purgatives. It would be better for purgatives never to be given at all in this condition than for them to be used with any carelessness. Even when they are permissible, there is no proof that they are particularly effective. Since they are ever of doubtful value, and may do great harm, we should absolutely eschew them in the preoperative stage of all acute conditions with locking of the bowels.

As already stated, leaving rare conditions aside, the question that confronts us first, when we meet a case of ileus, is whether it is mechanical or due to peritonitis, and if the former, whether there is strangulation or other progressive destructive process going on in the involved section of the gut. Since peritonitis is a secondary process, the ideal procedure is to make a diagnosis of the primary condition before the infection has spread to the peritoneum. To attempt here a differentiation between ileus and the other possible individual causes of peritonitis would cover too wide a range, but it may be said in a general way that severe abdominal pain, with an absence of tenderness and rigidity, is almost diagnostic of acute mechanical ileus in the early stages. A continued disproportion between the pain, vomiting, meteorism, and shock on one hand, and tenderness and rigidity on the other, points still to mechanical obstruction. A low temperature and a low leucocyte count also suggest mechanical obstruction. A wavelike exacerbation of the pain is more common and more marked in mechanical ileus than in any other abdominal disease. It is very desirable to diagnosticate obstructive lesions on other symptoms, before locking of the bowel becomes evident. The development of this symptom should not be waited for, and, above all, no effort should be made to develop it by purgation. Peritonitis should be prevented by early operation on the primary focus of infection, and mechanical occlusion of the bowel should be relieved before obstruction is manifest.

However, in spite of all care and skill, we shall have the development of both paralytic and mechanical ileus plainly marked by obstinate and even absolute stoppage of gas and feces. Each condition tends to produce the other, and ultimately they are prone to be associated, no matter which is primary. Once there is the development of obstruction, it is only the history that can be of any special value in helping us determine whether or not there was primary mechanical ileus. Paralytic obstruction excludes peristalsis by its very name, while mechanical obstruction stimulates it, and here we have our only valuable differential point. Wavelike paroxysms of cramping pain strongly suggest the presence of peristalsis, while "patterns," in other words, visible contracting coils of gut, prove its presence. So long as the neuromuscular apparatus of the bowel is sufficiently sound to produce this symptom, we have a basis for differentiation. When peritoneal sepsis supervenes, and peristalsis subsides, we are thrown back on the history for evidence of early mechanical occlusion. When the occlusion develops upon a peritonitis, the cramping pain of peristalsis may never be present at any time. Strangulation even may occur under such conditions, without any evidence beyond the absolute obstruction to gas, as well as feces; somewhat unreliable evidence at best. Here we have one of the most difficult of surgical diagnostic problems—that is, the detection of a mechanical obstruction developing upon a paralytic one. It is more than difficult, in many cases it is impossible, but fortunately a mechanical occlusion that is also a strangulating process, developing upon a peritoneal infection, is rare. Mechanical occlusion, without strangulation, and without violent peristaltic effort, adds little to the gravity of a severe peritoneal infection, and, in my opinion, calls for little variation in treatment.

On the second question, that is, whether or not we have a progressively destructive process at the site of a mechanical obstruction, there is not much outside of clinical evidence sufficiently clear to be comforting. Conditions that cause chronic mechanical obstruction, culminating later in acute obstruction, can usually be counted on as not being progressively destructive. Postoperative mechanical obstruction that comes on within a few days, or even within a few weeks, after operation, is usually due to kinking or agglutination, and is not a strangulating process. There are exceptions enough in both classes to make it hazardous to count out the danger of gangrene or perforation, though Ellsberg figures that only fifteen per cent. of acute obstructions will be attended by a gangrenous process, or one that threatens to become so, and two thirds of these are either volvulus or intussusception, while the latter of these will, in most cases, be capable of clinical recognition. So far as symptoms are concerned, shock, with the symptoms given above, suggests strangulation, as does also intense pain, if it is continued between and independent of the peristaltic waves.

Treatment. The prevention of ileus has already been discussed in a minor way, and what has been said must suffice, as we have not time to go into the technical details to be followed at abdominal operations, where we have our evident field for prophylaxis. The handling of ileus, until the question of its surgical nature has been established or disestablished (and in the former case, while waiting for operation) is simple: Absolute withdrawal of food, water, and medication by the mouth, with the use of gastric lavage; the administration of water by the bowel, if it can be done satisfactorily, or by hypodermoclysis, if necessary; water must be given and retained; enemata to empty the lower bowel and encourage the ascape of gas and other bowel contents would be desirable but for the probable interference with the use of water; enough morphine to subdue pain, quiet the nerves, and put the bowels at rest. Many surgeons object to morphine, but I believe it absolutely indicated, before operation in mechanical ileus, to put a stop to violent peristalsis, and I am sure that the most violent opponent of opium would prefer a narcotized patient to the victim of castor oil or compound cathartic pills.

Taking up the surgical treatment of ileus, I will not consider the surgery of peritonitis, for it is safe to assume that the handling of peritonitis along the lines popularized by Murphy meets with the approval of the majority of internists and surgeons. And yet, I will call your attention to the fact that in this type of ileus practically nothing is done at operation to empty the bowel of its contents. Very rarely is enterotomy, and more rarely still, enterostomy, done. From this we may assume that the absorption of poison from the lumen of the gut is considered a negligible danger. This is rather strange, in view of the fact that in mechanical ileus such stress is laid upon the importance of emptying the distended proximal bowel, whether the obstruction itself is relieved or not. Hartwell and Hoguet (*American Journal of the Medical Sciences*, cxliii, p. 357) in experimental work on high intestinal obstruction have concluded that in this condition there is little danger of the absorption of newly formed poisonous products, or the abnormal absorption of poisons ordinarily present, until there have occurred pathological changes in the mucous membrane of the bowel. The experiments of Roger and Garnier, quoted by the writers mentioned above, have apparently proved that the stagnation of bacteria and their toxines cuts no special figure in the production of the symptoms of obstruction. In view of these experiments, it is very possible that we have overestimated the danger of absorption of toxic material from the flaccid bowel below an obstruction, after the latter has been relieved, and the contents of the proximal bowel allowed to enter the flaccid area. Counting out the bacteremia, the essential difference between a paralytic and a mechanical obstruction lies in the damage done to the gut in the latter condition. This damage is done in two ways, by strangulation and peristalsis, and the handling of these two factors creates the essential difference in treatment of the two types.

The disadvantages of surgery done for the permanent relief of mechanical obstruction, in the face of acute symptoms, are too well known to need amplification here. Suffice it to say that they are so great as to exclude its use except to prevent an impending destructive process in the bowel, or to remedy destruction already accomplished. It is desirable to get rid, if possible, of all acute symptoms, before even the simplest surgery is done. We find then that the surgery of both paralytic and acute mechanical obstruction is reduced to a minimum. The removal of foci of infection in one condition, and of destructive processes in the other is the limit, so to speak.

Laying aside these features of the two conditions temporarily, what about the gut itself urgently demands attention? In both paralytic and mechanical obstruction we have a bowel full of poisonous material, and in unrelieved mechanical obstruction we have to guard against injurious peristalsis. Gastric lavage and purgatives by mouth, or purgative enemata are considered sufficient to take care of the accumulated poison of peritonitis, for instance. Enterotomy and enterostomy are seldom used. But when mechanical occlusion is present, enterostomy and enterostomy alone, at some, you might say any, point proximal to the obstruction becomes the sheet anchor, not only to empty the bowel and check injurious peristalsis, but, as believed by some, to offer opportunity to strangulated coils of gut to escape from ensnaring bands. In some hands this procedure brings the moribund back to life with remarkable uniformity of action. Other operators are not so happy in their results, and consequently not so certain of its theoretical and practical advantages. To my mind, the statement of Treves, quoted and denounced by Ellsberg, that it is "extreme, irrational, and blindly advised," appeals as being not far from the mark. It certainly is blindly advised when a destructive process is left uncared for. Let us assume for a moment that we have a mechanical occlusion, due to adhesions or some similar condition, without any strangulation of bowel circulation. If sufficient opium is given to not only prevent violent, irregular peristalsis, but to inhibit all bowel movement, on what basis can we assume, except in very high obstructions, that our patient is in any immediate danger? If neither gangrene nor perforation is imminent at the site of obstruction, is our patient in any worse fix from an opium paralysis of the gut than he would be from septic paralysis? If gastric lavage will tide the septic case over until the bowels move, why will it not do the same for the narcotized patient? It will, and under lavage and opium, circulatory disturbances in the occluded and proximal gut will be readjusted, and, as the gut begins to wake up, it is more than likely to find the mechanical obstruction relieved.

If the occlusion is permanent an enterostomy is of course demanded, unless the patient's condition justifies surgery for permanent relief of the obstruction. Enterostomy is a nasty affair to handle during what might be called its eruption period, and, besides this, the operation may be performed so high in the gut, when done without careful selection of the coil to be opened, that starvation of the patient results. Its very unpleasantness is sufficient argument against its use except where it has distinct advantage over any other plan of procedure. I must confess to a suspicion that enterostomy has been given the cerdit, of late years, of raising almost too many people from the dead, but, granting everything claimed for it, it seems very reasonable to believe that patients, with such a pathological condition present that they can be brought back to life by bowel drainage, might have been saved, by intelligent treatment, from getting into any such shape. Go ahead and use enterostomy on desperate cases of obstruction from any cause. Let us grant that it is not "extreme" or "irrational," though it is blindly applied under such conditions; but, where the patient's condition at all justifies it, let us make some slight search for the obstructed gut, unless we have extensive adhesions. Attempts to unravel adhesions in the presence of acute obstruction are fatal, and I do not think are ever justified. Let us try to prevent our patients from getting to the stage where enterostomy is indicated, and let us not get too much obsessed with the idea that it is a surgical procedure indicated for the treatment of acute mechanical bowel obstructions in general.

It is probable that you have been able to follow my line of argument with great difficulty, if at all, for this paper lacks consecutiveness; but the few points I wish to emphasize can be briefly stated in conclusion.

1. Digestive disturbances, with colic, following abdominal operations, should be treated with opiates and not by purgatives.

2. A suspected mechanical obstruction should never be treated or tested by purgatives by the mouth.

3. Under such circumstances the painful peristalsis should be quieted with opiates. Attempts to move the bowel should be made only with enemata.

4. Patients with suspected strangulation of the bowel, or with mechanical obstruction of any type that does not yield promptly to opiates, gastric lavage, purgative enemata, and hypodermoclysis should be treated by section.

5. In all patients, except desperate cases that are operated on a search should be made for the obstruction, provided no adhesions are present. This search should, if possible, start with the cecum, and should proceed up or down the gut, as determined by the flaccid or distended state of the cecum.

6. If the obstruction is not located after a brief search, enterostomy should be done at the lowest point in the distended gut that is practicable. This should be made by fastening in a rubber tube with sutures, after the manner of a Kader or Senn gastrostomy.

7. There is only one technical point that I wish to present. It concerns a plan I have used only once, myself, but it appeals to me as a good one. When resection is done for damaged gut, and anastomosis is considered justifiable, use the lateral suture method, and establish gut drainage by fixing the proximal end of the gut in the operating wound, or in a stab wound, after fixing a tube in it by two or three successive purse strings of catgut.

By this means the proximal bowel is given an outlet for its accumulations, and the suture is absolutely relieved from stress and strain due to distention of the gut. Spontaneous closure of the fistula is practically assured, since a portion of it is lined with peritoneum.

THE SUCCESSFUL TREATMENT OF ATROPHIC RHINITIS AND OZENA;

A New Remedy.

By Louis Jacobs, M. D.,
New York,
Assistant, Ear, Nose, and Throat Clinic, Mount Sinai Hospital.

In the therapeusis of chronic atrophic rhinitis and ozena, the remedial measures that have been employed are legionary. Each in turn has been advocated as a cure for the relief of this distressing condition and has been found wanting. The author, however, ventures to offer another that seems a rational and efficient remedy, judging from the results obtained.

Inasmuch as this report is a preliminary one, the consideration of the various theories of etiology and pathology of this disease will not be discussed, nor will reference be made to the general constitutional treatment and local surgical measures, either intranasal or upon the accessory sinuses, with a view toward removing causative factors. In the vast majority of instances the treatment has been local, and this includes the topical application of preparations of such drugs as iodine and ichthyol, sprays of watery and oily solutions, insufflations of powders, tamponage, injections, and electrical stimulation. Relief, if any, has been but for short periods only.

In the fall of 1911, in the course of treatment of a simple ulcer of the septum with scarlet red ointment, there was noted by the writer an intense reactionary inflammation in the normal mucous membrane. This fact suggested the use of the ointment as a stimulant to the atrophic mucous membrane, as found in chronic atrophic rhinitis. In the early cases treated the ointment was used, but it proved unsatisfactory because of the difficulty of application and its inability to adhere to the mucous membrane. Later, a suspension in white petrolatum, five per cent. strength, was used. This was found to adhere to the mucous membrane, but it did not remain in the nose for a reasonable time. Suspensions in either mucilage of acacia or of tragacanth, of five per cent. strength, proved the most satisfactory, in that they were easily applied and would remain in the nose for from two to three days. The preparation employed in this work was the suspension in mucilage of acacia.

The technic of application is as follows: The nasal cavities are first thoroughly sprayed with a Dobell's solution under a pressure of forty pounds. This softens the crusts and they are removed with a cotton applicator. This preliminary cleansing is important, and must be carried out until the nose is free from all crusts. The suspension of scarlet red is then vigorously rubbed, with a cotton applicator, over the mucous membrane of every part of the nose. As the suspension remains adherent for about two days, the treatment was carried out every second or third day at the outset. As the condition improved, the interval of time between treatments was increased. Some of the patients were given the scarlet red in a one per cent. suspension in white petrolatum for home use, to be applied in the form of a spray once a day. The method was employed in all stages of atrophic rhinitis. After two to three weeks of treatment the mucous membrane began to undergo regenerative changes; soon the odor became less marked, and eventually it entirely disappeared. There was a decrease in the formation of crusts; they were softer and easily removed.

A general improvement of the mucous membrane of the nose was noted; from a thin, shiny, anemic appearance, it became reddened and thickened and assumed a healthier tone. This certainly demonstrates that scarlet red must exert a stimulating effect upon the mucous membrane far in excess of other medicaments formerly employed in this condition. Whether the normal ciliated epithelium is restored to the mucous membrane is a question not as yet determined. The results observed from the local application were encouraging enough to lead to the pursuance of the treatment without disturbing its continuity by removal of a section for microscopical examination. As the local condition improved, there was noted a concomitant improvement in the general condition of the patients. The depreciating effect of the absorption of the effete discharges, producing, as it were, a vicious circle, was thus demonstrated. The total number of patients treated by this method was twenty, and all of them were benefited. The best results were attained in those cases in which the treatment was most faithfully carried out; for, as is customary in dispensary work, treatment was in some of the cases intermittent. Therefore the patients treated privately showed the most gratifying results. As a check upon this work, the following system was followed: Cases were examined and diagnosticated by Dr. Emil Mayer, chief of the clinic, or by Dr. S. Yankauer, of the same clinic. They were then placed under my care for treatment, and as time elapsed were reexamined by these physicians, who have substantiated the results obtained. The brief histories of six cases are here appended.

Case I. Mrs. L., aged thirty-eight years, for several years complained of dryness of the nose with formation of crusts, a decided odor having been evident for the past year. During this time she was under treatment and had a submucous resection performed. Examination showed a dry, shiny, mucous membrane, hypertrophied left inferior turbinate, atrophy of both middle turbinates, and a large perforation of the septum at the middle third. Since the operation the condition had become worse. After a few applications of the scarlet red there was a disappearance of the crusts and odor and a general improvement of the mucous membrane. Continued treatment for a few months. Patient is now seen at irregular intervals.

Case II. Miss G. G., aged nineteen years; feather worker. For one year complained of frequent blowing of the nose, dryness, and marked fetor. Had been under treatment for four months without relief. Examination showed nares large and roomy, mucous membrane pale, thin, shiny, and covered with thick greenish, adherent, foul smelling crusts; the odor being nauseating. Upon removal of the crusts the surface of the mucous membrane was bleeding. Both middle turbinates were markedly atrophied and both inferior turbinates partially so. This case was rather resistant to treatment at the outset, and other causes of trouble were investigated, though without success. Transillumination, the Wassermann reaction, and examination of heart and lungs all proved negative. After two months of patient and persistent treatment, however, favorable results were noted. The crusts and odor diminished, the mucous membrane assumed a healthier tone, and the turbinal mucous membrane became thickened and would pit on pressure with a probe. The treatment was continued for six months and a very favorable result was obtained. The patient is now free from crusts and odor.

The improvement in the general condition was marked, and this without systemic treatment.

Case III. Mrs. H. S., aged thirty-two years; housewife; for eight years had complained of having to blow her nose frequently and of local dryness, crusts, and odor. Had been under treatment for various periods during this time. Examination.—Mucous membrane thin, shiny, anemic, and covered with thick, offensive smelling crusts and a thick, greenish yellow secretion; both middle turbinates atrophied; transillumination negative. In three weeks improvement was noted; discharge less, odor less, mucous membrane becoming reddened. After this the patient did not appear for treatment for three months. There had been, however, no retrogression to the former condition. With treatment twice a week the patient was completely relieved. Is now seen at irregular intervals.

Case IV. Miss M. P., aged nineteen years, saleswoman; for four years had complained of dryness and crusts in the nose with bad odor; had been under treatment for this condition but without relief. Examination.—Right nares large and roomy; deviation of the upper middle third of septum to the left; atrophy of both middle turbinates and left inferior turbinate; mucous membrane dry, pale, and glassy; crusts very thick, greenish, and foul smelling; transillumination negative. This patient has been under treatment for three months and is showing favorable results. She continues under care.

Case V. Miss H. J., aged eighteen years, stenographer; for five years had complained of dry nose, constant blowing, crusts, and odor; had been under treatment for a year. Examination.—Slight deviation of the septum to the right; hypertrophy of the left middle turbinate; atrophy of the left lower turbinate; mucous membrane pale, shiny, and covered with greenish crusts; very bad fetor. Under treatment for two months when improvement was quite marked. Transillumination negative. There was a thick, greenish yellow discharge from the left superior meatus. The left middle turbinate was removed, and the anterior ethmoidal cells curetted. Following this, the applications were continued and improvement progressed rapidly.

Case VI. Miss X., aged twenty-two years; for some years had complained of a dry nose and the necessity of constant blowing. Examination.—Thin, pale mucous membrane; atrophy of both middle turbinates. In a short time rapid improvement took place, this being an early condition of atrophy.

The writer presents the following conclusions:

1. The substance known as scarlet red may be applied to the nasal mucous membrane without producing any constitutional symptoms.
2. The best excipient for these applications is mucilage of acacia.
3. Lasting results of great benefit may be obtained by the use of this remedy.
4. The treatment is simple and of short duration.

149 West 118th Street.

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Therapeutic Notes.

Treatment of Menorrhagia in the Presence of Acute Inflammation of the Uterine Annexa.—C. Koch, in *Semaine médicale* for January 8, 1913, is credited with the introduction of a new procedure for the treatment of profuse menorrhagia accompanying acute annexitis. Subcutaneous injections of pituitary extract proving ineffective in these obstinate cases, even when doses of two c. c. were given on several successive days, the author resorted to injections of ergot and of pituitary extract directly into the uterine muscle itself.

After the usual preliminary antiseptic preparation of the parts, the anterior lip of the cervix was fixed with a double tenaculum—not drawn forward, however, or but slightly—and a hypodermic needle introduced into it to a depth of one or two centimetres in a direction parallel with the long axis of the uterus. The barrel of the syringe was removed for a moment, in order to make sure that no bloodvessel had been entered by the needle, then reapplied and the injection made.

This procedure was carried out in ten patients. Injections of an aqueous extract of ergot proved effective, the bleeding being arrested almost at once, although where the uterus contracted firmly, some pain was experienced for ten to twenty-four hours, and at the end of this time, bleeding generally recurred, a repetition of the injection becoming necessary. Pituitary extract was next tried. With this agent, the headache, cardiac acceleration, pallor, and nausea sometimes caused by ergot were avoided, and the effect on the hemorrhages was good, although less pronounced than with ergot, some slight oozing still taking place. There was noted with this drug the same possibility of a return of bleeding when the uterus relaxed as with ergot, but, on the whole, the use of the pituitary preparation is preferred by the author.

Miscellaneous Therapeutical Hints.—Norbert Reader, in the *Practitioner* for November, 1912, points out the value of magnesium carbonate as an inexpensive substitute for bismuth in general practice. In many instances it is no less efficacious than the latter.

The following combination was found valuable by the author in the treatment of cardiac disease:

℞ Ammonii carbonatis, ...gr. iv (0.25 gramme);
Tincturæ strophanthi, ...♏x (0.6 c. c.);
Spiritus ætheris compositi, ... }
Tincturæ lavandulæ compositæ, } ..āā ʒss (2 c. c.);
Aquæ chloroformi, q. s. ad..........℥ss (15 c. c.).
M. ft. solutio.
Sig.: To be taken three times daily or every four hours.

In the vomiting sometimes accompanying anemia a combination of arsenic and iron, recommended by Beddard, proved very effective:

℞ Liquoris sodii arsenatis, ...♏l (3 c. c.);
Ferri et ammonii citratis, ...℥ss (15 grammes);
Aquæ menthæ piperitæ, ...℥iii (100 c. c.).
M. ft. solutio.
Sig.: One teaspoonful three times a day.

Iodine was particularly useful in the treatment of compound fractures. The bones should first be plated, and the entire wound then swabbed out with a one per cent. iodine solution, which may be poured into the wound from a sterile vessel. The author has records of six cases so treated, in all of which primary union of bone and skin occurred

Treatment of Primrose Dermatitis.—H. A. Sharpe, in the *Journal of the American Medical Association* for December 14, 1912, states that he has had occasion to treat many cases of dermatitis due to the wild primrose flowers. The condition occurs in the spring, may be acute, subacute, or chronic, and is often mistaken for eczema. In the acute cases avoidance of all contact with the cause of the affection, together with the use of mild ointments, are sufficient. In treating a chronic case, the author uses an ointment of the following composition:

Oil of cade, . }
Salicylic acid, } ....of each 1 to 3 per cent ;
Phenol (for itching when present) 1 to 3 per cent.;
Ammoniated mercury, ...5 to 15 per cent.;
Zinc oxide ointment, to make.........100 per cent.

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PROPOSED FEDERAL ANTINARCOTIC LEGISLATION.

We have frequently called attention to the abuses in the sale of morphine, cocaine, etc. (in the JOURNAL of May 3, for example), and to the necessity for some form of additional federal legislation on the subject. The difficulties involved in such legislation are, however, well shown by the widely divergent character of the bills relating to this subject recently introduced into Congress. There seem to be only two ways in which the sale of such drugs can be brought under the control of the federal government, namely, under the clause authorizing Congress to regulate interstate commerce or under that relating to the levying of an internal revenue or other tax.

In one of the bills introduced the former clause only is invoked and it simply prohibits the interstate shipment of certain habit forming drugs to other than certain specified classes of individuals (qualified practising physicians, pharmacists, dealers, etc.), and requires that a record of all such shipments and receipts shall be kept, which records are to be open to the inspection of local and other officials when authorized by the Secretary of Agriculture. The control of the sale of the drugs in the States themselves is left to the local authorities; the federal law would simply assist these in determining the source of the drugs and by whom they were received.

The bills of the other type, that is, those relating to the laying of an internal revenue or other tax, are more comprehensive and designed to give the federal government some degree of control over the drugs after they reach intrastate commerce. These measures propose the placing of a tax upon all who sell, prescribe, or dispense the drugs; under their provisions physicians would be required to pay to the United States government an annual tax of one dollar. Some of the measures provide, in addition, for a tax upon the drugs themselves. The purpose of these measures is to restrict as far as possible the use of these dangerous drugs to legitimate channels, and also to provide, for the use of local and other officials, a record showing the extent, character, and direction of the sales of such.

Physicians who, more than any other class of men, recognize the harm done by the illegitimate use of these drugs, will be glad to give their support to measures which will diminish such use, even if they themselves are put to some inconveniences; but they will be justified in insisting that when the bills are put into their final shape no unnecessary hardships are imposed upon them. The latter has too often been the case with similar measures introduced in the legislature of this and some other States.

OLD GREENWICH VILLAGE.

There is much of medical as well as general interest associated with the former village of Greenwich, occupying that section of the present borough of Manhattan, just to the south of Fourteenth Street and west of Fifth Avenue, in which "Old Home Week" has lately been celebrated—the first commemoration of the kind ever held in this city. Before New Amsterdam was dreamed of this spot was occupied by an Indian village, and it is said to have been noted for its healthfulness.

In the middle of the eighteenth century the principal landholder in Greenwich was Sir Peter Warren, a distinguished British naval officer. When an epidemic of smallpox broke out in New York, Sir Peter invited the Colonial Assembly to meet at his house, and the members were so pleased with the beauty and healthfulness of the site that it became at once the fashion for residents of the distant city of New York to seek health and recreation in this pretty rural village. From quite early days, however, the citizens had been accustomed to take refuge in Greenwich, on account of its reputation for healthfulness, at times of epidemic disease; and in a letter to the Duke of New Castle, dated April 18, 1739, Lieutenant-Governor Clarke wrote:

> I beg to inform your Grace that the Small Pox being in town, and one third part of the Assembly not having had it, I gave them leave to sit at Greenwich.

In 1742 and 1743 Mayor John Cruger reported 165 deaths (the population of the city was then about 10,000) from "an epidemical distemper or plague," which was no doubt yellow fever, and it is recorded that in the summer of both these years many persons fled to Greenwich to escape infection. To go to Greenwich was probably not as efficient a means of protection against smallpox as vaccination (which then, of course, was as yet a thing of the future), but it is a remarkable fact that yellow fever appears never to have crossed the swamp and the meadows lying between the town and the village. In 1798 there was a very severe epidemic of the latter disease in New York, and for a number of succeeding years it recurred almost every summer. Each time that it appeared there was an exodus to Greenwich, and as a certain proportion of those who resorted thither remained permanently, the village constantly added to its regular population. It was, indeed, to the great epidemic of 1822 that the place was largely indebted for the impetus to the active growth and prosperity which characterized it for many years. Mr. John Lambert states that upward of 20,000 persons fled from the city, and in describing the hegira he says:

> As soon as the dreadful scourge makes its appearance the inhabitants shut up their shops and fly into the country. Those who cannot go far, on account of business, remove to Greenwich, a small village situate on the border of the Hudson River, about two or three miles from town. Here the merchants and others have their offices and carry on their concerns with little danger from the fever, which does not seem to be contagious beyond a certain distance. The banks and other public offices also remove their business to this place, and markets are regularly established for the supply of the inhabitants.

Wall Street was completely deserted, and the temporary banking offices were, almost without exception, located on one street in Greenwich, which ever since has borne the name of Bank Street. Dr. Richard Bailey, who practised in New York until his death, in 1801, published several valuable monographs on the yellow fever epidemics which had so often devastated the city during the eighteenth century.

It would be interesting, but beyond the scope of this article, to refer to the many persons of note who have resided in or been associated with Greenwich village, but two of them were of such exceptional prominence in American history that mention should perhaps be made of them. Thomas Paine came to live there about the beginning of the nineteenth century, and died there on the eighth of June, 1809, and the commissioners appointed to lay out the city plan, out of compliment to the author of *The Age of Reason,* named one of the streets Reason Street. It was from Greenwich that Aaron Burr went to Weehawken to fight his duel with Hamilton, July 11, 1804; returning there for breakfast after the fatal encounter. Since 1797 Burr had occupied a historic mansion on "Richmond Hill." This dwelling was the headquarters of Washington for a short time in 1776, and from it Nathan Hale was sent on the mission which resulted in his execution; while in 1789 it became the residence of Vice-President John Adams. As United States senator, as well as Vice-President, Burr entertained there many of the most eminent men of the day, including Louis Philippe and the illustrious Talleyrand.

Quite a large number of the prominent New York medical men of former generations were either born in Greenwich or practised there, and the first rector of old St. Luke's Church, on Hudson Street (one of the vestry of which was Clement Moore, author of *The Night before Christmas*), was a physician as well as clergyman, Dr. George Uphold. At the present time, moreover, a respected member of the profession, Dr. Edwin Zimmerman, is familiarly known as the "mayor of Greenwich village."

ANTITOXINES BY THE MOUTH.

Ever since the introduction of antitoxines attempts have been made by clinicians to substitute their administration by the mouth for the usual hypodermic method. The reasons for the preference are obvious, even if not very convincing. The hypodermic method involves considerable care in the technic, entails pain and annoyance to the patient, and generally marks such a radical departure from the usual methods of medication as to introduce an element of considerable apprehension on the part of the layman. By mouth one can administer anything without fear of criticism. Besides, one can leave a prescription and have the drug administered ever so often without the necessity of personal supervision. It is noteworthy that these attempts were made in the early days of serum therapy, when this kind of agent was new and regarded by the laity and a considerable proportion of the profession with some misgivings. Chantemesse was the first to administer diphtheria antitoxine by the mouth in twenty cases of diphtheria, with, he alleged, favorable results. This was in 1896. Following this observer, De Minceis, in France, Urkevitch and Zahorsky, in Russia, and several clinicians in Germany have tried the method and reported favorably on it. However, all these reports lacked scientific support. They were based almost entirely on bedside observations. Nedrigailoff (*Bolnitchuaja Gazetta Botkina,* January 13, 1899) submitted the question to an experimental investigation, and found the administration of antitoxine by mouth or rectum to be without the slightest protective value. His experiments showed that no antitoxine could be found in the blood following its administration by the gastrointestinal tract, and that seven hours after the introduction by the mouth no antitoxine could be found in the stomach or intestines. Recently, Pivovaroff reported before the St. Petersburg Pediatric Society his experiments on guineapigs, showing the possibility of immunization against diphtheria toxine by antitoxine administered by the colon. Blumenau and Dzerzhgovsky (*Roussky Vratch,* March 9, 1913) applied the method clinically with unfavorable results. They then conducted a series of experiments on animals, with the result that in no instance could they secure immunity by this method of introduction of antitoxine; neither could they discover any antitoxine in the blood of the animals so treated. Moreover, even the administration of toxine by the bowel remained without apparent effect. Incidentally, they discovered that the vagina offered a very satisfactory cavity for the absorption of both toxine and antitoxine. In view of the fact that Sokoloff (*Pediatria,* No. 13, 1912) stated that he had emloyed tuberculin successfully by the colon, the authors administered tuberculin by the bowel to six children known to be tuberculous. None of them reacted, although subsequent application of the tuberculin subcutaneous test proved positive. These facts would seem to throw considerable doubt on the efficacy of the method of internal administration of tuberculin recently advocated. So long as the results obtained by various observers at the bedside and in the laboratory are so contradictory, it does not appear to be good therapy to depend on a method so uncertain, particularly in conditions fraught with great danger to the patient.

DANGER IN WOOD ALCOHOL.

At a recent hearing before the public health committee of the New York Board of Aldermen the danger incurred in the indiscriminate use of wood alcohol was clearly brought out. The hearing was given in connection with a proposed ordinance requiring that all methyl alcohol, whether impure or purified, shall be labeled "wood poison" and bear a poison label, together with a warning that its fumes are apt to produce blindness and its imbibition, death. In at least one State the law requires the seller to label the substance "wood naphtha" instead of "wood alcohol." Several State laws classify it as a poison, and under this classification it should bear a poison label.

But even if such laws were general and were enforced, there would still be a very large field in which methyl alcohol is used and in which it is a source of danger. Methyl alcohol happens to be an excellent and economical solvent for several gum resins, and is therefore used as a solvent in the manufacture of many varnishes. It has other technical uses, and in its application the workman, wholly ignorant of the risk attendant upon its use, may suddenly find himself suffering from paralysis of the optic nerve without any clue to the etiology of the trouble. Such cases could only be reached by legislation prohibiting the use of methyl alcohol in any industry under circumstances in which the workman might possibly inhale the fumes. As a matter of fact, there are very few technical uses in which denatured ethyl alcohol may not be substituted for methyl alcohol, and without great difference in the results or in cost.

Where such laws are enacted they should be adequately enforced. The use of methyl alcohol in medical preparations is already illegal, but the executive secretary of the committee on prevention of blindness of the New York Association for the Blind, at the aldermanic hearing referred to, cited at least two instances in which paregoric had been purchased from retail druggists in New York made with methyl alcohol, and three instances in which refined methyl alcohol had been sold without the poison label required under the laws of the State of New York. We doubt the desirability of requiring methyl alcohol to bear the label "wood poison," for the term does not seem sufficiently descriptive. It would, in our opinion, be sufficient to require it to be labeled "wood naphtha" and to bear a poison label, with the traditional skull and crossbones and a warning against its imbibition. But whatever laws or ordinances may be enacted, adequate relief from the danger involved in the use of wood alcohol cannot be expected until the laws regarding it are more rigidly enforced than they have been in the past. Under the head of Miscellany we refer to the fourth annual report of this committee on the prevention of blindness, which gives further data regarding the danger involved in the use of wood alcohol in various directions. A copy of this report should be seen by every health officer in the United States.

METABOLISM IN PELLAGRA.

The ability of pellagrins to utilize the various foodstuffs, as indicated by a series of fifteen experiments made by Victor C. Myers and Morris S. Fine, and published in the *American Journal of the Medical Sciences* for May, appears to be only slightly if at all below the normal. The elimination of mineral and nitrogenous matter in the urine is strictly in accordance with the dietary and physical conditions of the individuals. A lowered physiological efficiency is indicated by the low creatinin coefficients and the elimination of small amounts of creatin in the urine. Some possible renal irritation may be inferred from the presence of a few hyaline casts in about forty-five per cent. of the cases. Anacidity, a condition common in pellagra, was present in eight of the writers' fourteen cases, and was generally associated with an entire absence of pepsin, or with pepsin in only minute quantities. Indicanuria is marked in pellagrins, and is excessive in the cases with gastric inefficiency. Though the ethereal sulphate hardly parallels the indoxyl potassium sulphate, the quantities eliminated are much higher where anacidity exists, and they also hold a higher ratio to the inorganic sulphates. Indol and skatol, especially the latter, are present in the feces in decidedly abnormal amounts. The presence of excessive amounts of indican in the urine, associated with a high elimination of ethereal sulphates, considered in connection with the abnormal amounts of indol and skatol in the feces, points to some unusual bacterial conditions in the intestine. This putrefaction, according to the writers' views, would appear to take place rather high up in the intestine.

THE RELATION OF STOMOXYS CALCITRANS IN THE TRANSMISSION OF TRYPANOSOMA EVANSI.

The Bureau of Agriculture at Manila, Philippine Islands, has undertaken a series of studies to incrimate or to exclude from all practical consideration the various species of blood sucking insects that might be concerned in the transmission of *Trypanosoma Evansi.* The first of these experiments to be reported on has been published in the *Philippine Journal of Tropical Medicine* for December, 1912. Dr. M. B. Mitzmain, the author of this very interesting essay, has made the fly the object of these experiments. Thus, flies were employed in twenty-nine experiments involving the use of three horses, six monkeys, and twenty-two guineapigs. But only negative results were obtained in the attempts at direct transmission of surra with flies which were induced to bite healthy animals at intervals ranging from five minutes to three days after being permitted to complete the feeding upon infected animals. Hence it seems to be proved that surra does not develop in the body of *Stomoxys calcitrans.* The wounds made by the labium of the fly were not found to be a suitable channel for infection; consequently it is not likely that surra in domestic animals is produced through this avenue by external contamination, namely, feces, mouth parts, or pulvilli of infected flies.

News Items.

Commencement Exercises at Vanderbilt University.—At the annual commencement of the medical department of Vanderbilt University, Nashville, Tenn., held on May 20th, the degree of doctor of medicine was conferred upon seventy-five young men. The address of the evening was delivered by Dr. Ira Landrith.

American Medicopsychological Association.—The next annual meeting of this association will be held in Niagara Falls, Canada, June 10th to 13th. The present officers are: Dr. James T. Searcy, of Tuscaloosa, Ala., president; Dr. Carlos F. MacDonald, of New York, vice-president; Dr. Charles G. Wagner, of Binghamton, N. Y., secretary and treasurer.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Monday, June 2d, Philadelphia Clinical Association and the Clinical Society of the Jewish Hospital; Wednesday, June 4th, College of Physicians; Thursday, June 5th, Obstetrical Society; Friday, June 6th, Kensington Branch and the Southeast Branch of the County Society.

Tennessee State Medical Association.—At the annual meeting of this association, held recently in Nashville, the following officers were elected: President, Dr. W. D. Haggard, of Nashville; vice-presidents, Middle Tennessee, Dr. E. M. Holmes, of Murfreesboro; West Tennessee, Dr. Robert Mann, of Memphis; East Tennessee, Dr. H. P Larrimore, of Chattanooga; secretary, Dr. Perry Bromberg, of Nashville.

Commencement Exercises of the Woman's Medical College.—The fiftieth annual commencement of the New York Medical College and Hospital for Women was held on the evening of May 22d in the Waldorf-Astoria Hotel. The degree of doctor of medicine was conferred upon nine young women. On the following evening the Alumnæ Association of the college held a dinner at the Hotel Savoy to celebrate the fiftieth anniversary of the founding of the hospital.

Jefferson Medical College to Have a Tuberculosis Hospital.—The Jefferson Medical College has purchased the property at 236 and 238 Pine Street, Philadelphia, and will use it as a hospital for the treatment of tuberculosis. The building was formerly occupied by the Phipps Institute for the Treatment of Tuberculosis, and will consequently need little alteration. Dr. Thomas McCrae, of Jefferson Medical College, formerly associate professor of medicine at Johns Hopkins University, will have charge of the new institute.

Medical Inspection of Public Schools in New York.—Governor Sulzer on May 24th signed the bill of Senator Blauvelt, amending the education law by providing for medical inspection of pupils attending public schools in New York State, such inspection to include the service of a trained and registered nurse, if one is employed, and for the examination of pupils for the existence of diseases, of physical defects, and for testing the eyes and ears. Medical inspectors are to be employed by the Board of Education in each city and union free school district.

Iowa State Medical Society.—Dr. L. W. Dean, of Iowa City, was elected president of this society, at its annual meeting held in Des Moines on May 7th, 8th, and 9th, succeeding Dr. V. L. Traynor, of Council Bluffs. Other officers elected are: First vice-president, Dr. F. S. Smith, of Nevada; second vice-president, Dr. S. A. Spilman, of Ottumwa; fifth district councilor, Dr. G. E. Crawford, of Cedar Rapids; sixth district councilor, Dr. H. C. Eschbaugh, of Albia; trustee, Dr. G. N. Ryan, of Des Moines. The secretary and treasurer of the society were reelected to serve for another year.

Medical Association of the Greater City of New York.—A special meeting of this association will be held under the direction of the chairman for the Borough of Richmond, at St. George, Staten Island, on Monday evening, June 2d, at 8:30 o'clock. The programme will include the following papers: Report on the Recent International Congress on Physical Education in Paris, by Dr. M. S. Gabriel; the Intrathoracic Use of Nitrogen Gas in the Treatment of Pulmonary Tuberculosis, by Dr. Charles R. Kingsley, Jr.; the Treatment of Arteriosclerosis, by Dr. Louis Faugeres Bishop; Longevity and Rejuvenescence, by Dr. I. L. Nascher.

West Tennessee Medical and Surgical Association.—At the annual meeting of this association, held in Jackson, Tenn., on May 9th, Dr. J. R. Carroll, of Henderson, was elected president. Dr. I. A. McSwain, of Paris, was reelected secretary and treasurer for the twenty-second consecutive term. Dr. I. C. Rawls, of Dyersburg, and Dr. O. S. McCown, of Memphis, are the new vice-presidents of the association. Next year's meeting will be held in Union City.

Medical Society of the County of Steuben, N. Y.—At the ninety-eighth annual meeting of this association, held in Bath on May 13th, the following officers were elected: President, Dr. Douglas H. Smith, of Bath; vice-president, Dr. W. E. Barron, of Addison; secretary and treasurer, Dr. W. W. Smith, of Avoca. Dr. W. W. Smith, who had been secretary and treasurer for seventeen consecutive years, declined reelection. Dr. T. H. Pawling, of Avoca Dr. D. P. Mathewson, of Bath, Dr. F. C. Shaut, of Addison, and Dr. B. R. Wakeman, of Hornell, were elected censors.

Southwestern Kentucky Medical Association.—This association held its forty-third annual meeting in Paducah on May 20th and 21st, and elected the following officers to serve for the ensuing year: President, Dr. G. W. Payne, of Bardwell; first vice-president, Dr. F. G. Larue, of Smithland; second vice-president, Dr. John C. Dismukes, of Mayfield; secretary, Dr. Herbert Hunt, of Mayfield; treasurer, Dr. Vernon Blythe, of Paducah; historian, Dr R. T. Hocker, of Arlington. The principal feature of the programme was an address on Spinal Surgery by Dr. Russell A. Hibbs, of New York.

Connecticut Valley Medical Association.—The following officers were elected at the annual meeting of this association, held in Bellows Falls, Vt., on May 13th: President, Dr. H. K. Faulkner, of Keene; vice-president, Dr. A. I. Miller, of Brattleboro; secretary and treasurer, Dr. J. Sutcliffe Hill, of Bellows Falls. An interesting programme was presented, which included the address of the retiring president, Dr. A. L. Miner, of Bellows Falls, and papers by Dr. Edward Reynolds, of Boston, Dr. C. A. Pease, of Burlington, Dr. Waldron H. Vanderpoel, of New York, and Dr. C. W. Strobell, of Rutland.

Gifts and Bequests to Hospitals.—The Polyclinic Hospital, New York, has recently received the endowment of three beds in its general wards and an additional donation of $1,000 from Mr. A. H. Troescher, in memory of his friend, the late Mr. Andrew Blum.

The will of Mrs. Charlotte Thompson Ames Brown, who died in Boston on January 18th, provides for the erection of a new hospital building, at a cost of $250,000, for the New England Baptist Hospital on Parker Hill, to be known as the Samuel Newell Brown Hospital. This hospital is also made the residuary legatee of her estate. Other public bequests are $5,000 to the Home for Crippled Children in Boston; $10,000 to the Cullis Consumptive Home; $5,000 to the Burnap Free Home for Aged Women; $50,000 to the Brockton Hospital to be known as the Franklin and Martha K. Ames Fund in memory of her father and mother; $10,000 to the Brockton Hospital, in memory of her niece; $5,000 to the Home for Aged Couples in Boston, and $10,000 to the New England Moral Reform Society.

Resolutions on the Death of Dr. Elmer E. Brown.—At a meeting of the faculty of the Medical Department of Temple University, held on May 28, 1913, the following resolutions were adopted:

WHEREAS, We have learned with profound sorrow of the death of Dr. Elmer E. Brown, vice-president of Temple University, our beloved fellow worker and friend, and,

WHEREAS, His sterling qualities as a man, his kindness of heart, and his devotion to the university have earned for him the deep affection of the entire teaching staff of the Medical Department, and,

WHEREAS, His public spirited, humane, and self sacrificing services to Temple University, its medical school, and its hospitals have contributed much to their great advance and development, and,

WHEREAS, Such a career as was his, in which arduous, incessant, and disinterested labor, all devoted to man's intellectual uplift, and to the alleviation of suffering, should be perpetuated as an inspiring example to our student body and to all men, be it

Resolved, That our faculty place on record all these exemplary virtues of Dr. Elmer E. Brown as a tribute to his noble career, and as an expression of the deep, enduring, and warm affection in which we shall ever hold his memory; and be it further

Resolved, That an engrossed copy of these resolutions be placed in the dean's room at Medical Hall, and a similar copy be forwarded to the bereaved family of our departed friend as an expression of our sincere sympathy and fellowship in their affliction.

THE COMMITTEE ON RESOLUTIONS.
FRANK C. HAMMOND.
C. E. DE M. SAJOUS.

Texas State Medical Association.—The fifty-fifth annual meeting of this society, held in San Antonio, was brought to a close on May 8th, by the election of the following officers to serve for the ensuing year: President, Dr. Marvin L. Graves, of Galveston; vice-presidents, Dr. John H. Foster, of Houston; Dr. J. C. Anderson, of Plainview; Dr. R. R. White, of Temple; secretary, Dr. Holman Taylor, of Fort Worth; treasurer, Dr. W. L. Allison, of Fort Worth; trustee, Dr. John S. Turner, of Dallas; councilors, Dr. W. C. Dickey, of Memphis, third district; Dr. W. A. King, of San Antonio, fifth district (reelected); Dr. W. N. Warllaw, of Corpus Christi, sixth district; Dr. J. C. Scott, of Temple, twelfth district; Dr. W. H. Blythe, of Mt. Pleasant, fifteenth district. Next year's meeting will be held in Houston.

Medical College of Virginia Holds Annual Commencement.—The graduating exercises of the Medical College of Virginia were held on the evening of May 27th, degrees being conferred in the three departments of the college as follows: Forty-two graduates received the degree of doctor of medicine, eleven the degree of doctor of dental surgery, and nine the degree of graduate in pharmacy. At the faculty meeting which preceded the formal graduating exercises, silver loving cups were presented by the faculty to Dr. William H. Taylor, in recognition of his forty years' continuous service as professor of chemistry, and to Dr. Christopher Tompkins, in honor of his long career as dean of the faculty. The presentation to Doctor Taylor was made by Dr. Charles R. Robins, and to Doctor Tompkins by Dr. George Ben Johnston.

Personal.—Dr. Milton B. Hartzell has resigned the chair of clinical dermatology in the Woman's Medical College of Pennsylvania, Philadelphia. His successor has not been chosen as yet.

Dr. David Starr Jordan has resigned as president of Stanford University, to accept the office of chancellor.

Dr. George Gibier Rambaud, head of the New York Pasteur Institute, has been appointed director of the Friedmann Institute for the Treatment of Tuberculosis, on West End Avenue.

Dr. Daniel O. Orth, of Chicago, has been appointed by Governor Dunne to represent the State of Illinois at the congress on school hygiene, to be held in Buffalo in August.

Dr. James T. Faulkner, of Lansing, Kansas, was recently appointed physician to the Kansas State Penitentiary, succeeding Doctor Axford.

Dr. Oscar M. Schloss has succeeded Dr. Ira S. Wile as consulting physician at the Riverside Kitchen of the New York Diet Kitchen Association.

The Duhring Medical Legacies.—Broadly considered as was the entire life of their donor, the legacies for humanitarian purposes in the will of the late Dr. Louis A. Duhring are many sided. Those of peculiarly medical interest were contingent gifts of $5,000 to the Aid Association of the Philadelphia County Medical Society and $1,000 to the Philadelphia School for Nurses. Manuscripts on cutaneous diseases, as well as notes of cases of the donor, are to be given to the university. The testament directs that they be edited scientifically. The medical library of the testator is given to the University of Pennsylvania, and duplicate volumes are given to the College of Physicians. A permanent trust fund of $3,000 is created under the care of the trustees of the University of Pennsylvania for the care of drawings, portraits, medical works, models, and photographs which comprise the collection of the testator. The will also directs that $5,000 be given to the College of Physicians with which works on cutaneous medicine and surgery are to be purchased. The library of the University of Pennsylvania is given $3,000 without direction. The income of $25,000 is to be used for the department of cutaneous medicine of the University of Pennsylvania. A museum for the study of cutaneous diseases is to be established. Should any of the income of this $25,000 trust fund be available for other purposes, lectures, prizes, and scholarships are to be awarded and facilities for research work are to be obtained. The University Hospital is to receive $50,000 for the support of wards of free beds for the treatment of skin diseases and similar physical disorders. The residue of the million dollar estate is to be given to the trustees of the University of Pennsylvania, to be distributed in a specified manner, and to the College of Physicians.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

April 7, 1913.

Therapy of Gastric and Intestinal Hemorrhages.—I. Boas says that the treatment of gastric and intestinal hemorrhages is one of the few fields which have been entirely reserved for the activity of internal medicine. Prophylaxis plays an important rôle in cases of this kind. Rest in bed and systematic milk treatment (from three to four litres per day) are advised. The drinking of Carlsbad water should be prohibited, so that no manifest hemorrhage may develop from an occult one. To stop a hemorrhage that has appeared, the patient should abstain from food, and calcium chloride injections should be given when the hemorrhage takes place from the lower portion of the bowel. Nourishing enemata are, in the author's opinion, almost worthless; normal saline solution, given in the drop method, is better. As a rule, one litre is sufficient for twenty-four hours. The addition of adrenalin heightens the effect.

Is there a Bilious Peritonitis without Perforation of the Biliary Passages?—C. Nauwerck and Lübke describe a case of such peritonitis which macroscopically showed absolutely no perforation. Even the water test resulted negatively, and only with the aid of the microscope was there revealed a separation in the continuity of the gallbladder wall which had existed previously, but was now closed up. These findings explain the occurrence of a bilious peritonitis without macroscopical proof of a perforation.

Therapy of Plaut-Vincent Angina.—J. Citron recommends, in severe cases of Plaut-Vincent angina, general salvarsan treatment, together with the local application of salvarsan glycerin, in order to reach the spirochetes existing in the tissues by one method, and by the other reach those spirochetes in the dead masses which can no longer be reached by the blood or lymph.

Experiences with Abderhalden's Ferment Reaction in Carcinoma.—E. Frank and F. Heimann found that out of forty-six uterine carcinomas, forty-five or 97.8 per cent. of the cases had a positive reaction, while out of twenty normal serum cases nineteen, or ninety-five per cent. had a negative reaction with Abderhalden ferment procedure.

Etiology of Rabies.—Fr. Proescher has found microorganisms which he considers the cause of rabies. The final proof will consist in the artificial cultivation and transmission of the organism in animals (from pure cultures).

Conservation of Permanent Preparations in Concentrated Sugar Solution.—G. Magnus's experiments show that the preservation of permanent preparations in concentrated sugar solution is not only a reliable, cheap, and convenient procedure, but also that the results in respect to preservation of the natural colors and the lasting possibility of microscopical examination were entirely satisfactory in every way.

April 14, 1913.

Treatment of Progressive Paralysis.—A. Westphal states that neither the specific nor the nonspecific methods of treating paralytic processes have been proved to be of permanent value in arresting the progress of this disease. Whether these methods of treatment, applied alone or in combination, will be able to prevent remissions, or will be able to produce temporary improvement,. only more extended experimentation will be able to show.

Percentage of Chlorine in Blood Serum with Meat Free Diet, Poor and Rich in Salt, and also with Varied Fluid Ingestion.—Arnoldi found that diet poor in salt and free of meat has a tendency to increase the proportion of chlorine in the blood serum; the longer the diet poor in salt is given the greater the proportion becomes. In a meat free diet rich in salt and deficient in water, the proportion of chlorine content of the blood is lessened. The amount of urine is diminished as compared with the period of a diet poor in salt. With a meat free diet rich in salt, and with a superabundance of water, the proportion of chlorine in the blood serum is increased as compared with the salt free period, and the amount of urine is increased. The transition in this regard, that is, by lessened and increased water ingestion, consists of a quantity of fluid of about twenty-four c. c. for each day and for each kilogramme body weight.

Quantitative Determination of Urine for the Practical Physician. — Pfeiffer condemns Esbach's method because of its unreliability, erroneous results being obtained in spite of the most careful observance of all the rules. They have not even an approximate value. The method of Claudius should be used, or the modification of the Tsuchiyas method, given by the author, which consists of precipitation with phosphoric acid.

April 21, 1913.

Effect of High Altitudes on the Pulse.—E. Stern says that the rate of the pulse falls in great altitudes and on the level plains, at night, to about the same extent. It rises after muscular exertion (five minutes' duration), in Orosa for 48.8 beats and in Strassburg for 40.7 beats. The fall of the pulse to normal also exhibits variations. On plains it occurs in a smooth curve, while in mountainous districts the frequency drops at first very rapidly, then slowly, then again rapidly, and then slowly to normal. As a rule the pulse frequency rises greatly in the descent to lower levels.

Scopolamine in Withdrawal of Morphine.—F. H. Mueller disagrees with Fromme, who states that treatment with scopolamine is "the one sure and convenient means of curing morphinism." The use of narcotics makes the withdrawal of morphine unnecessary and harmful (danger of collapse). Of all the narcotics, scopolamine is a most dangerous drug for use in withdrawal cures, because of its action on the heart. It must not be forgoten that there are incurable cases of morphinism, where life is more endangered by the withdrawal than by the morphine itself.

New Operation for Sterilization, Offering the Possibility of a Return of the Ability to Conceive Later.—Blumberg prevents the migration of the ovum into the tube by suturing the ovaries in a pocket of the broad ligament. The procedure may be done through the vagina, and its advantage lies in the present theoretical possibility of a return of the power of conception at a later date, as a result of liberation of the ovary.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

April 5, 1913.

The Toxicity of the Human Urine during the Puerperium and in Eclampsia.—Zinsser mentions the work of H. Pfeiffer, who reported that the urine of guineapigs normally, but especially when showing anaphylactic shock, contains a poisonous substance which, when introduced intraperitoneally into another guineapig, gives rise to anaphylactic disturbances. Pfeiffer concluded that this was an exact way of determining whether or not parenteral destruction of albumin occurred in certain diseases. Similar work by others suggested that by this means an exact prognosis in cases of eclampsia might be made and that the therapeutic effects might be controlled. Zinsser injected 0.5 c. c. of fresh urine directly into the circulation. The urine was taken from pregnant women, and from those in labor and in the puerperium. The first table gives the effects of the injection upon the temperature. The second table deals with the toxic effect of the urine in eclampsia. As a result of his work Zinsser states that the examination of the urine in nine cases of eclampsia gives no foundation for the belief that eclampsia can be considered as due to toxines formed by the splitting up of albumin. In no case was he able to produce death or clinical manifestations by injecting eclamptic urine into guineapigs.

April 12, 1913.

Intraperitoneal Hemorrhage, intra partum, Due to Rupture of Uterine Veins.—Langes reports a case in which the patient, thirty-two years old, was suddenly seized with severe pain and tenderness in the abdomen during labor. A few hours later she became unconscious and was admitted to the hospital. A laparatomy was performed and the entire uterus amputated, and death followed two hours later. Examination of the uterus showed a circular defect in the serosa, which opened into a large vein. Serial sections showed normal uterine muscle present on the inner side. It was evident that there had been a rupture of a large varicose vein directly beneath the serosa. A brief review of several similar cases is given.

April 19, 1913.

Bacteriological Examinations in Gynecological Cases.—Scholl and Kolde examined one hundred cases, of which twenty-four were carcinoma of the cervix, fifty-three plastic, and the others of varying kind. They found streptococci of different sorts in seventy-two instances and other organisms in the remaining twenty-eight. In comparing the bacteriological findings with the course of the disease and the number of deaths, they conclude that the presence of streptococci, hemolytic, or not, anaerobic or aerobic, is of no value as a means of prognosis.

A Case of Transposition of the Large Vessels of the Heart.—Liebich reports a case in which a child, after living some twelve hours and showing nothing abnormal, suddenly became cyanotic and died. At the autopsy it was found that the aorta sprang from the right ventricle, the pulmonary posterior. The foramen ovale was not completely closed and the ductus Botalli was patulous.

April 26, 1913.

The Development of Malignant Tumors in the Stump of the Uterus Following Supravaginal Amputation.—Hansen reports three cases in which carcinoma developed in the stump of the uterus, although there were no indications of malignant disease at the time of the operations. In view of his experience, as well as that of others, he can see no advantage in an amputation over the total extirpation of the uterus.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

April 15, 1913.

A Malignant Adenomyoma of the Mesentery.—Ludwig reports this tumor on account of its special interest, in that it appeared in those tissues which normally are free from both epithelium and muscle. He concludes that the tumor had arisen from an embryonal misplaced portion of intestine.

April 30, 1913.

Experimental Leptomeningitis Resulting from Chronic Alcoholic Poisoning.—Lissauer, in experimenting with rabbits, produced, in one instance, a chronic leptomeningitis, characterized by an infiltration of lymphocytes and plasma surrounding the bloodvessels.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

March and April, 1913.

Lamellar Cataract and Tetany.—Robert Hesse and Eduard Phelps contribute to the disputed question of the interrelation of lamellar cataract and tetany a careful study of forty-three patients with lamellar cataract, thirty-five of whom, or eighty-one per cent., presented unquestionable symptoms of the other disease. From this they conclude that it may be stated as extremely probable that tetany is the causal factor in the production of lamellar cataract.

LYON MÉDICAL.

April 20, 1913.

Tumors of the Cerebellopontine Angle.—E. Pallasse reports two cases of this kind, one of which was peculiar in that there was a hemianesthesia and no choked disks.

Effects of Sodium Nucleinate.—Weill, Gardère, and Dufourt investigated experimentally the question whether the alexin (complement) of the blood could be increased by inducing an artificial leucocytosis by subcutaneous or intravenous injections of sodium neucleinate. Tests made in both human beings and animals showed practically constantly that the amount of complement present bore no relation to the leucocytosis.

Acute Biliary Ascites.—Leriche and Crémieu report the case of a man, thirty-five years of age, in whom, upon opening the abdomen because of signs of acute peritoneal involvement, the cavity was found filled with a strongly bilestained fluid. No perforation of the biliary apparatus could be found, but from the greatly enlarged and distended gallbladder, filled with concretions, a constant transudation of bile was seen to be taking place. Cholecystectomy was practised, and the patient recovered.

Secondary Lobar Pneumonia in Measles.—Weill, Mouriquand, and Gardère point out that lobar pneumonia may occur either during the eruptive period or in convalescence from measles. While much less common than bronchopneumonia, the lobar affection should be recognized when present, as the prognosis is far less unfavorable than where lobular involvement occurs. The differential diagnosis in measles is rendered more difficult than usual by the simultaneous bronchitis, irregular temperature curve, etc., but it can easily be made with the x rays, which, in the case of lobar pneumonia, show a characteristic triangular area of consolidation. This triangle can be demonstrated even before any sign is elicited by auscultation, as was the case in one of the authors' two patients. The second patient succumbed, and a condition of gray hepatization was found at the autopsy.

PARIS MÉDICAL

April 12, 1913.

Diagnosis of Intermittent Claudication.—J. Heitz shows that by a study of the range of oscillations observed with the Pachon sphygmooscillometer when the cuff of the latter is applied successively at different levels on the lower extremities, much information can be obtained concerning the condition of the subjacent arterial trunks. Thus in six cases of intermittent claudication he was able to demonstrate with considerable precision the seat and extent of arterial involvement, and to follow, with the pressure instrument, the improved circulation in the part resulting from appropriate treatment. In cases of arterial narrowing not yet causing symptoms the method permits of making a definite decision as to the presence of circulatory difficulty, where the pulse of the dorsalis pedis is hardly perceptible on palpation. Where intermittent claudication is already manifest, one can ascertain whether the vascular lesions are limited to the arteries of the foot or, as is generally the case, involve the tibials. In some cases the femorals are also shown to be involved in the lower third of the thigh. Heitz has become convinced that in addition to organic disease functional trouble in the arteries (probably spasm of the muscular coat) plays an important rôle in these cases, and that the latter factor can be in a measure overcome by treatment, e. g., iodides, hot air applications, and carbon dioxide baths.

April 26, 1913.

Syphilitic Neurotropism in a Family.—P. Carnot and J. Dumont report the history of a family in which a predisposition to central nervous disease appeared to be transmitted by the syphilitic father to two of the offspring. The father died of general paralysis. The first child, at sixteen years, became the subject of gastric crises, which have continued since, and later definite signs of a slowly progressive tabes. The seventh and last child was taken at twenty-one years with an undoubtedly syphilitic hemiplegia, which improved under treatment, but was followed by sudden death two weeks after discharge from the hospital. This patient presented numerous stigmata of congenital syphilis and a positive Wassermann reaction.

Abbott's Method in the Treatment of Old Scolioses.—F. Calot and J. Privat, in an article illustrated with Abbott's own slides, laud the method of treatment introduced by him. They are inclined to accept his statement that all third degree scolioses can be overcome with it, provided the condition has not been present too long a time.

PRESSE MÉDICALE.

April 26, 1913.

Opening Submaxillary Abscesses through the Mouth.—H. Morestin advises this mode of intervention in cases where the disfigurement resulting from the scar of a skin incision in the treatment of acute suppuration of the submaxillary lymphatics is a matter of serious concern to the patient, as in the female sex. He reports three cases in which incision through the mouth proved entirely satisfactory, healing taking place promptly and without any complication. In each case at the time of operation the suppurative process had already caused infiltration of the subcutaneous tissues and adhesion and redness of the skin. Under general anesthesia, and with the mouth held open wide and the tongue pulled to the opposite side, the author incises the floor of the mouth at the point of deep induration, if this is palpable, or if not, at any point between the first bicuspid and the angle of the jaw. The first jet of pus is taken up by gauze previously placed at the back of the mouth; this is quickly replaced by more gauze, the cavity roughly cleared out, and the incision then enlarged, so that the pocket can be carefully cleansed and disinfected with ether or tincture of iodine. A rather tight gauze packing is then inserted. This is removed in two or three days and replaced by shallower drains. In six or seven days healing is already so far advanced that no more gauze can be introduced.

Hyposphyxic Syndrome and Polyglandular Insufficiency.—A. Martinet first refers to former articles, in which he pointed out that under normal circulatory conditions, the mean arterial pressure and the viscosity of the blood are parallel, each varying in direct ratio with the other. In the hyposphyxic syndrome, on the other hand, characterized by a constantly weak circulatory function, with tendency to venous stasis, cold limbs, hepatic congestion, etc. (see this JOURNAL for February 1, 1913, page 253), the viscosity is high in comparison with the mean pressure, which is normal or low. In forty-eight cases of this type under observation evidences of insufficient glandular activity were noted in almost every instance, especially as regards the digestive tract—anorexia, nausea, slow digestion, and poor motility, constipation, occasionally elimentary glycosuria, and, in one case, complete suppression of the salivary secretion. Assimilation in these patients is poor, and sometimes there is emaciation. In other instances the patients are stout, or even obese. The ductless glands are frequently involved, as illustrated in three cases of gigantism with testicular insufficiency, two cases of ovarian and thyroid insufficiency, four cases with insufficient adrenals, five of mental disturbance, etc. Hyposphyxia and poor glandular functions—

hypocrinia—coexist so regularly as to preclude a mere coincidence. The former appears frequently, if not always, to be the primary condition, the hypocrinia, however, itself reacting in a complex manner on the hyposphyxia, forming a vicious circle.

Technic of Exclusion of the Pylorus.—G. Parlavecchio recommends that pyloric exclusion be effected by passing around the pylorus a ribbon of cotton material about one centimetre wide, tightening it enough to obliterate the lumen without unduly compressing the tissues, suturing the extremities of the ribbon, and burying the whole by means of three seroserous sutures. Posterior gastroenterostomy is then performed. With this procedure the pylorus remains occluded for several months, giving ample time for healing of the gastric ulcers. No pain during digestion is noted after exclusion thus procured. The ribbon can be placed some distance from the pylorus if desired.

SEMAINE MÉDICALE.

April 30, 1913.

Causes of Intestinal Obstruction in Pregnancy.—R. de Bovis discusses the origin of the occlusion in the twenty per cent. of cases of obstruction in pregnancy or the puerperium where hitherto no definite mechanical cause has been evident. He is inclined to accept the theory recently advanced by Van der Hoeven, based on clinical observations, that the condition may arise owing to induration of the vagina, annexa, or uterine ligaments—as may occur through hypoplasia or previous peritoneal infection—these preventing the body of the uterus from rising out of the plevis and thus causing compression of the rectum. In the puerperal uterus, on the other hand, obstruction can arise through excessive retraction of the uterus by the overtense uterine ligaments, in cases where the sacral promontory is unusually prominent, as in rachitic pelves. De Bovis adduces cases of other observers and his own in support of this hypothesis, and calls attention to the favorable results obtained in such cases by placing the patient in the genupectoral posture or lateral decubitus.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

April, 1913.

Artificial Pneumothorax in Pulmonary Tuberculosis.—R. Burnand describes the results obtained in a series of thirty-eight cases. Of these, fourteen are excluded from detailed consideration because of insufficient introduction of gas, the fact that the cases were very recent, etc.; leaving twenty-four. Fourteen of the latter were more or less benefited; in the remainder, the results were doubtful, nil, or only temporarily favorable. In one case, rapidly progressing and in bad general condition, the measure brought about complete arrest of expectoration in sixteen days, and the patient was afebrile after twenty-four days. Subsequently he regained all appearances of health, and was still well a year after, monthly gas injections being continued. In nine other cases, of which eight were in the third stage, the disease process in all its manifestations was brought to a standstill, some slight expectoration, however, still persisting. In six instances fever disappeared within three weeks. Burnand does not believe the procedure should be recommended as yet for the routine treatment of tuberculosis, owing to possibility of harmful results—though careful technic renders these rare. It is indicated where nothing can be lost by it, i. e., where the disease is apparently progressing to a fatal termination. In grave cases practically at a standstill, or slightly improving, it is hardly advisable. Apparently the only absolute contraindications to the method, however, are bilateral active disease (except, perhaps, in "galloping" cases) and grave extrapulmonary complications. Cardiac weakness, cachexia, suspected widespread pleural adhesions, and quiescent contralateral disease probably should be considered only relative contraindications.

Examinations for Tubercle Bacilli.—Seelos considers a granular appearance of these bacilli the only definite favorable prognostic sign that can be had from examination of the sputum. Plasmolytic degeneration of the bacilli constantly occurs where treatment is proving effective. The number of bacilli found bears no relation to the patient's actual condition. Not only do different portions of a specimen of sputum contain varying numbers of bacilli, but the number often varies at different times in a single day in the same patient. The so called granular forms of tubercle virus are considered by the author products of degeneration of the bacilli; he has never missed finding the bacilli themselves in cases where the granules were detected. In examining for bacilli he adds to the sputum two drops of ten per cent. sodium hydroxide solution, shakes in a glassstoppered bottle, heats to boiling, adds one third part of fifty per cent. alcohol, and allows the product to stand in a conical glass for a few hours; after which the upper two thirds are decanted and the remainder subjected to centrifugation at 4,000 revolutions a minute. The flocculent deposit is then placed on slides previously cleansed with potassium permanganate, concentrated sulphuric acid, and absolute alcohol. Two slides are slid one over the other until the deposit has become dry. Fixation is then secured and the specimen stained by the Ziehl-Neelsen method, using five per cent. sulphuric acid and seventy per cent. alcohol for decolorization. The staining is done with the slides on a warm copper plate. Finally, the preparations are washed in running water and counterstained with Loeffler's methylene blue.

Bilateral Renal Tuberculosis. — C. Perrier, after discussing the diagnosis and treatment of this condition, endorses suprapubic cystostomy for cases of bilateral renal tuberculosis with painful cystitis in which nephrectomy is contraindicated. The pain and tenesmus are partly or almost entirely relieved by this measure, and the general condition of the patients much improved.

BRITISH MEDICAL JOURNAL.

May 10, 1913.

Remarks on Transverse Colostomy as the Operation of Selection.—Lawrie McGavin states the requirements of a really good colostomy operation as: 1. Good sphincter control; 2. firm support for belt and plug; 3. freedom from prolapse; 4. accessibility; 5. good spur formation; 6. removal of the colostomy to a distance from the site of growth. A seriatim consideration of the iliac and lumbar operations reveals the frequent failure of each to fulfill one or more of the requisites, and even the iliac colostomy has little to recommend it. On the other hand, the transverse colostomy seems to fulfill all of the necessities in a large proportion of cases and has few of the common defects. The anatomical position of the transverse colon does away with the effects of gravity in promoting leakage; it even does more than this, for the splenic flexure is higher than the hepatic, and hence if the colostomy be placed to the left of the middle line the passage of the bowel contents toward it must be against gravity before their escape. For the same reason, prolapse is not likely to occur. McGavin has never seen either in his experience. The transverse colon between the hepatic flexure and the stoma acts as a receptacle which can be conveniently emptied from time to time, and patients gain very perfect control over this act, the bowels being moved morning and evening with great regularity. The stoma being made through the thickest and strongest portion of the rectus, and at a point where the fibrous tissues also give their maximum support, the sphincter provided is as nearly perfect as an artificial one can be. The location is ideal for the fitting of a belt, and the costal extremity as this point gives a purchase from which sufficient pressure can be made. Furthermore, greater pressure can be comfortably borne at this point than is the case lower down. The position of the opening is such that it is very easy for the patient to cleanse it and care for it. The site of operation is distant from the most frequent location of growth. Lastly, ultimate reconstitution of the colon is more easily and safely accomplished in this location than in the iliac operation. McGavin supports his contentions with the records of twenty-six cases.

The Interneuronic Synapse in Disease.—B. Henry Shaw does not believe that the cell exhaustion theory explains satisfactorily the pathology of acute delirium. Analyzing twenty-five cases of insanity resulting from sudden and violent mental shock and seventeen cases resulting from the exhaustion of surgical operations, he finds that there was a family history of insanity in about twenty-five per cent. of each group. The average time required for recovery was 5.8 months in the cases due to shock, and 16.2 months in the cases due to operation; that is, about three times as long in the latter. In cases showing delirium only the average time for recovery was about the same in both groups, namely, from three to four months. In shock the tendency is to the development of acute delirium, while in the exhaustion cases, after operation, the trend is toward depression. In the deliriant cases the tendency is toward rapid recovery or death, while in the others permanent insanity often results. The greater the shock the more the likelihood of delirium, and if the exhaustion theory be invoked, this would be an apparent contradiction in the result to be expected. A sudden minor shock gives rise to a "start" and a sensation similar to an electric discharge through the body. This being a matter of common observation, is it not probable that a very intense nervous discharge might seriously damage the finer nerve arborizations and synaptic junctions, causing a "synaptic fusion" which might be likened to the fusion of electric wires? This, occurring in the higher neuronic terminals and interneuronic membranes, might cause dissociation of the higher centres and misinterpretation of stimuli. The higher associative neurons being the latest devedoping terminal arborizations, are probably the most delicate and susceptible. A further point of interest in this connection is the fact that the average time required for recovery from acute delirium due to shock is identical with that required for nerve regeneration after trauma. Shaw suggests that hysteria may be due to too low an interneuronic resistance, resulting in a constant leakage of nerve current outside the area to which it is normally limited. The opposite condition—an abnormally great resistance—with a periodic disorderly discharge of stored up nerve impulses, might explain certain forms of epilepsy. It might even be possible to locate the region in which the faulty synaptic action was located by a study of the way in which the patient responded to each discharge.

LANCET.

May 10, 1913.

The Physiology of the Open Air Treatment.—Leonard Hill cites a long series of observations made to discover the toxic matters in the "close" air of overcrowded rooms, and concludes that no toxic matter is present; that there is no material reduction in the percentage of oxygen or increase in that of carbon dioxide in such air. The discomfort is due to an excess of moisture and the heat, together with the absence of motion in the air. Per contra, the good effects of open air are due to the lower temperature, smaller amount of moisture, and the fact that it is in motion. He says: "Modern life is tending to put people into confined places, heated by convectors, with perfectly made windows, no draughts, and that kind of thing, and it is diminishing the metabolism, and vigor, health, and happiness of everybody, quite apart from causing consumption."

"Colds in the Head."—Leonard Hill and Francis F. Muecke find that when man is confined in a warm (80° F.), moist atmosphere, the mucous membrane of the nose flushes and swells, becoming turgid with blood and tissue lymph, and covered with a thick secretion. Passing from this warm into a cold atmosphere, the mucous membrane promptly becomes paler, but still remains swollen with tissue lymph. In a warm, crowded room the thick secretion on the nasal mucosa will become massively infected with bacteria, explosively sprayed out by the other occupants who sneeze, cough, and speak in the room. When one passes out into the cold after being in such a room, the nasal mucosa is not only constricted, but is chilled, and the defensive mechanisms of the blood, the immunizing properties of the plasma, the cleansing action of the ciliated epithelium, and phagocytic action of the white corpuscles are dimnished by the low temperature, while the pathogenic bacteria find a suitable nidus for their growth in the secretion and tissue lymph of the swollen mucous membrane. "Apart," he says, "from the general question of health and immunity, we believe it is the massive direct transmission of bacteria from one to another in warm, confined atmospheres, and the subsequent exposure to the cold, moist outer air which together contribute to the infection of the susceptible individuals. We can lessen our liability to such infection by keeping the air of our rooms and crowded meeting places cool and moving. We find that a fan set to whirl the air in our experimental chamber will keep the nose paler and drier, and the airways patent, even when the air is heated to 100° dry and 83° F. wet bulb."

Alimentary Toxemia.—W. E. Dixon holds the view that, in general, alimentary toxemia is not a poisoning produced by "toxines" in the strict sense of the word, but by relatively simple chemical substances, certainly not of a more complex nature than many of the alkaloids. For instance, many of the amino acids which are not toxic may be acted upon by fermentative or putrefactive bacteria in the intestine, with the production of more or less highly active poisons. The simplest way in which this may be accomplished is through the decarboxydation of the amino acids. Among the products which may thus be formed from material likely to be present in the intestine are: Hydroxyphenylethylamine, a histidine base, indolethylamine agmatine, isoamylamine, phenylethylamine, putrescine, and cadaverine, and indol and skatol. It is probable that many of these are normally formed in small amounts in the intestine, but never enter the circulation; being either destroyed in the intestine, combined with some other substance, as sulphuric acid, which renders them nontoxic, or they are destroyed in the liver.

The Prognostic Significance of Secondary Polycythemia in Cardiopulmonary Cases.—F. Parkes Weber includes under the term, "cardiopulmonary" cases, the late stages of emphysema, chronic bronchitis, old bilateral pleuritic adhesions, chronic interstitial pneumonia, and pulmonary fibrosis. He believes that in such cases when polycythemia comes on, and a great degree of cyanosis develops, the outlook is extremely grave. Death may be due to actual carbonic acid poisoning, to intercurrent bronchopneumonia or other affection, or to gradual heart failure.

INDIAN MEDICAL GAZETTE.

April, 1913.

Control of the Eye in Cataract Operations.—F. W. Sumner points out that the one, and often insuperable, difficulty in removing the lens in its capsule according to Smith's method is the necessity of a skilled assistant to take charge of the eyelids to prevent the patient making pressure upon the eyeball. Smith himself emphasizes this necessity, and states in his book that assistance at some 100 extractions is needed before the requisite skill is acquired; meantime the assistant takes charge not only of the patient's eyelids, but also of the operator's reputation, for the least flaw in correctly holding the eye may have disastrous consequences. To obviate this necessity, Sumner has devised a speculum that differs somewhat in its form from the one usually employed. Its handle has a curve to accommodate the index finger; the ball of the thumb rests on the spring; the portion of the upper blade which slips under the upper eyelid is narrower and projects under the lid much farther than that of the ordinary one. Different sizes are needed for different eyes. For the corneal incision it is introduced and used as the ordinary speculum, except that the outer edge of the upper eyelid must be held back with a blunt hook to prevent the possibility of the knife touching it. The assistant now takes a firm grasp of the speculum between the index finger and thumb, the other fingers lying against the side of the face; the pressure of the thumb on the spring end of the speculum, acting through the index finger as a fulcrum, tilts the eyelid as much as is necessary. The assistant's other hand is spread out over the patient's head and, the eyebrow having been drawn well back, his thumb presses against the upper edge of the orbit.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 15, 1913.

The Excretion of Formalin in the Urine; an Inquiry into the Accuracy of Burnam's Test.—George G. Smith says that Burnam's test for formaldehyde in urine is definitely positive when this substance is present in the strength of one part in 40,000 or more. The urine should be examined as soon as possible after it has been voided. A negative test at one time does not prove that formaldehyde is never liberated. He believes that formaldehyde is liberated from the hexamethylenamine by the acids of the urine, not by a specific function of the renal epithelium; the process may take place in the kidney, but is continued in the bladder. Litmus paper proved unreliable as an indicator of the true acidity of the urine in about twenty-five per cent. of the cases examined. The higher the acidity of the urine, measured in terms of its hydrogen in concentration, the greater is its power to set free formaldehyde. The requisite amount of acidity is not great, is present in the majority of normal urines, and can be secured in almost all cases by the use of boric acid or sodium acid phosphate. The writer disagrees with the statements of Burnam and L'Esperance that only from fifty to sixty per cent. of individuals break up hexamethylenamine. Examination of 213 specimens, from fifty individuals, showed that only in the urine of one case was formaldehyde never found.

Serous and Suppurative Labyrinthitis; Differential Diagnosis.—Irving Wilson Voorhees says that a defferential diagnosis between serous and suppurative labyrinthitis is frequently impossible. In general, if the slightest remnant of function is still present, the labyrinth should not be disturbed; there should be no shaking up, no probing, no meddling of any kind, and absolute rest in bed should be enjoined. If the labyrinth is completely out of commission, the history of the case must be weighed carefully and as accurate a diagnosis as possible made. One may wait a week or ten days, and then, if the symptoms become worse in the slightest degree, a labyrinthine operation should be performed.

Artificially Dried Casein: Preliminary Investigation.—Henry I. Bowditch calls attention to the fact that in making whey with raw milk the tough curd of precipitated casein is discarded. He then tells how this casein curd may be saved, dried, and made into stable, pure, soluble or insoluble powder. It may then be used to increase the accuracy of our administration of casein. He will report at a later date the results of feeding on the basis of exact casein percentage.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 17, 1913.

A New Differential Leucocyte Count Chart.—W. H. Watters remarks that in the early days of hematology the leucocyte count was supposed to be a quite reliable guide to the extent, progress, and severity of various infections. Later it was observed that a normal leucocyte count or slight leucocytosis might mean little or no infection, with no need of great resisting force or, on the contrary, it might be indicative of a very severe infection overwhelming the body without even a chance of combating it. An additional index was needed to complement this early one, and was found in the differential count, in which the percentage of the neutrophiles or polynuclears was determined. The degree of leucocytosis is now said to indicate the amount of resistance put forth by the body and the percentage of neutrophiles indicates the virulence of the infection. Information concerning both opposing forces is obtained by making a leucocyte and a differential count. The writer has devised a chart for recording these, which has proved satisfactory to him both from the standpoint of diagnosis and from that of prognosis.

Laryngeal Tuberculosis.—Robert Levy, discussing the various phases of this condition, remarks that in the matter of treatment the modern consensus supports the following measures: Treatment by means of rest to the vocal organs in conjunction with rest and general hygienic care; local measures, modifications of surgical procedures (among these the use of the galvanocautery has the most adherents); the relief of pain by injection or section of the superior laryngeal nerve; the use of tuberculin. The establishment of thorough normal nasal respiration, climatic treatment, and a maximum of nutritious food, fresh air, and abundance of sunshine, together with rest and a proper management of the local condition, are the cardinal principles that must guide our treatment.

Skin Grafting without Dressings.—The technic employed by Joseph Wiener is the usual one for Thiersch grafts. The grafts are cut as thin as possible, and applied in the usual manner, suppurating sinuses in the grafted area being packed with iodoform gauze, which is changed as it becomes saturated with the discharge without disturbing any of the grafts. The grafts may be placed within a half inch of a discharging sinus, and they will take. Crusts of inspisated serum form between the grafts during the first day or two; these crusts must not be disturbed. No dressing of any kind is applied for seven or eight days, or even longer. After this time a weak ichthyol ointment is applied over the entire grafted area. Under this dressing the crusts soften and drop off, and the area soon assumes a normal appearance. Wet dressings, even a bland one, should not be applied until at least two weeks have passed, as their early application, in some cases, would macerate the grafts. During the first ten days that the grafts are exposed to the air, they are steadily becoming more hardy. The results from this method of skin grafting have been so uniformly good and successful, even in the most difficult cases, that the writer urges its trial by the profession.

Plague Eradication in Porto Rico.—R. H. Creel relates many interesting and instructive points concerning the recent epidemic of human plague in Porto Rico. Fifty-five cases, all of the bubonic type, were recorded, with a mortality of sixty-five per cent. Although flea infestation was very low, the infestation of rats by chicken flea in San Juan is noteworthy. The decline in rat population was the result of rat proofing. The presumptive evidence points to an extension by infected rats in merchandise. The writer emphasizes the importance of making the water front as rat proof and as rat free as possible, especially where foreign shipments are received.

MEDICAL RECORD.

May 17, 1913.

The Prevention and Cure of Cancer.—Parker Syms confesses that the title of this paper is an ambitious one, as all cancer cannot be prevented nor cured, though he denies that it is either presumptuous or preposterous, since a great deal of cancer can be prevented as well as cured. He emphasizes the fact that cancer is a very prevalent disease, reaping an enormous harvest of victims every year. While, after a careful study of many statistical tables, his mind is in doubt as to whether cancer is on the increase or not, he is fully convinced that it is not on the decrease and must be recognized as one of the most terrible of scourges. In the early stage of cancer pain is not a characteristic sign, and when present at this time it is the exception, while as a rule pain is present in the late stages. Cancer, while always a localized disease at first, always tends to progression and dissemination. In the former instance cure follows complete removal; later, complete removal may not be possible, and if not, cure is out of the question. A "precancerous stage" of the disease is now very generally acknowledged. The writer discusses benign tumors and pigmental moles as causes of cancer, and shows that gastric ulcer and gallstones are in reality precancerous states; as between sixty and seventy per cent. of cancers of the stomach have developed in the site of a preexisting ulcer, or in the cicatrix of an ulcer which has been healed. From which he concludes that the gastric ulcer must first be cured, and that when operation is made for gastric ulcer the ulcer bearing area must be removed. As to gallstones causing cancer, it has been found that in practically 100 per cent. of cases of primary cancer of the gallbladder and bileducts gallstones may be found which have existed for a long period before the cancer developed. Chronic irritation and chronic inflammation are next discussed as fruitful causes of cancer, and the frequent occurrence of indigestion as a warning of this disease. The importance of early diagnosis and early operation is emphasized by the writer, who states that fifty per cent. of cancers show a definite and easily recognized precancerous stage which, coupled with the fact that 80,000 deaths from cancer occur annually in the United States, would make early diagnosis and early operation the means of saving 40,000 persons annually in our country alone.

The Surgical Treatment of Cancer of the Esophagus.—Willy Myer states axiomatically that the time when the surgeon should receive this class of patients is when the general practitioner has become convinced, nay, merely suspicious, that the patient is afflicted with cancer of the esophagus, since he is past help from the general practitioner, under whose care the mortality must be 100 per cent. and the length of life not more than twelve or fifteen months at best. If a patient conplains of difficult deglutition he should be subjected to a rigid examination at once. In nearly eighty per cent. of these cases cardiospasm may be excluded, the presence of a diverticulum, pressure upon the esophagus from within by an aneurysm or by glands or by a mediastinal tumor, a cicatricial stricture, a benign stenosis following the rather rarer affections of a tuberculous or specific ulceration or a peptic ulcer at the cardia, and if these can all be excluded the patient is doomed unless the surgeon has a chance in the early stages to save him by the knife. If the probabilities are for cancer, an exploratory thoracotomy is indicated, and if this proves that the diagnosis of cancer is correct, the surgeon should be prepared to proceed immediately on the proper lines. The writer's choice of operation in this latter case is gastrostomy, using Jianu's new method, in which a part of the major curvature of the stomach is dissected and formed into a long, gutlike tube, one end of which remains connected with, and opens into, what is left of the stomach, while the other end is free (the gastrostomy opening is at the level of the cartilage of the third left rib). Where the location of the carcinoma is above, behind, or just below the aortic arch, the newly formed tube is drawn up extrathoracically, below the skin or pectoral muscle, to a point next to or above the mammary gland (Jianu), and at a second sitting, after resection, the oral end of the esophagus having also been transposed extrathoracically, the connection is made between the two, either by end to end suture or by a subsequent plastic operation.

Cancer of the Uterus.—Periodically and repeatedly, says Reginald M. Rawls, have our expectations in the treatment of cancer been raised to the highest pitch, only to find that the hope of a cure was based on the assertion of overenthusiastic laboratory or clinical workers, leaving the cancer question still unsolved; there being no specific and the only means at hand for cure being early diagnosis and immediate operation. A radical removal of the growth will give a cure, as it is generally conceded that cancer in its earliest stage is a local condition. The earliest symptoms are so atypical that the laboratory workers have in the last few years developed many tests to aid in diagnosis. These tests are physical, chemical, and serological in character, and are more or less fully explained by the writer. In the matter of treatment, the nonoperative methods are applicable to inoperable cases and as a means of preventing postoperative recurrence. These include the x ray, fulguration, the high frequency current, radium and radioactive substances, cancer emulsions and sera, the antimeristem of Schmidt, micrococcus neoformans vaccine, and the eosin selenium combination of Wassermann. The best operative procedure is still in doubt. High amputation of the cervix, the Byrne method of cauterization, the extended abdominal operation as done by Wertheim, and the extended vaginal operation as done by Shauta have their advocates. The object of the last two operations is to remove the uterus and annexa with as much of the parametrium as possible, and also to remove a generous vaginal cuff to get well beyond the area of the growth and to prevent infection from the growth, which has been proved to always harbor microorganisms, especially streptococci. There is a very complete exposure of the ureters on either side, and the uterine vessels are ligated well out from the cervix. If time will permit, the enlarged lymphatic glands are removed. The main solution of the question of uterine carcinoma is to get our cases early, no matter what method of operation or cure we adopt.

INTERSTATE MEDICAL JOURNAL.

April, 1913.

Tuberculosis of the Kidney.—Daniel N. Eisendrath calls attention to this disease, which is of rather frequent occurrence. The larger the number of cases of tuberculosis of the kidney, which are seen by competent judges, the clearer the conviction becomes that were they diagnosticated at an early stage, more patients could be saved from a lingering, painful, and necessarily hopeless illness. From a study of nearly 1,500 operated cases the writer emphasizes certain conclusions: First, in the early months of the disease, only one kidney is affected in over ninety per cent. of the cases. Second, when the diseased kidney has been removed early, the operative (i. e., immediate mortality) was a little over two per cent., and the late or remote mortality (in first five years) not much higher. Even in the latter the mortality is far less than it would have been if the condition had not been recognized early nor not subjected to operation. Third, while we know that pulmonary and many other forms of tuberculosis will heal under hygienic and other nonoperative measures, there has been accorded no authentic case of tuberculosis of the kidney which has recovered under similar treatment without loss of function of the kidney. The writer outlines some of the more frequent clinical pictures of this disease in the order of their frequency: Those cases in which the bladder symptoms predominate, either with clear or turbid urine; those with vague pains over the kidney, pus in the urine, and gradual loss of weight and strength; those with pus in the urine and marked rise of the temperature; those with sudden initial hematuria; those presenting a renal tumor without any symptoms; those with evidences of a perinephritic abscess of unknown origin. In the matter of treatment, the writer "is compelled" to recommend nephrectomy for every patient where one kidney only is affected by tuberculosis. The contraindications to nephrectomy are: Advanced tuberculosis elsewhere and evidence of advanced involvement of the opposite kidney.

Clinical Observations of Carbonic Acid Brine Baths on the Circulation.—J. H. Honan, after three fourths of a century of experience, observation, and study on the action of carbonic acid baths as a remedial measure in cardiovascular disease, has learned some facts which he believes merit the careful attention of the profession. The fact has been generally overlooked that it is not the strength of the brine, nor the carbonic acid of the usual bath, which exerts or taxes the heart, but the temperature of the bath and the duration of the same. The saline carbonic acid baths produce a mechanical and chemical irritation of the skin, which generates a sense of heat, neutralizing the cold of the water to a certain extent. The mechanical irritation of the carbonic acid brine bath is a very important action. The physiological action of the carbonic acid saline bath on the circulatory system, particularly the increased glandular activity and increased elimination, indicates best its therapeutic value. The fine gradation in the administration of these baths admits of their application in all forms of chronic cardiovascular diseases. The bath of neutral zone, or warmer, relieves the action of the heart. The cooler bath increases the heart's action, but improves the conditions under which the heart performs its work. The cold bath adds extra work to the heart, but not unless administered below or above the neutral zone of temperature (below 30° C., 86° F., or above 39° C., 102.2° F.). High blood pressure or sclerotic condition of the arteries is no contraindication of the baths. The constancy of the action of these baths, the safety with which they may be administered, and the reliability of their effect in recorded conditions inspire a confidence in them which is unknown from any drug or drugs.

Cerebrospinal Fluid Diagnostics.—A. L. Skoog states that the examination of the cerebrospinal fluid is threefold—physical, chemical, and microscopical; each including tests of much importance for arriving at accurate diagnostic conclusions in a large number of neurological diseases. *Physical.* A rough estimation of the pressure of the cerebrospinal fluid in the lumbosacral cistern may be made from the rapidity of the flow. Using a needle of ordinary calibre, from forty to eighty drops per minute should be obtained from the normal individual. From a normal subject the fluid is always clear and limpid. The fluid is cloudy in acute meningitis, whether due to the *Diplococcus intracellularis meningitidis,* pneumococcus, staphylococcus, or other pus producing organism. In a few exceptional cases of epidemic meningitis organisms have been found in fluid appearing clear. In tuberculous meningitis the fluid is often clear, but it may contain flocculi, which are also quite frequently present in chronic meningitis. The fluid is often slightly opalescent in the preparalytic stage of acute poliomyelitis, but it clears at the onset of the paralytic stage. When blood appears we must rule out lesions produced by the puncture. Blood is present in the fluid in cases of cranial and spinal column trauma, and in apoplexies and hemorrhages within a neoplasm with rupture into a ventricle or subarachnoidean space. Xanthochromia may be present with ancient hemorrhage or transudate. *Chemical.* Normal cerebrospinal fluids contain a small amount of albumin, considerably more in that from the lumbosacral cistern than in that from the ventricles. There is a mere trace of globulin, which is greatly augmented in syphilis of the central nervous system, the quantity being an indication of the severity or activity of the disease. There is a reducing substance (evidenced by Fehling's test) in the normal fluid, which in acute meningitis is absent or much decreased, and this diminution seems to bear a relationship to the increase of the polynuclear cells. *Microscopical.* Purulent, turbid, or opalescent fluid means a great increase in cellular content, but a perfectly clear fluid may show a marked pleocytosis. Very few leucocytes, almost exclusively lymphocytes, are found, probably never exceeding five or six c. mm. The writer cautions one never to allow cerebrospinal diagnostics to supplant clinical diagnosis. Rachiocentesis may be utilized for diagnosis and therapeusis at the same time.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

April, 1913.

Myatonia Congenita.—Alfred Gordon points out that between the myatonia congenita of Oppenheim and infantile muscular atrophy, as described by Werdnig and Hoffman, there are many intermediate forms. It is difficult in every case to decide as to the myelogenous or myogenous origin of the state of the musculature. It may be presumed that in all such cases there has been a prenatal disturbance in the nutrition of the anterior horn cells, in some cases leading to their destruction, thus producing Werdnig-Hoffman's type, in others remaining slight; diminished muscular tone alone resulting. In one of the author's cases symptoms referable to both the diseases were present, and, in addition, optic atrophy, hitherto never observed, was found in pronounced form. The malformed cranium and positive Wassermann test suggested congenital syphilis as the cause of nutritional disturbance in the anterior horn cells in this case; large doses of iodides, furthermore, proved beneficial. In a second case, more of the type of infantile muscular atrophy than myatonia congenita, iodides caused but very little improvement.

Prevention and Surgical Treatment of Cancer.—J. A. McGlinn, discussing cancer prophylaxis, advocates a direct appeal to and education of the public, in order that they shall seek medical aid before the disease has advanced so far as to be almost hopeless. That such a course will bear fruit and entail no evil consequences has been shown by Winter's educational movement in Germany, where the number of cases of cancer of the cervix coming to treatment while still in the operable stage has increased by eighty per cent. In individual hopeless cases it is humane and proper not to inform the patient of the presence of cancer, but to patients still operable or in the precancerous stage who make light of their condition and will not accept advice promptly the full truth should be told.

Mine Sanitation.—N. P. Brooks gives a thorough discussion of this subject, laying particular stress upon ventilation, on which much study has been expended by engineers, but little if any by sanitarians. More attention should be paid to the size and condition of the air ways, as well as to the humidity and temperature. Other topics considered by the author are drainage, dust, lights, power, underground stables, first aid and rescue work, personal hygiene of the miners, and care of human excreta in the mine, with special reference to hookworm infection. Some form of portable latrine should be used, e. g., heavy cans provided with privy seat covers and also tight iron covers. These could be taken to the surface periodically for emptying, cleansing, and disinfection.

Proceedings of Societies.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Twenty-fifth Semiannual Meeting, Held at Kansas City, Mo., March 20 and 21, 1913.

The Second Vice-President, Dr. B. T. Quigley, of Mound City, Mo., in the Chair.

Genital Tuberculosis in the Female.—Dr. W. O. Henry, of Omaha, Nebraska, stated that abortions, gonorrhea, and other inflammations, as well as all injuries or contusions and a general rundown or anemic condition might be predisposing factors in the origin and development of the disease. We should be more careful and thorough in examinations of cases lest we overlook the true conditions at the time when they were most amenable to treatment. Our present day duty and privilege of helping to prevent and cure these cases, as contrasted with those of our predecessors, were so great that it behooved us to wisely safeguard the public by teaching prevention and encouraging the afflicted by a favorable prognosis, unless other serious complications were also found.

Management of Genital Tuberculosis in the Female.—Dr. Palmer Findley, of Omaha, Nebraska, pointed out that genital tuberculosis in woman was rarely a direct cause of death. The fatal issue was usually determined by a primary lesion in the lung or bowel. In at least fifty per cent. of cases there were some symptoms directly chargeable to the tuberculous lesion in the genital organs. It followed that in fully half the cases there was no urgent indication for operative interference. Inasmuch as genital tuberculosis was rarely primary, we must discriminate, if we could, between the symptoms directly due to the primary lesion and those due to the secondary lesion in the genital organs. The symptoms referred to the genital organs would usually yield to palliative measures. A radical operation was rarely justified for relief from symptoms caused by genital tuberculosis. There was danger in operative interference from the awakening of a latent primary focus, from the high primary mortality in these cases, and from the possible unnecessary sacrifice of organs, inasmuch as spontaneous healing was a possibility, as in tuberculosis elsewhere in the body. In tuberculous peritonitis the cause of death in ninety per cent. of cases was chargeable to the primary focus. In operating for tuberculous peritonitis it was well to remove the tubes when infected, in order to cut off the source of supply to the peritoneum. The utmost conservatism should be exercised in dealing with ovaries and uteri in young women. The exudative type of tuberculous peritonitis was alone favorable for operation. One should not operate in the presence of a fever or an active primary focus in the body. Medicinal and hygienic treatment was not to be underrated in the management of these cases. In the absence of severe symptoms directly referred to the lesion in the genitalia or peritoneum, operative measures should give way to the usual hygienic measures, at least for an extended trial.

Dr. H. C. Crowell, of Kansas City, Mo., said that in a large proportion of cases of tuberculosis of the genital organs the symptoms were very acute and pronounced, so far as his observation went. Whether the disease caused death immediately or not, was probably open to question, but ultimately the majority of these cases, even with a local tuberculosis in the pelvis, succumbed, as did patients with other forms of the disease. His experience had been limited to the cases with pelvic manifestations. He had had quite a number of cases in which there was no evident involvement of the lung, and operative procedure had effected a perfect cure, the patients recovering without secondary involvement of other organs.

Doctor Henry, in closing, said it would be a mistake to leave an active focus of tuberculosis in the pelvis or in any of the pelvic organs and expect by local treatment to get rid of it. Removal of the local focus was essential to the patient's getting well

The Surgical Colon.—Dr. A. L. Blesh, of Oklahoma City, said the surgery of this condition consisted in the restoration or establishing of colonic continuity. This might call for anything in the way of an operation from the simple severing of a constricting band to an ileosigmostomy, sometimes with, sometimes without, resection. It was manifestly impossible to treat these conditions by any rule of thumb procedure; but there were a few fixed features connected with the embryology of the organ that, if borne in mind, would assist materially in guiding the surgeon: 1. The location of the most fixed points in the colonic circle, viz., splenic and hepatic flexures. 2. The termination of the ileum, for the reason that here was found normally the shortest ileal mesentery. 3. The cecum (cecum mobile of Wilms). 4. Diverticula. He desired to emphasize the statement that not all the embryological deviations or reversions of the colon were by any means to be considered surgical.

The Rôle of Tonus in the Digestive Canal.—Dr. John M. Bell, of St. Joseph, Mo., stated that atony of the digestive tract existed in all gradations, from a mere slight delay in motility to absolute kinking and retention; it was, therefore, impossible to outline a procedure to restore all cases. The keynote of treatment, except in those cases of more or less acute kinking, was the restoration of normal tone, not merely to the digestive canal, but to the body, and came within the domain of medical treatment, not essentially drugging, but rather hygiene, diet, daily habits, and all those measures which tended to restore vitality.

Diverticulitis of the Sigmoid.—Dr. Arthur D. Dunn, of Omaha, Nebraska, after considering the etiology and pathology of diverticulitis of the sigmoid, and reporting five cases, emphasized the following symptoms which, in the absence of evidence to the contrary, were presumptive of a diverticulitis: 1 Alternating constipation and looseness of the bowels in an individual not previously much troubled in this respect, and which were accompanied by fullness, soreness, or colicky pain in the hypogastrium. 2. Febrile manifestations, and a sharp neutrophilic leucocytosis. 3. Frequency of and pain on urination in the presence of symptoms referable to the lower colon. 4. A palpable tumor mass, usually discovered by rectal examination, often sausageshaped and extending to the left in close relationship to the sigmoid.

Membranous Pericolitis.—Dr. Charles Ryan, of Des Moines, Iowa, related his personal experience, which had been confined to twelve cases. One case was of especial interest, that of a woman, thirty-eight years of age, who presented symptoms of chronic cholecystitis and chronic appendicitis, which was his diagnosis. At operation there was found a well developed membrane extending from a point about three inches above the caput coli to a point on the transverse colon two inches to the left of the median line; the transverse colon had been raised until it occupied a position approximating the anterior border of the liver, the gallbladder being covered, and the membrane spreading over the anterior surface of the stomach. The appendix was kinked, the distal end being incarcerated in a well formed Lane's kink. Simple division of this extensive membrane and kink, with the application of sterile petrolatum to the latter, with appendectomy and cholecystotomy, was the treatment. While she was greatly benefited, the symptoms did not entirely disappear. The results in twelve cases at the present time were: Completely cured, four; greatly benefited, three; showing recurrence to a variable degree, three, and two cases operated in within the past week.

Dr. Herman E. Pearse, of Kansas City, Mo., emphasized the importance of diagnosis, and then discussed the choice of operative procedures in cases of malformations or deviations of the colon.

Dr. C. C. Conover, of Kansas City, Mo., recalled the case of a woman who had stenosis three inches to the left of the hepatic flexure, with alternating constipation and diarrhea. She had been treated for neurasthenia for almost four years. She had symptoms of intestinal stenosis and was operated upon. The band or pericolic membrane was removed, and she made a good recovery.

Dr. Henry S. Munro, of Omaha, had noticed one thing in common with every method of treatment in the class of cases under discussion, and that was, a carefully regulated dieteic regimen, coupled with systematic exercise, must follow the operative procedure, no matter what it was.

Dr. E. W. Powell, of Omaha, said that if we could get these cases to the internist early he could make the diagnosis and correct the condition before the patient got to the stage of the pathological condition known as Lane's kink, but unfortunately the average patient did not consult the internist or the surgeon early. Personally, he thought the simplest operation that would correct the deformity was the one that was ideal.

Dr. John F. Binnie, of Kansas City, Mo., said there were colons of all sorts and peculiar shapes tucked away in all sorts of ridiculous fashions, and yet they worked very well. If there was a mobile cecum and a mobile (lowest) portion of the ileum we had a loop of intestine which was pretty much in the same condition as the normal sigmoid, and the intestinal work could be carried on very well in that individual; but if we had a fixed ileum near the cecum, and a mobile cecum, then, of course, the cecum could pop around in various directions and produce temporary obstruction. In operating he did not bother about ileal kinks and cecum mobile very much unless he found them combined. In operative work, or in post mortem work, when he had exposed the cecum and found it mobile, he had found the sigmoid plastered down to the abdominal parietes; and this, he thought, was usually the case. Many of these conditions were probably congenital.

Dr. William T. Reynolds, of Kansas City, Mo., stated that in May last he had operated upon a girl, fourteen years of age, with the idea that he had to deal with appendicitis. He found the appendix comparatively normal, but there was a membrane at the head of the cecum. There was nothing to be observed in the formation of the membrane upon the colon higher up. After operation she went home and was well for about six weeks. Since then she had been having the same pain as formerly. He operated a second time and found a smooth, white, glistening membrane high up on the colon which had formed between May and four weeks ago.

Dr. Howard Hill, of Kansas City, Mo., said more observation was needed as to what caused these malformations or deviations of the colon. The looseness of attachment of viscera might be responsible primarily for angulation and similar conditions. There was no use in operating on the cecum alone, as in six or eight weeks these patients got into the same condition they were in before operation. An ileosigmostomy should be done. The difference between an ileosigmoidoscopy and operations upon the cecum and colon was that after an ileosigmostomy the patient got well slowly, but remained well.

Dr. M. J. Ford, of Omaha, cited two cases. In one, on opening the abdomen he found the colon and ascending colon in proper anatomical position, but within an inch and a half of the cecum and caput coli, and extending up over the colon for three inches there was a distinct band running longitudinally across the colon, holding it down. This was released. The other patient had the chain of symptoms which usually accompanied these cases, and had been treated by various physicians for neurasthenia. On opening the abdomen he found he could not get to the head of the colon unless he broke through a number of adhesions to reach the pericolic membrane which extended clear over, and when he got down to where the appendix was he found it was normal, within a sac, and was not adherent to the tissues around it. The appendix was free, and the pericolic membrane spread over it, with the head of the cecum plastered down upon the parietes.

Landry's Paralysis.—Dr. E. M. Hummel, of New Orleans, reported a case of Landry's paralysis in a man, forty-six years of age, which gave strong support to the opinion that lowered resistance was the preliminary necessity in the development of the disease, and the agency of psychic depression was again introduced. While no specific organism was likely to be proved the cause of Landry's paralysis, it seemed that some condition of toxicity springing out of unwonted virulence of some one of the bacterial flora native to the body and operating under the auspices of lowered resistance would be settled upon as the cause of this insidious, creeping death, for such might it be characterized in its clinical expression.

Dr. A. L. Skoog, of Kansas City, Mo., said the mortality from Landry's paralysis ranged from seventy-five to 100 per cent. Children were less frequently attacked than adults. There was a group of acute poliomyelitis cases which might be described as the neurotic type, and in some of these the disease might ascend and be called the neurotic plus the myelitic type. Psychic depression and also physical exhaustion had been named as predisposing causes. Those who had done laboratory work, especially in the last few years, with acute poliomyelitis thoroughly believed that it was due to some infectious process. Very recently Flexner and Noguchi had reported an organism as the cause of acute poliomyelitis which they thought they had isolated and cultivated, and he was inclined to believe they were correct. In view of what was known of acute poliomyelitis, that it could be transmitted to monkeys, it was of considerable interest to have a few cases with frank symptoms of Landry's paralysis and attempt to inoculate animals.

Dr. C. R. Woodson, of St. Joseph, Mo., said there could be no question but that there were cases of Landry's paralysis in which there was elevation of temperature and sphincter involvement. Some writers were disposed to believe that the disease was a polyneuritis, and while it had some characteristics which were quite different from the ordinary types of polyneuritis, there were others very much like it. There was no question but that we had a flaccid paralysis in poliomyelitis, and in poliomyelitis the arterioles were involved. In Landry's paralysis the spinal ganglion was implicated. According to some authors, there was a disseminated myelitis. Again, there was occasional recovery in cases of Landry's paralysis, but ne did not recall any author at the present time who said complete recovery followed in cases of disseminated myelitis.

Dr. C. C. Goddard, of Leavenworth, Kansas, recalled the case of a physician who was perfectly well apparently up to a certain evening, when he reached out his hand to take hold of the ear of his dog and found he could not hold it. Then he tried with the other nand, and found he could hold the dog's ear. The next morning the left arm was paralyzed, and the other arm became involved. That day he thought he was bound to get out of bed. He threw himself out of bed and fell to the floor. The speaker was called in and made a diagnosis of Landry's paralysis or acute ascending paralysis. The patient could move his feet in bed that day, but from that time he became completely paralyzed both as to sensation and motion in his whole body. This case started in the left arm, which was unusual, as it generally began in the feet. The mind was perfectly clear; his pupils looked all right at the time he went to bed. He had no pain; he had to be catheterized; he could not pass urine after the second day without catheter. After the fourth or fifth day paralysis of deglutition set in; his pulse became weaker and weaker; he gave a sighing resoiration, and was dead.

Dr. Charles O'Neill Rich, of Omaha, reported the case of a postman, who was admitted to the hospital complaining of numbness in both feet. He gave a history of sore throat. Paralysis was progressive. At the time poliomyelitis was attracting a great deal of attention and he tried in some way to correlate the two diseases. A diagnosis of Landry's paralysis having been made, he made spinal punctures every six hours. The sphincters were intact, and the only thing very noticeable was the ascending paralysis. The blood count during the eleven days he was in the hospital ranged from 8,000 to 16,000. The spinal fluid ranged from sixty to ninety-six. The lymphocytes per c. c. were much the same as in the cases of anterior poliomyelitis reported at the time. Toward the last the lymphocytes in the spinal fluid had increased. The patient had a Noguchi positive reaction, a negative Wassermann reaction, and denied lues. The majority of clinicians and pathologists considered Landry's paralysis as identical with anterior poliomyelitis, but coming on as it did in this case in adult life, and death occurring at such an early stage, the patient did not get the resulting polyneuritis, but simply a root lesion and ganglion lesion.

Dr. S. Grover Burnett, of Kansas City, Mo., said that in Landry's paralysis the patient did not die from toxemia, but from the want of air. He died because he had become paralyzed so far as the respiratory function was concerned. He had seen but one case recover, and in this it was a question whether or not he was correct in his diagnosis. The disease began in the lower extremities, took the usual course, extended up, and involved the throat muscles. The paralysis was progressive from one six hours to another. In desperation he gave drachm doses of fluid extract of ergot every three hours. Under the influence of the ergot the disease seemed to be checked; but on the other hand, it was known that this happened once in a while, and a few patients got well.

Dr. Abraham Sophian, of New York, stated that from the studies that had been carried on during the past few years, particularly with reference to clinical and laboratory analyses, the relationship between Landry's paralysis and poliomyelitis had been established, and there was no question but that in some instances Landry's paralysis and poliomyelitis were one and the same disease. Several years ago during a large epidemic of infantile paralysis in New York city, he had seen two cases of Landry's paralysis in children. Poliomyelitis was characterized by two great groups of symptoms, first the motor, or paralytic phenomena, and secondly the symptoms of hydrocephalus. Landry's paralysis had both of these symptom complexes. We had hydrocephalus in all cases of Landry's paralysis Poliomyelitis might affect any part of the central nervous system. The characteristic feature of Landry's paralysis was the ascending paralysis. The cerebrospinal findings in the two diseases were similar.

Rheumatism.—In a symposium on this subject several papers were read in which the various theories as to the etiology of the disease were advanced. The diagnosis of chronic rheumatism, the modern conception of rheumatism, and its treatment, were discussed. In the diagnosis chronic disease of the joints was considered a sign of some focal or systemic disease elsewhere in the body. The diagnosis of chronic disease of the joints depended upon establishing the interrelationship between the focal and systemic disease and the changes in the joints. In the cases observed by the author's treatment directed toward these focal or systemic causes produced the best results upon the joint lesions.

Cancer.—In a symposium on cancer, Dr. W. L. Brosius, Gallatin, Mo., spoke of the theories of Virchow, Rous, Ross, Wassermann, Loeb, etc., as regards the etiology of cancer. Dr. Joseph C. Bloodgood, Baltimore, pointed out the great danger of incomplete operations for cancer in the early stages; while Dr. Franklin H. Martin, Chicago, discussed the early diagnosis of cancer of the uterus and its surgical treatment. Other papers presented dealt with cancer of the stomach from a medical point of view; prevention and treatment of cancer of the skin; cancer of the colon from a diagnostic point of view; surgery of the axilla in advanced mammary cancer, and the x ray treatment of cancer. In the discussion Dr. John F. Binnie, of Kansas City, Mo., said that too much abuse had been poured upon the unfavorable statistics after operative treatment for frank malignant disease in the matter of recurrence. He thought other terms should be used. After cutting out the disease, if we had a reappearance within a comparatively short period of time, say after two or three years, it was a true reappearance of the disease, but it was not a recurrence. It meant that some disease was left and still continued to grow, but when we had a true recurrence, things were somewhat different. If disease appeared again after a lapse of three years, why could it not be the original causes of the disease working again on a patient who had shown himself nonresistant to the noxious influence which caused disease. Thus we had a fresh incidence of the disease, not necessarily a recurrence.

Dr. J. P. Kanoky, of Kansas City, Mo., said that where the cancer was very malignant and affected the deeper tissues, the x ray would afford relief, although it might not cure. As regards superficial ulceration or rodent ulcer, years ago he had employed the actual cautery or the knife. Within the last few years he had used carbon dioxide snow. It was as efficacious as the cautery, much pleasanter than the knife, and the cosmetic results were superior to both. Superficial cancer, or so called rodent ulcer, could be treated with the snow with absolute success.

Dr. W. O. Henry, of Omaha, spoke with reference to enlightening the laity about cancer of the uterus, and said that committees had been appointed by various societies in the United States to do what they could in this direction. There was a large class of physicians, however, who did not attend society meetings and did not read up to date medical journals, and those should be educated as well as the laity. The way to do it was for every State society to have a publicity committee, backed by the authority of the society, to prepare proper articles for the daily press and for the weekly papers in every county.

Dr. A. L. Blesh, of Oklahoma City, wondered how we were going to educate the people upon the cancer question when perhaps nine out of ten of the deep body cancers could not be diagnosticated by the physician himself in time to be of any avail whatever to the patient. Only a few days ago he had examined a woman sent to him by a brother physician, and found far advanced cancer of the cervix. In operating he discovered that the disease had extended so far out into the sides of the pelvis retroperitoneally that he gave it up in despair and closed the abdomen. How were we going to educate the people to consult physicians for cancer when they did not know that the disease existed?

Dr. Donald Macrea, of Council Bluffs, Iowa, said this and other societies ought to take a strong stand with regard to a publicity campaign in educating the laity about cancer. The right time to operate upon these patients was in the precancerous stage.

Dr. H. C. Crowell, of Kansas City, Mo., said if one thing was of greater importance in regard to cancer than anything else, it was the education of the people secondarily and the profession primarily. The average physician of the country was better informed on the scientific methods and procedures and the advanced treatment and advanced theories of cancer than he was on the diagnosis.

Letters to the Editor.

PHYSICIANS AND THE TENEMENT HOUSE DEPARTMENT.

1181 Broadway, New York, *May 21, 1913.*

To the Editor:

An article in the May 17, 1913, issue of the Journal leads me to offer some supplementary and corrective information relative to "Physicians and the Tenement House Department." The medical profession should be well informed on tenement matters, as nothing affects the health of the community so much as housing, and New York city housing is, perhaps, the most difficult city problem in the world. In 1908 I accidentally met in Norway a practising physician who served in the Tuberculosis Clinic of the Presbyterian Hospital, and I advocated a type of building that had been in 1900 available (although untried) in complete form. This resulted, in 1909, in the Vanderbilt Tuberculosis Tenements, of 512 East Seventy-seventh, Street, a building housing 384 families. One sixteenth of this building is now in charge of the Association for Improving the Condition of the Poor for trying out one of the most interesting experiments ever offered a large city. Physicians who have read the former article should see these buildings and, at the same time, visit the group called the John Jay Dwellings immediately across the way, at 520 East Seventy-seventh Street, which are identical with the Vanderbilt Tenements, but built at less cost to prove out the principle that this type can be built successfully by the commercial builder, and thus cover a wider range of housing reform. These buildings are in a rather inaccessible part of the city, and that has resulted in many people reading about them and entering upon one side or the other of this discussion without seeing the buildings themselves. Although I have been constantly studying tenement problems ever since I graduated at Columbia University in 1893, I have never seen so much literature about a simple portion of this topic as has been written about this.

What is it all about? If the reader is interested, let him visit extreme East Seventy-seventh Street as far as one can go, and on either side of the street, next to John Jay Park which faces the river, can be seen these two groups above mentioned. Now, by observing the toilet windows in both the Vanderbilt Tenements and the John Jay Dwellings, you can, at once, see at least that there was reason for the existence of the Tenement Economies Society, which up to last spring had upon its letterhead only this: "To Eliminate the Vent Shafts from Open Stair Tenements." This was its sole object at that time, and through the resolution of the Academy of Medicine, which was proposed by Dr. A. Jacobi and seconded by Dr. Hermann M. Biggs (see *Archives of Pediatrics,* July, 1911, pages 563, 621, and 630, and NEW YORK MEDICAL JOURNAL of August 26, 1911, on "Recent Corrective Tenement Legislation") a bill was introduced at Albany. Among those well known to the profession are Professor Charles F. Chandler, who is president of the society, Dr. Floyd M. Crandall, Dr. Alfred Meyer, Dr. William L. Stowell, Dr. Antonio Stella, Dr. William Shannon, Dr. Royal S. Haynes, and Dr. Joseph E. Winters, who advocate the perfection of the type with an unbroken periphery. Professor George F. Canfield, who for many years was president of the State Charities Aid Association and is now its vice-president, has constantly maintained the same attitude, although he does not feel as yet, at any rate, the necessity of a board of appeal to accomplish this object.

In the recent article that has caused my addressing your paper appear these phrases: "constant campaign of misrepresentation"; another, "to promote a fantastic project"; again, "water closets on tenement house stairs"—lastly, "diminish present legal minimum of cubic air space." None of these phrases fit the building which the Tenement Economies Society advocate. There are no buildings, except those in extreme East Seventy-seventh Street, that have as yet been built that do approach its ideal. Open stair tenements were tried in 1879 in the "Monroe," still standing, in Manhattan. The plan was not sufficiently economical or efficient to attract interest. In 1900, when the "economic" open stair tenement was offered and a description published in the *Record and Guide* (March 17, 1900, page 452) evidently the germ theory and fresh air treatment had not been so widely established, for that very reliable paper comments thus: "Apparently the stairs are open to the large court, and are a decidedly bad feature, affording the elements full opportunity to create conditions that would be a menace to health and life of the occupants." This plan, just as the Tenement Economies Society would advocate it to-day, was awarded a prize, in 1900, by the Tenement House Committee of the Charity Organization Society (the letter signed by Mr. Veiller highly commending this plan is available, together with a photograph of the original drawing). So it seems that many of us have gone astray from reviewing imperfectly presented articles, instead of studying the building. The *New York Times,* for instance, last winter printed an article that caused a reasonable ground for misunderstanding. The Academy of Medicine never passed upon the court of appeal matter, nor upon the shape of bedrooms. It only offered the resolutions of May 4, 1911, signed by Doctor Huddleston and Doctor Shannon, that was introduced by Doctor Jacobi and seconded by Doctor Biggs.

It is a mistake to think that the cubic air space of a bedroom was to be cut down by the Tenement Economies Society bill. This bill is at the office of the JOURNAL, and others can be obtained from the corresponding secretary of the Tenement Economies Society, at 1181 Broadway, as it is too long to reprint herewith. The law says today, as it has done for thirteen years, that no room shall be less than seventy square feet in area and with a nine foot ceiling in all cases. This gives the cubic space. (There must, besides, be one room to each suite containing 120 superficial feet of floor area.) Now, last year a new law was enacted fixing the minimum horizontal dimension of this bedroom containing 630 cubic feet in this way: In power elevator apartments certain rooms can be six feet across, while in tenements they must be at least seven feet across. The bill which the Tenement Economies Society submitted was merely to make both classes of house alike for the purpose of lessening the burden on the low wage earner. For instance, it results in less waste space, and thus lower rents, if at times a room six feet by eleven feet eight inches be used instead of seven feet by ten feet. The latter is legal, the former illegal; but only since last spring. Now, the board of appeal for the Tenement House Department is not a matter that can interest the medical profession, but the advisability of such a board, be it an advisory board or a suggesting board or whatever it may be called will be a benefit to the city because it will be *public.* At present this function is assumed by the Tenement House Committee of the Charity Organization Society, which is a *private* body. It can not summon before it whosoever it wishes, nor does it allow to appear before it those who wish to present new methods of housing. Some sort of board of appeal is advocated by many, if not all, members of the New York Chapter of the American Institute of Architects, the Brooklyn Chapter, and the New York Society of Architects. The architects are those who constantly see the lack of such a board because they practise not only with the Tenement House Department, but also with the Building Department, which latter has always had such a board called the Board of Examiners. The author has received encouragement relative to a board of appeal from such architects as Messrs. LaFarge, Boring, Waid, Kohn, Atterbury, Flagg, Chambers, Whitney, Warren, Baker, Meade, Stokes, and Cook, all of whom stand at the very head of the profession, not only in New York, but in the United States. This is not a matter that we expect the medical profession to pass upon.

Those of the readers of the JOURNAL who have struggled to the end of this discussion should really visit both these groups of buildings this very spring, and also see the latest building of the City and Suburban Homes Company (on a nearby corner, Seventy-ninth Street and East River), at last embracing our main progressive feature, which it formerly so bitterly avoided or opposed, a house with all "open stairs."

HENRY ATTERBURY SMITH.

Endorsed by:
CHARLES F. CHANDLER, WILL WALTER JACKSON,
SAMUEL OSGOOD MILLER, WILLIAM P. MILLER.

A WARNING.

To the Editor:

The following is the facsimile of a card which has been sent to me from Everdell, Minn.

12 Hrs. Treating Consulting Surgeon
Chronic Diseases Mercy Hospital, Philadelphia
C. LOUIS SCHNEIDER, B. Sc., Ph. D., M.D.
Head Physician and Surgeon
CROOKSTON MEDICAL AND SURGICAL
INSTITUTE
Two Post Graduate Courses
in Berlin, Germany CROOKSTON, MINN.

Mercy Hospital knows nothing of this man. He is in no way connected with our institution and never has been. From the letter I have from Everdell, Minn., I am sure that this man is a fraud in his dealings with patients there. Of one thing I am certain, he states an absolute untruth when he advertises himself as connected with Mercy Hospital. I hope you will publish this letter as a warning to a gullible public, and for the sterilization of the Surgical Department of Mercy Hospital.

ALGERNON B. JACKSON,
Surgeon.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Bovine Tuberculosis and Its Control. By VERANUS ALVA MOORE, B. S., M. D., V. M. D., Professor of Comparative Pathology, Bacteriology, and Meat Inspection, New York State Veterinary College at Cornell University, and Director of the College. With Thirty Full Page Illustrations. Ithaca: Carpenter & Co., 1913. Pp. x-134.

There seems to be an unlimited number of writers and books on tuberculosis. But few of the authors have so well succeeded in producing a valuable book as Dr. V. A.

Moore. The learned professor and director of the New York State Veterinary College at Cornell University gives his reader a clear insight into bovine tuberculosis and its control. In following him through the pages of his book we learn about the history of tuberculosis in cattle, read about the cause of it, the changes produced by it in the tissue, the symptoms, the methods of dissemination, the diagnosis—especially with the help of tuberculin—and the examination of cattle, immunization against and control of bovine tuberculosis. The illustrations on thirty plates are well executed. The book can be well recommended.

Elements of Practical Medicine. By Alfred H. Carter, M. D., M. Sc., Fellow of the Royal College of Physicians, London, Professor of Medicine, University of Birmingham, etc. Tenth Edition. London: H. K. Lewis, 1912. Pp. xvii-683.

This little manual considers the subject of general pathology and general medicine, including nervous diseases and diseases of the skin, or rather those diseases of the skin which would be likely to fall into the hands of the general practitioner. Under this latter heading, too, are included drug eruptions and the various forms of skin tumors, benign and malignant. A number of prescriptions are given under the heading of the various diseases for which they are recommended, and in the brief appendix a few routine laboratory measures are considered. It would seem advisable, in the light of present knowledge, to include rheumatic fever under the specific infectious diseases, rather than place it among general diseases as has been done. In speaking of the ductless glands no mention is made of the pituitary gland, and consequently no reference is given to hyperpituitarism or hypopituitarism or to acromegaly, nor is reference made to aplastic anemia and leucanemia. The work cannot, of course, replace any of the larger textbooks, but as a ready reference manual, it has a value.

Outlines of Psychiatry. By William A. White, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C., Professor of Nervous and Mental Diseases, Georgetown University, Washington, D. C., etc. Nervous and Mental Disease Monograph Series No. 1. Fourth Edition, Revised and Enlarged. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. v-318. (Price, $3.)

To those who are familiar with the earlier editions of this work eulogy of it is superfluous. To others desiring a general survey of the broad subject of psychiatry the book can be recommended as a concise and at the same time comprehensive presentation of it which the frequent revisions, necessitated by the several editions, have kept thoroughly up to date. Of special note are the chapters devoted to the exposition of methods of examination. These include Principles and Methods of Examination, A Minimum Mental Examination, and Binet-Simon Scale, and form a most practical section. One new departure from previous editions is the use of extracts from case histories as illustrations of the descriptive text, a plan which assists the reader to gain a correct idea of personality in relation to the different psychic states, and of the necessity to individualize in the study and treatment of patients affected with abnormal mental processes.

The Surgery of the Stomach. A Handbook of Diagnosis and Treatment. By Herbert J. Paterson, M. A., M. C., M. B. (Cantab.), F. R. C. S., London. With Plates. New York: William Wood & Co., 1913. Pp. xiv-312. (Price, $3.50.)

This volume represents the latest word in gastric surgery and is to be recommended to the surgeons or physicians wishing to know the present status of this important subject. Great advances have been made in recent years in the pathology, diagnosis, and surgical treatment of stomach disorders, and there is distinct need of an up to date monograph written by a worker in this field. The author gives the results of his own experience, as well as the views of other masters of the subject. The description of the technic of the various modern operative procedures is clear and concise, and the illustrations of the various steps are excellent. The chapter on the physiological effects of gastrojejunostomy is particularly instructive, and the theories expressed are original and the practical deductions important. One misses, however, a discussion of the effect of an open pylorus after gastrojejunostomy upon digestion and drainage. This point is of the utmost importance and is receiving much attention at the present time. The various complications of gastric ulcer are described in minute detail, and the treatment outlined in a clear and forcible way. The whole book bears the mark of authority, and one feels that it is based on intimate knowledge and broad practical experience. The volume deserves a warm reception among surgical practitioners in this country, not only on account of its intrinsic worth, but also because of the generous acknowledgment by the author of America's great achievements in abdominal surgery and his dedication of the book to one of our leading abdominal surgeons, William J. Mayo.

Medical Laboratory Methods and Tests. By Herbert French, M. A., M. D., F. R. C. P., Assistant Physician, Guy's Hospital, London, etc. Third Edition. Chicago: Chicago Medical Book Company, 1912. Pp. viii-202. (Price, $1.50.)

This little work, according to the author, has for its object a consideration of "chemical and microscopical methods that are of established value in clinical medicine." In this sense we know of no book of its size which contains so much really valuable information. Necessarily, in a pocket manual, a work designed especially for the family physician, no reference is made to the more technical and complex methods of analysis. One disadvantage it possesses to the American student, not an unsurmountable one, to be sure, is the reference to British pharmacopeial strengths of the various solutions used. For instance, in the test for pepsin hydrochloric acid (B. P.) is given. In describing tests for the determination of acidity, the author recommends that 100 c. c. of strained vomit be used in estimating the total acidity, and, again, 100 c. c. in a quantitative estimation of free HCl. This presupposes a rather large amount, and after the test meal it is only rarely that one can lift more than 125 c. c., only a portion of which is fluid. It is not necessary to use over five or at most ten c. c. of filtered contents for the determination of these tests. No reference is made to the alizarin test for free acid and acid salts, without which it is not possible to determine the combined HCl or the organic acid and acid salts. These are sometimes of distinct value in a diagnostic sense. Chapters IX and XI, respectively, deal in a brief way with the "preservation and staining of morbid anatomy specimens" and "tests for the commoner poisons." The former of these might have been omitted, as the time necessary for carrying them out is not given to the practising doctor. The work is well illustrated, and should find considerable favor among those for whom it is especially designed.

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Meetings of Local Medical Societies.

Monday, *June 2d.*—Brooklyn Hospital Club; German Medical Society of the City of New York; Utica Medical Library Association; Hornell Medical and Surgical Association; Roswell Park Medical Club, Buffalo; Nigara Falls Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

Tuesday, *June 3d.*—Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Lockport Academy of Medicine; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Hudson County, N. J., Medical Association; Bridgeport, Conn., Medical Association.

Wednesday, *June 4th.*—Bronx Medical Association; Society of Alumni of Bellevue Hospital (annual); Harlem Medical Association (annual); Elmira Academy of Medicine.

Thursday, *June 5th.*—Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Dansville Medical Association.

Friday, *June 6th.*—Gynecological Society, Brooklyn; Manhattan Dermatological Society; Corning Medical Association.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health Service for the seven days ending May 31, 1913:

Carmelia, Francis A., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Eagle**, J. M., Surgeon. Relieved from duty at Portland, Me., quarantine station and directed to report to the director of the Hygienic Laboratory for instruction in the examination of vaccines and antitoxines. **Ebert**, Harvey G., Passed Assistant Surgeon. Relieved from duty at the immigration station, San Francisco, Cal., and directed to proceed to Astoria, Ore., and assume charge of the quarantine service at that port; granted one month's leave of absence en route to station. **Foster**, A. D., Passed Assistant Surgeon. Granted one month's leave of absence, from June 16, 1913. **Grimm**, R. M., Assistant Surgeon. Directed to proceed to Belfast, Ga., to make an inspection of the vessels and crew of the British schooner *Lady of Avon*. **Grubbs**, S. B., Surgeon. Detailed to represent the service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, May 8th and 9th. **Hooper**, Lionel E., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the Angel Island Quarantine Station, for duty and assignment to quarters. **Jenkins**, Luther W., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the immigration station, for duty. **Mathewson**, H. S., Surgeon. Relieved from duty at Milwaukee, Wis., and directed to proceed to Portland, Me., and assume charge of the quarantine service at that port. **Mullan**, E. H., Passed Assistant Surgeon. Granted one month's leave of absence from June 1, 1913. **Neill**, M. H., Assistant Surgeon. Relieved from duty at the Marine Hospital, Boston, Mass., and directed to report to the director of the Hygienic Laboratory for duty. **Paine**, Liston, Assistant Surgeon. Directed to proceed to Boston, Mass., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Safford**, M. V., Assistant Surgeon. Assigned to duty in the medical examination of arriving aliens at Boston, Mass. **Scott**, Ernest W., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Sprague**, E. K., Surgeon. Granted one month's leave of absence, from July 1, 1913. **Watson**, H. J., Acting Assistant Surgeon. Grant-thirty days' leave of absence from February 14, 1913, and fourteen days' extension of annual leave on account of sickness from March 16, 1913. **Wilson**, R. L., Passed Assistant Surgeon. Detailed to represent the service at the Pure Food and Health Exposition and Municipal Sanitary Congress to be held at Greenville, S. C., May 19th to 24th.

Board Convened.

Board of medical officers convened to meet at Honolulu, Hawaii, upon the call of the chairman, for the physical examination of Assistant Surgeon Charles M. Fauntleroy and the presentation of questions for the written examination to determine his fitness for promotion to the rank of passed assistant surgeon. Detail for the board: Surgeon Frederick E. Trotter, chairman; Passed Assistant Surgeon E. R. Marshall, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 24, 1913:

Bratton, T. S., Major. Relieved from duty in the Philippine Islands and will sail for the United States about September 15, 1913. **Brown**, Ira C., First Lieutenant, Medical Reserve Corps. Will report to the medical superintendent of the Army Transport Service, Fort Lawton, Wash., for assignment to duty as transport surgeon on the transport *Dix*, for the trip to the Philippines and return, about June 7, 1913. **Ekwurzel**, George M., Major. Ordered to Gettysburg summer camp for instruction of students, from July 7th to August 15th, and will then return to station. **Fauntleroy**, P. C., Major. Reported for duty at Fort Monroe, Va., on May 15th. **Glennan**, James D., Lieutenant Colonel. Relieved from duty at the Letterman General Hospital, Presidio of San Francisco, Cal., about July 1st, and will report to the governor, United States Soldiers' Home, Washington, D. C., for duty. **Kennedy**, J. S., First Lieutenant, Medical Reserve Corps. Arrived at camp, Waco, Georgia, from Fort McPherson, on May 17th. **Lyster**, W. J. L., Major. Left Fort Oglethorpe, Ga., on May 18th, to camp at Franklin, Tenn. **Reynolds**, F. P., Lieutenant Colonel. Relinquished leave of absence and left Elmira, N. Y., on May 24th, en route to San Francisco, Cal., and Hawaii. **Van Kirk**, H. H., First Lieutenant. Assigned to duty at the Presidio of Monterey, Cal. **Worthington**, J. A., Captain. Arrived at Fort Baker, Cal., on May 15th, for temporary duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 24, 1913:

Allen, D. G., Assistant Surgeon. Ordered to duty at the Naval Hospital, Newport, R. I. **Curtis**, E. E., Passed Assistant Surgeon Detached from the *Supply* and ordered to the Naval Station, Guam. **Dessez**, P. T., Passed Assistant Surgeon. Detached from the *Tonopah* and ordered to the *Castine*. **Eytinge**, E. O. J., Passed Assistant Surgeon. Detached from the Naval Station, Guam, and ordered to the *Supply*. **Pleadwell**, F. L., Surgeon. Detached from the *North Dakota* and ordered to the Naval Medical School, Washington, D. C. **Pryor**, J. C., Surgeon. Detached from the Naval Medical School, Washington, D. C., on June 1st, and ordered to the *North Dakota*. **Stone**, E. P., Medical Inspector. Detached from the Navy Recruiting Station, Denver, and granted sick leave. **Warner**, R. A., Passed Assistant Surgeon. Ordered to the Naval Hospital, Washington, D. C., for temporary duty.

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Births, Marriages, and Deaths.

Married.

Badt—Glenn.—In Fort Worth, Tex., on Thursday, May 8th, Dr. Morris B. Badt and Miss Mabel Glenn. **Glenn—Weaver.**—In Philadelphia, on Tuesday, May 20th, Dr. Robert A. Glenn and Miss Myrtle Weaver. **Hildreth—Whitaker.**—In New York, on Thursday, May 22d, Dr. Warren Hildreth and Miss Kathleen Whitaker. **Plunkett—Lewis.**—In Lauderdale, Va., on Monday, May 12th, Dr. Flavius O. Plunkett, of Lynchburg, and Miss Ruth Lewis.

Died.

Brown.—In Philadelphia, on Friday, May 23d, Dr. Elmer E. Brown, aged fifty-three years. **Carson.**—In Port Deposit, Md., on Wednesday, May 14th, Dr. William Cowan Carson, aged eighty years. **Cowles.**—In Rochester, N. Y., on Tuesday, May 13th, Dr. James B. Cowles, aged eighty-nine years. **Eaton..**—In Belgrade, Mo., on Tuesday, May 6th, Dr. Jesse A. Eaton, aged sixty-nine years. **Engleman.**—In Easton, Pa., on Wednesday, May 14th, Dr. David Engleman, aged seventy-seven years. **Charles.**—In New York, on Wednesday, May 21st, Dr. Frank Charles, aged sixty years. **Keener.**—In St. Joseph, Mo., on Monday, May 12th, Dr. H. N. Keener, aged seventy-one years. **LeBeuf.**—In Pass Christian, La., on Monday, May 5th, Dr. Louis G. LeBeuf, aged forty-seven years. **McIntosh.**—In Covington, Tenn., on Sunday, May 4th, Dr. J. S. McIntosh, aged seventy-seven years. **Nelson.**—In New York, on Wednesday, May 21st, D. J. De Witt Nelson, aged sixty-four years. **Ogden.**—In Chicago, on Wednesday, May 14th, Dr. E. Russell Ogden, aged fifty-one years. **Peers.**—In Topeka, Kansas, on Monday, May 12th, Dr. T. W. Peers, aged fifty-seven years. **Phares.**—In St. Paul, Minn., on Sunday, May 11th, Dr. George W. Phares, Sr., aged seventy-six years. **Tomlinson.**—In Philadelphia, on Sunday, May 18th, Dr. Joseph Tomlinson, of Bridgeton, N. J., aged fifty-nine years. **Wocher.**—In Cincinnati, on Thursday, May 15th, Dr. Charles F. Wocher, aged fifty-six years.

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THE UNCONSCIOUS FACTORS IN THE NEUROSES.*

BY A. A. BRILL, PH. B., M. D.,

New York,

Chief of Clinic of Psychiatry, and Clinical Assistant of Neurology, Columbia University.

One of the rules that I invariably follow in my psychanalytic work is not to analyze the patient's dreams until I am fairly well acquainted with the "lay of the land" of his mental makeup. Dream analyses require the full cooperation of the dreamer. He must conceal absolutely nothing that enters into his consciousness during the analysis and be ready to answer all questions put to him. It often happens that I hear dreams that could be analyzed without any assistance, but as a rule it is impossible to get at all the facts without the dreamer's help. To obtain this, one must have the patient's confidence, there must be some rapport between patient and doctor, and it usually takes a few weeks before this is established. Now and then, however, one is forced to make an exception, and rarely it is even necessary to utilize dream analysis to bring about this rapport. It is of such an experience that I am about to speak.

A very brilliant but rather skeptical woman of thirty-six years—she was a doctor's daughter—was referred to me for psychanalytic treatment because of a very severe neurosis from which she had been suffering over fifteen years. She soon learned from friends and acquaintances that I was a dream interpreter, and was anxiously waiting to find out the meaning of her dreams. At my request she brought me dreams every day, but I refused to tell her their meaning. She then sought information from the literature and, contrary to my wishes, read my translation of Freud's selected papers on hysteria. One morning she brought the following dream: "I was with a crowd of people, and we wanted to pick some flowers, or rather wanted to steal them. We came to a garden and I saw beautiful flowers. I was about to steal some when suddenly I descried a man looking out of a window. Fearing that I was detected, I asked him whether I could pick some flowers. He jumped up and cried, 'Now I know who has been stealing all these flowers.' I was frightened, started to run away, and awoke."

When she finished reciting the dream she teasingly demanded its meaning, and when I reminded her that I did not analyze dreams for the first few weeks she mockingly accused me of not knowing what the dream meant and harassed me with the question, "What does it mean to pick flowers in a dream?" until I was forced to take up the analysis. When I asked her to focus her attention on the dream and repeat her thoughts she insisted that nothing came to her mind. This answer, "Nothing comes to my mind," is often heard from beginners who are not accustomed to "continuous associations,"[1] from people who are impeded by conscious or unconscious resistances, and, last but not least, one hears this answer where the element of the dream refers to a symbolic expression. In the last case the meaning is found in the symbol or double meaning expressed in the element of the dream. It did not take me long to decide that we dealt here with the last theory, and the meaning of the dream soon became clear to me. As a prologue to the interpretation I shall relate the following facts: As I said above, I was aware that the patient had read Professor Freud's book, and when she kept on hurling at me the question of flower picking in the dream some passages in the book flashed through my mind. These passages deal with the mechanism of the therapeutic effects of the psychoneuroses. Thus, we are told that the "psychoneuroses are distorted substitutive gratifications of impulses the existence of which one must deny to himself and to others"; that "their capacity to exist rests on the distortion and misjudgment"; and that with the solution of the riddle they present, and with the acceptance of the solution by the patients, these morbid states, become incapable of existence."[2] In brief, it is asserted that the morbid symptom disappears as soon as psychanalysis discovers its hidden meaning and brings it to the surface. By way of illustration, Freud mentions the fact that the visual hallucination of the Holy Virgin used to be a frequent occurrence among peasant girls, and as long as such a manifestation drew a large crowd of believers, or even resulted in the erection of a chapel over the holy shrine, the visionary state of these girls remained inaccessible to suggestion. To-day even the priesthood has changed its attitude toward such manifestations. They allow the doctor and the policeman to take charge of the visionary girl, and consequently the Holy Virgin seldom reveals herself nowadays. To illustrate further, he says,

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*Read before the Section in Psychiatry and Neurology of the New York Academy of Medicine, March 11, 1913.

[1] For the technic of dream analysis see Freud: *The Interpretation of Dreams*, New York and London.

[2] Selected papers on Hysteria translated by A. A. Brill, second edition, p. 213.

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"Let us assume that a circle of ladies and gentlemen of good breeding have agreed upon making a day's excursion to some country place. The ladies have decided among themselves that if one of them should desire to satisfy a natural want she was to say aloud that she was going to pick some flowers. But a mischievous joker discovered this secret and put on the printed programme sent to those invited: If the ladies wish to ease Nature they should say that they are going to pick flowers. Of course, none of the ladies would then wish to make use of this covert allusion, and this also made impossible the use of a similar formula." These quotations from Freud's book came to my mind and, as you can see, furnished the key to the dream. However, to verify my assumption, I ascertained that she had finished reading the book the evening before the dream. I might add that the passages cited are from the last two pages of the book. She saw no connection between my questions and her dream, but took my "irrelevant questioning" as further evidence of my ignorance of dream analysis. I was inquisitive to know whether she would discover the connection between the dream and the story in the book, but despite all my leading up to it, I was finally forced to call her attention to it. This was followed by a mingled reaction of shame and laughter, lasting for a few moments and ending by her remarking, "And shall I add that I took a dose of calomel before retiring, and was awakened by it."

Now, let us consider the psychological principles that gave rise to this dream. On the day preceding the dream I had a long discussion with the patient about certain sexual experiences of her life. She refused to give me any information beyond what her physician wrote to me. Although married for years and the mother of a few children, she looked upon sex with the greatest disgust. The very word was disagreeable and nauseous to her. From her physician I learned that for some time after marriage she evinced an abhorrence to any intimate relations with her husband. Later she became more tolerant, but always became hysterical over it, and always expressed her disgust for it. In brief, she was a marked *natura frigida,* and evinced a typical infantile sexuality. She had an enormous craving for affection, and loved to be fondled and petted by her husband, but stated that she would be perfectly happy in her married life if only sex would not come in. When I tried to have her go into details about a definite phase of her history she refused to do so because it touched upon sex. She made a great many efforts, but I saw that she really could not continue. I anticipated some of her thoughts and told them to her. She was very much impressed and remarked, "Why don't you tell me everything if you know it? I wish you would talk, instead of asking me questions." I retorted that it was necessary that she should do the talking herself. She agreed to do so the next day, as our session was then at an end. It was shortly after she left me that she read the part of the book which I have cited.

What were the psychological mechanisms that entered into the formation of this dream? When the patient left me she debated with herself whether or not to reveal to me what she called the disagreeable part of herself. She reflected over some of the thoughts that she would have to disclose and could not make up her mind to tell them. This struggle continued throughout the day, but now and then it was crowded out from consciousness by other thoughts. On falling asleep this stream of thought, endowed with so much interest, though dulled by the desire to sleep, nevertheless retained some of its activity. Experience in dream analysis teaches that in order to form a dream the stream of thought in question must succeed in arousing and in forming a connection with one of the unconscious repressed tendencies from childhood. It is through this reinforced energy that this stream of thought, or day remnant, attains sufficient force to reach consciousness in the form of a dream. The patient's dream was the expression of the wish to disclose to me that part of herself which was under very strong repression and suppression. The determinant of the dream was the conflict of the previous day about her hidden sexuality, which continued its activity during sleep and aroused any number of associations from early life. Once the connection was formed, the thoughts obtruded themselves upon consciousness, as in the dream. But the vigilance of the psychic censor is plainly visible. The story she had read the day before impressed her very much because it showed the futility and ridiculousness of prudishness, and because it expressed the identical ideas that entered into our discussion. The dream therefore makes use of the beautiful formula "to pick flowers" in order to hide a contrast idea to ease Nature. As I said before, our patient was altogether infantile in her sexuality. She knew absolutely nothing of adult sexuality when she married. She made no distinction between the vagina and anus (Freud's cloaca theory); both were equally tabooed. Hence to ease Nature was equivalent to a sexual act. The allusion in the dream to something immoral and forbidden is nicely expressed by the fact that she was not merely going to pick flowers, but to steal them. The man in the dream was myself; I discovered her sexuality, and it was from me that she was trying to run away. At the same time this expresses the wish to be detected and seen, which goes back to the wish expressed the day before that I should tell her all there was to be known of sex, and not ask her any questions, and to a marked childhood exhibitionism and immorality which later gave the reaction of extreme bashfulness and prudery. I might add that this dream nicely illustrates the part played by an organic stimulus. When the patient first told me the dream she purposely omitted that she was awakened by the griping of the calomel and had to empty her bowels. It was only after I called her attention to the meaning of flower picking that she corroborated my interpretation by telling me the part played by the dose of calomel. As can be seen, there was an effort to render harmless the stimulus, the griping, as a sleep disturber. This is always the case in all the so called convenience or laziness dreams[3] where the sensory stimuli are taken up by the dream and woven into a wish. As a rule, however, such dreams are undisguised. Here the disguise was essential and followed the tendencies of the patient's mental makeup. The consciousness of the real meaning of the dream would have been very disagreeable, and throughout her whole life she was accustomed to invest everything with a poetic atmosphere.

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[3] *The Interpretation of Dreams,* p. 104.

Bearing in mind the dream and its interpretation, it may be said that the different stages of the whole process were the following: 1. A mental stream produced during the day; 2, a subsequent forgetfulness of the same; and, 3, its reappearance in consciousness in a disguise form in the dream. The last stage, the dream, is totally foreign or, we may say in meaning, unconscious to the patient. In other words, the original thoughts or impressions underwent a certain change before they reappeared in the dream, and the only way to find their meaning was by comparing them with the latent thoughts. The latter, though unconscious to the patient, were nevertheless the active elements of the dream. This mechanism shows the striking analogy to the so called "posthypnotic suggestions." As we know, Bernheim and others do this experiment in the following manner: A person is hypnotized and while in this state ordered by the doctor to perform a certain task at the expiration of a certain time after awakening. He is then awakened and is in normal condition; he has no recollection of his hypnotic state; and yet at the appointed time he is seized with an impulse to perform the task assigned to him and he does it consciously and rationally without knowing why. When questioned about it he usually finds some excuse for his action. Here it must be said that the order had been present in the mind of the person in a latent or unconscious state until the designated time, and then suddenly merged to consciousness. In normal life this is noticed in such actions as mailing letters, etc. It is to be noted that not everything comes to the surface. Thus the command, the influence of the doctor, the recollection of the hypnotic state, remain unconscious—all that is remembered is the idea of the act to be performed. Moreover, the idea of the action ordered in the hypnotic state not only becomes conscious at a given time, but it also becomes active as soon as it reaches consciousness. But as the real stimulus to the action was the order of the physician, it must be conceded that the idea of the physician's order became active, too. But as it remains unconscious we are justified in saying that it was active and unconscious at the same time.[4]

The fact of posthypnotic suggestions finds full corroboration in the works of Pierre Janet, Breuer and Freud, Morton Prince, and others. All these investigators found that hysterical patients evince many active yet unconscious mechanisms. This has been especially demonstrated by Freud and his school. In our psychanalytic work we always find that the psychoneurotic symptoms are governed by motives of which the patient is entirely unconscious. Thus I have reported two patients who went through major and minor hysterical attacks, lasting from a few hours to days, which on analysis proved to be unconscious reactions to former erotic experiences and episodes.[5] Such patients prove with complete certainty the existence of an unconscious activity which is made up of infantile erotic wish feelings which experienced repression during the developmental period of childhood. In all cases fully analyzed one finds an infantile stage evincing a polymorphous perverse sexuality, a repression or emotional transformation during the developmental period of childhood—a return and a revival of the latter, either as a consequence of the sexual constitution or in consequence of unfavorable influences of the sexual life. To illustrate such unconscious activity I will cite the following case:

J. L., thirty-three years old, single, drug salesman, was referred to me for treatment by Dr. Beverly R. Tucker, in the beginning of April, 1911. The patient had been an active sufferer since 1904, the main symptom being a mysophobia. A letter written by Doctor Tucker reads: "About five years ago he got into the habit of washing his hands very frequently. This dirt phobia has expanded until now he is afraid to touch almost anything for fear of transmitting poison or filth in an infinitesimal amount to himself or some other person." The patient was almost entirely incapacitated by his neurosis. He could no nothing without getting into trouble. He was afraid to touch anything that had any dust on it. If he noticed spots on his clothes he immediately washed his hands over and over again because he imagined that he had touched them. He would get into a state of excitement over it which manifested itself in anxiety and perspiration. His hands were almost always wet with perspiration. He was especially worried by poisons, and, having been a drug salesman, he saw poison in everything. Thus he did not use a match for years because matches contain phosphorus or sulphur. When he wanted to light a cigar he always managed to do it in some other way. Usually he went into cigar stores, where one can always find a cigar lighter. When a box of matches was left in his room he became very much excited over it, asked the maid to remove it, and had the spot scrubbed and cleaned. On the other hand, he carried in his pocket a silver matchbox containing matches which he never used, and which was a constant source for new phobias. His phobia for odors was just as marked. When he first came to New York he lived in a hotel, and on entering his room one afternoon he perceived a peculiar odor. He inquired about it and was told that the floors were cleaned with some preparation containing carbolic acid. This caused him to leave the hotel; he was in fear lest his coat might have touched the floor, taken up some of the poison, and transmitted it to others. He was afraid to pass certain sides of the street because he noticed a paint shop there; paint suggested lead, which he knew was a poison. He would not touch any metallic door knob because it might contain some "canker" which he thought was especially poisonous—by canker he meant the greenish substance one often finds on exposed metals. It was for this reason, too, that he found it hard to drink water coming from the hydrant. These are only a few of the main phobias which constantly obsessed the patient. Here I simply wish to point out the various stages in the development of this mysophobia, tracing it throughout the patient's life.

It was during the analysis of psychoneurotics that Freud's attention was first called to dreams, the psychology of which he has later studied and developed. At present, however, it may be asserted that psychanalysis is founded upon the analysis of dreams, as dream analysis is the most finished part of psychanalytic investigation. It was for that reason that I began with the analysis of a dream when I wished to demonstrate the unconscious elements in the neuroses. Like the dream, these phobias seem absurd and strange to the patient and the outsider; yet, as in the dream, the enigmatic absurdities and the exaggerated emotions disappear as soon as the analysis is completed.

Starting therefore with the formula that "the neurosis is, so to speak, the negative of the perversion,"[6] I investigated the patient's infantile life. I shall mention here only those elements that are absolutely essential to explain the phobia. I found that the patient's childhood was characterized by the usual polymorphous perverse sexuality, but that instead of undergoing the usual repression, it continued throughout the whole latency period. From his early childhood he displayed a very strong aggressive activity in his sexual life. As far as he could recall, he indulged in sexual looking, despite frequent punishment. He displayed a strong desire for coprophilic activities. He took an unusual interest in feces and urine, he liked the odor of water closets, and one of his favorite indulgences was to put his finger between his sweating toes and then smell them. He was often punished for these acts by both parents, and especially his father. He began to masturbate long before the age of puberty, and his first love affair began between ten and eleven. In brief, there was no latency period to speak of—all the infantile activities were continued to adult life, with only little conflict. From fourteen to fifteen he began to be troubled with all sorts of religious and moral conflicts, and he also became very neat in his appearance. He led what he called a pure life in every way until the age of nineteen, when he consorted with a prostitute. This was followed by many reproaches, so that he had very few such experiences thereafter. His neurosis really began at the age of twenty-one, when he was very scrupulous, very moral, and very conscientious. I may add that throughout his whole life he evinced a very strong attachment for his mother. Whatever he did was for his mother; he was guided entirely by her wishes. For his father, who died when he was about fourteen, he entertained absolutely no regard; on the contrary he talked about him in a contemptuous manner.

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[4] Freud: A Note on the Unconscious in Psychoanalysis; the *Society for Psychic Research*, Part lxvi, Vol. xxiv.

[5] Brill: *Psychanalysis, Its Theory and Application*, pp. 220-225.

[6] Freud: *Three Contributions to the Sexual Theory*, p. 38.

To translate what has been found into psychanalytic language, we may say that so far we have an individual of normal makeup whose early sexual activities were accentuated to an extent that there was hardly any latency period as one finds normally. This was followed by a correspondingly strong suppression and repression in adult life, and resulted in a more or less inhibited life, owing to his incapacity to sublimate properly. This maladjustment was shown in a great many ways. When his father died he left a wholesale and retail drug store, the management of which he later undertook. He always disliked the drug business, and had it not been for his duty to his mother he would have taken up something else. His mother was aware of his feelings, and urged him to adopt some other occupation. He made many attempts and obtained good positions in which he "made good," but always had to return home and resume his old work. "I felt that I owed it to my mother; it was my love for her that made me give up everything else," he said when discussing this. His love and regard for his mother was enhanced by the fact that she was ailing much of the time and because she had a great deal of trouble with the other children. Thus, his older brother, to whom he had looked up when young, turned out to be the black sheep of the family. He was a drunkard and guilty of theft, bigamy, and desertion from the army. To add more mortification for his mother, two of his sisters eloped; so that he, always having been his mother's favorite, was her only consolation. She continually urged him not to be like his brother. He promised her everything and tried to live up to his promises. He got along fairly well until the following episode took place. In 1899 he made the acquaintance of a woman who tempted him, and in a moment of passion he once touched her vulva. He was immediately seized with remorse and fear. He thought that he had committed a terrible crime against his mother. He had the impulse to go and explain everything to her and ask her forgiveness, but could not make up his mind to do it. Whenever he was ready to make the confession he thought of the great worry that it would cause her, and so refrained from doing it.

For a period of about five years he apparently suffered from a mild mixed neurosis. He was obsessed by the idea that he might be shot by this woman's father or brother for having insulted her, and showed many other neurotic symptoms. His mother's condition grew worse, as she had cancer of the liver; and he was with her a great deal. During the last days of her life she often admonished him to lead a clean, upright life. It was shortly before she died, in 1904, that he began to show the hand washing mania which expanded later into the other phobias. What happened was this: The sexual libido, active during childhood and adult life, was suddenly repressed. Now and then there was an attempt at readjustment of his libido through some erotic experience in the form of a love affair or gross sexual experience. Occasionally he would go out with his friends and drink and carouse. Such experiences were always followed by terrible reproaches, as they were incompatible with his religious and ethical training, inculcated by his mother. Continuing in the drug business despite his dislike for it, he was unable to sublimate his sex energy on something higher. All his libido was therefore centered on his mother; she was his ideal in every respect, the only person he could love. All his attempted love affairs turned out failures. The high tide of libido which became detached with his mother's death therefore caused a regressive revival of his autoerotic sexuality.[7] He could find no outlet elsewhere; hence he had to resort to himself. But as his autoerotic sexuality dealt with coprophilic activities which were entirely incompatible with his present ego, they had to manifest themselves in a negative form. Had they returned in their original form he would have suffered from perversions. The motive power of the phobia was therefore the repressed libido, while the determinants were furnished by actual occurrences at the time of the onset. Thus, the hand washing signified a moral stain, and was determined by the touching of the vulva. The usual generalization then took place, and the patient feared all stains, and, by a form of rationalization (as fitly expressed by Doctor Jones), he thought that he feared the stains because they represented drugs and poisons. The phobia for "canker" appeared after his mother died, and was simply a sound association of cancer. The immediate onset of the symptoms was probably helped by the fact that for days before she died his mother's stools were very offensive.

The morbid gain of the disease was two fold. First, it served as a sexual gratification and represented some components of his sexual life;[8] second, it took him away from the occupation he disliked.

These analyses serve to show the part played by the unconscious activity in the neuroses; they amply demonstrate the futility of the old *Anschauungen* in the examination and treatment of the psychoneuroses. This patient was treated for years by the orthodox methods. He received his share of medicines and rest cures at home and in sanatoriums without the slightest improvement. He was with me about five months when I discharged him as cured. I had the pleasure of seeing Doctor Tucker during his recent visit to New York, and I was gratified to hear that the patient was perfectly well. Last January the patient himself paid me a social visit while here on business. I found him to be in perfect health, showing absolutely no trace of his former trouble. While talking to me he remarked that he was no longer in the drug business, and for the moment I was somewhat shocked; but he anticipated my thoughts and laughingly said, "No, it was not on account of phobias that I gave it up. I did not dare give it up while I was sick, but since getting well I thought I could do much better in some other business, and I finally found something that is much more lucrative than selling drugs." I was both surprised and interested to hear that he was selling perfumes—a compromise formation serving a useful purpose which throws some light on the psychology of trade selection. (Cf. Brill *l. c.*, p. 208.)

Now, I have been asked repeatedly how psychanalysis cures. The last questioner argued: "Suppose I grant you that this means that and that that means this; how is the patient cured?" To answer this question I related a story which I shall here repeat. A German professor of astronomy invited his colleagues to take luncheon with him. After the cigars were served he asked them to accompany him to his garden, of which he was very proud. In European gardens one often sees hollow iridescent glass globes placed on sticks between the bushes.

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[7] Cf. Brill, *loc. cit.*, pp. 172 and 184.

[8] Freud: *Selected Papers*, p. 198.

While walking, one of the guests, a professor of physics, happened to touch one of these globes and was surprised to find it very hot. What puzzled him was the fact that the heat was not on the side heated by the sun, but on the opposite side. On touching the other side he found it comparatively cool. He called his colleagues' attention to this phenomenon and asked them to explain it. The discussion that followed first became very animated and then even personal. As soon as one offered a theory it was disproved by the others. Not one of these learned men could explain this phenomenon. While they were thus quarrelling the gardener approached unobserved, and, upon discovering the dispute, turned to the host and said: "Professor, just before you came here with the gentlemen, I turned the globe around. I do this every day at this time."

Of course, the arguments and quarrels ceased in a trice; there was nothing left to dispute about. Had the gardener not made his appearance, would these learned men have ever settled the problem? Surely not. The energy that they were trying so hard to explain away did not belong there—it was displaced. We may say the same of the phobias and obsessions, the exaggerated affect is justified in its right place, but it does not belong to the symptom. The gardener has turned the globe around.

55 Central Park West.

GALLSTONES PRODUCING PYLORIC AND JEJUNAL OBSTRUCTION.*

By W. Wayne Babcock, M. D.,
Philadelphia,
Surgeon to the Samaritan and Garretson Hospitals, and Professor of Surgery in Temple University, Philadelphia.

Intestinal obstruction may occur when gallstones having a greater diameter than two centimetres enter the small bowel. Much larger gallstones pass into the large intestine without producing obstruction. Gallstones of sufficient size to produce intestinal obstruction are, as a rule, too large to pass through the biliary ducts without some ulcerative or perforative process. It is rare to find a dilated communis with a greater lumen than one centimetre, and, in conjunction with such dilatation of the duct, a marked distal narrowing, usually situated in the region of the head of the pancreas or in the wall of the duodenum, will be found. It is obvious, therefore, that large gallstones may enter the intestinal tract in one of three ways:

First, they may gradually erode their way through the cysticus and the communis by a combination of proximal and circumferential dilatation and distal pressure necrosis and ulceration.

Second, the duct or gallbladder containing the calculus may become adherent to an adjacent portion of the stomach or bowel, and a direct perforation occur with the transference of the stone from the biliary to the gastrointestinal canal.

Third, the stone may perforate the gallbladder or duct, and be received into a cavity of inflammatory formation, and from this cavity or abscess the stone may then perforate the wall of one of the hollow organs of the abdomen. In this way the gallstone may enter the stomach, the small intestine, colon, or rarely some other viscus, as the urinary bladder.

Gallstones, when in the general abdominal cavity, share the property of other harsh foreign substances of tending to penetrate adjacent hollow viscera. Thus it is the tendency for metallic instruments, towels, gauze, sponges, and similar objects left within the abdominal cavity, by ulceration and perforation, to enter an adjacent hollow viscus. Sea sponges, on the other hand, do not, as a rule, cause such perforative types of ulceration. Not infrequently the foreign bodies that have passed from the general peritoneal cavity into the intestine are eventually expelled from the body, this constituting apparently Nature's method of freeing the general abdominal cavity of large foreign substances. Intestinal obstruction from gallstones is unusual, and, as would be expected, usually occurs in elderly women who have long suffered from gallstone "dyspepsia."

The two gallstones, herewith presented, represent the only instances in which I have had personal knowledge of intestinal obstruction from gallstones. The larger stone was removed from Mrs. S. S., an obese German woman of sixty-five years. Her family and previous history were unimportant, except that she had had a large umbilical hernia for nearly thirty years and had also suffered from indigestion for many years. In December, 1909, I was asked to see the patient by Dr. F. S. Bower, and found the sac of the umbilical hernia distended to the size of a child's head by foul smelling pus and gas. On incising the thinned integument, possibly a quart of pus escaped. Following this the discharge of pus continued, but some weeks later it was found that food, shortly after it had been swallowed, also escaped through the umbilical sinus. Later the leakage of food ceased, but there then followed signs of pyloric obstruction. I saw the patient the second time, three and one half months after opening the umbilical abscess, when she was brought to the Samaritan Hospital with a weak and rapid pulse and subnormal temperature; the collapse that had followed pyloric obstruction of five or six days' duration. The sinus had spontaneously closed for one week, reopening the day before the patient entered the hospital. Although the patient seemed almost beyond surgical aid, an operation was done under spinal anesthesia. On exploration of the sinus, it was found to lead to a perforation in the anterior wall of the atrium of the stomach. Immediately below the pyloric ring was an enormous obstructing gallstone, which was pulled back into the stomach and removed, after enlarging the sinus. The patient died twenty-four hours after the operation. The removed gallstone was oval, six and one half centimetres in length and four centimetres in diameter.

a, Gallstone, 6.5x4 cm. in diameter, removed from the pyloric ring and first portion of the duodenum. Half size.
b, Gallstone, 3.1x3.5 cm. in diameter, removed from the jejunum. Half size.

The second gallstone was removed from Mrs.

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*Read before the Pathological Society, May 23, 1912.

L. F., who was sixty-four years of age and had had typhoid fever at twenty-one. Twelve years ago the patient was in bed five weeks, with gastric pain, vomiting, and eructations. Three months later another attack occurred, and thereafter attacks followed indiscretions in diet. During the last eighteen months she had been in bed six times, and during the summer of 1911 was in bed sixteen weeks, and she had had almost continuous pyrosis and epigastric pain. On the 22nd of December, 1911, the patient was taken with severe cramplike pain in the epigastrium, followed by vomiting and eructation of gas. The pain soon became generalized and the vomiting fecal in character. All efforts to move the bowels failed after December 20th. On the evening of December 24th, I first saw the patient, also with Dr. F. S. Bower, and had her transferred to the Samaritan Hospital. Under spinal anesthesia the abdomen was opened, and a coil of small intestine to the right of the median line was found distended by the stone. This was removed by a transverse intestinal incision, and the wounds closed without drainage. The patient recovered from the obstructive symptoms, and later from the pyrosis and other digestive disorders. The removed calculus was slightly oval, and measured 3.1 centimetres in length and three and one half centimetres in diameter.

2033 WALNUT STREET.

CHANGES IN THE TREATMENT OF SYPHILIS.*

By WILLIAM S. GOTTHEIL, M. D.,
New York,
Professor of Dermatology and Syphilography, Fordham University Medical School; Dermatologist to the City and Lebanon Hospitals, etc.

The phenomenal advances made during the last ten years in our knowledge of syphilis have naturally modified both the diagnosis and treatment of the disease. Some of the discoveries, such as the recognition of the direct dependence of paresis and tabes on the infection, have not as yet led to any practical results in the direction of the ultimate aim of all our efforts, the removal of disability and the cure of the disease; but others are of greater practical importance. The discovery of the spirochete has apparently settled the long debated question of the etiology of syphilis, and has given us a new means of recognizing its presence in certain cases; the establishment of the possibility of inoculating apes and other animals with the disease has opened the way for the first time to experimentation along ordinary lines; the Wassermann serum test offers us a new symptom that is especially useful when other signs are doubtful or absent; and, finally, the salvarsan medication gives us a new means of combating the infection. None of these discoveries is as yet sufficiently old for us to speak with absolute positiveness about it; this will take at least a generation of experiment and experience. But they have been used long enough now for us to form at least a provisional judgment of their value, and in the light of that judgment to decide how far and in what manner they have influenced the best diagnosis and the most advisable treatment of the disease. The practitioner cannot be expected to go into the minutiæ of the laboratory experimenter or the clinical investigator; he wants in broad general lines the rules of practice to be deduced from their labors; he asks for conclusions from those who have had opportunities to form them; and, above all, on matters of such vital moment to his patients and to himself, he requires calm and deliberate judgments, rather than the enthusiastic utterances of special advocates. I shall consider, as of immediate and practical importance, the spirochete as a means of diagnosis in doubtful cases and the influence of its recognition on the treatment to be employed; the serum test as an element in the recognition of the disease, as an index for treatment, and as a criterion of cure; and, finally, the place occupied by salvarsan, in so far as our present knowledge goes, as a therapeutic agent in the disease.

1. *The spirochete.* In the hands of an expert having at his disposal the dark stage for the living and the various approved staining methods for the dead specific microorganisms, their demonstration is indubitable evidence of the presence of the disease. This is of little importance in the later lesions, where the organisms are often undemonstrable, and where their evidence is rarely required for diagnosis; it is of greater moment in the secondary lesions, especially of those of the mucosæ, in which they are more generally recognizable. But it is in the chancre, the initial lesion, that the spirochete finding has its greatest value. The syphilographer, it is true, can almost always recognize a chancre when he sees one; but even he may make mistakes. In view of the importance of the decision as to infection, the recognized rule in the past has been a conservative one, namely, no matter how like a chancre a single lesion may be, to await the appearance of another definite symptom of the disease before making a positive diagnosis and beginning the treatment. The reason for this was the well known fact that approved antisyphilitic treatment might prevent the appearance of other secondary symptoms, or so mask them that it would always remain uncertain whether the patient was really infected or not. Now the second definite symptom to confirm the diagnosis could not be the earliest one, the local adenopathy; for though this presents certain features that the expert can recognize, it is not sufficiently different from the local adenopathy accompanying a nonsyphilitic lesion to permit of its general recognition. The second indubitable symptom was held to be the roseola, the angina, the cephalalgia, or the general adenopathy that marked the systemic spread of the disease. This meant a wait of from two to four weeks after the appearance of the initial sore; a loss of time that it was hard to make our patients submit to, and which we ourselves regarded as undesirable, but necessary. This has now been changed, since any lesion can be examined for the spirochete, and the required second symptom found or not found at once. The rule, therefore, now is, in the presence of any suspicious

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*Read before the Medical Association of the Greater City of New York, April 7, 1913.

lesion on the genitals or elsewhere, to have an immediate spirochete examination made. A positive finding supplies the requisite confirmation of the diagnosis of syphilis, and treatment should be begun at once. A negative finding is necessarily not so conclusive, since various factors may interfere with the recognition of the spirochete; but it is presumptive evidence against the syphilitic nature of the lesion, and is an indication either for another microscopical examination or a wait, if there is still doubt, for the possible appearance of secondary symptoms.

2. *The serum test.* It is to be feared that there is much misapprehension in the profession as to the significance and importance of the Wassermann test and its modifications in the light of our most recent knowledge; showing itself in the tendency to make these laboratory investigations the final and sometimes the only arbiters as to the nature of a given affection. If the serum test is positive, the malady is syphilitic, and *vice versa;* which is by no means the case. The fact is that a positive Wassermann reaction means simply that the blood shows that the patient has had syphilis at some time. The questionable symptoms may or may not be luetic; for a syphilitic, like any one else, may have other diseases. It is evidence, in a large number of cases, of minor weight only; though it is of much importance if other things can be excluded and the available evidence also points to syphilis. If the serum test is negative, its meaning is of still less direct significance; individuals undoubtedly affected with the disease may and do, on occasion, give this result. The serum test may be negative at one time and positive at another, due to factors that are in part known, as to the influence of recent mercurial or arsenical treatment, and in part to others that we are still ignorant of. The serum test does not possess the absolute value that is the property of an undoubted syphilitic lesion, as a mucous patch or a broad condyloma. It is a secondary, a subsidiary symptom of the disease, that may or may not help us in the diagnosis of the condition that we are treating. Its especial value lies in the fact that it is a symptom that we can elicit at will, and in the absence of other signs, or when these latter are inconclusive, it is extremely useful. But it is not, under any circumstances, absolute evidence of the syphilitic nature of a given symptom or set of symptoms, and this those who know most about the Wassermann reaction, the serologists themselves, will readily admit. The serum test, then, not being a pathognomonic sign of the nature of an affection, it is a mistake to rely upon it to the exclusion of other symptoms. The syphilographer requires its evidence for the diagnosis of the disease only in exceptional cases; in the ordinary ones it is entirely unimportant—so unimportant that I have no hesitation in saying that, in the presence of the symptoms usually relied upon for making a diagnosis, it does not matter what the Wasserman test is.

Similar considerations in even greater degree apply to the serum test as a guide for treatment. It was confidently hoped, when the test was first introduced, that it would give us a means of gauging and regulating our therapeutics; but this has been found to be the case only to a limited degree. Syphilitics, after the conclusion of a course of treatment, may show a Wassermann reaction that may be negative once or twice and then become positive again. A negative serum is to some extent an evidence of the success of our treatment, and justifies to that degree a diminution of its intensity and duration; but it cannot be regarded as a safe indicator of the therapeusis required. As a matter of fact, the latest conclusion of the serologists is that in a very large proportion of cases of tertiary syphilis, estimated by some authorities as seventy per cent., it is impossible to render the Wassermann reaction permanently negative, no matter what form of treatment has been employed. Multitudes of these patients are practically well; they have had no symptoms for long, perhaps for indefinite periods; they have infected no one, and they have healthy offspring; yet their blood may show, temporarily or permanently, positive Wassermann reactions. But here, as in the days before serum tests were used, common sense must come to our aid. If, after an appropriate treatment for the length of time that experience has shown to be needed, there are no symptoms, and the blood test remains permanently negative, it is additional evidence of the cure of the disease. If, however, under similar circumstances, the test is still positive, it may, within reasonable limits, be regarded as an indication for more treatment in the attempt to change it; but it is not to be regarded as an absolute negation of a practical cure.

The rules to be deduced, then, from what we know of the serum test to-day, are the following: The Wassermann test when positive is evidence of the existence of syphilis; it is of much less weight as to its absence when negative; and it is of especial value when other evidence is lacking or indeterminate. It shows that a patient has had syphilis at some time; it does not necessarily show that a certain lesion or symptom is or is not syphilitic. In the presence of definite symptoms of the disease it is of little moment whichever way it turns out. It is not an absolute index for treatment or criterion of cure, though it may be of much help to us in the absence of other signs. The old rules for the treatment of syphilis for prolonged periods with the approved remedies still hold good, entirely irrespective of the results of the blood examination.

3. *Salvarsan.* Some of the very first experiments with arsenobenzol in this country were made by me in the wards of the City Hospital, and they were almost the first ones made by an unprejudiced observer who was familiar with the disease, who knew what could be done with the older remedies when properly used, and who had the opportunities for continued observation of the cases at his command. My results were excellent, but they were very much at variance with the hysterical pean of praise that rose up from professional and, I am sorry to say, from nonprofessional sources also. These results were put on record at the time, and I should not refer to them now had not the experience of the two years that have elapsed since then shown them to be entirely right; so that the best authorities to-day stand practically on the ground that I then occupied almost alone.

The facts, as I now restate them, are apparently as follows: Salvarsan is a very potent *symptomatic* remedy for syphilis; it often acts better and more quickly than mercury; but sometimes it acts less satisfactorily, or not at all. It does not cure syphilis any more than mercury does, probably not so well, for it is the common experience to find, as we did in our first properly observed hospital cases, that new symptoms of the disease set in, or old ones reappeared, more quickly after salvarsan than after mercury. These are not relapses, as they have been improperly termed; they are merely signs of the persistence of the disease in spite of treatment, and they entirely justify the assumption that the same persistence exists in the cases in which they do not appear. The introduction of salvarsan into the luetic therapeutics has therefore not changed the necessity for full mercury and iodine courses for the length of time that experience has shown to be best. And since it was evident to calm observation from the very beginning of its use that salvarsan in any dose does not cure syphilis, and that "sterilisatio magna" is, unfortunately, a dream of enthusiasm, the drug should be given in courses, combined with the regular mercurial and iodine treatment; so that a sustained and continuous action of both arsenic and mercury is obtained. Syphilis can be cured, in so far as it can be said to be curable, and in the absence of any absolute criterion thereof other than a reinfection, by mercury alone; it is better cured by mercury and arsenic together; it cannot be cured, so far as I know, by salvarsan alone. There is no evidence yet to show that the new drug prevents the occurrence of the later effects of syphilis on the nerve structures or influences its hereditary transmission any better than the old one; when the nerve lesions have already occurred, as in tabes and paresis, both are equally powerless. Nevertheless, salvarsan is so valuable a weapon in certain stages of the disease, and so useful an adjuvant to mercury and iodine in others, that its use is to be recommended in practically every case. It generally causes a most rapid disappearance of the annoying and dangerously infective secondary symptoms, and it helps and sustains the older drugs in the obstinate later manifestations of the disease. Besides this, it has been so well advertised among the laity that patients demand it, and expect, and therefore get, marked psychic as well as physical benefit from its use. It therefore now forms an integral part of the best treatment for the disease, both in its earlier and in its more advanced stages.

I prefer neosalvarsan to the older form of the drug, as being much more soluble, less liable to show toxic effects, and apparently equally potent. It is best administered in smaller divided doses in courses, and in conjunction with the regular mercury and iodine treatment. The intravenous route is decidedly the best; the amount of fluid required is only from fifty to 125 c. c., and it can be administered, with a proper and careful technic, in the office and without reaction. Intramuscular injection or adminstration per rectum is less effective and less desirable. My rule at present is as follows: In early cases a series of from four to six intravenous injections of from 0.3 to 0.45 gramme of neosalvarsan is given at weekly intervals; between these injections I give a full dose of mercury by intramuscular injection. The mercurial course is afterward continued for the usual length of time and in the usual doses. Occasionally, in severe cases or when opportunities for a full course are lacking, 0.75 or 0.9 gramme may be administered. The further employment of the drug in conjunction with the mercurial medication depends upon the symptoms; if these are obstinate, severe, or relapsing, a second or third arsenical course should be given with the mercurial ones. In late syphilis a similar combination of the arsenical and mercury-iodine medication is advisable; but the doses of the former may be greater and the intravenous injections less frequent than in the earlier medication.

154 WEST SEVENTY-SEVENTH STREET.

A QUANTITATIVE CHEMICAL REACTION FOR THE CONTROL OF POSITIVE WASSERMANN RESULTS.

(*A Preliminary Communication.*)

By D. M. KAPLAN, M. D.,
New York,
Director of Laboratory, Neurological Institute.

In the attempt to offer to the clinician a laboratory method for the corroboration of the existence of lues in a given patient, a method upon which greater reliance could be placed than upon the Wassermann reaction, the following test is suggested. This reaction depends upon an exact quantitative chemical analysis, and does not suffer from the many uncontrollable technical difficulties that are so glaringly inherent in the Wassermann reaction. This reaction depends upon the fact that aliphatic amino groups (RNH_2) react with nitrous acid (HNO_2) according to the following equation:

$$RHN_2 + HNO_2 = ROH + H_2O + N_2$$

As in this reaction the N appears in the form of a gas, special methods for the estimation of this substance had to be devised. The method advanced by Donald D. Van Slyke, which is the most useful of all on account of its simplicity and the rapidity with which results are obtained, as well as exactness of end results, was employed in this work, and the results obtained are tabulated in these pages.

PRINCIPLE OF THE METHOD.

The nitrous acid decomposes of itself in solution with the formation of NO. The NO is made use of in this reaction to drive off all air from the apparatus. After this is attained, the amino containing substance is introduced into a container for the purpose, resulting in the formation of N and NO. The NO is absorbed by alkaline potassium permanganate solution, leaving unabsorbed the pure N, which is collected over water in a special burette for the purpose, and the quantity is read off.

REAGENTS.

After Van Slyke tried the various substances in vogue for the absorption of NO, it became apparent that the best material for this purpose was an alkaline solution of potassium permanganate. This gives most satisfactory results as an absorbing agent. The solution is made up of fifty grammes of pure potassium permanganate and twenty-five grammes of potassium hydrate to the litre. The resulting formation of MnO_2, which, as a result of reduction, is present in an exceedingly fine state of subdivision, can be utilized for many tests before renewal. The sodium nitrite solution is made up of 300 grammes of $NaNO_2$, which is preferably obtained in powder form and dissolved in 1,000 c. c. of water. The solution, even if chemically pure, needs a preliminary correction for the presence of N, which, when ascertained, is known for the given lot of solution as the correction. It may, in some $NaNO_2$ samples, amount to as much as 0.5 c. mm, or even more, of N. This factor is deducted from the resulting quantity of N obtained from the analysis of a given substance. Ordinary glacial acetic acid is used to bring about the evolution of the gas.

THE APPARATUS.

The photograph shows the essential glass parts, the stand, the barometer at the bottom, and the thermometer suspended from the stand. The reaction takes place in E, which is an ordinary bottle of 37 c. c. capacity. Into the neck of this bottle fits a rubber stopper which has three openings and is held in place either with a wire or with a special clamp, to be had from the makers. The cylinder A has a capacity of 40 c. c. and is marked at 5 c. c. and at 25 c. c. Burette B is graduated up to 10 c. c. and holds the substance to be analyzed. The tube C serves to let out the gas formed during the preparation of the apparatus for an analysis, and also serves as a connecting tube between E and the gas burette. The lower end of C and B is exactly on the level with the rubber stopper. The capillary tubes C and F are connected with the gas burette D with stout flexible rubber tubing with a narrow bore. Tube F leads to the Hempel bulbs which hold the permanganate solution. The large burette D is filled with distilled water to the top of the rubber connecting tube. The water is raised and lowered at will by the water bulb G. The permanganate solution fills the capillary tube leading from the bulbs as far as the lower margin of the cock IV. A sensitive barometer is useful, and should be gauged in mm., not in inches.

DETERMINATION.

The reaction can be divided into three stages: First, driving off the air in the apparatus with pure NO; second, decomposition of the amino substance; third, absorption of the NO and measuring the left over pure N.

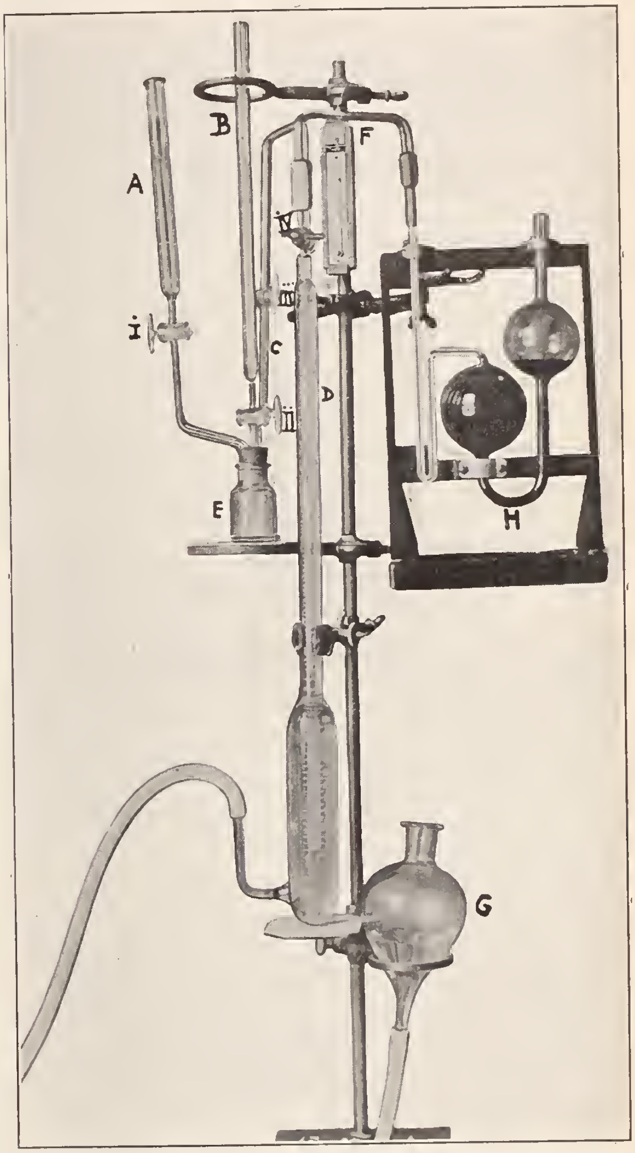

FIG. 1.—Apparatus used in Doctor Van Slyke's method of controlling Wassermann results.

DRIVING OFF THE AIR.

The substance to be analyzed is placed in the burette B. In my work the patient's serum was treated with ten times its volume of ninety-five per cent. alcohol and permitted to stand over night at room temperature. The following morning the mixture was filtered, evaporated at a temperature not over 50° C., with negative pressure. The alcohol free residue left in the evaporating dish was dissolved with about seven to ten c. c. of boiling distilled water. The amount of serum used was usually 2.5 c. c. With the substance in B, the next process is to place seven c. c. of glacial acetic acid into A. It is important before placing the rubber stopper into the bottle E to note that the tubes A and B should be filled flush with the bottom of the openings of the tube; this is done by placing about twelve c. c. of glacial acetic acid in A and permitting the surplus to flow back into the acid container until only seven c. c. are left. Tube B is treated in a similar manner, in that the substance to be analyzed should be permitted to flow back into the test tube, filling the tube to the lower tip; the substance remaining in the test tube is poured back into tube B. Cocks I and II, naturally, are shut, while cock III is open. The rubber stopper and the tubes it carries are fitted snugly into the neck of E and fastened with a wire. Cock I is opened, and the acetic acid permitted to flow into E. This causes an immediate evolution of gases, and the air is driven off through the open cock III. In order to facilitate the evolution of gas the bottle E is constantly shaken for about two or three minutes. At intervals cock III is closed, which forces the fluid from the bottle back into tube A. When this is accomplished two or three times cock I is closed, with the cylinder A about eight tenths filled. The bottle and tubes are placed on the stand, as shown in the photograph, and joined to the burette.

DECOMPOSITION OF THE AMINO SUBSTANCE.

After C and F are joined, cock II is opened and the substance permitted to flow into E. The cock is closed. The bottle is vigorously shaken for exactly five minutes; this results in a quick development of N, with which is admixed a great deal of NO. At the end of this time cock I is opened, which drives the gases into the burette D, and when the bottle is filled to the top, as well as the connecting tube C to the bottom of the opening of cock IV, cock I is shut off and the gas in the burette D is ready to be forced into the permanganate solution. This is accomplished, previous to opening the connection at cock IV, by lifting the bulb containing the water five or six inches above the connecting tubes. Cock IV is opened, and the gas forced into the Hempel bulbs. The gas is now being purified, as the permanganate solution absorbs all the NO present almost instantaneously. The Hempel bulbs are shaken for two minutes before the actual estimation of the N takes place.

T.	b.728	730	732	734	736	738	740	742	744	746	748	750mm	b.752	754	756	758	760	762	764	766	768	770	772mm
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12°	.5655	.5670	.5685	.5700	.5720	.5735	.5750	.5765	.5780	.5795	.5815	.5830	.5845	.5860	.5875	.5890	.5905	.5925	.5940	.5959	.5970	.5985	.6000
13°	.5630	.5645	.5660	.5675	.5695	.5710	.5725	.5740	.5755	.5770	.5785	.5805	.5820	.5835	.5850	.5865	.5880	.5895	.5910	.5930	.5945	.5960	.5975
14°	.5605	.5620	.5635	.5650	.5665	.5680	.5700	.5715	.5730	.5745	.5760	.5775	.5790	.5805	.5825	.5840	.5855	.5870	.5885	.5900	.5915	.5935	.5950
15°	.5580	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5705	.5720	.5735	.5750	.5765	.5780	.5795	.5810	.5830	.5845	.5860	.5875	.5890	.5905	.5920
16°	.5555	.5570	.5585	.5600	.5615	.5630	.5645	.5660	.5675	.5690	.5710	.5725	.5740	.5755	.5770	.5785	.5800	.5815	.5830	.5850	.5865	.5880	.5895
17°	.5525	.5540	.5555	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5710	.5730	.5745	.5760	.5775	.5790	.5805	.5820	.5835	.5850	.5865
18°	.5500	.5515	.5530	.5545	.5560	.5580	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5700	.5715	.5730	.5745	.5765	.5780	.5795	.5810	.5825	.5840
19°	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5630	.5645	.5660	.5675	.5690	.5705	.5720	.5735	.5750	.5765	.5780	.5795	.5810
20°	.5445	.5460	.5475	.5495	.5510	.5525	.5540	.5555	.5570	.5585	.5600	.5615	.5630	.5645	.5660	.5675	.5690	.5705	.5725	.5740	.5755	.5770	.5785
21°	.5420	.5435	.5450	.5465	.5480	.5495	.5510	.5525	.5540	.5555	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5710	.5725	.5740	.5755
22°	.5395	.5410	.5425	.5440	.5455	.5470	.5485	.5500	.5515	.5530	.5545	.5560	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5715	.5730
23°	.5365	.5380	.5395	.5410	.5425	.5440	.5455	.5470	.5485	.5500	.5515	.5530	.5545	.5560	.5575	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5700
24°	.5335	.5350	.5365	.5380	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5625	.5640	.5655	.5670
25°	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5625	.5640
26°	.5280	.5295	.5310	.5325	.5340	.5355	.4370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610
27°	.5250	.5255	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580
28°	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550
29°	.6195	.5210	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520
30°	.6160	.5175	.5190	.5205	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490

MEASURING OF THE REMAINING N.

Cock IV is opened, and the permanganate allowed to flow as far as the lower end of the opening in the cock, when it is quickly shut off. The amount of gas is determined by bringing the water bulb on a level with the niveau in the burette D. From the resulting quantity of gas is next deducted the correction factor, and the remaining amount of gas is the final figure for the given quantity of substance analyzed. As the temperature and the barometric pressure must be taken into consideration in the calculation of the amino nitrogen, the above given table is used for the final calculation, which gives the amino N in milligrammes. The figures were obtained from the values given in Gattermann's book, *Praxis des organischen Chemikers,* ninth edition, and were divided by two for moist N. These numbers represent the weight of amino N, in milligrammes, which corresponds to one cm. of N gas, as obtained by the action of nitrous acid and by measuring the gas over water, at the given temperature and pressure.

With this method and with these considerations the results obtained in the various cases studied were very promising. It is apparent that there is a marked difference quantitatively between luetic and nonluetic individuals. I do not wish to overestimate the value of these findings, and would simply add that in these analyses we have a control of those positive Wassermann tests that do not possess clinical signs of syphilis. In a case where the amino content is very great, as compared with a positive case, the reaction should be done over again. It is too early to place a greater significance on these results at present; that there will be reported conditions with very poor amino content in different clinical states is almost certain. For the reason that the amino nitrogen is very much diminished in syphilis, as compared with conditions of nonluetic etiology, I believe we possess a means of weeding out unexpected positive Wassermann reactions.

The following table of analyses is offered as a preliminary study of this most interesting quantitative difference. The amount of serum used in the test was with but very few exceptions 2.5 c. c., and in the case of cerebrospinal fluids, 4.0 c. c. The temperature ranged between 20° and 23° C., and the barometric pressure ranged from 753 to 764 mm. The resulting figures given in the table represent the amount of amino nitrogen in 100 c. c. of the substance used. For comparative use the Wassermann results are also offered.

POSITIVE SERIES.

Case.		W. R.	Amino N.
Kl.	Cerebrospinal lues	+	0.176
Ca.	Systemic lues	+	2.412
Cy.	Luetic meningomyelitis	+	0.568
Go.	Cerebrospinal lues	+	2.242
Mu.	Specific nasal septum	+	1.148
Ha.	Luetic pupils	+	0.560
Mi.	Florid lues	+	0.0
Ra.	Tabes	+	1.559
Th.	Tabes	+	2.244
Be.	Endarteritis cerebralis luetica	+	1.133
Ch.	Systemic lues	+	2.263
Ba.	Secondary lues (puella publica)	+	1.131

In order to impress the difference between the positive results scheduled above and the negative results obtained with nonluetic sera I will next give the figures obtained with such material.

NEGATIVE SERIES.

Case.		W. R.	Amino N.
Ry.	Epilepsy	—	12.399
De.	Arteriosclerosis simplex	—	9.516
Sch.	Involutional melancholia	—	7.950
Cu.	Cauda eqina disease	—	9.144
Ko.	Mother of retarded baby. Two miscarriages	—	17.573
Ma.	Hysterical hemiplegia	—	7.847
Li.	Osteoarthritis of the spinal column	—	9.488
H. S.	Arteriosclerosis simplex	—	12.342
Oh.	Dementia præcox	—	10.098
Cr.	Epileptiform seizures	—	12.249
Li.	Epilepsy	—	12.249
Ki.	Epilepsy	—	13.863
Mo.	Muscular rheumatism	—	11.136

Case.		W. R.	Amino N.
Le.	Osteoarthritis	—	6.789
Ad.	Ulcers on vocal cords	—	8.224
Wr.	Senile dementia	—	6.789
Ke.	Arthritis rheumatica	—	7.158
Al.	Progressive muscular atrophy	—	6.724
Gi.	Dementia præcox	—	6.724
Me.	Gonorrheal hip	—	7.865

The smallest quantity of amino N obtained in this negative series is in the case of Al. and Gi. Compared with the greatest amounts obtained with the positive sera, which is in the case of Th. (2,244), a very appreciable contrast of a differentiating nature is still to be had. Where the positive Wassermann reaction gives one the impression of a laboratory error, or makes one think of another peculiarity of the test, of which there are many and some as yet undiscovered, these numerical differences may offer to the clinician in some instances another laboratory support of more acceptable value. As will be shown later, one sometimes obtains results with the Wassermann reaction that are very vexing, inasmuch as the clinical findings and the entire status of the patient, moral, social, and otherwise, make syphilis a very undesirable and impossible diagnosis. That there are such cases one must admit, but I hope that such Wassermann reports in the future will be corroborated by the quantitative chemical analysis offered in this communication.

CEREBROSPINAL FLUID ANALYSES.

Case.		W. R.	Amino N.
Ni.	Exudative tabes; 80 lymphocytes per c.mm.	+	0.703
Th.	Tabes. Well treated with 914 and Hg. 26 lymph.	—	2.810
Ra.	Tabes	+	1.554
Kl.	General paresis. W. R. performed in Bellevue Hospital	+	0.472
Tr.	General paresis. W. R. performed in Bellevue Hospital	+	2.686
Sa.	Alcoholic psychosis. Stiff pupils	—	1.466
On.	General paresis	+	1.122
Fi.	Hysteria. Chancre twenty years ago	+	2.800
Ly.	Lateral sclerosis	—	0.944
Mu.	Cerebrospinal lues	+	0.566
Fo.	Cerebrospinal lues	..	0.844

The rather small number of analyses offered above does not permit at present of matured conclusions. The quantity of amino in cerebrospinal fluid is very small, and, as it seems to me at present, does not offer the great differences obtained with serums. It may, however, show quantitative increase in some conditions, which will be spoken of later in a more complete communication.

In reporting upon serums submitted for analysis with the Wassermann method one inevitably reports here and there positive on a patient who did not come in contact with syphilis. Such is the case in my laboratory to the extent of 0.3 per cent. Unpleasant as this may seem, it nevertheless cannot be done away with. There was such an occurrence in the case of a patient of Doctor L. This patient was an unmarried woman, twenty-six years old, who suffered from headaches. As a permanent cure could not be obtained a Wassermann reaction was suggested, with the result stated above. The amino nitrogen in this case was unusually high, which at once gave a doubtful significance to the Wassermann result. The amount of N was 14,965. In another instance the patient, Lu., gave a weakly positive result. The amino N was 12,448.

Next are a few instances of negative Wassermann results in syphilitic patients with positive amino content.

Case.		Amino N.
Ro.	Arthritis syphilitica	1.124
Bl.	Congenital syphilis	0.0
Ber.	Tabes. Three 914 injections, intravenous	1.143
P. G.	Diffuse syphilitic skin lesions	1.121
Hi.	Spinal spastic luetic paralysis	1.099
Ma.	Tabes	1.131

There seems to be some relation between the disappearance of the plus Wassermann reaction and the increase in the amino nitrogen. It will be seen from the few cases scheduled that the greatest increase is to be had in those cases of syphilis where the Wassermann reaction is absolutely negative. Those that showed a slight increase only also retained their positive Wassermann reaction.

Case.		W. R.	Amino N.
De.	General paresis. Two 606 intravenously, 30 mercurial inunctions	—	11.22
To.	Tabes. Three 914 intravenously, many mercurial inunctions	—	10.143
Fu.	Tertiary lues. Many mercurial salicylic injections	+	3.65
Br.	General paresis. Five 914 intravenously, 60 mercurial inunctions	+	3.408
233	Chancre four years ago. Four 606 injections	+	1.136
Hav.	Cerebrospinal lues. Two 914 injections	+	3.429

CONCLUSIONS.

1. In offering this preliminary communication I wish to be placed on record as a laboratory worker whose experiences with the Wassermann test compel him to be extremely cautious and overconservative regarding the clinical significance of this very complex reaction.

2. It is urgently needed that something of a more definite basis than the side chain theory should be at our command for the gauging of syphilitic serums.

3. I feel fairly certain that the determination of amino nitrogen in the serums from syphilitic patients will lend itself to further elaboration and give useful results on the lines suggested.

4. Although it may seem premature, I nevertheless would regard a serum where a positive Wassermann reaction was obtained as very dubious in a patient whose amino nitrogen is normal.

5. The amino content of syphilitics, as found by me, is frequently very much diminished, although the Wassermann reaction may be negative.

6. Whether a patient should be treated until the amount of amino nitrogen is restored, giving us another gauge as to therapy, is for the future to determine.

7. The general paretic patients who gave a normal animo nitrogen in one instance and showed a tendency to increase in another are in very good physical condition and show no psychic stigmata of the disease. Of course, the characteristic pupils are still there.

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30 BEEKMAN PLACE.

Treatment of Wounds.—Soubeyran, in *Paris médical* for December 21, 1912, is credited with the following stimulating ointment, to be applied to open granulating surfaces or sinuses that are slow in healing:

℞ Balsami peruviani. ....ʒx (40 grammes);
Styracis. ....ʒiiss (10 grammes);
Petrolati, ...℥iss (50 grammes).
M. ft. unguentum.

THE PROBLEM IN LOCAL RECURRENT BREAST CANCER.*

By C. W. Strobell, M. D.,
Rutland, Vermont,
Attending Surgeon, City Hospital.

As an unsolved problem, cancer easily distances its great rival, tuberculosis, in that it is not yet recognized or treated as of pathogenic germ origin.

My contribution to this important symposium on cancer is based upon the fact of practically no recurrence in fourteen years' experience with radical chemical extirpation, and should be regarded as supplemental to one published in the *American Journal of Surgery* for November 1913, entitled, A New Method of Treatment of Cancer of the Breast based on the Nature and Causes of Recurrence. Certain seemingly apparent facts, unavoidable deductions, and tentative propositions recorded in that paper should have careful consideration, as a foundation for conclusions concerning the following.

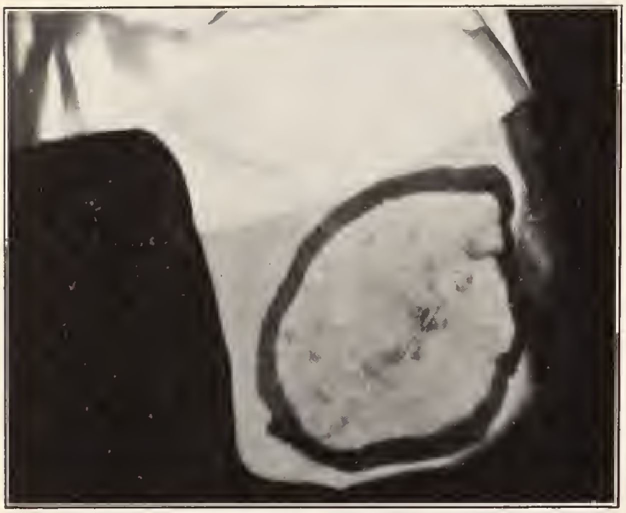

Fig. 1.—Reappearance of breast carcinoma in fifteen months, following the radical standard extirpation of Halsted.

That the question of recurrence in cancer of the breast is a very real and live problem needs no defence. Recurrence is of far greater concern to the surgeon than primary extirpation, because in the primary operation the case is, as a rule, in the preferred or so called "operable" class, and holds out a reasonable hope of ultimate cure; whereas, confronted with recurrence, the surgeon is quite helpless, in view of the well recognized fact that further excisions are usually but palliative measures. Did the patients in these recurrent cases more frequently recover as the result of single, or even successive, excisions, the subject would long ago have stimulated the consideration it deserves; the opposite being the case, however, there is only inclination to shift responsibility, and to forget as quickly as possible the unpleasant episode. It therefore quite naturally follows that but little appears in the literature on the subject of recurrence, except in reports of unsuccessful cases. To be sure, the present day results, as regards both cure and recurrence, compared with those set forth by Gross in his *System of Surgery*, 1882 (ii., pp. 982-3), show a very substantial improvement, thanks to the genius of our American surgeons. May I be pardoned if I digress for a moment to say that whatever has been accomplished in this direction. however, cannot justly be credited to either the accuracy or utility of Cohnheim's theory of the embryonic origin of tumors, as applied to malignant disease. On the contrary its failure to meet the test has insistently directed attention to the very obvious fact of a pathogenic germ origin. Therefore the Cohnheim theory, as applied to the embryonic origin of malignant tumors, must go; it has never been proved. According to Delafield and Prudden's *Pathological Anatomy and Physiology* (5th edition, p. 291), "no one has seen the strayed or delayed embryonic cells." Infection, as applied to the resumption of physiological activity of originally displaced, long dormant, and newly awakened embryonic cells, is a misnomer, and violates all rules of practical, hardheaded common sense. Nor can there be such a thing as a primarily germ infected, strayed, and coralled embryonic cell lying dormant for periods varying from fifteen to fifty years; to me it is unthinkable. Thus the proposition is: Either the misplaced cell was infected at the time of its "straying," or it was not. If infected, it must have been by a pathogenic germ; if by a pathogenic germ, pathogenic changes would soon have resulted. Life does not stand still save in *cold* storage. In the case of benign tumors, it probably is true that they are due to such an origin as heredity, or trauma, or displaced embryonic cells, but benign tumors neither recur nor metastasize; thus proving that they are in a class by themselves. Malignant tumors, however, do recur and metastasize, *and these attributes are characteristic of pathogenic germ infection.*

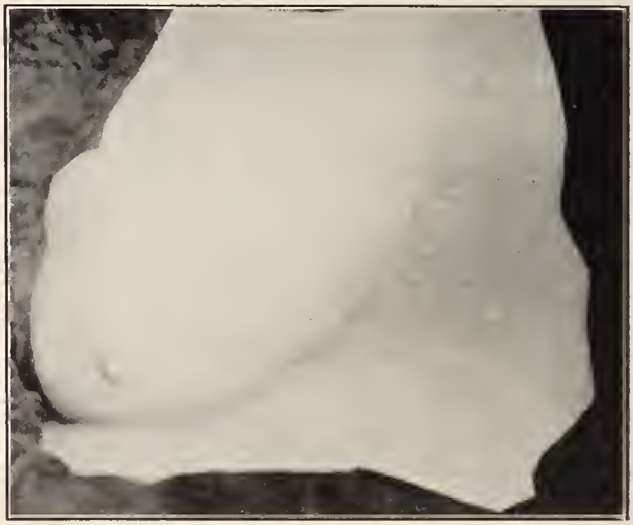

Fig. 2.—Same case as shown in Fig. 1, five weeks subsequent to skin grafting, following the radical chemical extirpation of the author.

Recurrence, in cancer of the breast, implies a preceding radical extirpation. The rapidity of such a return depends upon many conditions, none of which are definite or absolute; so that even in a most carefully selected case, operated in under ideal conditions, there may be primary recurrence within two or three months; while, on the other hand, recurrence may be surprisingly delayed, as notably in scirrhous conditions. "Of such recurrences," Pearsoll tells us, "eighty-five per cent. are in the chest wall and fifteen in the axilla." Recurrence following the radical standard extirpation is almost universally regarded as an external evidence of internal metastasis. I do not so regard it. To me it is simply the perceptible evidence of renewed activity of surviving specific pathogenic organisms. If internal metastasis to an abdominal or pelvic viscus exists at the time of recurrence, it so exists quite independently of the latter. Metastasis dating from a local recurrence is only by continuity through the chest wall to the pleura and lung, and thence to the general system. Whenever metastasis to any part of the abdominal or pelvic viscera manifests itself prior to, or coincident with, recurrence, it is certain that the primary operation was too late. This could not be known at the time of operation for the reason that the beginnings of all disease processes are microscopic rather than macroscopic, and that thus early they are also without appreciable symptoms. So that at the time of operation, the true extent of the disease must always be more or less problematical. To-day, for the first time in medical history, is there apparently something tangible at hand to hang our hopes upon; this consisting mainly of the very obvious fact of infection by a specific cancer germ, and the apparently corroborative results of the new chemical surgery. This new chemical surgery is based upon the assumed facts stated above and *upon scientific principles, and questions altogether the expediency or safety of extirpation by excision through presumably healthy adjacent tissues.*

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*Read by invitation in the Symposium on Cancer, before the Medical Society of the County of New York, March 24, 1913.

The foregoing facts should be accentuated in connection with the importance of a speedy and most radical secondary operation upon the earliest indication of recurrence, such as can only be accomplished with any degree of scientific certainty by the new chemical technic outlined in the original article already referred to. By the employment of this technic I regard recurrence, unaccompanied by internal metastasis, as a curable condition. May I digress for a moment to call attention to the fact that of the seven radical chemical operations I have thus far reported, only one was a really suitable case for the legitimate expectation of ultimate cure, all the others being far advanced. This will be seen by a study of that report; and yet in not one of that number is there, or has there been, any sign of local recurrence. One of the patients, with evident metastasis at the time of operation, returned, a year and three months later, with a tumor in the left breast, with accompanying bilaterally enlarged cervical lymphatics. Despite this development, however, and the ultimately fatal outcome (occurring subsequently to the publication of the report), absolutely no sign of local recurrence was observed at any time at the site of the removed breast. Surely my work deserves attention, if for no other reason than the fact that in all the patients the enlarged axillary lymphatics disappeared.

I desire here to submit the report of a recurrent case, with coincident internal metastasis, tentatively and palliatively operated in by the new chemical method. To my mind, it is a beautiful object lesson as to what may be done in even such a hopeless condition. The photographic plate of Fig. 1 was taken when the patient arrived. The black band about the infected field was done with the tincture of iodine, merely to mark the outermost boundary of involvement. It will be noted that recurrence was, as usual, along the line of "incision and suture," with secondarily infected trauma nodules studding the field above and below, which in similar cases are probably due to tension of other sutures, minute breaks in the skin from severe stretchings, or drainage punctures and stabs. The centre of the line exhibited an ulcerating aggregation of nodules. At the axillary end of the line was a larger mass as yet intact. About an inch superior to this mass and lying beneath the remaining portion of muscle was to be felt a large, freely movable lymph node, the size of a robin's egg. The tissue to be removed was firm, unyielding, cicatricial, and fixed to the chest wall. The involved area measured seven by nine inches in its transverse diameters; surely the picture of an extreme type of recurrence, in which few surgeons would have the disposition to employ reexcision.

The case was that of Mrs. P., aged seventy-two, an American, always in poor health. A radical standard extirpation of the breast had been performed in 1910, at Albany, N. Y. At the expiration of a year and three months evidence of recurrence was noted. Two months later the patient was referred to me for chemical surgery in a final attempt to save her. The problem was most difficult, as the devitalization had to be very carefully gaged and guarded on account of the near proximity of the pleura to the overlying affected area and the close relationship existing between the auxiliary vessels and the large node under the pectoral stump. The tissues lying within the circumscribed area down to, but not involving, the periosteum of the ribs, together with the enlarged node, were removed; a fine granulating surface eventually presenting. This granulating surface was then covered with Ochsner skin grafts, every graft "taking." The photograph of the completed condition was taken about five weeks after the grafting operation. *Under the influence of important modifications in the previously described technic, the discomforts attendant upon previous operations were almost wholly abolished.*

Fig. 2 shows the healed site of the operated area, the outlines of the larger grafts being easily traced. These grafts have gradually taken on the natural pale flesh color with the accumulation of subcutaneous fat, and have the same appearance in their central portions as that of the surrounding skin. At the end of three months, in an uncomplicated early case of recurrence, the same result would obtain as is shown in plate XIV of my previous article. The skin should then be quite freely movable, possessed of the normal glandular secretions, and would need no care different from that of the surrounding skin. Subsequent to the taking of the photograph, a few very small flat, lentillike papules, discovered well outside the operated area, were devitalized as a precautionary measure. The operation was done in November, 1912, and at this reading the patient is in fine condition.

23½ Merchants Row.

SOME UNUSUAL OBSTETRICAL COMPLICATIONS.

*With Reports of Cases.**

By Frances Merriam Myers, M. D.,
Mount Vernon, N. Y.

What I am about to present to you this evening is not a paper in any sense of the word—it is merely a report of a number of cases coming under my care during the past few years which have been of especial interest to me, and which I hope may interest you and serve as an introduction to reports of somewhat analogous cases encountered in your work.

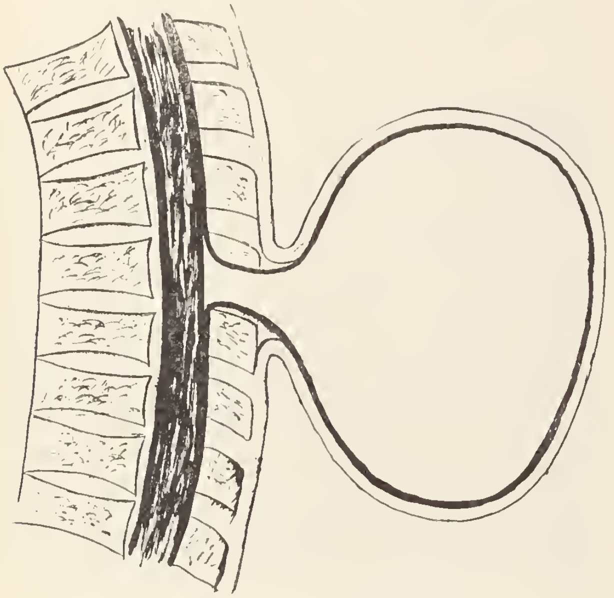

Fig. 1.—Diagram showing protrusion of membranes of the cord in meningocele.

The first two cases are instances of spina bifida or hydrorrachis posterior, and, before reporting them, I shall briefly review the salient points of this malformation. It has been defined as a congenital hernia of the spinal membranes, with or without the cord, through a cleft in the vertebral column, due to a deficiency in the vertebral arches, or through an intervertebral space. This condition is found in one out of 1,200 births, and has been observed more frequently in girls than in boys. Both my cases were in girls. Holt reports two cases in one family, successive children of the same parents; and Bryant has seen two protrusions in one individual, one being lumbar and the other sacral. Though the swelling is usually posterior, and takes place through clefts in from one to four vertebral arches, it has occurred anteriorly through a bifid vertebral body—spina bifida occulta.

Three varieties of spina bifida are seen. The first is the meningocele, which is a protrusion of the membranes of the cord, the cord itself not being present in the tumor. This is filled with a fluid similar in all respects to the cerebrospinal fluid; and as this increases in amount the sac becomes distended, in one reported case reaching a circum- laminæ of the vertebræ takes place from above ference of twenty-two inches. This variety of spina bifida occurs most frequently in the cervical region, is usually pedunculated and translucent, and is the form most amenable to treatment. (See diagram in Fig. 1.) The second form, meningomyelocele, is the most common variety of spina bifida, occurring in thirty-five out of fifty-seven cases reported by Demme. In the meningomyelocele, as the name indicates, there is present, in addition to the spinal membranes, part of the spinal cord, the fibres of which are implanted in a cicatrix which is situated near the centre of the mass. From this cicatrix or central umbilication the fibres emerge, but again enter the spinal canal after traversing the internal surface of the lower half of the tumor. (See diagram in Fig. 2.) In this form of spina bifida the mass is always sessile, and is usually located in the lumbosacral region. This location is accounted for by the fact that ossification of the downward, so that delayed union of the two ossific centres for the lumbar laminæ leaves a weak spot for the protrusion of the spinal contents as the intraspinal tension increases. The third form is the syringomyelocele. In this there is a dilatation of the central canal of the spinal cord, and usually an associated hydrocephalus. It is seen oftenest in the dorsal or dorsolumbar portion of the spine, and rarely in the lumbosacral region. Paralysis of the bladder and rectum may be present in the lumbar form of spina bifida, with more or less complete paralysis of the lower extremities; but in the sacral variety paralysis of the bladder and rectum only may exist, on account of the involvement of the fourth sacral nerve in the cauda equina.

Other deformities are frequently associated with spina bifida, the most frequent being hydrocephalus, hare lip, talipes, encephalocele, and cerebral meningocele. In all forms of spina bifida the prognosis is poor, but is the most promising in simple meningocele. A cure may result in this form from operative procedures, or occasionally from a spontaneous rupture followed by an obliterating inflammation and sloughing of the mass. Treves believes that this desirable end would be more often accomplished if operative interference, with its frequently fatal result, were more often abstained from. In

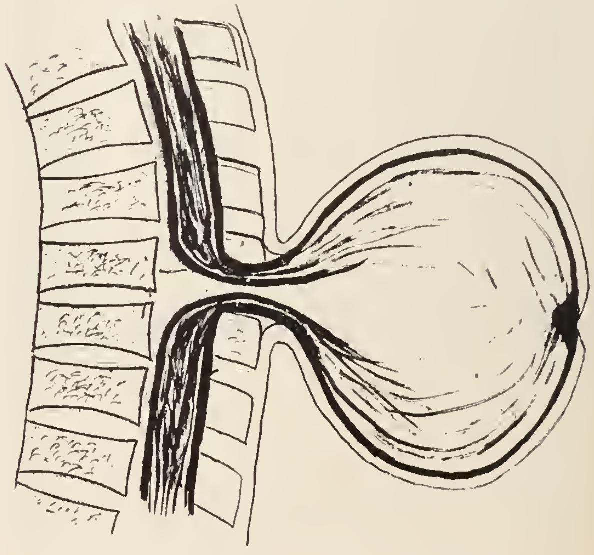

Fig. 2.—Diagram showing protrusion in meningomyelocele.

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*Read before the Women's Medical Association of New York City, March 19, 1913.

meningomyelocele and syringomyelocele, which, according to the report of the London Clinical Society, constitute ninety-five per cent. of the fatal cases, the case may terminate in one of three ways: First, rupture of the sac with draining of the cerebrospinal fluid, convulsions, and death; second, rupture with infection and consequent spinal and cerebral meningitis; or, third, infection through the attenuated integument, without rupture.

The only treatment possible in cases associated with paraplegia, hydrocephalus, or involvement of the bladder and rectum is the protection of the tumor from pressure and infection. Operative measures are advised by Holt if the child has survived six months without paralysis of the lower extremities or of the bladder and rectum, and he considers operation occasionally admissible earlier if the tumor is tense and rupture seems imminent; while Treves advises palliative measures unless there are urgent indications for active interference, and reports cases which lived to the ages of twenty-eight. thirty-seven, forty-three, and fifty years without operation.

Case I. The first case which I am about to report to you can be classed as a meningomyelocele; and the child was born March 29, 1903, after a normal labor, the only remarkable feature of which was an unusually large amount of liquor amnii, estimated to be about nine quarts. The presentation was left occipitoanterior, and the duration of labor five hours. She was the fourth child, and the other children, and both parents, were unusually well and strong. At birth a lax, sessile sac was discovered over the lumbosacral region. This was empty, and had, at its centre, an umbilicated mass of granulation tissue; while a longitudinal cleft in the vertebral arches could readily be palpated. Even light pressure over the depression in the spinal column caused crying, but no other phenomena. The sac slowly filled, although there was leakage from the first from the umbilicated centre, the fluid being colorless, and not stiffening the dressings. On removing the dressings at the end of twenty-four hours, the boric acid which had been used as a dusting powder was found to be of a bright yellow. The right leg was flexed most of the time, and irritation of the soles of both feet produced no effect beyond slight movements of the toes, the usual flexing of the leg which occurs on tickling the soles of normal newborn babies being absent. The feet were cold at all times, regardless of warm clothing. Urine and feces were passed normally; but the child was slow about learning to nurse, and never took an average amount of nourishment, even with spoon feeding. The fluid in the sac slowly increased until the twelfth day, when complete rupture took place (no especial pressure having been made upon it), and about four ounces of fluid escaped. The general condition was not at first affected by the rupture—sleep, nursing, crying, etc., occurring as before, On the eighteenth day after birth, and the sixth day after the loss of fluid, a few convulsive movements took place and food was refused; general convulsions and death occurred the next day. As the fatal prognosis was realized, the only treatment attempted consisted in lightly sponging off the sac with a weak solution of mercury bichloride and dusting it with boric acid. A ring of absorbent cotton served to keep the weight of the child from the sac. On two occasions I found this dressing disturbed for purposes of exhibition to the neighbors, but no signs of meningitis developed. An autopsy had been arranged for at Carnegie Laboratory, but at the last moment the parental consent was withdrawn and no post mortem examination allowed. The mother has since had four perfectly normal robust children.

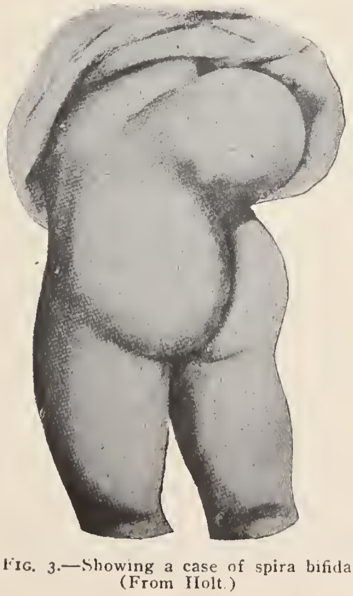

Fig. 3.—Showing a case of spira bifida. (From Holt.)

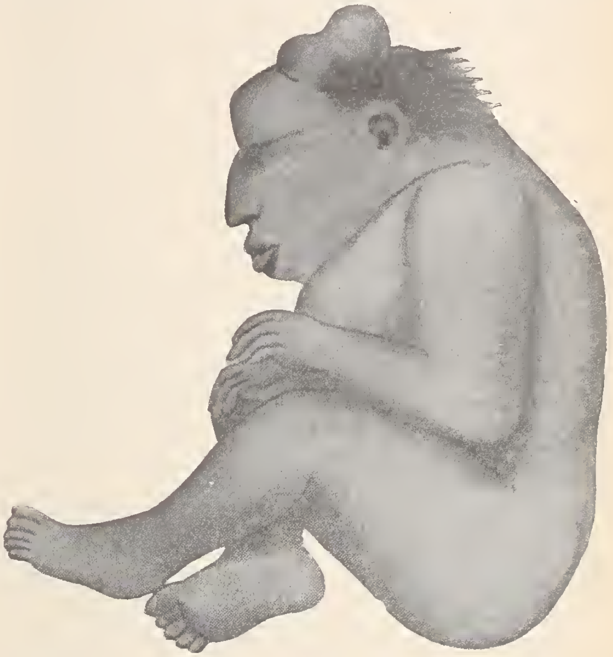

Fig. 4.—An anencephalic monster. (From Schroeder.)

Case II. During the summer of 1910 I was called upon to take charge of the oldest daughter of this patient, a girl of eighteen, who had been married about a year and was pregnant for the first time. The pregnancy was normal in every respect and labor took place November 24th (Thanksgiving Day). A brow presentation delayed delivery somewhat, but it was accomplished spontaneously, and a rather small girl baby was born at the end of fifteen hours. My attention was immediately attracted by a sessile tumor in the lumbosacral region. This, also, proved to be a meningomyelocele, two and one half inches in diameter, raised two inches above the level of the surface of the body, and resembled closely the condition which had presented itself in her little aunt seven years before, except that rupture of this second sac had not occurred at birth. Three days later, in spite of every care, rupture took place. The sac alternately refilled and leaked until the twelfth day, when the baby quietly died. There was no paralysis of the lower extremities, nor of the bladder and rectum in this case, and no terminal convulsions. (Fig. 3.)

A few months ago I again delivered this patient, this time of a normal boy.

The most startling abnormalities which have come to me in obstetric work have been two cases of anencephalic monsters; and no one who has not seen this deformity can appreciate its revolting appearance. As you know, the anencephalus or hemicephalus derives its name from the absence of most of the brain and cranial vault, the base of the skull being exposed to view. (Fig. 4.)

Case III. My first case was a large, well developed girl, the fifth child of normal German parents. The preceding four children were all perfectly developed, and pregnancy had been normal in this case. Delivery occurred on November 29, 1906 (Thanksgiving Day), and let me remark, in passing, that Thanksgiving Day has again and again brought me abnormal confinement cases. In this anencephalus case also there was more than two gallons of liquor amnii, and when the membranes were artificially ruptured at the conclusion of the first stage of labor, and it became possible to palpate the fetus through the cervix, the findings were decidedly queer. The head presented by the brow, and the sella turcica and olivary process, with the various other processes, on the superior surface of the sphenoid bone could be felt taking the place of the usual cranial vault. As my attention had never been directed to this abnormality, I was decidedly at sea; but the pains were good and, the second stage advancing rapidly, delivery was soon accomplished. There was a little mass in the frontal fossa which contained rudimentary brain tissue. Part of the temporal, frontal, and occipital bones were present, but the parietal bones were entirely lacking.

Case IV. My second anencephalous baby was the third child of healthy Vermont parents. The family history was excellent on both sides down to this particular family, but the first child had been anencephalic and the second a spina bifida, living nineteen days. The third, whose birth I attended, as the parents had moved to Mount Vernon, proved to be an anencephalic monster. The pregnancy had been a rather painful one, with many false labor pains during the last two months; but the patient was in good condition, an otitis media being the only disturbing element. The feet presented in this case, and the baby being large and distending the abdomen almost to the limit, the absence of the cranial vault could not positively be made out, although the small size of the head was noted. Labor took place October 19, 1908, and, after five hours a large boy was born who was otherwise well developed. The cranial condition was similar to the anencephalic case just described, except that integument covered the vault. As you may imagine, the parents were almost in despair at this third abnormality in the family, and decided to adopt a baby; but while I was helping them to find one which came up to every requirement, the patient again became pregnant, and I delivered her of a normal boy. Two years later a perfectly formed little girl was born to them, and we are no longer searching for a little waif for that family.

But two anencephalic monsters and a spina bifida in rapid succession were certainly nothing less than appalling!

A hydrocephalic baby, with hare lip, cleft palate, and supernumerary little finger; another case of hare lip; a baby with a supernumerary thumb, and one with rudimentary fingers of the right hand, but a perfect thumb, complete my list of malformations; and in *none* of these cases was there anything which could be construed as the faintest approach to a maternal impression. Before these cases occurred I was always most optimistic when questioned by nervous prospective mothers as to the possibility of abnormal babies. I am still just as optimistic in my reassurances; but the occurrence of these cases has forced me to make a few private mental reservations.

You may have noted that in two out of my four major malformations, viz., one spina bifida and one anencephalic monster, there was a marked polyhydramnios—the fluid in the first spina bifida filling an ordinary wooden pail three quarters full, estimated at nine quarts, and the first anencephalic case having about the same quantity. The nurse reported in the second anencephalic case that there was a gush of an unusually large quantity of fluid, but could not give me an idea of the amount. You will remember that the normal amount of liquor amnii has been estimated as from 600 to 1,800 c. c. (eighteen to fifty-four ounces), or one to three pints. The condition of polyhydramnios has been noted in other cases of spina bifida and anencephalic deformities, and is attributed to an excess of urinary secretion on the part of the fetus, due to the stimulation of the cerebral or spinal centres, which are without their normal coverings; and this presumption is fortified by the fact that in these cases there is a slightly higher percentage of urea in the liquor amnii than is usually found. This explanation is not wholly satisfactory, however, as other deformities of the fetus, such as hare lip, clubbed feet and hands, webbed fingers, and imperforate anus, are also occasionally accompanied by an excess of liquor amnii; and also for the reason that the major malformations are sometimes coexistent with marked oligohydramnios. Very little has been written upon this subject, and a paper by Dr. Joseph Browne Cooke, published in the *American Journal of Obstetrics* (LIV, No. 6), on Abnormality in Amniotic Secretion in Its Relation to Fetal Malformation is of absorbing interest.

Leaving the subject of teratology, I now have several cases to report in which the course of *delivery* was attended by unusual complications. These do not include the ordinary run of cases of placenta prævia, eclampsia, and abnormal presentations which occur with a certain regularity in every obstetric practice, but comprise several which have been of especial interest to me because of their rarity. The first was a case of unrecognized chronic appendicitis, an acute exacerbation of which complicated a six months' pregnancy, and was terminated by a pulmonary embolus.

Case V. The patient was a medical graduate, aged thirty-seven years, and the mother of two children, one, two and one half years and one sixteen months old, and was at the time six months' pregnant. At about the third month of her second pregnancy the patient had severe pain in the right iliac fossa, accompanied by what she called "uterine pain." This was regarded by her attending physician as a threatened abortion, and the patient was kept under the influence of large doses of morphine for about two weeks, at the end of which time the pain and tenderness in the right iliac fossa had disappeared and did not return until the day after her delivery, when they recurred violently for one day and were attributed to indigestion after the ingestion of milk. There was an absence of all pain and tenderness for a year, but about three months previous to the fatal attack, when the patient was again about three months' pregnant, and while she was walking in to town, a severe attack of pain in the region of the appendix came on, which was so intense that she was prevented from walking further for about twenty minutes, when it suddenly disappeared. The last attack began with moderate severity on the afternoon of November 12, 1906, after the ingestion of a glass of milk. Vomiting accompanied the attack, and the patient, fearing an abortion, took morphine by mouth. She was seen by me a few hours later, and at that time there was general abdominal tenderness, most marked in the right iliac fossa. The uterus was enlarged to the umbilicus, the full length of the cervix was present, and the os was closed. There was no vaginal discharge, nor any indication of an approaching miscarriage. The temperature was 99.8° F., and the pulse 96, but later increasing to 108. The diagnosis of appendicitis was made, and was a surprise to the patient and her family, as such a condition had never been suggested to them. This diagnosis was confirmed, however, by Dr. Robert Abbe, who saw her with me in consultation, and who considered an operation imperative. As uterine contractions with dilatation of the cervix had taken place within the few hours intervening between the time I telephoned for Doctor Abbe and the time he made the examination, it seemed best, as the case was not at all alarming, to allow the delivery to take place, and a day or two to elapse before operating, the patient being watched most assiduously in the meantime, and everything being arranged for an emergency operation. The patient was delivered easily of the six months' fetus about an hour after Doctor Abbe's examination. She was free from acute pain during the next twenty-nine hours, but suffered from a nagging soreness. The temperature remained below 100° F. and the pulse did not go above 108. Twenty-nine hours after delivery the patient, while lying quietly in bed, complained of sudden severe pain in the præcordium. She became cyanotic, and the nurse could not detect the radial pulse; and within a few moments the respirations had stopped. The course of events seems to have been first an acute exacerbation of the chronic appendicitis, which, according to Doctor Abbe's views, caused traction on old adhesions, and so started up uterine contractions. Twenty-nine hours after delivery a thrombus in one of the uterine sinuses became detached, was washed out into the general circulation, and became impacted in the pulmonary artery, causing almost instant death. A sister of this patient, five years later, also died from pulmonary embolism during the puerperium.

Two cases of premature, partial separation of the normally implanted placenta seemed to me to be unusual enough to be included in this report. This accident has been attributed to traumatism and to nephritis, neither of which conditions was present in either of my cases; neither were abnormally short umbilical cords causative factors.

Case VI. The first case occurred in a normal multipara whose first four confinements had been uneventful. Slight labor pains began on October 19, 1910, and an examination at my office found conditions normal, and the os dilated to the size of a quarter dollar. These light pains continued until the afternoon of the next day, when a gush of about eight ounces of blood occurred during a slight pain. The patient went to bed and sent for me, and on my arrival shortly afterward I found the os fully dilated and no evidence of placenta prævia present. Little gushes of blood accompanied each pain, but the amount was small. Pains were coming every five minutes, and, as the patient's conditions was good (cheeks pink, pulse excellent, and no evidence of concealed hemorrhage) and the fetal heart beat normal, an oxytocic was given, and the patient watched, with everything in readiness for an immediate forceps delivery, if it should be indicated. During the last half hour the amount of blood had slightly increased, perhaps an ounce coming with each pain. The baby was born covered with blood, but cried lustily at once. The uterus contracted well, and the placenta was expressed about five minutes later, being preceded by the passage of an organized clot about five inches long and three wide. The placenta was unusually large, and of perfectly normal appearance, with no evidence of any old hemorrhage, areas of infarction, or calcareous degeneration. The patient made a normal convalescence, and her next delivery, two years later, was uneventful.

Case VII. The second case of partial premature detachment of the placenta was less fortunate, the baby being stillborn. The patient, who had had one normal child, was examined on the 16th of last August, and conditions were normal in every respect. Pains began on the 18th, at term. On my arrival the patient told me that she had felt no fetal movements for the preceding twelve hours, and I was unable to detect any fetal heart sounds. The os dilated rapidly and the mother's condition was excellent. During the second stage a little dark clotted blood accompanied each pain. Labor progressed quickly, and a pallid, pulseless baby was born in less than three hours from the beginning of labor. The placenta showed about a third of its surface covered with dark grumous blood. It seemed curious that the remaining two thirds of the placenta could not supply enough oxygenated blood for the fetal circulation, but the cessation of the previously vigorous fetal movements twelve hours before the advent of labor proved that it could not do so.

I had intended to inflict upon you two cases of contracted pelvis, one a kyphotic and one a justominor pelvis (the former was treated by Cæsarean section and the other will be, next month); a case of hydatidiform mole; a case of eclampsia with hemiplegia, and one of placenta prævia with facial paralysis; and to speak of the great prevalence of occipitoposterior positions in my work (twenty per cent.), with almost uniform spontaneous rotation, and undisturbed deliveries, as well as of my expectations of relief from an aching back in substituting the pulmotor for the usual methods of artificial respiration. But time is short, and my reports have already occupied too much of your valuable time. I think, however, that my work has demonstrated, to myself at least, that the life of one who works largely in an obstetrical field is full of the greatest variety and interest; and, in the opportunities it affords for the study of human nature, it is certainly unexcelled.

109 South Third Avenue.

THE TREATMENT OF ENDOMETRITIS.*

By George Gray Ward, Jr., M. D.,
New York,
Professor of Diseases of Women, New York Post-Graduate Medical School, Etc.

The term "endometritis" is one that is familiar to every physician, and should one be asked the meaning of the word he would probably reply, "Inflammation of the endometrium, of course." Unfortunately, in many instances this is about the extent of his knowledge of this condition. He will use the term with profound effect upon his receptive patient, and he will talk glibly of it to a brother practitioner while discussing the diagnosis of a gynecological case. Yet withal, in the majority of instances, close inquiry would elicit the fact that he has a very hazy idea as to the actual pathology of this condition and of its relation to other gynecological diseases.

In order to intelligently comprehend this condition we must have an understanding of its pathology, at least sufficient to form a working basis for the clinician. I am aware that there are many classifications and disputed points from the standpoint of the pathologist, all of which tend to cause confusion; therefore I must ask for indulgence if I take up some of your time with a hasty statement of its present status.

For many years the pathology of endometritis has been based on the conditions found in the endometrium, consisting of changes in its thickness, the number of its glands, and the character of its epithelium and stroma. An acute and a chronic type are recognized. The etiological factor in acute cases can usually be determined, while in the chronic type it is not readily apparent. In chronic cases the hypertrophic state was until recently considered as the final result of chronic inflammatory processes. Consequently, when uterine curettings were submitted to the pathologist he reported the finding of endometritis, hypertrophic, and glandular, according to the increase in the thickness of the mucosa and the glandular changes present.

This was the status of the subject until 1908, when Hitschmann and Adler (1) published the recult of their investigations, which has somewhat revolutionized previous theories, and showed that heretofore many of the reports on uterine scrapings submitted by competent pathologists were misleading, if not entirely erroneous. Hitschmann and Adler's work was based on the study of the endometrium in its relation to menstruation, and they have demonstrated that the regular menstrual cycle in the normal human female is characterized by cyclical changes in the structure of the endometrium, which changes are identical in appearance with the so called hypertrophic glandular endometritis. Consequently, if curetting is done during the presence of these normal hypertrophic changes in the mucosa, the pathologist, according to his previous light, would report the presence of hypertrophic endometritis when only a physiological condition existed.

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*Read by invitation before the New Rochelle Medical Society, February 10, 1913.

Briefly, Hitschmann and Adler find that the endometrium passes through four distinct stages throughout the month. The first, or *premenstrual* stage, begins from six to seven days prior to the appearance of the flow. The endometrium during this time shows an increase in the thickness of the mucosa two or three times that of the resting stage. The glands are enlarged in size and their component cells likewise, and the stroma throughout has assumed a decidual type. In short, it presents the conditions which were previously considered as characteristic of chronic hypertrophic glandular endometritis. The second, or *menstrual* stage, when the blood appears and the picture changes rapidly. A general deturgescence is noted. The glands become flattened; some of the superficial epithelium is cast off. Third, the *postmenstrual* stage, shows the mucosa thin and pale. The glands are narrow, straight, and with contracted lumina, and the epithelial cells are small. Fourth, the *interval* stage. This lasts about two weeks, and shows the mucosa in what we have hitherto considered the normal condition.

Of course, great physiological variations may exist in the duration of the stages and the extent of the changes. At first Hitschmann and Adler believed that the only chronic inflammatory form which can be accepted is endometritis interstitialis, and that all cases of so called hypertrophic glandular endometritis were nothing but normal premenstrual findings. They believed that the presence of *plasma cells*, which accept a specific stain, are alone characteristic of true inflammation. Hitschmann (2) now admits, however, that hyperplasia other than the physiological cyclical degree occurs, but asserts that it is not inflammatory in origin.

In the foregoing remarks, I have quoted freely from the most excellent article recently published by Frank (3), and would refer those interested to Frank's paper for a clear and concise statement of the present status of the pathology of the subject. Numerous investigators have confirmed the fact that cyclical changes take place in the normal endometrium, and it is now generally accepted. However, while a distinct advance has been made, numerous points which are still unsettled are met in endeavoring to harmonize the physiological changes pointed out by Hitschmann and Adler with the clinical standpoint.

It seems reasonable to recognize the normal changes as a temporary hyperplasia and to accept the fact that certain pathological forms of hyperplasia exist which are permanent or stationary. Also, that these permanent types may be caused by chronic inflammation, but that a permanent hyperplasia of the endometrium may exist in the absence of true inflammation. This latter type I believe to be due to disturbances of circulation, and one of the most common conditions that we have to deal with, as I shall endeavor to show later.

Albrecht and Logothetopulos (4) have recently contributed a valuable study to this subject, and I quote their conclusions as follows:

> 1. The anatomical diagnosis of chronic endometritis is based upon the presence of certain changes in the stroma and bloodvessels, circumscribed or diffuse infiltration of lymphocytes, exudation, hypertrophy, or atrophy (cicatrization) of the stroma, the presence of blood pigment, proliferating bloodvessels and infiltration along the vessels, and inflammatory infiltration in the muscular interstices.
>
> 2. In addition to the normal premenstrual hyperplasia, there are certain pathological forms of hyperplasia which are stationary, as:
>
> a. All the transitional forms between hyperplasia and adenoma occurring during the menopause.
>
> b. Postmenstrual and interval hyperplasia.
>
> c. Hyperplasia following prolonged placental retention.
>
> d. Hyperplasia after prolonged hemorrhages.
>
> 3. The permanent hyperplasia may be distinguished from the temporary form by certain anatomical features: Mitosis, which is not marked in the latter form, irregularity, as absence of the premenstrual folding of the mucosa, true intraglandular papillary proliferation, twisting and elongation of the glands, thickening and increase in the epithelium due to mitosis, irregular secretion and loss of the typical premenstrual secretion.
>
> 4. In chronic inflammation the regularity of the cyclical menstrual phase is disturbed.
>
> 5. Chronic inflammation usually causes a proliferation of the uterine glands; hyperplastic and proliferating endometritis is therefore a correct term, but it should be distinguished from the pathological hyperplasia of the uterine mucosa in the absence of inflammation.

Frank states that the classical signs of "endometritis," leucorrhea, menorrhagia, and metrorrhagia are dependent upon the functional activity of the ovaries, the former being the sign of glandular overactivity, and the latter of vascular and stroma stimulation; and that hence in most cases we must devise a more logical treatment than curetting, intrauterine applications, or vaginal douches to produce a cure. He states that the sole method at our disposal to reduce the activity of the ovaries, short of complete ablation, is to expose them to the x ray with the hope of controlling the leucorrhea and the bleeding.

I believe that our clinical results warrant us in taking a more optimistic view as to what we may accomplish in the relief of these classical symptoms in the majority of such cases. If we accept the statement that permanent hyperplastic changes may occur in the absence of inflammation, we must look for its cause in disturbances of the circulation. If chronic passive congestion plays its rôle as a factor in producing pathological changes in other organs of the body, it surely can do so with the uterus.

Until we are shown how to control excessive and diminished ovarian activity with certainty, we must still resort to the curette and local measures. I believe that curetting will never be entirely superseded by other forms of treatment in that large class of cases which suffer from the classical signs of so called "endometritis," viz., leucorrhea, menorrhagia, and metrorrhagia, which present permanent hyperplastic changes in the absence of inflammation, and which are the result of long continued passive congestion. Therefore, I shall present the subject of the treatment of endometritis from the clinical rather than the pathological standpoint.

Endometritis may be cervical or corporeal in its location, but, except in the onset of acute infections, the entire endometrium participates in the inflammation, and for practical purposes we may ignore these differences and consider the condition as involving both the cervix and the body, as is the usual case. It is well to remember that the secretion from the cervical glands, which are of a compound racemose character, is very tenacious, viscid, and thick, while that from the utricular glands is more limpid in character. A mixture of the two is the usual composition of the discharge.

As a working basis, we will divide all cases of endometritis into two varieties: First, those which are the result of infection; and, second, those in which a bacterial origin or sepsis plays no part, but which are the result of purely circulatory disturbances.

In the first, or infective variety, we have acute and chronic types, but the chronic type, on account of loss of virulence of the causative bacteria, or their disappearance, simulates closely the noninfective type, and will be studied in our consideration of this. Acute infective endometritis is caused most frequently by the gonococcus, or by the ordinary pus producing organisms, as the staphylococcus, streptococcus, colon bacillus, etc., which have been introduced by dirty instrumentation by the attending physician in endeavoring to give local treatment or in efforts to induce abortion. The virulence of the disease depends entirely upon the nature of the bacteria producing it. Acute gonorrheal endometritis is very common, commencing in the cervical endometrium, where, if let judiciously alone, it may confine itself, but unfortunately often extending to the corporeal endometrium, and almost invariably extending there if local interference in the way of intrauterine treatment is attempted.

So long as the disease remains confined to the cervical canal the woman notices little disturbance other than an increase in her leucorrheal discharge and a feeling of weight and tenderness in the uterus, similar to what she is accustomed to notice at the approach of the menstrual periods. This accounts for the frequency with which these patients fail to ask advice, so that the disease goes unnoticed until the lover comes along and gets infected. If the disease extends to the tubes, as it is very prone to do if it reaches the corporeal endometrium, acute pyosalpinx, pelvic peritonitis, severe invalidism, laparotomy, ablation of the appendages, with resultant sterility and surgical menopause, make up the familiar picture, with a wrecked body and life as a finale. Fortunately for these patients, the infection does not usually cause death, as a general sepsis is not induced, the manifestations of the gonococcus being local and the peritonitis it produces not of a virulent type. If, however, the infection is due to the other organisms mentioned, especially the streptococcus, general septic peritonitis of a virulent type and pyemia are apt to occur, with fatal result.

The second variety of endometritis, the noninfective type, where no organism has been introduced as a causative factor, and which is dependent entirely upon circulatory changes, is by far the most frequent form of the disease in my opinion, and is the one that is practically always associated with nonbacterial uterine pathology. This type, then, is caused by something altering the normal ingress and egress of the blood stream as it flows through the network of capillaries which are situated in the uterine mucosa. As obstruction to the circulation on the venous side is the most easily interrupted elsewhere in the body, so it is here, and venous stasis or passive congestion is the frequent condition found in the uterus, which must, in time, produce, first, disturbance in the glands of the endometrium, and later, actual structural changes in the endometrium itself.

A glance at the venous anatomy of the woman shows us that she was never originally constructed to walk upright in the erect posture. The ovarian veins are very long and pass through the top of the broad ligaments just under the infundibulopelvic ligaments to the side walls of the pelvis, and then pass up the sides of the spinal column until, on the left side, the left vein opens into the left renal vein at a right angle, discharging into a blood stream much greater than itself, and on the right side the right vein opens into the inferior vena cava, a little lower down. These veins, in spite of their great length, have no valves. We can easily see that if the woman walked on all fours, like our progenitors, the apes and other lower animals, these peculiarities of the ovarian veins would be aids, rather than hindrances, to the onward flow of the venous blood stream, as the pelvis would be at a higher elevation than the thorax, and the valveless veins would allow a free flow down hill into the larger venous trunks. Likewise, retrodisplacements and prolapse of the uterus would have gravity to contend with and would not be, as now, such frequent factors in the production of venous engorgement of these parts.

As we have foreshadowed, anything that will impede the progress of the venous blood current from the uterus will cause endometritis. If the histology of the corporeal uterine mucosa is brought to mind, you will remember that it is composed of a single layer of columnar epithelium, and that throughout its structure it contains simple tubular glands lined with this same epithelium. At the base of these glands in the submucosa ramify the arterioles and venules which send capillary branches to the back of their epithelial lining. This endometrium is usually less than a line in thickness, and macroscopically presents a smooth, glistening, moist appearance, similar to the mucous membrane lining the inside of the cheek. The physiological working of these glands is the same here as that of glands elsewhere in the body. On stimulus (as the odor of food in the case of the salivary glands, ovarian in this case) there is a determination of arterial blood to the gland structure controlled by the vasomotor mechanism, and from this abundant fresh arterial blood the epithelial cells elaborate their particular secretion, which is poured out into the lumen of the gland and eventually finds its way to the surface of the mucous membrane. One of the purposes of this secretion in the uterine mucous membrane is undoubtedly to keep it moist, but should these glands work to excess and produce more secretion than is necessary for that purpose, it is evident that the excess secretion will find its way out of the uterus through the cervical canal, and will appear in the vagina as leucorrhea. In other words, there should be a sufficient moisture to keep the mucous lining of the uterus in a normal and healthy condition, just as in the buccal cavity, and not a continuous excess which will produce a "drooling" similar to salivation.

The mechanism of the production of this normal secretion in the cavity of the uterus being understood, it must be evident that if a continuous excess of blood is forced upon these utricular glands they will work overtime and produce an amount of secretion greater than is required, and that if this excess of blood is venous in character, instead of freshly aerated arterial blood, the quality of the secretion produced will be abnormal. Thus, any cause that induces a state of chronic venous congestion in the uterine mucosa will produce an excessive secretion by the uterine glands of an abnormal character. Furthermore, in addition to this functional disturbance of the endometrium, long continued passive congestion will produce organic or structural changes in this membrane, just as it will elsewhere in the organs of the body,—as, for instance, cirrhosis of the liver and nephritis. The condition present in long continued venous congestion is one of "forced feeding with a poor quality of nutriment"—venous blood instead of arterial blood—and the result is an excessive and exuberant growth of the epithelial cells lining the glands and the surface of the mucosa, until they are abnormally large and of unstable fungus type, due to their rapid growth from poor nourishment. They are embryonic in structure and simulate the so called "proud flesh" that we see on the margins of a varicose ulcer. There is also an increased proliferation of the connective tissue cells and elements, and as the cell elements or the connective tissue elements predominate, so we get the classification of the pathologists of the so called "glandular endometritis" and fibrous or interstitial endometritis, or both combined. The terms "hypertrophic," "hyperplastic," and "fungoid" endometritis are all descriptive of the type we have just described.

The macroscopical appearance of the lining of the uterus in these cases has now changed from that of the normal, smooth membrane to a rough, shaggy, mossy, fungoid, and greatly thickened mucosa—even up to half an inch in some cases. There is an actual increase in the number as well as the size of the glands, and, as the unstable epithelium brushes off easily, there is frequently a blood streaked leucorrhea, and the menstrual flow is excessive and appears early and sometimes often. The so called "erosion" of the cervix is not an erosion at all. Instead of the loss of superficial epithelium from ulceration or trauma, there is an actual increase or hypertrophy of the epithelium which grows downward from the cervical canal and spreads itself outward on the surface of the vaginal portion of the cervix. It is thus an external manifestation of the interior condition of hypertrophic endometritis.

In the beginning of this paper I said that we would consider chronic endometritis of an infective origin when discussing endometrititis due to circulatory changes. The picture that is presented in cases of chronic endometritis which were originally of an acute infective character does not differ greatly from that just described, except that these cases are almost always of a severe type, and are characterized by the profuseness of the leucorrheal discharge, which is more purulent and foul in its nature. There is an absence of the bacteria, or at least they are no longer active in old cases. Palmer Findley, in his work on *Gynecological Diagnosis,* states that the profuseness and persistence of a leucorrheal discharge in a patient, in spite of all treatment, is pathognomonic of a previous gonorrheal origin. Hysterectomy is the only cure for such patients.

In contradistinction to the hypertrophic type of endometritis, due to venous congestion, we have the opposite condition of atrophic endometritis, which is due to an insufficiency of blood supply, with the result that the mucosa atrophies and areas of it may even become necrosed on account of atrophic changes occurring in the arterioles. It is commonly observed in the establishment of the menopause and in old women, when it is spoken of as "senile endometritis."

Having thus briefly described the pathology of endometritis, we are now better prepared to make a diagnosis and to treat the disease intelligently. In differentiating a chronic type of endometritis, we must first bear in mind the difference between leucorrhea and pus. A discharge present in the vagina and coming from the cervix is not necessarily pus because it is white in color. The noninfected secretion from the cervical and utricular glands is clear until it is rendered turbid or white by reason of the normal acidity of the vagina. The characteristics of pus (gonorrheal pus, for instance) are familiar to you all, and whenever real pus is seen to issue from the cervical canal, with the external os showing the cardinal signs of acute inflammation, you may rest assured that the case is one of infection, gonorrheal or otherwise. Which microorganism is it? You cannot tell without the aid of a microscope. Likewise, if you are in doubt as to whether it is a leucorrheal discharge or pus that you are dealing with, it is to the microscope that you must resort to settle the question. A drop of the discharge is transferred to a glass slide with a sterile platinum loop, and a smear is made, dried, and stained for gonococci, and examined while the patient is on the table, or, if it is preferred, the specimen is sent to a pathologist for an expert opinion. In all our medical schools to-day every student is taught the simple technic necessary, and has been given training in microscopical diagnosis. Having determined that the case is one of acute infection, be it gonorrheal or otherwise, the treatment is simple—*leave it alone.* Do not attempt to destroy the infection inside the uterus by any of the antiseptics or silver salts. Any local interference with the cervical cavity by local applications will almost surely result in driving the disease up into the body of the uterus, and from there to the tubes, with their resulting destruction. Above all, I implore you not to endeavor to "curette out" the infection. In what better way could you vaccinate the deep tissues of the uterus with gonococcus, or the other more virulent and dangerous organisms, than by scraping away the epithelium and rubbing in the virus? I should hesitate to say how many cases of hopelessly damaged female genitalia, with often ultimate death, that I have seen in consultation or that have come into my service at the hospital as a result of such inexcusable—yea, criminal—ignorance on the part of the family physician. Vaginal antiseptic douches are permissible, and should be employed to protect the external genitals, if they are not already involved, and for purposes of cleanliness. Absolute rest and quiet are to be enforced, in the hope that the infection may run out its virulence without extending to the more dangerous localities. If extension or general infection does occur, the case becomes a surgical one, which time does not permit our discussing in this paper. Probably the future treatment of the acute condition in these cases lies in the direction of vaccine therapy. Already much has been accomplished in this line, and some remarkable successes have been obtained in certain infections, especially where autogenous vaccines have been employed.

In the chronic types of the disease, the most frequent evidence of its existence that Nature has presented to us is the leucorrheal discharge. The extent of the disease may vary from a temporary overactivity of the uterine glands, due to congestion, to a condition where there is extensive thickening and structural changes in the endometrium. The patients of the latter type generally give a history of increased or profuse menstruation, and if the disease is extensive, metrorrhagia is observed. The actual condition of the endometrium can be studied by the diagnostic curette. This is a very small, dull, spoonshaped curette that can be passed through the internal os without difficulty in these patients, and by drawing it slowly over the surface of the endometrium, scrapings are obtained which, if floated in water, will give a very good idea of the character of the membrane. Of course, the instrument must be boiled before it is introduced under direct vision into the uterine canal. The most important thing to diagnosticate in these cases, however, is not the presence of endometritis, which is self evident, but the cause of the passive congestion. We cannot hope to cure these patients until we find the cause of the venous stasis and can correct it. The causes are various. For instance, the patient may be a victim of chronic constipation, in which case the sigmoid flexure is a storehouse for feces, and pressure on the collapsible left ovarian vein is sure to result, as the sigmoid lies adjacent to the left broad ligament. The portal circulation is also interfered with, all the venous structures in the pelvis are engorged, and the patient has a congestion of her uterine glands, just as she has hemorrhoids. To cure her leucorrhea it is evident that an appropriate pill taken daily, to insure a proper evacuation of her large intestine, is the all important treatment. Perhaps the uterus is markedly retroverted. If so, it is plain that there must be a partial twist in the tops of the broad ligaments, just where these collapsible ovarian veins pass through them, and a venous back pressure is the result, with the inevitable endometritis as an accompaniment of the retrodisplacement. The remedy is again obvious—the uterus must be replaced and maintained in its proper position, to allow of the proper venous flow and the relief of the endometrium.

Again, the uterus may be in place and the bowels regular in habit, but the patient may have a noncompensating mitral regurgitation. Naturally, there is back pressure on the whole venous system, the uterus suffers with the rest of the organs, and the patient has a troublesome leucorrhea. Digitalis is the remedy to overcome the excessive discharge in this case. Or, the patient may be a poorly nourished, flabby muscled, debilitated woman, with scarcely strength to drag herself from the washtubs to attend to the wants of her many children. She has an atonic condition of her circulation as a result of general weakness, and, of course, there is venous stasis with resulting symptoms. It is plain that change of environment and rest is needed to cure her leucorrhea, although it may be difficult to apply the remedy. The woman who wears tight corsets, eats largely of candy, and is too lazy to walk, is pretty certain to have a lazy circulation, and a little of the active exercise that her poorer sister is obliged to take will improve the endometritis here.

But what about the curette as a cure for endometritis? I have purposely left the use of the curette to the last, because as a rule it is the first and last thought of the general practitioner. I have tried to emphasize to you the importance of appreciating that the basic cause of the venous congestion that results in the endometritis is the essential factor to be determined, if we hope to get a permanent cure. The curette is a valuable adjunct by scraping away the hypertrophied mucosa, with its enlarged, unstable epithelium, so that a proper balance in the circulation having been restored by the measures appropriate to the particular case in hand, a new growth of epithelium of a healthy and stable type may spring up and the endometrium be restored to its normal condition. If the curette alone is used, the patient will be benefited for a short time only, and later the former condition will surely return. I perhaps can best fix in your minds the principles involved if I ask you to compare the treatment of a case of hypertrophic endometritis to the familiar treatment of a varicose ulcer of the leg. The factors in the case are very similar. You have a deficient circulation, venous stasis, as a reason why the ulcer will not heal; owing to the venous congestion, you have exuberant granulation cells of a poor, unstable, and mushroom like character, which cover the surface of the ulcer and which you call "proud flesh." If you only take a curette and scrape away this "proud flesh," you get a temporary improvement, but a relapse to the former state is sure to occur. So you not only curette away the diseased epithelium, but you elevate and strap the leg to overcome the venous stasis and thus improve the circulation, and the ulcer heals as a properly nourished and healthy epithelium develops on its surface. Formerly it was the custom (and is to-day among many general practitioners) to endeavor to remove the exuberant tissue in the uterus by the local application of caustics, as, for instance, tincture of iodine, carbolic acid, silver nitrate, zinc chloride, etc. This is, at the best, a very slow and unsatisfactory method, and the curette is so much superior that it has practically supplanted the use of caustics in the hands of gynecologists.

Now, a word as to the douche. This is the most frequently resorted to remedy of the general practitioner when a patient comes to him to be cured of her leucorrhea. He is always seeking for the proper medication to put in the douche to cure the discharge, and the medical journals are filled with advertisements of all kinds of powders, etc., which are warranted to produce marvelous results. The idea in his mind is to find something that is antiseptic and astringent. From what we have already learned, it must be plain that it is an absurdity to employ an antiseptic to cure a leucorrheal discharge unless organisms are present to be destroyed. Therefore the use of antiseptic douches must necessarily be limited to the class of cases that are acute infections. Can we not then cure the large class of cases of a noninfective type by the use of an astringent? We might perhaps obtain some lessening of the discharge by astringing the glands of the uterine cavity, if it were possible for the douche water to come in direct contact with them, but it is self evident that a vaginal douche cannot possibly accomplish this object. Why then do we get a beneficial result when we employ vaginal douches for leucorrhea? Because if you only have the woman employ them often enough she will never see the vaginal discharge, because it is washed away before it can accumulate in the vagina in a sufficient quantity to cause annoyance. So long as she takes frequent vaginal washings, the appearance of the leucorrhea will not be noticed, but as soon as she stops, it is there just as bad as ever. Vaginal douches, however, are of benefit if properly employed, but not by the use of any medication they may contain. The only advantage of a douche in these cases is by virtue of its heat; but it is important that the heat is properly employed if we wish to get results. If you put your hand in water at a temperature of 100° F. for a few seconds, when you take it out you will find that it is reddened and all the capillaries are dilated, and there is a state of congestion present. If, however, you put your hand in water at a temperature of 115° F., and leave it there for four or five minutes, you will notice that your hand is blanched and contracted like a washerwoman's. Herein you have the gist of the proper use of a douche. You must have a long application of excessive heat to produce contraction of the capillaries, if you wish to relieve an already existing state of congestion. Yet let us see how the woman who has been told to take a douche, without detailed instructions, goes about it. She buys the smallest douche bag possible, because it is the cheapest. She then makes the water a comfortably warm temperature, which is about from 95° to 100° F. She then sits on the toilet to take the douche, because it is convenient. The result is obvious. She gets a result in her uterus similar to that first described in the hand, and she increases her uterine congestion and makes herself worse instead of better. Therefore, detailed instructions are essential to success. The douche bag must be of the largest, the water must be at 112° to 115° F., and the woman must lie down on a douche pan with her clothes loosened at the waist line, in order that the hot water may balloon the vault of the vagina and circulate at the base of the broad ligaments. Always instruct the patient to put something in the douche, because she will have no faith in plain water; but appreciate the fact that it is for psychic reasons, and not therapeutic ones. A tablespoonful of borax is found in every household, and makes a cleansing alkaline solution. There is one expedient that I believe to be of great value in all cases of pelvic congestion, and that is the knee-chest posture. If the patient is instructed to assume this position every night on retiring for a period of five minutes by the watch, and then turns directly on her side in the semiprone, or Sims's position, and goes to sleep in that posture, the pelvic veins will have been thoroughly drained of their contents and will remain relieved of their engorgement throughout the night. Glycerin tampons are also of value by reason of the hygroscopic action of the glycerin, abstracting large quantities of water from the tissues, and thus relieving the tension in the capillaries and allowing of an improvement in the circulation. Douches, tampons, and the knee-chest posture are simply adjuncts to be used in improving the pelvis circulation, and they are of benefit in just so far as they accomplish this object.

To summarize, the following are the essential factors to be borne in mind in the treatment of endometritis:

1. That leucorrhea, the most prominent manifestation of the disease, comes from the uterine cavity, and not from the vagina.

2. That endometritis may be divided into two great classes, those of bacterial origin and those of nonbacterial origin.

3. That in the acute infective cases the discharge is pus containing, active, demonstrable organisms.

4. That in acute infective cases the treatment to be observed is masterly inactivity.

5. That in the common variety of so called chronic hyperplastic endometritis, which is by far the most frequent type we have to deal with, there is no infection, and the leucorrheal discharge is an excessive secretion from the cervical and utricular glands, the result of venous congestion.

6. That the first and most important principle to be observed in treating these cases is to determine the cause of the venous stasis and to treat the same by appropriate measures.

7. That the curette is our most valuable means for removing the greatly thickened and diseased endometrium, but if it is used alone, without correcting the cause, only temporary relief of symptoms is obtained.

8. That vaginal douches, glycerin packs, and postural methods, if properly employed, are valuable adjuncts in aiding and improving the pelvic circulation.

9. That in the class of cases which are probably dependent upon disturbed ovarian function (either excessive or diminished), such as in the preclimacteric menorrhagias and metrorrhagias, arteriosclerotic uteri, chronic metritis, fibrosis, etc., and which are not benefited by the curette and local measures, we must look for a cure in the direction of ovarian control, possibly by the x ray or by sera from antagonistic glands of internal secretion; otherwise complete ablation of the ovaries or hysterectomy is our only resort.

10. That in submitting curettings to the pathologist it is imperative that the relation of the time of the curetting to the menstruation be stated, in order to obtain an opinion of value.

In conclusion, let me say that if I have been able to clear the atmosphere for you on a somewhat hazy subject, so that you may be able to treat this very common disease in a more intelligent way and with more satisfaction, not only to your patients but to yourselves, I shall feel amply rewarded in that the purpose of this paper has been accomplished.

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71 WEST FIFTIETH STREET.

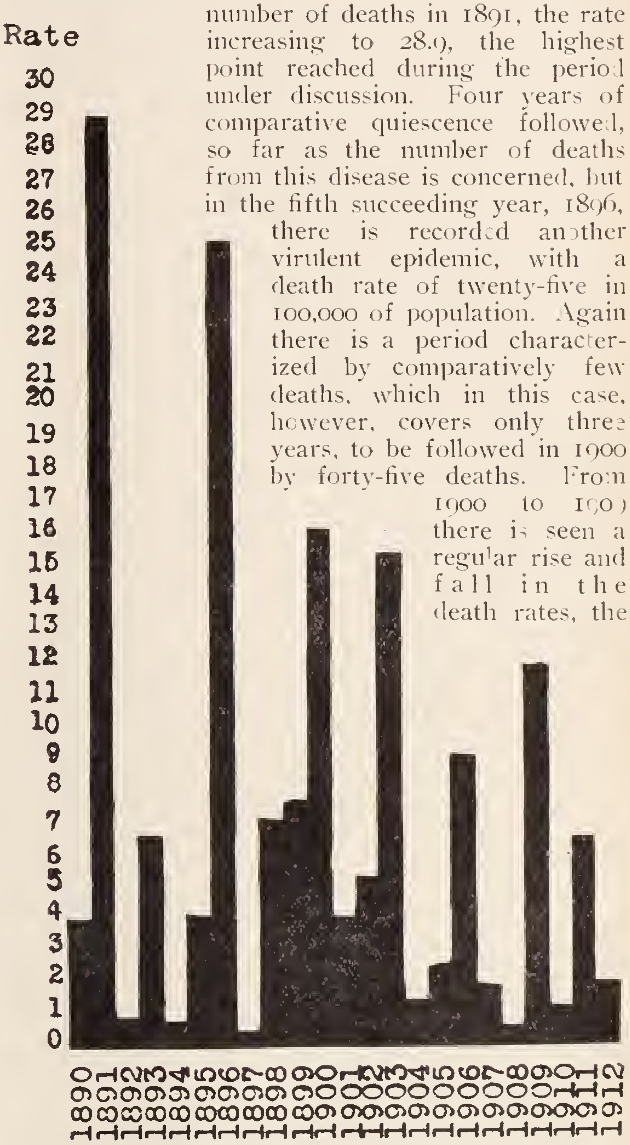
MEASLES: PERIODIC CYCLES OF VIRULENCE.

By HUGH ARBUTHNOT BROWN, M. D.,
Washington, D. C.

As is well known, most, if not all, of the highly contagious diseases present more or less clearly defined periodic cycles of prevalence and of virulence. Years during which the disease is to a large extent quiescent or of low virulence will be followed by widespread epidemics accompanied by high mortality. This characteristic has been often recorded, and, indeed, it has been stated that it is often possible to predict with reasonable certainty that in a specified locality there will occur during one year a comparatively small number of cases of one of these diseases, with a correspondingly small number of deaths, while in the succeeding year there will in all probability be a large increase in the number of cases and in the virulence of the contagium.

A knowledge of this characteristic may be used to advantage by health officers and physicians in preparing for an expected epidemic, as was done in 1910 by Dr. Ernest C. Levy,[1] Chief Health Officer of the city of Richmond, Virginia. A careful study of the death rates from measles in preceding years and a knowledge of this periodic action enabled Doctor Levy to predict a coming epidemic with absolute certainty and to take precautionary measures to keep it in check.

An interesting example of the periodic increase in the number of deaths from measles, with more or less well defined cycles of virulence, is furnished by a study of the death rates from this disease in the city of Washington, D. C., during the past twenty-three years. The apparent cycles are clearly illustrated in the accompanying table and diagram. Immediately following the year 1890, when only thirteen deaths occurred from this disease, corresponding to a death rate of 3.9 in 100,000 of population, there is a tremendous increase in the number of deaths in 1891, the rate increasing to 28.9, the highest point reached during the period under discussion. Four years of comparative quiescence followed, so far as the number of deaths from this disease is concerned, but in the fifth succeeding year, 1896, there is recorded another virulent epidemic, with a death rate of twenty-five in 100,000 of population. Again there is a period characterized by comparatively few deaths, which in this case, however, covers only three years, to be followed in 1900 by forty-five deaths. From 1900 to 1909 there is seen a regular rise and fall in the death rates, the high rate in 1900 being followed by comparatively low rates in the two succeeding years, which in turn are followed by forty-five deaths in 1903—the same number as in 1900, but corresponding to a slightly lower death rate because of the increase in population. This three year cycle of virulence continues with surprising regularity during the ten year period from 1900 to 1909, and, as might have been predicted, the year 1910 was one of low mortality from the disease. This regularity is, however, broken in 1911, in which year we have the apparent beginning of a new cycle of a different type. The fact that a year showing a high death rate is almost invariably followed by one or more with extremely low rates is probably due in part



Death rates from measles in 100,000 of population, Washington, D. C.

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[1] *Annual Report of the Health Department of the City of Richmond, Va.*, for the year ending December 31, 1910.

to an attenuation of the contagium, resulting in a comparatively nonvirulent type of the disease, and also in part to the fact that health officers, physicians, and the public in general, after experiencing the results of a widespread, virulent epidemic of any disease, are more keenly alert to prevent a recurrence in the succeeding year. Perhaps, also, after experiencing a year or two of comparative freedom from the disease, the feeling of security leads to some relaxation, at least on the part of many physicians and the public, of former vigilance in reporting suspected cases and properly isolating the patients, and this, coupled in many cases with an increased virulence of the contagium, results in another epidemic with a high death rate.

Perhaps the most striking feature, as indicated by the diagram, regardless even of the apparent cycles of virulence, is the steady decrease in the death rate; the high points being, successively, 28.9 in 1891, 25.0 in 1896, 16.1 in 1900, 15.3 in 1903, 9.0 in 1906, 11.9 in 1909, and 6.5 in 1911. The high points in the later years corespond to the low points fifteen and twenty years previous. Thus, the comparatively low death rates in 1893, 1898, and 1899 are only slightly lower than the comparatively high rates in 1906, 1909, and 1911. On this basis alone the prediction might be made with a reasonable degree of certainty that the death rate in 1913 will probably not be materially higher, if at all, than at any time during the preceding six or seven years, with a fair possibility that it will be even lower than in any of the recent years of high mortality from this disease. If it is true that in 1911 a new cycle of virulence was initiated, with alternating years of high and low death rates, we may expect in 1913 a comparatively high rate, that is, one approximating 9 or 10 in 100,000 of population. This would be equally true, although the rate would probably be lower, if there were to be a repetition of the apparent cycle which occurred between 1891 and 1896. Certainly the rates shown in the years 1909 to 1912 bear a rather striking resemblance, on a smaller scale, to those which occurred in 1891, 1892, 1893, and 1894. In this case we might expect a rate in 1913 approximating 4 or 5 in 100,000. On the other hand, if the three year cycle with a two year interval between years showing high death rates, such as occurred between 1900 and 1909, has been only temporarily discontinued by the apparent discrepancy occurring in 1911, we may look for a low rate in 1913, approximating 1 or 2 in 100,000.

An average of the rates in 1906, 1909, and 1911 amounts to 9.1, while an average of those in 1907, 1908, 1910, and 1912 amounts to 1.3. On the basis of the steady decrease in the rates since 1891 the indications are, of course, all in favor of a rate in 1913 not higher than 9 or 10 per 100,000, while the prediction might be made with a reasonable degree of certainty that the rate will not exceed 3 or 4.

WASHINGTON, D. C.

Year.	Deaths from measles.	Death rate in 100,000 of population.
1890	13	3.9
1891	70	28.9
1892	2	0.8
1893	17	6.5
1894	2	0.7
1895	11	4.0
1896	69	25.0
1897	1	0.4
1898	20	7.0
1899	22	7.6
1900	45	16.1
1901	11	3.9
1902	15	5.2
1903	45	15.3
1904	4	1.3
1905	8	2.6
1906	28	9.0
1907	6	1.9
1908	2	0.6
1909	39	11.9
1910	4	1.2
1911	22	6.5
1912	7	2.0

306 Fourth Street, S E.

NOTES ON THE DELETERIOUS EFFECTS OF SALVARSAN FROM AN OTOLOGICAL STANDPOINT.*

By Alfred Kahn, M. D.,
New York.

My interest in this subject is due to the fact that a patient came under my observation, at the clinic of the University and Bellevue Hospital Medical College, suffering with deafness in both ears, due, as he thought and as these patients generally think, to the effects of an injection (salvarsan) which he had received some time previous. This case is as follows:

Barney B., aged forty years, male, came to our clinic September 5, 1912. He gave a history of syphilis. During the second stage he had had an injection of salvarsan. About three weeks later he became *suddenly* deaf in his right ear; several days later he complained of deafness in his left ear; he now complained of pain in the head of a dull character and of head noises. He gave no previous history of ear trouble. The Wassermann reaction at this time was negative; the patient did not show any external signs of syphilis, or any sign whatever of syphilis except an old scar on his tongue, which had a specific appearance. I do not know whether the Wassermann reaction was negative because of the injection of the salvarsan or because of the fact that perhaps the patient never had syphilis. This is important, as you will appreciate as I go into this discussion further.

Physical examination of ear.—The patient was entirely deaf so far as forced whisper, loud voice, or the entire scale of tuning forks were concerned. The Weber, Schwabach, and Renne tests, together with all bone conduction, were negative. Jumping forward and backward, and hopping, the patient had a tendency to fall toward the right. (This test showed that the involvement on the two sides was unequal, or that the disease had made more progress on one side than on the other. If the disease on both sides had been equal, the patient would not have had a tendency to fall to either side.)

Nystagmus.—There was an extremely slight amount of nystagmus on stimulating both ears by the turning test, but it was greatly reduced (ten to fifteen seconds in time). The caloric test gave a similar reaction. This showed that the labyrinth was practically inactive, though it did not show that it was destroyed, or that the lesion was located in the labyrinth. There was a good chance that the lesion was located in the trunk of the auditory nerve. This is an important point in the discussion.

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*Read before the Section in Dermatology, New York Academy of Medicine, April 1, 1913.

The questions to be answered were: Was the trouble due to syphilis? Was the trouble due to the injection of salvarsan? Was the trouble due indirectly to syphilis through the action of salvarsan? I at first thought I had a very rare condition, but a number of similar cases have been reported, and the question is a very live and most important one. I will first discuss those cases which occurred before the days of salvarsan; then those occurring during the salvarsan period, and the various views on the subject.

Cases before the days of salvarsan.—Perkins reports the case of J. S., aged thirty, who consulted him for marked impairment of hearing in right ear which existed for two days. This patient improved under the treatment with potassium iodide. Benario reports twenty-nine cases of neurorecurrence after mercury. Ten of these involve the auditory nerves. These patients were practically all improved or cured through the use of salvarsan. Otto Meyer and Professor Habbermann reported 131 cases before the days of salvarsan. These cases, in one way or another, involved the acoustic apparatus. Mauriac collected, prior to 1879, 168 cases of syphilis of the central nerve system. Naunyn collected and observed 305 cases of cerebral syphilis.

Cases occurring since the discovery of salvarsan.—Benario has collected 126 cases from reports of over 14,000 cases treated by salvarsan. In the 126 cases the auditory nerve was involved sixty-two times; the optic, forty-one times; oculomotor, eight times; trochlear, twice; abducens, three times; and facial, ten times. (The eighth nerve seems to have a peculiar predilection.) Benario calls attention to the greater danger of neurorecurrence in extragenital infections, and especially in chancres of the head. In his 126 cases, thirteen patients had extragenital chancres, and nine cases were of the head. Cases presenting the papular syphilide were more liable to be effected, as in sixty-six in which the variety of skin eruption was specified, thirty-six were papular. Nonne has called attention to the fact that the papular exanthem denotes a malignant type of syphilis, liable to be followed by cerebral complications. Benario mentions the fact that in 3,200 cases treated by Arning, Doerr, Fruhaut, Duhot, Fordyce, Neisser, and others, no neurorecurrences have been observed. He concludes that the nerve involvements are specific in nature, and not due to the salvarsan, and gives the following reasons for this belief:

1. The long interval between the injection and the appearance of nerve symptoms.

2. The character of the process in optic nerve involvements, which is an inflammation or irritation in most cases, as shown by Schanz and Tobias.

3. The condition appears during a determined period of syphilis, which is followed by a comparison of these patients treated with salvarsan with those of Mauriac, who reports fifty-three, or twenty per cent., as occurring within the first year after infection, as shown in the following table from Benario:

Month.	Mauriac: Cases.		Month.	Salvarsan: Cases.	
1	3		1	5	
2	4	12.8 per cent.	2	10	12.6 per cent.
3	5		3	15	
4	7	24 per cent.	4	26	24.6 per cent.
5	4		5	29	
6	6	18.4 per cent.	6	17	38.9 per cent.
8	2		8	5	
9	2	7.2 per cent.	9	4	7.6 per cent.
10-14	20		10-14	8	

4. Their curability by specific medication, especially salvarsan.

5. The symptoms seem more liable to follow small doses of salvarsan, which, of course, would not be the case if they were caused by the toxicity of the remedy.

6. And that exactly the same symptoms follow after the treatment with mercury.

Considering the subject from the standpoint of salvarsan as a causative factor, H. Frey observed a syphilitic for three months. Internal ear involvement occurred two months after the administration. This was followed in five days by a dermal recurrence. B. Spiethoff reports a case in which, six weeks after injection of salvarsan, there was internal ear involvement. Wassermann reaction positive; mixed treatment for five days without effect. Two new injections of salvarsan produced amelioration of the symptoms in several days. Werthier reports two cases of internal ear involvement following salvarsan which disappeared under mercury, and a third which persisted in spite of mercurial treatment, but disappeared under salvarsan. Geronne and Gutmann, in six cases, obtained a cure or amelioration of the internal ear involvement following salvarsan by the further administration of the same remedy (Cases IV, IX, XI, XII, and XIII), and in a seventh case under mixed treatment (Case VIII); while in one patient (Case X), who would not accept another injection, the condition persisted. Ehrman reports a case of internal ear involvement after salvarsan cured by a course of mercurial inunctions, while M. V. Ziessl reports still another cured by mercurial treatment.

On the other hand, Peritz reports a case of neurorecurrence of the eighth nerve following salvarsan which did not disappear even after the third injection of the drug, and there are some others of a like nature recorded. Ingersheimer has made a comparative study of atoxyl and salvarsan. He arrives at the conclusion that the acid radical phenylarsenic is the cause of the toxicity of the atoxyl. This is not found in salvarsan. After injection of salvarsan in dogs and cats he was unable to find the lesions characteristic of poisoning by atoxyl. He therefore thinks that poisoning by arsenobenzol is not to be feared. Of interest in this connection are the experiments of Paul Rothig, who, by injecting arsacetin into ordinary mice caused them to perform the movements of the Japanese dancing mice and found upon examination of the nervous system, besides various other lesions, a degeneration of the vestibular nerves. According to Seegman, Beck, at Urbantschitsch's clinic, has produced the same result with salvarsan. So it seems that these preparations of arsenic have (as far as white mice are concerned) what we may call a selective affinity for the vestibular nerve, or find here a point of least resistance. That the earlier ear symptoms following salvarsan (those likened to the

Herxheimer reaction) are for the most part at least limited to the vestibular apparatus, is somewhat suggestive in this connection. Victor Urbantschitsch notes that in sixty cases sent to the ear clinic for examination after injection of salvarsan, five had disturbances of the vestibular functions, appearing three hours, five hours, and three days respectively after injection, and disappearing in from ten to fifteen days later. In the fourth case the symptoms appeared five weeks after injection and disappeared in seven weeks, and in the fifth case they appeared four weeks after the administration and were still present in the tenth week. Biehl reports the case of a soldier who had vestibular symptoms for two hours after injection, hearing remaining unaffected. O. Beck has taken up the subject of vestibular involvement after salvarsan and has reported a number of interesting cases and discussed the possibility of exactly locating the lesion by tests. He is inclined to consider the condition as analogous to the Herxheimer reaction.

In my own case, the Wassermann reaction was negative and continually remained negative under repeated trials. I do not know whether this was due to the fact that the patient did not have syphilis, or whether it was due to the previous injection of salvarsan, which the patient received before he came under our observation. If the patient did not have syphilis in the first place, it would have a tendency to favor salvarsan as the cause. If the disease was localized in the acoustic apparatus, the general system being free, due to the injection of the salvarsan, it does seem peculiar in that after a length of time the localized foci would not react and again cause a systemic infection, and then produce a positive Wassermann reaction. We know that there are other drugs which have a peculiar action upon the auditory apparatus. I have in mind quinine, which causes that peculiar tinnitus when taken in large quantities. May not salvarsan have some peculiar selective effect for the ear?

Various theories have been advanced to account for these nerve lesions. Ehrlich contends that salvarsan produces sterilization through the blood, except in some of the osseous canals through which the cerebral nerves pass. Here, the circulation being sluggish, a few spirochetes are enabled to escape the action of the remedy and proliferate, causing an inflammation (an osteoperiostitis perhaps) and swelling, with pressure upon the nerve with consequent interference with function. Nichols advances the theory that after the administration of salvarsan most of the spirochetes being killed at once, no natural resistance is established, so that some focus in the nervous system which has escaped finds its development unopposed after the elimination of the salvarsan. After mercurial treatment natural resistance is established, as the spirillæ are not killed so rapidly. Both of these theories are consistent with the observations of the serum reactions In a great many of these patients neurorecurrence develops, while the Wassermann reaction is negative. Later, as a rule, if treatment is not promptly instituted, it becomes positive, while in a certain number the reaction has been positive at the time of the neurorecurrence. The presence of a small focus of the spirochetes may occur with a negative reaction, but as they develop and their presence becomes general the reaction changes to positive.

Another view is along the line of the Herxheimer reaction on the skin. Through the action of the arsenobenzol upon the spirochetes, these organisms seem to react for a final stand. This reaction produces an increased activity in the skin lesions and increases the dermal symptoms. A similar action seems to take place where nerve tissue is involved A peculiar point in my case is that first the right ear was affected, and that several days following this the patient became deaf in his left ear. This seems to show a peculiar selective affinity for the auditory nerve, and statistics also seem to bear this out. I cannot account for this peculiar selection, unless it be along the line of the theory advanced by Ehrlich. In this connection it might be of interest to know if there are not other cranial nerves also at times involved in syphilitic lesions, and that if death could not really occur from such a lesion. I have in mind a neurorecurrence of the pneumogastric.

This case that I have reported teaches us that we should never inject salvarsan until we have made a sure diagnosis. It must not be forgotten that the administration of salvarsan may have deleterious effects, and that it is therefore to be used with caution. It would seem best that before administering it, we have some evidence of syphilis, either from clinical symptoms or from the Wassermann reaction. Perkins has suggested that the best way to prevent nerve involvement after salvarsan is to associate its administration with mercury and potassium iodide, and to repeat the injection as often as may be necessary. A wiser plan would seem to be to first treat with mercury or potassium iodide, and after some reaction has taken place in the system (to be judged by clinical improvement or gauged by the intensity of the Wassermann reaction) to then use salvarsan. After the development of the neurorecurrence the best plan seems to be to inject additional doses of salvarsan. This, however, has not proved effective in my case, and I understand the results have been similar in the hands of others. Judging from the literature on the subject, however, good results have been reported where this procedure has been followed out.

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7 EAST THIRTY-SECOND STREET.

THE USE OF THE METRANOIKTER IN THE TREATMENT OF DYSMENORRHEA AND STERILITY.

By PHILIP F. WILLIAMS, M.D.,
Philadelphia,
Assistant Surgeon to the Maternity Dispensary, Hospital of the University of Pennsylvania.

Among the etiological factors of dysmenorrhea and sterility has been associated the infantile or small adult type of uterus with a long conical cervix and pinhole external os. Often an undue anterior bending or anteflexion is present. This type of uterus represents a cessation of development of the uterine muscle at an early stage. In such cases spasmodic dysmenorrhea and primary sterility are quite frequently found. The symptom complex is essentially menstrual. Pain of a colicky or cramplike type appears just before or on the first day of the menstruation. The normal menstrual molimin are exaggerated, intense headache, gastrointestinal disturbances, and even vertigo and fainting being present. As the flow is established the pain ceases and the general condition clears up. For the relief of this condition numerous procedures have been recommended. Some operations aim at a cure by a division of the posterior lip of the cervix to provide an enlarged opening at the external os. Few, if any, achieve a similar result at the internal os, where the narrowing is perhaps even more marked, and the end results may include the train of untoward symptoms following a lacerated cervix with erosion and cervical endometritis. The use of long worn pessaries or drains even in selected cases always carries with it the possibility of infection. Simple dilatation of the cervix often gives relief but seldom permanent, the condition recurring after a few months with the same intensity. The rapid dilatation fails to overcome to a sufficient degree the resistance of the cervical tissues.

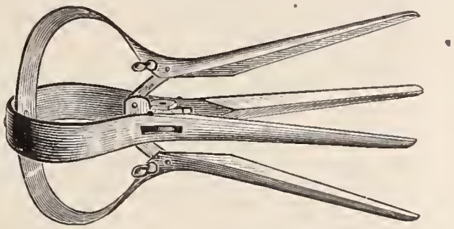

Fig. 1.—A modification of the Schatz metranoikter.

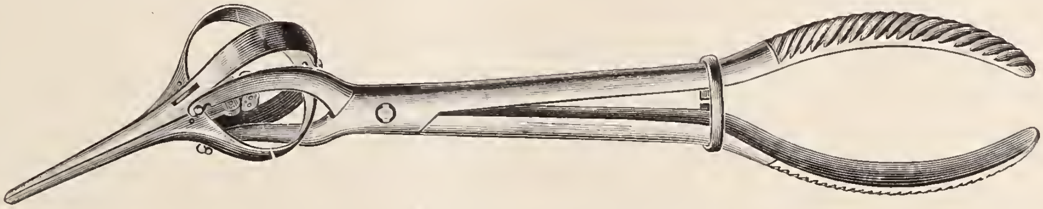

Fig. 2.—Metranoikter with handle attached.

In order to accomplish a permanent widening of the canal without the necessity of a splitting operation on the cervix or a continuously worn drain, a four bladed modification of the Schatz metranoikter has been devised. (Fig. 1.) The instrument consists of four blades joined in pairs at right angles by springs, the springs being made small enough to be inserted in the nulliparous vagina. The technic of its application is as follows: Following usual preparation, under general anesthesia, with the patient in the lithotomy position the cervix is seized with a double tenaculum and drawn downward. A preliminary dilatation is then performed with the Baer, Warthens, and Cleveland dilators, in succession, the bars of the last being separated to a circumference of eighty mm. The uterine cavity is then lightly curetted with a sharp curette. The handle of the instrument is applied to the knobs on the sides (Fig. 2), the blades approximated, and the instrument inserted obliquely in the vagina. The blades are inserted until the knobs come to rest against the cervix. The handle is then unlocked and removed, allowing the blades to expand. The instrument is removed in twenty-four hours, when it is often found that the cervix is so dilated that a digital exploration of the uterine cavity is possible. In removing the metranoikter the springs are grasped by the fingers and drawn out until the small knobs are in view, when the handle may be applied, the blades approximated, and the instrument withdrawn. Some pain may be experienced by the patient, but it is easily controlled by a small dose of an opiate. As the metranoikter is provided with springs of different degrees of strength, a more powerful instrument may follow the first to obtain the desired dilatation.

In order to ascertain the results from the use of this instrument in the treatment of dysmenorrhea and sterility, the histories of the last 150 consecutive cases admitted prior to 1912 to the clinics of Dr. B. C. Hirst were examined. As a year had elapsed, it was expected that the end results would be definite. It was possible to trace fifty-three of these patients. Twenty-two of the patients had complained only of dysmenorrhea, thirteen of sterility, and eighteen others of both dysmenorrhea and sterility. Of the first group, eight report complete relief, five partial relief, and nine no relief from their previous symptoms. A cure resulted, therefore, in thirty-six per cent. Of the second group, those who complained alone of sterility, ten have become pregnant, nine having full term deliveries. In the third class, of eighteen patients who were admitted for both dysmenorrhea and sterility, the results may be given as regards each condition. Ten report complete relief, two partial, and six no relief from dysmenorrhea. Three of the ten women who have been completely cured of the dysmenorrhea have subsequently borne children. The average length of time before impregnation occurred after the operation in cases of sterility was seven months.

Combining the statistics of the two classes containing cases of dysmenorrhea, it is seen that complete cures resulted in forty-five per cent., while partial relief was obtained in thirty per cent. Of the patients complaining of sterility, the use of the metranoikter was followed by pregnancy in thirteen of the thirty-two cases. In one patient the pregnancy occurred as a tubal gestation. I am indebted to Doctor Hirst for the privilege of using these case histories.

1911 Pine Street.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

CXXXVI.—How do you treat cholera infantum. (Answers due not later than July 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXIII has been awarded to Dr. W. A. Wallace, of Spartanburg, S. C., whose article appears below.

PRIZE QUESTION CXXXIII.

THE TREATMENT OF INFLUENZA, ESPECIALLY IN VIEW OF SEQUELÆ.

By W. A. WALLACE, M. D.,
Spartanburg, S. C.

Influenza is a disease seldom regarded as serious within itself, but is to be much dreaded on account of its sequelæ. It is almost impossible to have a patient realize his danger when told he has a case of influenza, and it is with difficulty that we can get him to follow directions, only so far as to relieve his physical suffering. If we could make him more solicitous about the final outcome of the attack we could considerably reduce our mortality rate from influenza as a causative factor. The treatment, therefore, should be, first, a concentrated effort toward the prevention of sequelæ, and, second, measures to relieve the suffering of the patient. The first cannot be easily carried out, for the patient does not realize the danger of sequelæ. nor does he care much only in so far as his aches, pains, and prostration are relieved.

The first point in the treatment of influenza is a positive diagnosis, and only those cases in which the *Bacillus influenzæ* is known to be present should be diagnosticated influenza. There is, unfortunately, a tendency among physicians, as well as laymen. to draw the line very loosely between a deep cold and *la grippe*, or pseudoinfluenza and influenza; which should not be the case, because it robs influenza of the dread which it should carry with it, and thus favors the development of complications and sequelæ which a little more prudence might prevent. The treatment of influenza must, of necessity, be modified to suit the individual case, especially with reference to previous condition and age of the patient. No one is immune to influenza —the strong and the weak, the aged and the young, even the fetus in utero, are attacked by it. In every case of influenza a careful history should be taken, particularly with reference to any chronic disease which the patient may have, because of the tendency of a chronic condition to become acute after influenza. This is particularly true of tuberculosis, chronic bronchitis, kidney lesions, and chronic gastroenteric diseases. After an attack of influenza the patient should be under observation for at least two weeks, for convalescence is, as a rule, extremely slow, and there is danger of sequelæ till the patient is thoroughly himself again.

As a routine treatment, the following, modified to suit the individual case, has given good results:

First. Isolate the patient and keep him quiet in bed during the acute stage. A pregnant woman should not under any circumstances have the care of, nor should she go in the room where there is a case of influenza, for, should she contract the disease and escape an immediate abortion, the disease may be transmitted to the fetus in utero, with resulting death to the fetus.

Second. The diet should be liquid or light, every two or three hours during the day, and at night when the patient is awake. It is frequently necessary, on account of anorexia, to insist on the patient's taking food; in this class of cases it is well to give strictly liquid nourishment.

Third. Water; 180 c. c. (six ounces) every one and one half or two hours, to keep the kidneys acting freely, which serves a twofold purpose in aiding in elimination and also in preventing irritation along the urinary tract. In the gastroenteric form of influenza, in which vomiting is an obstinate factor, a saline enema, one pint, given twice daily and retained, is used instead of water by mouth.

Fourth. A mercurial purge, followed by castor oil, is to be given at the onset. After this the bowels should be made to act once, or better, twice, by the use of a mild laxative. It is absolutely necessary to keep the bowels acting well.

Fifth. For the aching the following prescription is useful: Quinine sulphate, 2 grammes; phenyl salicylate, 2 grammes; acetphenetidin, 2 grammes; made into twelve capsules and one given every three hours until aching stops; then every four hours. To this, caffeine citrate, in 0.06 gramme doses, may be added if there is much prostration. In those cases in which prostration is more marked than usual strychnine or brandy may be used to sustain the patient. Care should be used not to give strychnine in the nervous form of influenza; nor should alcoholic stimulation be used in the presence of acute or chronic nephritis.

Sixth. The patient should wash the mouth with an alkaline antiseptic before taking nourishment—the N. F. solution gives good results. The same solution, diluted one part to four of boiled water, is used to douche the nose, postnasal space, and throat every four to six hours. This cleansing process is very pleasing to the patient on account of improving the taste, for at least a while. The more important reason, however, is to try to prevent infection from this region into the middle ear or accessory sinuses.

Seventh. Keep the room at an even temperature of 68 to 70° F. and well ventilated—which means, of course, to avoid draughts over the patient.

Of the complications and sequelæ of influenza, pneumonia, either lobar or lobular, is the most common, with bronchitis following close in frequency. These conditions are seen particularly in the respiratory form of influenza, and are so frequent in this form of influenza that it is well to use, from the beginning, some measures to prevent them, if possible. For this purpose the chest is rubbed thoroughly with camphorated oil, or oil of gaultheria, one part, with olive oil, four parts, and covered with an oiled silk jacket. Tinctura benzoini composita, used in an improvised croup kettle, has apparently some beneficial effect on the congested membranes of the respiratory passages. A sedative cough mixture is often required in this class of cases in the early stages, which should be changed to a stimulating mixture as soon as the secretions become established. Tincture of digitalis, every four hours in impending cases of pneumonia, should be given to increase arterial pressure. Should pneumonia become evident, digitalis may or may not be discontinued, as the case demands. The treatment after such development would, of course, be for pneumonia. Otitis media, with resulting mastoiditis, probably comes next in frequency—hence the importance of keeping the mouth, nose, and throat thoroughly cleansed, in the effort to prevent infection from traveling up the Eustachian tube The patient should be cautioned against "blowing the nose hard," and thus forcing infected material into the Eustachian tubes. Pericarditis and endocarditis are possible sequelæ of influenza, and, even though not frequent, should always be borne in mind. An irregular, uneven pulse should not be passed unnoticed, for by the timely direction for the patient to lie on his back and keep perfectly quiet, even under the influence of an opiate if necessary, we may save some from sudden death, and possibly others from an impaired heart. Localized and multiple neuritis are also sequelæ of influenza, resulting from the toxic influence of the *Bacillus influenzæ;* hence the importance of looking after the eliminative organs. Thrombosis of the cerebral sinuses and veins must be borne in mind, and whenever meningitis follows influenza it is possibly the closing scene of thrombosis of a cerebral sinus; the result of infection having traveled up the Eustachian tube to the middle ear, then to the sinus. Therefore the importance of thoroughly cleansing the throat and nasopharynx. Thrombosis of other veins, particularly the femoral, may occur, and this possibility is best met by absolute rest in bed during the acute stage of influenza, and longer, if prostration is very marked. There is a particular tendency for the aged or those already in a debilitated condition to be attacked with phlegmasia alba dolens following influenza, and we should, therefore, be very careful with these patients. Marked and obstinate anemia is a frequent result of influenza, particularly the gastrointestinal form, and is treated by fresh air, liberal, easily digested diet, and some form of iron. This prescription is particularly recommended:

℞ Tincturæ ferri chloridi, ...30 grammes;
Liquoris potassii arsenitis, ...10 grammes;
Glycerini, q. s. ad......................60 grammes.
M. Sig.: Ten drops in water, three times daily after meals.

Dr. P. A. Smithe, of Enid, Okla., remarks:

The severity of any given attack of influenza depends upon two factors, the resistance of the patient and the virulence of the particular strain of the influenza bacillus with which he happens to become infected, in which connection it might be well to mention that it seems as though the clinical severity of the early years of influenza epidemics has been much modified, perhaps through a gradually acquired immunity on the part of our patients, or it may be that the *Bacillus influenzæ* has gradually lost its virulence. Certainly the severe prostrating forms so often seen in earlier years are not so often met with; still there is a prostrating quality to influenza which seems to be a part of the disease, inseparable from it. This being so, one can hardly have a set type or plan of treatment for all cases of "grippe," but must individualize in treatment, as much as in any other acute infection.

It has been my custom to insist on rest in bed, in a light, well ventilated room, apart from the rest of the family, if the house permits. One often finds the patient in a small dark bedroom, about as little suited to careful nursing as a closet, and when I do, I tell the patient or his family that grippe itself is not often dangerous, but that like scarlet fever it often "settles" in the ears or head, and that to prevent these troubles we must have the best room for the patient, so we can care for him properly. He should have a daily warm sponge bath, which will be all the more refreshing if a heaping tablespoonful of baking soda is added to the water.

I begin the medical treatment with a calomel purge, followed by a saline—¼ grain calomel, with soda, repeated every half hour until ten doses are taken; followed by Epsom or Rochelle salt, one ounce. As a rule, the calomel does not have to be repeated, but if gastric irritation is prominent throughout, I give, every other day, a course of 1/10 grain calomel tablets, repeated until ten are taken, and followed by a saline, as before. At the same time, the pain almost always needs relief. As a rule, an opiate is unnecessary, but in the worst cases ¼ grain morphine, or from ⅛ to ⅙ grain heroin, by hypodermic injection, will be needed to quiet pain and nervous shock. However, I usually depend on aspirin in ten grain doses every two to four hours, followed by plenty of water. As a rule, I combine with each powder, for the first twenty-four hours, from 2½ to three grains of acetphenetidin, and ⅓ grain citrated caffeine, discontinuing the combination and replacing it with aspirin alone as the initial pain becomes less severe. I have found that, as a rule, the aspirin gives rise to less gastric irritation than other salicylates. If there is much vomiting, I give 1/10 grain powders of calomel, without soda or sugar of milk, dry on the tongue, every fifteen minutes, and direct patient to allow the small powder to dissolve in the saliva and then swallow the saliva. Also, a mustard plaster about three inches square over the epigastrium is effective. I usually give hexamethylenamine, from ten to fifteen grains, dissolved in a full glass of water, four times daily, to promote so far as may be, aseptic secretions, and also direct that the nasal mucosa and throat be sprayed four or five times daily with a solution made up of a Seiler's tablet dissolved in six ounces of water. Care in the use of the spray should be advised, lest infectious material should be driven back through the Eustachian tubes or into the accessory nasal sinuses. If this occurs, infection is pretty sure to follow, sometimes with permanent damage to the conducting mechanism in the middle ear, or mastoiditis. At any sign of such complications the services of a competent nose and throat specialist should be had, if obtainable. The *Bacillus influenzæ* seems to be especially apt to gain a foothold in the middle ear or the mastoid cells, and is a fruitful cause of permanent damage in those two situations.

I find that for the first day or two, until the initial symptoms of the attack pass, patients do better without food, or with a little lemon albumen or other slightly nourishing drink. As soon as the fever has lowered and the pain is less severe, and the gastric symptoms have subsided, however, the diet should be as nourishing as possible, while at the same time it should be easily digested. Eggnog, milk, buttermilk, tea and toast, soft eggs, seem to be the best.

The cough and pulmonary pain usually abate with the generalized pain, after twenty-four hours, or codeine may be needed to quiet the patient, especially at night. If a bronchitis is present I use counter irritation by mustard paste, over front and back of chest. I direct that the patient shall guard himself against exposure for at least two weeks after the acute symptoms have passed, and unless the circumstances are very urgent, forbid him to resume his employment for a similar length of time, as a relapse seems to predispose to bronchitis or pneumonia, and often seems to be the start of pulmonary tuberculosis. The convalescence from grippe is the most dangerous time, and the patient's resistance should be kept as high as possible by nourishing diet, sunshine, slowly increasing light exercise in the open air, and sleeping in a well ventilated room; and during this time the use of the antiseptic nasal spray should be kept up.

Dr. Nelson DuVal Brecht, of Washington, D. C., writes:

The therapy of influenza may be considered for convenience under the following headings: 1. Hygienic; 2, dietetic; 3, drug; 4, onset; 5, course; 6, sequelæ and convalescence; and, 7, contraindications.

Hygienic measures.—The hygienic measures to be enforced in the treatment of a case of influenza are isolation of the patient in a well ventilated room, which receives a maximum degree of sunshine and is maintained at an equable temperature of 70° F. (20° C.), continuous and absolute rest in bed, and disinfection of the patient's discharges and secretions and all fomites that have been in the sick room.

Dietetic treatment.—The dietetic treatment resolves itself into the employment of an easily digested, nourishing, liquid or light dietary (slops) with a liberal allowance of pure cool (but not iced) drinking water.

Onset or invasion.—When a patient is seen during the first few hours of an attack it is well to administer a good purge, as calomel, six one grain[1] (0.06 gm.) tablets, one every hour, followed by a Seidlitz powder on the ensuing morning. Other useful cathartics, when idiosyncrasies to calomel exists, are castor oil, magnesium sulphate, and magnesium citrate. Vaccines or phylacogens manufactured from Pfeiffer's bacillus should be injected hypodermically at the onset as a routine procedure in the hope of aborting or shortening the attack. If the disease persists, their use should be continued. Immediately after the purgation, the following prescription is of value to stimulate the emunctories and reduce the temperature:

℞ Tincturæ aconiti, ...5 c. c.;
Spiritus ætheris nitrosi,
Syrupi limonis, ... } ....āā 50 c. c.:
Liquoris ammonii acetatis, q. s. ad.........200 c. c.
M. Sig.: One dessertspoonful in a wineglass of water as required.

An equally efficacious mixture is:

℞ Potassii citratis, ... 25 grammes;
Spiritus ætheris nitrosi, ...100 grammes;
Aquæ distillatæ, q. s. ad...............200 grammes.
M. Sig.: One dessertspoonful in one half tumblerful of water three times a day.

A hot bath and a drink of hot lemonade are of distinct value in the first stage, just before the patient goes to bed.

Course.—After the disease has passed the incipient stage, it is my custom to prescribe the following combination, unless there is some specific contraindication.

℞ Codeinæ sulphatis, ...0.20 grammes;
Acetphenetidinis, ...
Cinchonidiæ salicylatis, } ....āā 3.00 grammes.
Divide in capsules No. XX.
M. Sig.: One to be taken every three hours.

The pratical value of this prescription is that it relieves pain, coryza, and cough, is antipyretic and diaphoretic, while the cinchondria and codeine have sufficient strength as vasomotor stimulants to overcome any untoward depressive action of the coal tar product. Many practitioners employ a combination of phenyl salicylate and acetphenetidin to reduce the pyrexia and make the patient more comfortable. The phenylsalicylate by reason of its phenol content has a happy effect as a gastric sedative and, in addition, exerts an inhibitory action upon the intestinal and vesical flora. During the last few years aspirin has also come into extensive use. As *la grippe* is *per se* an asthenic disease, cardiac stimulation is nearly always indicated. Of the cardiac stimulants, strychnine is our sheet anchor and should be given to adults in doses of 1/20 grain (0.003 gramme) three or four times daily, when the pulse fags, the integument becomes bathed in perspiration, the cardiac or Hippocratic facies develops, or other symptoms of adynamia arise. When hyperpyrexia occurs the Brandt treatment may be employed with advantage in conjunction with frictions designed to bring the heated blood to the body surface and prevent internal congestion. The coal tar antipyretics in small doses or the preparations of cinchona, and the use of ice cap or cold water coil are also useful. To allay cough the inhalation of steam impregnated with compound tincture of benzoin is the most valuable remedy of our armamentarium. Belladonna, cubebs, ammonium chloride, morphine, codeine, and the bromides are important adjuncts. Insomnia and delirium are not of sufficient importance to warrant special therapeutic measures.

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[1] It will be observed that the dose is large, as is customary in the South.

Sequelæ and convalescence.—The important sequelæ of influenza are bronchitis, pneumonia (lobular or lobar), neurasthenia, nephritis, iritis, conjunctivitis, optic neuritis, otitis, abscess of the lung, pleurisy, empyema, neuritis, cardiac disease, various psychoses of the depressive or melancholic type, and impotence in males. The prophylaxis of the sequelæ consists in the judicious and careful management of the case, including the best supportive measures, nursing, confinement to bed, and rational medication. During convalescence it is essential that the patient have a change of air, pleasant surroundings, tonics, hematinics, and nutrients. Alcohol in the form of milk punches and eggnog, beef extracts, and ichthyol in the form of capsules for internal administration are to be recommended. Ichthyol is of special benefit in those cases in which the stomach has been deranged and there has been loss of weight. During convalescence the bowels should be regulated by the use of cascara sagrada.

Contraindications.—Coal tar products should not be employed in large doses; neither should depleting measures, such as venesection, wet cupping, or leeching. Influenza is an exhausting malady. It is well to remember the relative strengths of the three most used coal tar products, which are as follows: Strongest, and most depressing to the heart and respiration, acetanilide; next, antipyrine; least depressing, acetphenetidin. Digitalis is useless as a cardiac or circulatory stimulant in this disease. It does not take hold and act upon the circulatory apparatus when there is fever. The use of strychnine in large dosage should not be continued for an excessive period of time. Its use results in overstimulation, followed by depression or paralysis of the nervous system, including the cardiac ganglia, and delirium. Alcohol is of no value during the active period of the disease. The use of the combination of brown mixture and antimony so much in vogue in former years is to be condemned. In many cases of *la grippe*, particularly those in which there is marked involvement of the lungs or kidneys, there is a tendency for the development of pulmonary edema. Antimony greatly increases the liability to this unfortunate complication and frequently causes the death of patients by drowning in their own secretion, so to speak. In the therapeutics of influenza the empirical use of drugs is to be tabooed. When in doubt, masterly inactivity is the rule of conduct to be pursued.

(To be concluded.)

Therapeutic Notes.

Treatment of Gastric Hyperesthesia.—A. Bassler, in the *American Journal of Gastroenterology* for January, 1913, points out that sometimes patients with gastric hyperesthesia suffer from gastric subacidity during digestion, and that, paradoxical as it may seem, these do best when given alkalies. The great majority of patients, however, show increased acidity. In these the bromides are most useful to control distress; not infrequently they must be employed in large doses for a short time, perhaps even for one or two months. The following formulæ are suitable:

I.

℞ Sodii bromidi, ...ʒiiss-vi (10 to 25 grammes);
Aquæ menthæ piperitæ, ...℥viii (250 grammes).
Fiat solutio.
Sig.: One tablespoonful in water after meals.

II.

℞ Sodii bromidi, ... ⎫
Tincturæ valerianæ, ⎭ ......āā ʒiiss (10 grammes);
Aquæ chloroformi, ...℥iii (100 grammes).
M. ft. solutio.
Sig.: One teaspoonful in water after meals.

III.

Where there is constipation:

℞ Tincturæ rhei, ... ⎫
Tincturæ valerianæ, ⎭ ....āā ʒiiss (10 c. c.).
M. Sig.: Twenty drops in water after meals.

High caloric feeding and the administration of iron are always advisable in patients who are undernourished or anemic. As supplementary measures, hygiene and hydrotherapy, including the application of cold compresses to the abdomen to relieve distress; the galvanic current; occasionally nux vomica in medium doses, and the procedures customarily availed of in hyperchlorhydria and overmotility are indicated.

Treatment of Vincent's Angina.—T. H. Halsted, in the *Lancet Clinic* for October 26, 1912, states that in his experience the best results were obtained by the use of trichloracetic acid in the mild cases of Vincent's angina. He begins by removing the membrane with hydrogen peroxide solution and wiping off with a cotton swab. A ten per cent. solution of cocaine hydrochloride is then used to anesthetize the ulcer, and a few minutes later the trichloracetic acid applied. Three or four applications, at intervals of two or three days, are sufficient; in fact, sometimes but one is required.

Tincture of iodine is preferable to the acid in the presence of extensive ulceration, although in the author's cases, which were not of this type, it did not prove as effective.

An important feature in the treatment is that the general condition of the patient must be improved. The teeth must, in particular, be cared for, as no progress can be expected while caries and the accompanying ulcerations are allowed to remain.

Treatment of Trifacial Neuralgia.—A. Réthi is stated, in *Semaine médicale* for March 12, 1913, to have obtained excellent results in three obstinate cases of trifacial neuralgia by electrolysis of the infraorbital or supraorbital nerve. The needle employed, of the thickness of a sewing needle, was covered to within three quarters to one centimetre of its extremity with a thin layer of insulating material, in order to preserve the skin and deeper healthy tissues from injury. One half hour before the electrolysis a subcutaneous injection of 0.01 gramme (1/6 grain) of morphine hydrochloride was given, and fifteen minutes later the skin was asepticized and a deep injection of morphine into the nerve canal made in order to insure anesthesia of the nerve. At the expiration of the half hour the electrolytic needle, constituting the negative pole, was introduced into the canal, the other electrode, suitably moistened, being applied to the side of the face. A current was then passed, gradually increased to twenty, twenty-five, and thirty milliampères, for a period of fifteen minutes, after which the strength of the current was reduced. The procedure was well borne, and the skin remained quite intact, except for a slight evanescent swelling on the day following.

In the first case the author reports, that of a woman believed to be suffering from antral suppuration and presenting a rebellious infraorbital neuralgia which perineural injection of alcohol had failed to influence, the area of distribution of the nerve treated by electrolysis became quite anesthetic and pain disappeared. The two other cases so far treated, both suffering from supraorbital neuralgia of several years' standing, were likewise wholly relieved by the electrolysis.

Treatment of Acne in Children.—Gaucher, in *Monde médical* for November 25, 1912, reminds us that the first measure in the treatment of acne should be to seek, and if present, exclude, any drugs or local applications that might be causing the disturbance. Next the stomach should be cared for, and such articles of diet as stews, preserved meats, sauces, fish and shellfish, fermented substances in general, sweetbread, cabbage, asparagus, sorrel, and strawberries, prohibited. Constipation should be overcome, and hydrochloric acid given at mealtime.

Locally, careful washing with soap and water every evening is required. This is to be followed by application of the following lotion, which is allowed to act during the night:

℞ Sulphuris præcipitati, ...ʒi-iss (4 to 6 grammes);
Talci purificati pulveris, ...ʒss (2 grammes);
Glycerini, ...℥ii (60 grammes);
Tincturæ quillajæ, ...ʒiiss (10 grammes);
Aquæ rosæ, ...℥iv (120 grammes).
M. Sig.: Shake before using.

Each morning, the area should again be washed with soap and water and a paste of zinc or bismuth then applied. Where no irritation of the skin appears, the following powder, suitable especially for female patients, may be applied:

℞ Magnesii carbonatis, ...℥iss (50 grammes);
Sulphuris præcipitati, ...gr. xv (1 gramme);
Tincturæ carmini, ...q. s.
M. ft. pulvis.

Other agents which may be used are resorcinol, employed in one per cent. solution as a spray or as a two or three per cent. ointment if the area involved is small, and mercury bichloride, employed in one in 1,000 solution as a wash. The mercury salt and sulphur should never be used simultaneously.

The pustules should be punctured but not completely emptied until mature. Comedones, however, should be evacuated. The area should be carefully cleansed with hot water and the following lotion applied:

℞ Aetheris, ...ʒivss (12 grammes);
Sodii boratis, ...℥ss (15 grammes);
Aquæ, ...℥viiiss (250 grammes).
M. ft. solutio.

Miliary granulations should, if possible, be enucleated.

Mixture of Alcohol and Glycerin as a Wet Dressing.—F. Dörken is said, in *Semaine médicale* for October 23, 1912, to have obtained good results with the use of a mixture in equal parts of alcohol and glycerin as a moist dressing in cases where the ordinary dressings induce skin irritation—especially in children of the "exudative diathesis." The irritant properties of the alcohol are practically annulled by the glycerin, its local curative effects, however, remaining unimpaired. The dressing is applied in the usual manner, viz., gauze is saturated with the mixture, folded several times, carefully expressed, placed over the skin surface, and covered with some impermeable material and a layer of cotton wool.

This measure was employed with marked success in cases of lymphadenitis, mastitis, suppurative processes in general, inflammation in the umbilical region in the newborn, etc. In bronchopneumonia the mixture was rubbed on the skin for purposes of counterirritation. In children with sensitive skins it may also with advantage be employed for dressings around the neck in the presence of sore throat.

Improved Formula for Mistura Rhei et Sodæ.—A. F. Marquier, in the *American Journal of Pharmacy* for February, 1913, is credited with the statement that the official rhubarb and soda mixture contains an excess of glycerin and is too strongly flavored. He suggests the following formula as a substitute for that of the *Pharmacopœia of the United States:*

℞ Fluidextracti rhei, ...♏xxiv (1.5 c. c.);
Fluidextracti ipecacuanhæ, ...♏v (0.3 c. c.);
Sodii bicarbonatis, ...gr. lvi (3.5 grammes);
Potassii carbonatis, ...gr. v (0.3 gramme);
Spiritus menthæ piperitæ,.......♏xxiv (1.5 c. c.);
Alcoholis, ...ʒiiss (10 c. c.);
Glycerini, ...ʒvi (25 c. c.);
Aquæ, q. s. ad.....................℥iiiss (100 c. c.).
Misce et filtra.

Treatment of Pellagra.—E. A. Bowling, in the *Charlotte Medical Journal* for December, 1912, states that while Nason has obtained good results with the use of thymol in heroic doses in this affection, and Beverly Tucker has found hexamethylenamine more useful than any other drug, in his own experience nothing will benefit the patients so much as chlorine water, given in teaspoonful doses every two hours. The water should always be freshly made, with a slight excess of hydrochloric acid. The author usually instructs the druggist to take forty grains (2.6 grammes) of potassium chlorate, add four drachms (sixteen c. c.) of hydrochloric acid, and when gas is given off freely to pour in enough water to make eight ounces (250 c. c.).

Of eighty patients in whom the solution was used, but very few who employed it long enough were not benefited. Among the forty-two patients last seen there were but six deaths, two of which were in old, chronic cases, and two in cases hopeless from the start. The *modus operandi* of the chlorine water is believed by the author to be as an antiseptic in the digestive tract, the disease being looked upon as of microorganismal origin. Castor oil is given in addition in daily doses of one tablespoonful.

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NEW YORK, SATURDAY, JUNE 7, 1913.

FRIEDMANN'S TUBERCULOSIS SERUM AND THE NEW YORK BOARD OF HEALTH.

When, in our issue of May 17th, we referred to the many deaths which had followed the earlier use of Koch's original tuberculin (O. T.), owing to a deficient knowledge of its action and to its indiscriminate use, we little thought that hardly a week would elapse before harmful effects would also be credited to Friedmann's widely advertised serum. Nor did we anticipate that in two weeks the Board of Health, laying stress on a danger we had emphasized in our allusion to the "ever disquieting drawback of containing living tubercle bacilli" possessed by the Friedmann serum, would pass an amendment to the Sanitary Code, prohibiting "the use of living cultures of bacteria in the inoculation of human beings for the prevention or the treatment of disease in New York city" until permission be granted by the board for its use. The conditions for this permission are such as thoroughly to protect the public, viz.: "Full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dose, and administration." A violation of the amendment will be punished by a fine of $500 or imprisonment for one year or both.

The events which led up to the adoption of this precautionary measure were initiated by a letter to the Board of Health from Dr. J. J. O'Connell, health officer of the port of New York. This official urged that although ample time and opportunity had been extended to Doctor Friedmann to demonstrate the value of his serum, such a demonstration had not only not been made, but that reports of the gravest character, emanating from the official investigator's bureau, had been received. These were that the patients subjected to the treatment had not improved, that they had lost ground to a greater extent than might have been expected from the natural ravages of the disease, and that an unnaturally rapid development of the tuberculous process on the previously healthy side—which healthy side, as is well known, often greatly prolongs the life of the patient—had followed the use of the serum. Briefly, the alleged cure was stated to have shown a tendency to accelerate rather than retard the progress of the disease. A conference, presided over by Dr. Hermann M. Biggs, chief medical officer of the Health Department, and attended by authoritative members of the profession, then brought out additional evidence incriminating the Friedmann serum to the extent, it was stated, of its having caused death in several instances. Then followed the meeting of the Board of Health which unanimously passed the resolution, framed by Commissioner Lederle, referred to above. As a result the Friedmann Institute of New York will have to close its doors and the serum remain within the precincts of the experimental laboratory until its sponsors can satisfactorily meet the demands of modern science.

It has been hinted that professional prejudice and jealousy had inspired the antagonism to Friedmann's serum. The resolution of the Board of Health properly meets this calumny by the statement that the alleged cure had been rendered unsatisfactory, unscientific, and practically futile through the insistence of the originator of the alleged remedy on conditions which involved inadequate observation and inaccurate methods of administration, and his insistence on secrecy regarding the substances employed. Serious investigators, foreign or native, who have followed the only straight path, have never found the American profession wanting in favor and support. All others are warned, moreover, through the Friedmann incident, that the United States can no longer be looked upon as a dumping ground for undeveloped "cures," particularly when, as was made so evident in the present instance, the purpose is to reap a harvest among those unfortunates who grasp at any straw in the hope that it will prove their salvation.

States in which adequate protection against such abuses does not exist should follow the example set by New York. In Pennsylvania the authority of the health commissioner is such, under the act which created the department, that Doctor Dixon can and, we learn, will impose upon Friedmann conditions practically similar to those which fortunately now prevail in New York city.

HOME VISITATION—AN INDISPENSABLE METHOD OF PUBLIC HEALTH CONTROL.

One of the most interesting developments of modern public health work is the emphasis placed on individualizing the supervision of each case through home visitation. Originally developed by the health department of New York city in the campaign against tuberculosis, similar methods were first employed in general hospital and dispensary work, if we remember rightly, by Cabot, of Boston. They proved remarkably successful, and have since been copied in other cities, so that now they constitute a recognized function of hospital and dispensary administration. Home visitation undoubtedly supplies the surest way to reach the indifferent and ignorant portion of the public, and everyone familiar with public health administration knows that this constitutes the great obstacle in the successful prevention of disease. These people cannot be reached through public lectures, or through printed circulars of information, or yet through exhibitions; such methods are all far too indirect, too impersonal. But visit the people in their homes, show them that your interest is personal, help them with their individual problems, teach them the wherefore—and the solution of many a difficult health public problem lies close to hand. This has been well shown by the success attending the work carried on against tuberculosis, and by the splendid results obtained in New York in recent years through the campaign against infant mortality.

Similar methods might well be employed against venereal diseases, than which there is no greater menace to the public health. And since, as already stated, the object of home visitation is to appeal directly to the patient concerned and overcome his indifference and ignorance, it would seem advisable to confine this work, as in tuberculosis, to persons treated in free dispensaries and hospitals. Physicians, and not nurses, should be employed to make these visits, and particular emphasis be laid on instruction as to the necessity for proper and adequate medical treatment, and as to the spread of infection. It is clear that this affords a definite field of activity for the public health authorities, and one constituting a useful and necessary adjunct to the work of private physicians, hospitals, and dispensaries. The medical profession has strongly objected to the health authorities undertaking the *treatment* of the venereal diseases by means of dispensaries, but the plan here outlined admirably supplements, and in no way conflicts with the work of existing agencies. It is evident, from what has been said, that the only effective means of reaching a very large part of the population will be closed to the public health administrator if home visitation is interfered with, and it is equally clear that there can be no home visitation without notification to and registration of the cases by the health authorities. It may be that the name "clinic" or "dispensary," which is proposed by the health department for its diagnostic stations, is objectionable to the practising physician, but it is clear that the department has no intention of interfering with the practice of the physician; on the contrary, patients will be advised, if the case has been diagnosticated as syphilis, to consult a physician and to follow his advice, and as the visiting physicians employed by the health department are not permitted to solicit such patients, these patients will go back to their own physicians. Besides, the objections raised against reporting institutional cases to the health authorities are not in reality tenable, for at the present time much more than the data required for registration is entered in the hospital histories, and these, as is well known, are accessible to nurses, orderlies, clerks, and even to other employees of the hospital.

A NEW METHOD IN DIPHTHERIA PROPHYLAXIS.

In our issue of April 26th reference was made to von Behring's new procedure having for its purpose the establishment of a prolonged, active immunity to diphtheria. The additional details now available only serve to confirm the importance of his discovery. The method consists in injecting a combination of diphtheria toxine and antitoxine so proportioned that upon administration to guineapigs the antitoxine almost or quite offsets the poisonous action of the toxine. It was found that in human beings such a mixture, though bringing about immunity, caused only a slight reaction, provided the system had not already become oversensitive to diphtheria bacilli. Children from four to fifteen years old are almost always more sensitive than the newborn. Thus, with a dose which in a newborn infant would cause practically no reaction, it was found that in an older child the same amount (1/16 c. c.) caused an intense febrile reaction, with the active production of antitoxine by the body to the extent of 600,000 units. Since this is far in excess of the intensity of immunity required for practical purposes, there is ample opportunity for producing a sufficient degree of protection without inducing a marked reaction. In the child just referred to it was calculated, from several observations of the antitoxic power of the blood, that it would take over two years before this power would diminish to a level which is attained with the ordinary passive immunization by diphtheria antitoxine in ten days. Another important practical result is that in patients sensitive to horse serum a passive immunity can be produced by injecting human antitoxic serum, such as that obtained in the child mentioned above; furthermore, this immunity will not rapidly disappear, as would be the case with horse serum, but will persist as long as the active immunity obtained with the toxine antitoxine mixture, owing to the fact that the material introduced is derived from an individual of the same species.

A provisional outline of the procedure which von Behring demands should be followed in further trying out the prophylactic remedy is given in *Semaine médicale* for May 7, 1913. The mixture used must be free of aerobic and anaerobic germs, and must be nontoxic in guineapigs in the dose of 0.0005 gramme for every 100 grammes of body weight. Infants are to be given 0.0001 gramme as the initial dose, and older children only 0.00005 gramme, injected under the skin in 0.001 gramme of fluid. The further details of the procedure prescribed would occupy too much space. Suffice it to say that von Behring will at present entrust his remedy only to those who are able and agree to follow his directions accurately. The classes of subjects to be inoculated are those exposed to diphtheria in hospitals, schools, and buildings occupied by several tenants; well persons, not exposed to diphtheria at the time, in orphan and insane asylums, prisons, etc., and diphtheria carriers—the latter being usually very sensitive to the remedy and in whom a high degree of immunity developed. In beginning cases of diphtheria and in persons with a weak heart and irregular pulse the mixed inoculations are not at present to be tried.

The significance of von Behring's new discovery is obvious. Not the least of its practical results, it would seem, will be the elimination of the bugbear of horse serum anaphylaxis in connection with the preventive administration of antitoxines, to say nothing of the possible removal of the danger attending diphtheria carriers. In April the safety of the toxine antitoxine mixture had already been proved in about eighty cases this year, and its efficiency in producing active immunity was illustrated by recent experiences in Hagemann's ward in Marburg, where none of the children treated were attacked with diphtheria or harbored the bacilli, in spite of the fact that "carriers" were constantly present and an epidemic of the disease actually took place in the ward.

AUTOPSIES IN THE UNITED STATES.

We all knew that we were much behind the leading European countries in the matter of necropsies, but we never knew exactly the extent of our backwardness. The report of the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine on Post Mortem Examinations in the United States, just made public, contains figures which should give us cause for thought. Bellevue Hospital, with its average of 3,000 deaths annually, has an average of 300 autopsies a year. The Boston City Hospital had 100 autopsies for the 1,611 cases which terminated fatally in that hospital in 1912, and the Philadelphia General Hospital held 196 post mortem examinations on the 1,749 dead in 1912. Some of the smaller institutions fare, relatively, a little better, but the proportion of our hospital cases which come to autopsy is ludicrously small in comparison with foreign hospitals, and our figures show a disquieting tendency to decrease. While the Montreal General Hospital shows a proportion of eighty-six per cent., University College Hospital, of London, eighty-four, Charité Hospital, of Berlin, ninety-two, and the Allgemeine Krankenhaus, of Vienna, ninety-nine, the proportion of cases which come to autopsy in our largest hospitals is about ten per cent. In some instances it falls as low as six and five per cent. How under such circumstances can we expect to advance medicine and to teach physicians is a question that very vitally concerns not only the profession but the general public (if not primarily) as well. The public wants good and reliable physicians, but is unwilling to provide for their education, or, rather, is ignorant of the real needs of proper medical education. And we are to be blamed for their ignorance; we have not taken the trouble of educating them. Of the five causes responsible for the small number of autopsies in this country mentioned in the report of the Public Health, Hospital, and Budget Committee, adverse public opinion and existing prejudices are the most important. These can be overcome, partially at least, by a process of education and appeal to the common sense of the people. A great many people do not know the difference between an autopsy and an anatomical dissection. They object to an autopsy because they think that it entails a complete taking apart and disfigurement of the body. Neither do our laws differentiate between an autopsy and a dissection, and this is responsible for a great deal of confusion and many difficulties. A modern law should clearly recognize this difference and should also relieve the hospitals from the irksome duty of obtaining permissions for autopsies. It should be left to the friends and relatives of the deceased to object to an autopsy, if they so desire; but in case there be no objection within, say, twenty-four hours after notification of death, the body should automatically come to an autopsy. Under such arrangements, practised everywhere on the Continent and in England, there will be no injustice done to anybody and a great gain will be secured to medical science and education.

PROTECTION FROM THE ROENTGEN RAYS.

The numerous instances of severe dermatitis that have arisen among roentgenologists, with the further deplorable consequences of epithelioma and even death, lend interest and significance to all new methods of prophylaxis in this direction. The gloves covered with lead and rubber heretofore used by x ray specialists have been faulty in that they lacked flexibility and protected only the dorsal surfaces of the hands, the palms and lateral edges remaining exposed to the rays in the course of the necessary manipulations. Recently Bettremieux (*Presse médicale,* April 19, 1913) is stated to have had prepared for his personal use gloves made from silk strands charged with three times their weight of lead phosphostannate. The silk thus treated was woven into a cloth with meshes sufficiently large to afford a convenient degree of flexibility, but small enough to exclude the radiations. The gloves made from this material proved completely opaque when placed in the path of the rays, as illustrated in a photograph which Bettremieux took. That they constitute a distinct advance in x ray prophylaxis seems to admit of no doubt, since the radiographer will no longer be tempted to discard his gloves because of their annoying thickness and stiffness. The silk material may also be used for the making of other kinds of protective paraphernalia.

News Items.

Changes of Address.—Dr. E. P. Livingston, to 808 St. Nicholas Avenue, New York.

Dr. J. Wallace Beveridge, to 7 East Thirty-eighth Street, New York.

Meetings of Philadelphia Medical Societies to be Held during the Coming Week.—Tuesday, June 10th, Pediatric Society; Thursday, June 12th, Pathological Society; Friday, June 13th, Northern Medical Association.

Dedication of Beth David Hospital.—The new building of the Beth David Hospital, 113th Street and Lexington Avenue, New York, was formally opened on June 1st, the principal speaker being Dr. Abraham Jacobi.

New Building for Flower Hospital.—The cornerstone of the first of the four new buildings, which are to be erected at a cost of $1,000,000 for the joint use of the Homeopathic Medical College and Flower Hospital, was laid on Thursday afternoon, May 29th. This building will be used exclusively by private patients.

New Orthopedic Hospital.—The New York Orthopedic Hospital and Dispensary has purchased property in East Fifty-eighth and Fifty-ninth Streets, to be used as a site for new buildings for the hospital. The plans have not yet been completed, but it is understood that a large building will be erected as soon as possible.

New Officers of the Illinois State Medical Society.—At the sixty-third annual meeting of this society, held in Peoria on May 20th, 21st, and 22d, the following officers were elected: President, Dr. A. L. Britton, of Athens; first vice-president, Dr. Sumner Miller, of Peoria; second vice-president, Dr. D. G. Smith, of Elizabeth; secretary, Dr. W. H. Gilmore, of Mount Vernon; treasurer, Dr. J. A. Markley, of Belvidere, reelected. Next year's meeting will be held in Decatur.

Annual Meeting of the Oklahoma Medical Association.—Over three hundred delegates attended the annual meeting of the Oklahoma Medical Association, held in Enid recently. The following officers were elected: President, Dr. J. M. Byrum, of Shawnee; vice-presidents, Dr. D. Long, of Duncan, Dr. J. T. Slover, of Sulphur, and Dr. J. H. Barnes, of Enid; secretary and treasurer, Dr. Claude Thompson, of Muskogee, reelected. Guthrie was selected as the next place of meeting.

American Association of Anesthetists.—This association, which was organized on June 12, 1912, at Atlantic City, N. J., will hold its first regular meeting at Minneapolis, on June 18, 1913. Scientific sessions will be held in the morning and afternoon, ten papers being listed on the programme, and in the evening there will be a banquet at the Hotel Leamington, at which it is expected Dr. John A. Witherspoon, of Nashville, president-elect of the American Medical Association, will be present. On Thursday, June 19th, at the afternoon session of the Section in Surgery of the American Medical Association, a symposium on anesthesia will be presented under the auspices of the American Association of Anesthetists. The officers of the society are: President, Dr. J. Tayloe Gwathmey, of New York; vice-presidents, Dr. Charles K. Teter, of Cleveland, Dr. F. H. McMechan, of Cincinnati, and Dr. Yandel Henderson of New Haven; treasurer, Dr. Harold A. Sanders, of Brooklyn; secretary, Dr. William C. Woolsey, of Brooklyn.

Personal.—Dr. Paul G. Woolley has tendered his resignation as dean of the Medical Department of the University of Cincinnati, to take effect on July 1st, in order to devote more time to pathological research work He will retain the chair of pathology in the university.

Dr. William Brady, of Elmira, has been appointed physician to Auburn prison, to succeed Dr. John Gerin, who resigned recently.

The degree of Doctor of Science was conferred upon Colonel William C. Gorgas, assistant surgeon general, Medical Corps of the United States Army, and Dr. Alexis Carrel, of the Rockefeller Institute of Medical Research, by Columbia University, at the 159th annual commencement, held on June 4th.

Dr. Smith Ely Jelliffe, of New York, delivered the address to the graduating class of the Training School for Nurses of the Government Hospital for the Insane, Washington, D. C., and Dr. William A. White, superintendent of the institution, presented the diplomas.

Connecticut Medical Association.—The annual meeting of this association was held in Hartford on Wednesday and Thursday, May 21st and 22d, under the presidency of Dr. Edward T. Bradstreet, of Meriden. Officers for the ensuing year were elected as follows: Dr. D. C. Brown, of Danbury, president; Dr. W. S. Hulbert, of Winsted, first vice-president; Dr. Kate C. Mead, of Middletown, second vice-president; Dr. M. M. Scarborough, of New Haven, secretary; Dr. J. H. Townsend, of New Haven, treasurer; Dr. Edward J. McKnight, of Hartford, delegate to the meeting of the American Medical Association in Minneapolis. The meeting was brought to a close by a banquet at the Hartford Club on Thursday evening. Nearly one hundred and twenty-five persons attended, the guest of honor being Dr. George R. Deacon, of Stratford, Ontario.

Commencement Exercises at the Army Medical School.—The closing exercises of the Army Medical School, session of 1912-1913, were held at the school on Saturday morning, May 31st. The address was delivered by Dr. Charles W. Richardson, first lieutenant, Medical Reserve Corps, and the diplomas were presented by Secretary of War Lindley M. Garrison. The Sternberg medal was presented by Brigadier General George M. Sternberg, United States Army, retired, to First Lieutenant George R. Callender, of Massachusetts, one of the honor graduates, and Colonel John Van R. Hoff, United States Army, retired, presented the Hoff medal to First Lieutenant Benjamin B. Warriner, of Virginia, also an honor graduate. The other honor graduates were First Lieutenant George F. Lull, of Pennsylvania, and First Lieutenant Sidney L. Chappell, of the District of Columbia.

The American Medical Association.—The sixty-fourth annual meeting of this association will be held in Minneapolis, June 17th to 20th. The House of Delegates will convene at 10 o'clock on Monday, June 16th, but the general meeting, which constitutes the opening exercises of the scientific session, will be held on Tuesday, June 17th, at 10:30 a. m. The fifteen sections of the association will meet on Tuesday at 2 p. m., and subsequently, according to their programmes, on the three following days. The registration office will be open from 8:30 a. m. to 5:30 p. m. on every day but Friday, June 20th, when it will be open from 9 to 10 a. m. only. The first general meeting will be held in the Minneapolis Auditorium, and many of the section meetings will be held in the new buildings of the medical school of the University of Minnesota. Official programmes will, as usual, be given to each member on registration, but will not be distributed in advance of the meeting. Dr. Abraham Jacobi, of New York, is president of the association, Dr. John A. Witherspoon, of Nashville, president-elect, and Dr. Alexander R. Craig, of Chicago, secretary.

Canadian Medical Association.—A provisional programme has been issued of the forty-sixth annual meeting of the Canadian Medical Association, which will be held in London, Ontario, on Tuesday, Wednesday, Thursday, and Friday, June 24th, 25th, 26th, and 27th under the presidency of Dr. H. A. McCallum, of London. The first general meeting will be held on the evening of June 24th, the morning and afternoon being devoted to the transaction of business, and at this meeting the address in surgery will be given by Dr. J. Alexander Hutchinson, of Montreal, and the address in gynecology, by Dr. T. S. Cullen, of Baltimore. At the second general meeting, to be held on Wednesday evening, Dr. H. A. McCallum will deliver the annual address of the president, and the address in medicine will be delivered by Dr. Llewllys F. Barker, of Baltimore. The morning session of the third day will be devoted to a symposium on diseases of the stomach, and a symposium on diseases of the thyroid will be presented at the afternoon session. In the evening a public lecture on National Health will be given by Dr. Helen MacMurchy, of Toronto. On Friday morning Dr. Frank Billings, of Chicago, will conduct a medical clinic before the association, and a paper on the Experimental and Clinical Study of the Functional Activity of the Liver will be presented by Dr. L. G. Rowntree, of Baltimore; in the afternoon Dr. John B. Murphy, of Chicago, will give a lecture on Surgery of the Bones and Joints. An interesting feature of the programme will be a symposium on Venereal Disease as a Practical Public Health Problem, which will be presented on Wednesday morning, under the auspices of the Section in Public Health.

Pensions for Members of the Rockefeller Institute.—Pensions for its members and associate members have been provided by the governing boards of the Rockefeller Institute for Medical Research and have been financially secured by Mr. John D. Rockefeller, who has, with this purpose in view, increased the endowment of the institute by a gift of securities amounting to about $500,000 in value. The pension rules which have been adopted provide three quarters pay pensions for members retiring at the age of sixty-five years, after fifteen or more years of service, and pensions of from one half to three quarters of full pay, according to the length of service, for members and associate members who retire at the age of sixty years. There is also a provision for total disability after ten years of service, and for widows and orphaned children, at one half the scale upon which members of the staff are pensioned.

Vital Statistics of New York for the First Quarter of 1913.—If the average quarterly death rate (17.06) for the immediately preceding quinquennium had prevailed during the first quarter of this year, there would have been 1,589 more deaths reported from all causes than actually took place. This is an excellent showing and if the decrease continue in the same ratio it will mean a decreased mortality of over 6,000 during the entire year, compared with that of the previous five years. The causes of death that have engaged the attention of sanitary officials showed considerable decreases in the absolute figures taken in connection with the increased population, for example, typhoid fever a decrease of 60 per cent., measles 40 per cent., scarlet fever 47 per cent., diphtheria, 22 per cent., pulmonary tuberculosis 10 per cent., diarrheal diseases under five years of age 16 per cent.. The decrease in the infectious diseases of childhood was accompanied by a decrease in the number of deaths from acute bronchitis and bronchopneumonia amounting to 10 per cent. The few diseases that exhibited an increased mortality were those which have not as yet entered the list of those against which preventive measures have been taken, for example cancer, the deaths from which increased 10 per cent., organic heart diseases, with an increase of 8 per cent., and lobar pneumonia with an increase of 7 per cent. The number of births reported during the quarter was 34,196, and the number of marriages reported was 11,820.

Medical Alumni of the University of Buffalo Hold Annual Meeting.—The thirty-eighth annual meeting of the Alumni Association of the medical department of the University of Buffalo was held on Tuesday, Wednesday, Thursday, and Friday of last week, under the presidency of Dr. Henry C. Buswell. The afternoon and evening of the first day were devoted to class reunions and dinners, as arranged by class committees. On Wednesday, scientific sessions were held in the morning and the afternoon, and college fraternity reunions took place in the evening On Thursday morning a paper on the Uses of Radium in Surgery was read by Dr. Howard A. Kelly, professor of gynecological surgery at Johns Hopkins University, which was followed by a gynecological clinic by Doctor Kelly. In the afternoon Dr. Richard C. Cabot, of Boston, held a medical clinic, which was followed by an address by Doctor Kelly on Gynecology, Retrospective and Prospective. In the evening the annual dinner of the association, which was the social event of the meeting, was held in the Hotel Statler, Dr. De Lancey Rochester, of Buffalo, acting as toastmaster. Among those who responded to toasts were Dr. Roswell Park, of Buffalo, Dr. Howard A. Kelly, of Baltimore, Dr. S. V. V. Holmes, Dr. Thomas H. McKee, and Dr. W. J. Wickes, of Syracuse, who held a clinic on the anatomy of humor. Friday, May 30th, was devoted to the graduating exercises of all departments of the university. Officers were elected as follows: President, Dr. Grover W. Wende, '89, of Buffalo; first vice-president, Dr. George E. Brewer, '84, of New York; second vice-president Dr. George W. Goler, '89, of Rochester, N. Y.; third vice-president, Dr. Frank W. McGuire, '94, of Buffalo; fourth vice-president, Dr. Cynthia W. Koser, '06, of Williamsport, Pa.; fifth vice-president, Dr. William Irving Thornton, '99, of Buffalo; secretary, Dr. Julius Richter '04, of Buffalo; treasurer, Dr. William F Jacobs, '08, of Buffalo; trustee for five years, Dr. Henry C. Buswell, '88, of Buffalo; executive committee, Dr. Lesser Kauffman, '04, of Buffalo, Dr. Harry Mead, '91, of Buffalo, and Dr. Edith R. Hatch, '06, of Buffalo.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

April 5 and 12, 1913.

Experiences with Iontophoresis.—Friedrich Stocker reports *in extenso* the results he has obtained in a large number of various forms of eye and skin disease, and comes to the following conclusions: Iontophoresis, according to Wirtz's method, has proved a valuable therapeutic agent in various diseases of the eye. Its greatest value seems to be shown in the infectious diseases of the cornea, particularly ulcus serpens and interlamellar abscess. In these cases it takes the place of the cautery, over which it possesses great advantages, with none of its disadvantages. Paracentesis of the anterior chamber may very properly be associated with iontophoresis. This form of treatment does not obviate the need of attention to whatever troubles of the conjunctiva and lacrymal sac may be present. The author has never seen any injury of the eye result from the use of iontophoresis.

The New Method of Checking Hemorrhage and Treating Wounds with Kocher-Fonio's Coagulin.—Anton Fonio contributes a very long article on this subject. In general, it may be said that after seizing the bleeding vessels with forceps and ligating them the surface of a wound is dried, coagulin poured over it, and then, if necessary, pressure made for a time. The coagulin is supposed to act in such a way as to produce thrombosis of the vessels. It can also be injected into the veins to arrest hemorrhages from the lungs, when it is thought to be carried by the circulation to the bleeding place in the lung and to there form a coagulum, just as if it had been applied locally.

MÜNCHER MEDIZINISCHE WOCHENSCHRIFT.

April 8, 1913.

Orthostatic Albuminuria in Tuberculosis.—J. Sturm answers the critical comments of Arnold (*Deutsche medizinische Wochenschrift,* 1913, No. 12) on the earlier work of Sturm and Ludke (*Münchener medizinische Wochenschrift,* 1911, No. 19). Arnold obtained his results in cases of tuberculosis of the skin, which condition is sharply separated from general tuberculosis. The author defends even now the thesis that in sixty per cent. of incipient pulmonary tuberculosis cases orthostatic albuminuria is the rule.

The Presence of Spirochæta Pallida in the Central Nervous System in Progressive Paralysis and Tabes Dorsalis.—H. Noguchi, notwithstanding the failures of other workers, has been able to show typically colored spirochætæ with a modified Levaditi's method in forty-eight out of 200 brains of the subjects of paresis, and in one out of twelve spinal cords of tabetic patients. The spirochæta is found more often and in greater numbers in the cortex than in the white substance of the brain, rarely in the neighborhood of bloodvessels, and almost never in the walls of the bloodvessels. The preparations for examinations should be kept as long as possible in formalin before being placed in alcohol.

Chemotherapy of Tuberculosis; Experiments with Borcholin Enzytol.—H. Mehler and L. Ascher found that lezithin and lezithin splitting products (cholin) have considerable antibacteriological power, even in the case of tubercle bacilli. Cholin can be brought into the circulation of tuberculous patients in large quantities without harmful effects as a loosely bound salt (borcholin). In florid tuberculosis morcholin produces a typical reaction. Therapeutic experiments have shown the value of the use of borcholin in tuberculosis.

Pylorus Spasm and Gastric Ulcer.—A. Neudorfer reports the case of a man of forty-three upon whom laparotomy was performed for suspected carcinoma of the pylorus. At operation there was found in the small curvature of the stomach a callous ulcer with marked perigastritis, and a decidedly narrow pylorus suspicious of tumor. Kocher's resection of the pylorus was done without regard to the tumor in the fundus. The operation was completed without untoward results, the patient recovered, and the callous tumor healed completely, as could be seen by the Röntgen rays. The microscopical examination proved the suspicion of carcinoma unwarranted.

Unusual Indication for Intestinal Resection.—C. Sultan reports the case of a woman whom he was about to curette for endometritis. In the uterus was felt a tumor, which he considered a polyp, and drew out with forceps. It proved to be intestine, and a laparotomy was done, with resection of twenty centimetres of the gut. Recovery followed. The cause for the perforation of the uterus remained unsolved. The woman had for a long time, however, worn a uterine obturator, and this in all probability had produced a sore in the wall of the uterus.

Acromegaly Following Castration in an Adult Woman.—K. Goldstein reports the case of a woman, now forty-eight years old, who had always been conspicuous for her large bony framework and upon whom a panhysterectomy had been performed at the age of thirty-nine for myoma of the uterus. Since the operation the hands, feet, face, and chin have become larger, the whole body has become fat, and perspiration is profuse. No signs of an organic brain disease are present. The fundi and field of vision are normal. In radiographs no enlargement of the hypophysis is visible. The regulating endocrin apparatus was probably originally destroyed and lost its balance completely by the castration.

April 15, 1913.

Testing the Kidney Function.—Schlayer found that the intravenous injection of milk sugar for the purpose of testing the functionating of the kidney frequently produces chills and fever, owing to faulty sterilization and the use of contaminated molds. Sterilization for one hour in a steam bath at 100° C. seems to be the best method of preventing this. The milk sugar test is not a sufficient test in the ordinary sense of the term, but a means of recognizing the kind of kidney trouble. Only the quantitive determination of the examination of the milk sugar has a diagnostic significance.

General and Local Eosinophilia in Oversensitiveness for Organic Arsenic Preparations.—H.

Schlecht relates two cases of oversensitiveness to organic arsenic preparations (arseno phenylglyzin and salvarsan) noteworthy because of the appearance of an extensive exanthemata and a local and general eosinophilia. There are two possibilities for the causation of this eosinophilia, either a local injury to the cell or proteid by the eosin, and therefore local production of eosinophilia, or the entrance of a toxine, formed somewhere in the blood, into the skin and a secondary attraction of the eosinophils.

April 22, 1913.

Galvanic Stimulation of Muscles and Nerves in Pregnancy and the Tetany of Pregnancy.—L. Seitz found in the last months of pregnancy, in eighty per cent. of pregnant women, a slight rise in the galvanic irritability which reaches its zenith during birth and declines in the puerperium. In about ten per cent. of all pregnant women an almost subtetanic state is present. During pregnancy there are singular attacks of asthma, often combined with nausea and trembling of the extremities, which are due to a latent tetanic condition (parathyrotoxicoses).

Exposure of Inoperable Carcinoma of the Stomach for Illumination by Röntgen Rays.—Finsterer advises that resection of the carcinomatous stomach should be done in all cases where such a procedure is technically possible. It may be performed under local anesthesia if the general condition prohibits general anesthesia. After the resection of advanced carcinoma the process of deep illumination, even after secondary exposure of the field of operation, will bring about a lessening of the chances of recurrences and the formation of metastases. In inoperable carcinoma the diseased stomach should be freely exposed by the splitting of both recti, and fixation of both lobes of the liver to the border of the ribs, thus making possible a direct and long continued Röntgen illumination. Noteworthy results have been obtained in hopeless cases. In all these cases a large gastroenterostomy should be made as near the fundus as possible, and if this is no longer feasible, a jejunostomy should be added for the purpose of isolating the exposed stomach.

Producing Complement Binding Reactions by the Addition of Chemical Substances to the Normal Serum.—E. Rominger was able by the addition of certain substances to change normal blood serums to such a degree that they gave positive complement binding reactions with certain extractives. Serums, to which carbohydrates had been added, gave positive reactions with blood extractives, but not with the extract of guineapig heart or with tuberculous extractives. By the addition of certain acids a positive Wassermann reaction can be produced, and also a tuberculin reaction, while complement binding with blood extractives could not be established. These experiments prove that complement binding reaction does not depend upon a specific formation in the body, but upon the admission to the blood of abnormal substances from the pathologically changed tissues.

Tuberculosis of the Glands of the Neck and Its Relation to the Tonsils and Lungs.—G. Trautmann relates the case of a girl of eleven years, with healthy lungs and good teeth, who suffered for four months with abscess of the glands of the neck of the size of a child's fist. Incision; healing of the abscess, with formation of a fistula. During a second operation a number of cheesy nodules were removed from the neighborhood of the confluence of the jugular veins. Extirpation of the macroscopically normal appearing tonsil of the same side was performed. Microscopical examination revealed a typical epitheloid celled tubercle with giant cells. In this case, then, the tonsil was the primary tuberculous host.

Malignant Pemphigus Cured by One Intravenous Injection of Blood.—G. Praetorius reports that a woman, forty-eight years old, suffering for two years from a severe pemphigus, which had resisted all therapeutic measures, was completely cured by one intravenous injection of twenty cubic centimetres of nondefibrinated, fresh human blood. The cure has now lasted uninterruptedly for eight months. By rapid manipulation and the use of fine cannulas, which prevent the passage of large coagulæ, there is no danger in the use of nondefibrinated blood.

ZENTRALBLATT FÜR CHIRURGIE.

April 19, 1913.

Vascular Paralytic Gangrene Due to Cold.—Wieting states that many of the soldiers in the Turkish army developed symmetrical gangrene of the toes or feet from the effects of cold, although the temperature of the rain or mud in which they had to stand never fell as low as the freezing point. Some had to stand for one or more days in the mud of the rifle pits, and others were exposed to the cold winds. Almost all the patients were badly nourished and had suffered from intestinal troubles, either at the time or shortly before. The cases were most numerous before Tschataldja, where circulation was not maintained by marching or other bodily exercises, and the disease appeared coincidentally with the onset of cholera and dysentery. In the mildest cases the symptoms consisted of a more or less severe itching and pain in the toes or the foot, often without visible lesions, sometimes with edema or a slight redness. In other cases trophoneurotic symptoms were present; others had chilblains, blisters, and gangrene. All had paresis of the capillary vessels at least, the worse ones, of the deeper vessels, with stasis and thrombosis. Nearly all who did not die of other diseases recovered under conservative treatment. Amputation was performed in only one case.

Paresis of the Phrenic Nerve after Local Anesthesia of the Brachial Plexus.—Albert E. Stein reports an unsuccessful attempt to anethetize the brachial plexus in a young woman, twenty years of age. No fluid was injected, as the symptoms, indicating that the brachial plexus had been reached, failed to appear, but a severe attack of neuralgia and paralysis of the phrenic nerve followed; apparently induced by the injury done in introducing the needle. This case teaches us that great care must be exercised in the use of this method, especially when it is desired to anesthetize the plexus on both sides, either at one sitting or at two sittings a short time apart.

PARIS MÉDICAL.

May 3, 1913.

Value of Cystoscopic Examination in Cancer of the Uterine Cervix.—H. Hartmann reports the results of cystoscopic observations made by Cruet in cases of cervical cancer, and points out the value of such an examination to ascertain the condition of the floor of the bladder and the ureters before operation. Suggestive findings are an elevation of the floor of the bladder, hyperemia of the elevated portion, folds of the mucous membrane, and local edema. The latter may be diffuse or give rise to large parallel folds or bullæ. Definitely characteristic of cancer, however, are small, white, smooth granulations encrusted in the mucosa, or hard, opaque nodules. Partial retraction of the trigone, provided it be a true one and not due to elevation on the opposite side, is also an important finding. The ureteral orifices may be edematous or raised in the form of volcanoes. Compression of the ureters by the growth are indicated by a delayed, strengthened, or divided discharge of urine from them and by absence of infolding of the vesical mucous membrane after each discharge.

PRESSE MÉDICALE.

May 3, 1913.

Cutaneous Exanthems in the Diagnosis of Leucemic States.—A. Nanta asserts that the polymorphous skin lesions occurring in leucemia, which Audry has designated "leucemides," are equally as important from the diagnostic standpoint as erythrodermia or leucemic tumor formations. He reports the case of a woman with markedly enlarged spleen and liver, prominent neck glands, and white cell count of 21,700, who suddenly produced an eruption consisting of macules, papules, vesicles, and pustules, corresponding in intensity and distribution with a moderate syphilitic roseola. These lesions were especially numerous on the trunk, but also present elsewhere. More characteristic, furthermore, were some large, red, flattened nodules. accompanied by marked itching, which appeared chiefly on the arms, more sparsely on the face, neck, back, and lower limbs. Some of these were surmounted by small pustules or vesicles, and all involved the hair follicles.. This patient had at first been considered to have an intraabdominal malignant tumor, but the fact that she did not get worse, and the skin eruption, which had already occurred in a similar form a year before, finally led to a search for the visceral signs of a leucemia, the presence of which was then demonstrated.

ARCHIVES DES SCIENCES BIOLOGIQUES, ST. PETERSBURG.

Vol. XVII, No. 4, 1913.

The Lipoids in the Presence of Chronic Tuberculous Infection.—D. P. Griniew found in guineapigs that the lipoids in the cells of nearly all organs and tissues of the body undergo marked changes in tuberculosis. The aggregate of the lipoids and the phosphorus they contain diminish in almost all organs, while the lecithin is decreased in all without exception. The organs suffering the most are the lungs, and next to these the spleen, cord, and liver.

Action of Salvarsan on the Viscera.—I. I. Chirokogorov administered salvarsan by subcutaneous or intramuscular injection in doses of 0.03 to 0.1 gramme per kilogramme to dogs and rabbits, and in doses large enough to kill some of the animals, to mice. No fatty changes in the viscera were found in the dogs sacrificed for examination, but two out of four rabbits showed slight fatty agglomerations in some of the cardiac muscle fibres, as well as considerable deposits of fat in the liver cells; in one of these rabbits the kidneys showed merely a pronounced hyperemia, but in the other distinct fatty changes were noted in the epithelia of the loops of Henle in the kidneys and here and there in the convoluted tubules. In the mice, fatty degeneration was practically limited to the liver. Although the changes referred to were found only in a portion of the experimental animals, the author, having examined control animals as well, is convinced that the degeneration was sometimes due to the salvarsan, The power of resisting the effects of the drug appears to him to vary widely in different individuals of the same species. That the pathological effects noted in the experiments sometimes occur in human subjects treated with salvarsan Chirokogorov deems probable, since similar fatty changes have been found in the liver, kidneys, and heart of some of the patients who have succumbed after the administration of the drug.

JOURNAL D'UROLOGIE.

January, 1913.

A Case of Death from Gaseous Emboli Following the Injection of Air into the Bladder.—Nicolich had a death following the air inflation of the bladder preliminary to a prostatectomy. Stovaine spinal anesthesia was used, and the author thought it possible that death was due to this. At autopsy the ventricle of the heart and portions of the abdominal vena cava were filled with air.

Case of Death by Gaseous Emboli in the Course of Prostatectomy.—Marion had a case similar to the preceding, excepting in this case Marion observed emphysema of the prevesical cellular tissue before the death of the patient. There ws no autopsy in this case.

Simple Ulcer Perforating the Bladder.—The patient, a woman of fifty-eight years, was operated upon for a strangulated hernia. Twenty-two days after the operation, as the patient was about to urinate, she was seized with intense abdominal pain, and urination was impossible. The patient was catheterized and clear urine obtained from the bladder. Thereafter the urine was all drawn by catheter. The abdominal pain and rigidity continued. Various diagnoses were made, and the patient finally died. At autopsy the abdomen contained urine and a perforation of the bladder was found at the site of a simple ulcer.

February, 1913.

Leucoplakia of the Kidney Pelvis.—Lecene states that this patient's principal symptom was pain in the kidney region. The right kidney could be palpated, and it showed a diminished function and pus on ureter catheterism. Nephrectomy was performed. The kidney pelvis was the site of an extensive leucoplakia.

Plastic Operations for the Treatment of Renal Retention.—Eliot reviews 107 operations which he has collected from the literature. These were: Destruction of valves in the kidney pelvis, reimplantation of the ureter at the lowest portion of a distended pelvis, plastic operations on the ureters and kidney pelvis, lateral anastomosis of the ureters and pelvis, and resection of various portions of the kidney. The best result from the cases collected were in simple hydronephrosis, and the operation was ureteroplastic or ureteropyeloplastic. Of nineteen patients operated upon, eleven were clinically cured. If hydropyonephrosis is present the kidney must undergo a preliminary drainage before any plastic operation is performed.

Spontaneous Fracture of a Vesical Calculus.—Christian reports a case in which two calculi as large as an English walnut were removed from the bladder. These calculi absolutely fitted together, and had evidently been a single one which had ruptured.

March, 1913.

Early Diagnosis of Renal Tuberculosis.—Bazy calls attention to the symptom complex first formulated by his father, of hematuria, nocturnal polyuria, and the loss of the brilliancy of the urine. This symptom complex he believes to be of much value in making an early diagnosis of renal tuberculosis. A patient, twenty-seven years of age, had suffered from his first hematuria a year before. Since then he had had nocturnal polyuria (urinating three or four times each night). The catheterized urine was absolutely clear, but it had "lost its brilliancy." Ureter catheterism showed a tuberculosis of one kidney, and this kidney on removal was found to have tuberculosis papillæ.

Operation for the Extirpation of Large Cancer of the Prostate.—Gayet, Champel, and Fayol have devised the following operation: The patient is first placed in a kneeling position, and a curved incision begins about two inches above the rectum, goes to the left, and, after encircling the rectum, ends about two inches below the rectum. The incision continues in the median line to the scrotoperineal junction. The rectum is pushed to the right, and the prostate exposed. The patient is now placed in the lithotomy position. The urethra is cut through. The entire neck of the bladder, nearly up to the ureteral orifices, is excised. A tube is placed in the bladder and fixed in the perineum, and the perineum is restored as completely as possible. The authors have operated in two cases. In the first the patient has complete control of his urine, a year after operation, has kept his weight, and is in good condition. The second remained in good condition for four months after operation.

BRITISH MEDICAL JOURNAL.

May 17, 1913.

Internal Secretions in Relation to Dermatology.—Malcolm Morris calls attention to some of the more frequent dermatoses, associated with definite myxedema on the one hand and with exophthalmic goitre on the other, as indicating the possible relations between certain obscure skin lesions and disturbance of the function of the thyroid gland. Psoriasis, certain cases of pruritus, eczema of a chronic type, Darier's disease, ichthyosis, scleroderma, cheloid, multiple warts, certain cases of acne vulgaris, rosacea, rhinophyma, lupus, and a number of affections of the hair and nails have in many instances resisted all treatment only to yield to the proper administration of thyroid extract. The difficulty arises in many of these conditions in determining whether or not the thyroid is at the bottom of the disturbance, for, while some cases are cured by it others are not affected at all. Above all others psoriasis is the condition in which thyroid treatment gives the best results. Where the cutaneous affection is found associated with such conditions as obesity, infantile wasting, rickets, osteomalacia, chronic articular or muscular rheumatism, hemophilia, etc., there is presumptive evidence that the skin symptoms will respond well to the exhibition of thyroid. Others of the ductless glands, and those having definite internal secretion, are probably also associated with certain forms of cutaneous disease, but the association is far less well understood than is the case with the thyroid. Some cases of acne seem to be benefited by thymus. Cases of urticaria and angioneurotic edema, and some of acne and lupus, have responded to pituitary, thymus, or suprarenal capsule.

Treatment of Congenital Dislocation of the Hip.—A. S. Blundell Bankart criticises Lorenz's methods on a number of points. In the first place there is far too much traumatism in his operation, and it is not true that all of the soft parts have to be so stretched or torn as to offer no resistance before reduction can be made. Further, the constant pull of the muscles upon the femur is a great aid in the formation of a new joint cavity, and the stretching and tearing of muscles deprives the Lorenz operation of this advantage. The head of the femur is thrust forward in the Lorenz position and tends to project in front. In fact, it often passes in front of the acetabulum, and an anterior transposition results. When the Lorenz position is maintained for too long a time the shortening of the structures behind the joint is so great that inward rotation is not possible, and great disability results. The stretching of the hamstrings by extension of the knee is very prone to cause redislocation of the head of the femur, and the knee should be included in the plaster for some months to avoid this danger. The alleged importance of the "grinding" movements to facilitate the formation of a cavity for the head of the femur is a decided fallacy of the Lorenz procedure. The changes in the bone when covered by cartilage are not to be secured by "grinding," but by constant pressure, which should be produced by the action of the muscles of the thigh. Bankart reduces the congenital dislocation by the method of Ridlon, over the inferior border of the acetabulum. The knee is grasped and the limb fully flexed, both at the hip and knee; thus directing the head of the femur downward. Pressure is then made directly downward upon the knee—great pressure if necessary—so that the head is driven down below the acetabulum. Counter pressure is made on the tuberosity of the ischium, and the position of the head is determined by palpation through the buttock. When the head has been brought below the acetabulum, the thigh is abducted, the head passing upward over the lowest part of the rim into the acetabulum. No violence is employed and there is a minimum of trauma to this operation. Shock is infinitely less than in the Lorenz method. The operation is not so greatly limited by the age of the patient as is the Lorenz, and can be applied to youths, or even adults. The patient is put up in plaster while under the anesthetic and the Lorenz position is used, care being taken, however, that the head of the femur is not displaced too far forward. The opposite side should be included in plaster and the knee of the affected side also. The position should be verified by the x ray at once, and rectified if imperfect. After there has been sufficient retraction of the soft parts behind the head, the position should be changed to one of slightly diminished abduction with about 45° of internal rotation.

Chronic Arthritis.—D. W. Carmalt Jones treated twenty cases of this affection with vaccines made from streptococci obtained from the mouth, urine, or feces of the patients, and obtained a cure in one, marked improvement in six, and aggravation of the symptoms in one. The remained showed no improvement, or, at most, very slight. He believes that the therapeutic test is strong evidence that the streptococcus was the cause of the disease in the cured and improved cases and in the one which became worse.

LANCET.

May 17, 1913.

Some Points in Determining the Signification of Albuminuria in Pregnancy.—Herbert Williamson puts two questions: 1. "Can we distinguish between an albuminuria the result of chronic nephritis and an albuminuria due to pregnancy toxemia?" and, 2, "In a case of chronic nephritis, can we tell when pregnancy toxemia has been grafted on to the old kidney lesion?" and proceeds to answer them in the affirmative. He believes that a condition of acidosis in the urine and blood is found constantly in cases of pregnancy toxemia when the lesions are of a certain severity, while it is not found in cases of chronic nephritis, even when the symptoms are very severe. The onset of an acidosis in the course of a chronic nephritis in pregnancy may be interpreted to mean that toxemia has been added to the existing lesions. These tests, however, fail in many of the earlier and slighter cases. The symptoms are probably not due to the acidosis—in fact, some of Williamson's results tend to disprove this theory, because the symptoms are often present before any acidosis can be demonstrated. On the other hand, treatment which reduces the acidosis brings about an alleviation of the symptoms. Marked improvement sometimes follows the intravenous infusion of solutions of sodium acetate or bicarbonate in severe cases of eclampsia. Williamson accepts the recent view that the source of the toxines can be definitely stated to be the trophoblastic layers of the chorionic epithelium.

The Influence of Chronic Sepsis upon Eye Disease.—William Lang finds no less than 215 cases of eye disease of one kind or another which could be attributed to the effects of sepsis in some other portion of the body, 180 being due to alimentary toxemia, and of these, 139 to oral sepsis. On the other hand, he can find, in the same series of records as that from which the 215 cases were culled, only 168 cases of eye disease which were attributable to one or another of all the other causes. He finds that the proper treatment of the focus of septic infection is alone sufficient in many cases to cure the eye trouble; in others, however, it must be combined with some local measures directed to the eye. The essential features in eye work would seem to be a careful search after a source of septic infection and the proper attention to the condition of the teeth, if many otherwise obstinate cases are to be cured.

Chloretone Overdose.—W. Essex Wynter prescribed five grain capsules of chloretone to be used as a prophylactic against seasickness, and his two patients, man and wife, took eighty-four of these capsules on the trip from England to America and return. This is equivalent to about 100 grains apiece for each six day trip. While on the water the drug accomplished its purpose, though the trip was rough, but after landing in the United States, and during their three weeks' stay, the patients experienced sensations of incoordination, fullness in the head, and lack of spirits. Even after a fortnight these symptoms were very noticeable. After two weeks following their return trip and their second courses of 100 grains each, both showed contracted pupils, small tense pulse, and suppressed knee jerks. There were also incoordination, vertigo, dullness of sensation, and sense of effort in movement. Taste and smell were greatly reduced, and some patchy anesthesia was present. Mental confusion and defective concentration and memory were present from the beginning; there was striking susceptibility to alcohol, a glass of wine inducing intoxication. Hot fluids produced similar, though less marked, results. Headache, which was present, was rendered almost intolerable by the use of acetanilide. The general mental state was one of dullness and drowsiness by day and disturbed sleep by night. Wynter attributes these symptoms to the cumulative effect of the drug, partly due to its being taken in capsules; so that, being insoluble, it was retained in the intestine, dissolving from time to time in fat or alcohol, and undergoing absorption.

A Contribution to the Etiology of Rheumatoid Arthritis.—H. Warren Crowe has isolated an organism from the urine of a large proportion of cases of rheumatoid arthritis, sometimes in pure culture, and at others in mixed, which he calls the *Staphyloidcoccus A*. Its shape and color in colony on neutral red egg medium are sufficient points on which to base a diagnosis in general work. Not only is the organism present in a very large proportion of the cases, but agglutination tests show its specific nature, and render it likely that it is at least one of the causative organisms of the disease.

The Use of Vaccines in the Treatment of Rheumatoid Arthritis.—A. Bertram Soltau has treated a considerable number of cases of this disease with vaccines made from the *Staphyloidcoccus A*, described in the preceding article by Crowe, and has had very brilliant results in several. Where the urinary culture yields a pure growth of this organism he uses a stock culture obtained from another case; where the urinary growth is a mixed one he treats the patient with vaccines made from both the *Staphyloidcoccus A* and from the other organisms present, if they are of known pathogenic species. In the use of the vaccines from the *Staphyloidcoccus A* it is striking that very small doses have to be employed, or the reaction may be quite severe—seldom more than 500,000 organisms can be given at the first dose. Increase in the size of the dose must be made slowly and be gauged according to the reaction. The injections are best given about a week apart.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 22, 1913.

Treatment of Laryngeal Stenosis Following Diphtheria.—D. L. Richardson emphasizes these points: Intubation should not be prolonged much beyond a month. A low tracheotomy should be performed. Intermittent dilatation under direct vision until the larynx reaches about normal size, and then only when stenosis develops. Tracheotomy affords rest to the larynx and gets rid of a foreign body. The danger of coughing up the laryngeal tube is eliminated. The treatment would seem to require a shorter period of time than that required for continued intubation with the hope of better results.

The Favorable Influence of Periods of a Protein Free Diet in Chronic Nephritis.—Harry W. Goodall says that a protein free diet can be maintained for a continuous period of from five to ten days without harm to the individual. With such a restriction the accumulated end products of protein metabolism in the blood are promptly eliminated and the nitrogen content of the blood falls to normal, while the kidneys and heart are given an opportunity to rest. Such a restriction may be followed by a low protein diet for a considerable period of time, even in advanced cases of chronic nephritis, without a return of the disagreeable symptoms. The following procedure is advised as the dietetic treatment of chronic diseases in which there is a retention of nitrogenous end products: A protein free diet for from five to ten days, according to the severity of the disease; at the end of this period amounts of protein not exceeding sixty grammes daily should be added, and maintained until either the resulting improvement of the patient will permit of a further increase, up to ninety or one hundred grammes as a maximum, or the symptoms indicate that there is a reaccumulation of waste products. In the latter case the protein free diet should be repeated. The diet should be supervised and be controlled by the urinary nitrogen.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 24, 1913.

An Attempt to Interpret Present Day Uses of Vaccines.—Theobald Smith emphasizes the fact that all parasites tend to increase the resistance of the host in which they live and multiply, and out of this fact numerous problems arise. Is it worth while, in any given disease, to attempt to raise this immunity, and how much energy will it cost the patient? If it be worth while, What is the best and most economical way of artificially increasing this immunity? In any localized infection the question arises, Is this an initial process lacking attendant immunity, or is it a residual process associated with general immunity? If the latter, vaccines may be used with safety. In processes associated with a febrile movement and bacteremia, we should not interfere until we know whether we have a progressive disease with gradual undermining of the resistance or a more localized affection in which the excursions with the blood are secondary. The use of vaccines in these cases must be regarded in the light of an experiment, and should only be resorted to in conjunction with one trained in immunological problems. In short, vaccines applied during disease will be rarely, if ever, a means of saving life, but they may hasten a stationary or languid process which naturally tends toward recovery by eliciting the unused reserves of various tissues.

The Germicidal Efficiency of Commercial Preparations of Hydrogen Peroxide.—P. G. Heinemann states that for practical use in rendering water and milk safe, hydrogen peroxide solutions must be considered strictly in the light of emergency measures. The complicating factors are expense, uncertainty of composition, and its possible influence on organic constituents and enzymes. The use of hydrogen peroxide solutions can be recommended only if pure solutions are available, but this method of procedure can never replace efficient water filtration or the efficient pasteurization of milk.

Oily Injections of Salvarsan; a Warning.—H. H. Hazen reminds us that while oily injections of salvarsan have been recommended by various men, these have subsequently abandoned them without publishing their reason for so doing. Furthermore, as some of the best pharmaceutical houses are now marketing preparations of salvarsan in oil, the writer is constrained to give his experience in their use. He concludes his recital by stating that in view of the tendency for late abscess formation following oily injections of salvarsan, and in view of the pain incident to all other methods, the intravenous method should alone be used, but very carefully in certain patients, notably those with disease of the heart or of the central nervous system.

A Method of Controlling Rectal Hemorrhages.—B. L. Myers suggests the following novel technic: A piece of gauze about eighteen inches square is spread in a single layer over a Kelly proctoscope, and petrolatum is rubbed into it thoroughly. The proctoscope is then inserted into the rectum well past the sphincters. The obturator is withdrawn and the invaginated piece of gauze is packed, through the proctoscope, with a ten yard, one inch gauze bandage, the proctoscope being withdrawn as the invaginated gauze is ballooned up. When the packing fills the rectum and the proctoscope is withdrawn, the loose edges of the invaginated gauze are twisted tightly together, which binds the packing into a hard mass. The hemorrhage is thus completely stopped. Thirty-eight hours later the packing may be easily withdrawn without hurting the patient or starting the hemorrhage again, by catching the external end of the bandage used as packing and drawing it out. The invaginated piece of gauze collapses and easily slips out.

An Original Method of Testing for Potassium Iodide in the Urine.—Henry Power asserts that this method will indicate the presence of the drug in one fifth of one per cent. and is besides free from the objection of possible confusion with the indican test. The required materials are boiled solution of starch, a small platinum or carbon electrode, any convenient source of direct electric current, and a white evaporing dish. Urine is mixed with starch solution in the dish, and the two electric poles are immersed in the fluid, the positive pole being carbon or platinum. A current of from three to ten milliampères is allowed to pass through the liquid mixture, and in a few seconds the starch about the positive pole is seen to turn blue as a result of the iodine set free from the iodide and uniting with the starch, forming the blue iodide of starch.

MEDICAL RECORD.

May 24, 1913.

A Consideration of the Therapeutics of Intestinal Autointoxication.—The putrefaction referred to by William Harvey King in this article is due to the anaerobic bacilli, the presence of which in the intestines is caused by the absence of oxygen, which has been consumed by the colon bacilli. There is putrefaction, with a correspondingly large gas volume, always above fifty per cent. and generally ranging from ninety to 130 per cent. Indol is increased in amount, and skatol to a marked degree; so abundant is it sometimes that it gives the peculiar odor of skatol to the entire fecal mass. Indican is found in the urine in large amounts, but as it varies with the different degrees of concentration, as well as at different times of the day, it is not a reliable guide as to the amount of putrefaction present. A special form of local medication for the eradication of this putrefactive condition when located within the large intestine is outlined by the writer. This eradication is more or less permanent, according to the thoroughness of the treatment, and the subsequent care of the patient's diet and hygiene. The object sought in the treatment is not only the oxidation of the surface of the intestinal lining, but also to carry this oxidation within the glandular cells and tissues of the membrane. A high enema of plain water is given to empty the bowel of fecal matter, so that the antiseptic afterward employed will not be expended solely in destroying this dead matter, and to cleanse the membrane that a better osmosis or anaphorius may take place. A colon rectal tube is employed, and the water is slowly and carefully introduced, and held for a few minutes before the patient goes to the closet, where the bowel is thoroughly emptied. A second injection, consisting of normal salt solution and fresh electrozone (two ounces per quart) is introduced through a hollow electrode, which conducts the fluid and the electric current. A large electrode, which thoroughly covers the abdomen, is placed directly over the transverse colon, and to this is attached the positive pole of a continuous current. The clinical results of this treatment, from eight to twenty treatments given daily, show a disappearance of the insomnia and the other conditions dependent upon the autointoxication.

The Prevention of Adenoids.—William Brady concludes that the principal prophylaxis against adenoids is the avoidance of overheated living rooms. The family should be trained to acclimate themselves to an average temperature of 60° to 65° F. throughout the winter, instead of the usual one of 75° F., or more. Start at the beginning of cool weather in the fall, and regulate the temperature by the thermometer rather than by personal feelings, and such a moderate temperature will be comfortable to everybody, young and old. With the removal of the enervating, debilitating influence of highly heated air, the nasopharyngeal mucosa will withstand its daily assailants. There will be no adenoids.

AMERICAN JOURNAL OF SURGERY.

April, 1913.

Renal Lithiasis.—J. Bently Squier describes as follows the incision of exposure of the kidney, which differs from the usual vertical incision and has many advantages in its favor: A longitudinal incision, commencing from just below the last rib and extending three inches downward, is made over the belly of the erector spinæ. The posterior sheath of the erector spinæ is opened the whole length of the skin incision, and the outer cut edge is reflected outward. The belly of the erector spinæ is retracted inward, exposing its anterior sheath. Incision into the upper part of the anterior sheath opens up the posterior superior lumbar triangle just below the last rib. The last rib is then cleared of muscular and ligamentous attachments up to its head. The incision is enlarged downward by cutting a few fibres of the quadratus and lumbar fascia. The writer states that the chief advantages of such a method of kidney exposure are: The ease with which a kidney can be brought out on the loin, the minimum of pull upon the pedicle when it is on the loin, and the absence of danger of postoperative hernia forming in the wound.

Kidney Stone Diagnosis.—B. Lewis presents a short working formula for physical examination which will lead to satisfactory results in nearly all cases of nephrolithiasis: 1. If there are urinary disturbances of any sort (no matter what the "symptom" prevailing), examine the urine—preferably divided into two clean glasses while being passed. 2. Cloudy, bloody, or murky urine indicates the necessity of microscopical examination, with and without staining of the sediments. 3. If the clouding is from phosphates or urates it may be negligible; if from blood or pus, the duty staring one in the face is to learn (a) what part of the urinary tract it comes from; and (b) its causation. 4. If the bleeding or suppuration is proved to be in the lower part of the tract, there is no need for cystoscopy, but if this cannot be established, and there is good reason for suspecting the upper tract, the direct and unavoidable indication is for cystoscopy. It means cystoscopy and double ureteral catheterization, with sounding of the ureters for obstruction, and drainage of the respective kidneys independently, with searching investigation of the two urines thus obtained, and detection of any pathological features present, such as pus, blood, casts, bacteria, epithelia, etc. 5. Identification of pus or infection in either kidney commonly indicates the application of the x ray photograph of that side, with or without the coincident use of radiograph ureteral catheters or collargol injections for further elucidation.

Resection of the Ureter.—Howard Lilienthal has used the following method with most satisfactory results in twenty cases: Having performed nephrectomy, an ordinary ureteral bougie, about the size of No. 10 to 12 French, is pushed down through the ureter from its upper divided extremity to the bladder, and tied in place with a ligature. The ureter is now digitally isolated through the nephrectomy wound as far down as possible. The nephrectomy wound may then be closed by suture in the usual manner, with drainage by tube, gauze, or rubber dam. The patient is next placed upon his back and a short inguinal incision parallel to Poupart's ligament, seldom more than two inches in length, its lower extremity being close to the external border of the rectus, is carried down through the tissues as far as the peritoneum. Now the finger is used to push the unopened peritoneum away from the pelvic wall. The ureter, with its contained bougie, is extremely easy to recognize, and in fact can hardly be missed. With the back of the finger toward the pelvic wall, the ureter is peeled away from the peritoneum. The danger to the great iliac vessels is practically zero, since the ureter always adheres to the peritoneum and is lifted away with that structure. With a little manipulation the ureter is drawn out of the wound, loosened from below upward, and is drawn (as a rule very easily), with its contained bougie, out at the inguinal wound. The bougie is now extracted, and it will be found that the entire ureter, down to its termination at the bladder, can be drawn up into the wound. Here it is ligated, cut off, and the stump carbolized. The wound is closed with three layers of sutures, with or without drainage. This method of removing the ureter adds seldom more than ten or fifteen minutes to the length of the operation, and we then have the great satisfaction of knowing that the entire tuberculous focus has been extirpated.

ANNALS OF SURGERY.

April, 1913.

Congenital Internal Hydrocephalus.—Irving S. Haynes presents two cases in which he drained the cisterna magna into a cranial sinus. The operative procedure consists in exposing the occipital bone from the margin of the foramen magnum to above the occipital protuberance by a median incision with lateral reflection of the periosteum and the attached muscles. The bone is trephined over the midpoint between the foramen magnum and the occipital protuberance, and from this opening the bone is removed upward, so as to expose the termination of the longitudinal sinus. With a manometer the pressure in the cisterna magna and in the sinus is recorded. The cisterna magna is now connected with the occipital sinus, if it shows large enough, or with the torcular, by means of a rubber tube having an internal diameter of 1.5 mm., and sutured in place, the tube, silk, and needles having been previously sterilized in petrolatum. The tubes used are of firm consistence, with an internal diameter of from 1.5 to two mm., and varying in length from three quarters to one inch. The tube is to be let into the cistern and sinus through minute incisions that would be completely filled by the tube. The operation is completed by closure of the soft parts after packing the débris of bone in the gap in the skull. The first case showed much improvement for four weeks and then returned to the original state, but to a lesser degree; the second case did nicely for two weeks, and then died in consequence of displacement of the tube in the dura and the too rapid loss of cerebrospinal fluid.

The Embryogenetic Relationships of Tumors of the Kidney, Suprarenal, and Testicle.—Louis B. Wilson makes a study of the operative and autopsy material from the Mayo clinic, consisting of ninety-two renal tumors, three adrenal tumors, and twenty-one testicular tumors, and makes the following summary: Renal tumors: 1. Of ninety-two renal tumors studied, there were three pelvic papillomas, four carcinomas, one squamous celled epithelioma, one adenoma, one fibroma, seven sarcomas, one Wolffian tumor, three embryomas (Wilm's tumors), and seventy-one mesotheliomas. 2. The first two apparently arise secondarily to chronic irritative processes in the adult. 3. The third is probably a rare ectodermal inclusion within the renal pelvis. 4. The embryomas, according to Wilms, are derived from inclusions of the lateral embryonic plate within the caudal portion of the nephrogenic cord in the early embryo. 5. The most numerous of the renal cortex, the so called hypernephromas or Grawitzian tumors, are apparently mesothelomas derived from the nephrogenic vesicles which have failed in the early embryo to form a tubular connection with the renal pelvis. 6. Most of the few true sarcomas of the kidney develop primarily in the adult tissue of the renal capsule and involve the cortex secondarily. 7. The renal cortex is also frequently the site of inclusions from the mesonephros and rarely of inclusions from the suprarenal gland. Rarely, if ever, do either of these inclusions in the renal cortex form malignant tumors. Adrenal tumors: 1. Of the three primary adrenal tumors, one was adenoma, and two were hypernephromas from the adrenal cortex. 2. Primary malignant tumors of the adrenal are either round celled sarcomas or more frequently hypernephromas. 3. Adrenal hypernephromas frequently induce abnormalities of sex and strength. 4. Tumors of the adrenal, in whatever stage of their development, bear no histological resemblance to most mesotheliomas (so called renal hypernephromas). Testicular tumors: 1. Of the twenty-one testicular tumors, nineteen were teratomas. 2. Teratomas of the testicle, in harmony with Ewing's hypothesis, arise from sex cells whose normal development has been suppressed.

Infections of the Hand.—L. W. Hoon and G. J. Ross, following the technic and teachings of

Kanavel in the treatment of ninety cases of infected wounds of the hand, draw the following conclusions: 1. There were sixty-seven cases of simpler infections which were saved from becoming serious infections by simple treatment. 2. The beautifully simple anatomy of the hand and forearm in relation to infective processes, as emphasized by Kanavel, forms an amply sufficient foundation upon which can be successfully built up treatment for simple or grave infections of these parts. 3. For the twenty-three cases of deep infection the incisions recommended by Kanavel resulted in the most perfect restoration of function, with the least after scarring. 4. An utter disregard of the so called danger of the opening up of uninfected areas in the hunt for pus did not result in harm. Incisions into doubtful areas were always made before opening into obviously pus filled areas. In our future cases we intend to open up areas in which we cannot say definitely whether there is or is not pus, using the same incision as should be employed for opening up obviously infected pockets. 5. Rendering the operative field bloodless before operation, and subsequent release of the bandage, is an unnecessary procedure. 6. Conservative irrigation did no harm, but just as good or better results were obtained by merely washing off what pus could be brought out by very gentle pressure. 7. Bending or extending of the fingers, in a day or so after operation, was found to be entirely free from danger of spreading the infection and of paramount value to the patient in securing for him an afterward useful hand. 8. Incisions upon the back of the hand are rarely needed. The redness and edema commonly present upon the dorsum in these cases is extremely dangerous, because it often leads the uncertain practitioner to cut into pus free areas, and then, finding no pus, to adopt one of the fatal policies of poulticing or waiting until the abscess shall "come to a head." Meanwhile, the increasing infection may cause bone or tendon necrosis, with crippling that no amount of carefully made incision or faithful postoperative massage will wipe out. 9. Hot boric dressings, the dorsal splint, and flat rubber dam drains (never tubing), as used above, form an indispensable trio. 10. All cases treated as we have described recovered perfect function, excepting those few cases where necrosis of bone or tendon was present when the patient was first seen.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

April, 1913.

Prostatectomy.—E. S. Judd advocates dividing the treatment into two stages: The first stage consists in relieving the patient of residual urine, and at the same time treating the cystitis, if it exists. In about three quarters of the cases a permanent catheter is introduced into the bladder through the urethra, and in the remaining quarter it is necessary to make a preliminary suprapubic stab drain. The second stage, the removal of the obstructing prostatic gland, is carried out after the urine has reached a normal specific gravity, following the initial fall. His technic is as follows: After emptying the bladder a long median incision is made and before an incision into the bladder is made the fundus is pulled well up into the abdominal wound, by stripping back the peritoneum, and the space around the bladder packed. With the gloved fingers of the right hand in the rectum, the gland can be pushed well up into the bladder, and the left index finger is now pushed through the prostatic urethra into the capsule of the gland. The enucleation should include the entire prostate gland, with the exception of the small piece lying in front of the prostatic urethra and the posterior lobe lying behind. When the gland has been completely enucleated, the capsule contracts quickly and the hemorrhage promptly ceases. As soon as the gland is shelled free from its capsule, and the urethra is torn off, the catheter which was introduced into the urethra before the operation was begun is passed through the prostatic capsule into the bladder, and irrigation commenced. Free irrigation is begun at once and the clots washed away. If the bleeding is too free, or the bladder is too badly infected, a rubber drainage tube, held by a pursestring suture in the upper angle of the wound, is inserted, and allowed to remain from twenty-four to forty-eight hours. The abdominal wound is sewed with silkworm sutures, and frequent urethral irrigations are continued until the suprapubic wound has healed, which takes place in from two to three weeks.

Postoperative Results in Amputation of the Cervix.—V. N. Leonard prepares an analysis of 128 cases of amputation of the cervix performed in the gynecological clinic of the Johns Hopkins Hospital, and draws the following conclusions: (1) Hemorrhage after amputation of the cervix is not uncommon (five per cent)., and may occur weeks after operation. (2) Cases of late postoperative hemorrhage are due to infection, rather than faulty suture of the cervix. (3) After amputation of a diseased cervix, ninety per cent. of the patients show noticeable improvement in general health. (4) Persistent leucorrhea of cervical origin is cured in sixty per cent. of the cases and improved in thirty per cent. of the cases. (5) About half the cases experience less menstrual pain after the operation. (6) Four fifths of the women remain sterile after the operation, yet in certain selected cases of persistent sterility amputation of the cervix seems to be the only practicable procedure. (7) This postoperative sterility is probably mechanical in origin, and may be due either to a narrowing of the external os through encroachment by the edges of the vaginal mucosa or to a stenosis of the cervical canal, consequent upon the irislike contraction of the cicatrix which invariably follows the operation. (8) A pregnancy following the amputation of the cervix has not more than an even chance of progressing to full term, in which event (9) serious dystocia due to cicacritial rigidity of the cervix will commonly be encountered. (10) Amputation of the cervix is the operation of choice in elderly women, but the procedure should be applied to those in the child bearing period only when more conservative methods of treatment, such as Hunner's linear cauterization or thorough curettage of the cervix, have failed.

Abderhalden's Biological Test for Pregnancy.—P. F. Williams and R. M. Pearce assert that the use of Abderhalden's test for pregnancy, employing the dialysis method and the ninhydrin color reaction, has given positive results with each of twenty-eight sera from pregnant women and eight from women in the post partum period, including one after abortion, and that the test has never been negative in a known pregnancy. They have found the ninhydrin reaction far superior to the biuret reaction, and that Schleicher and Schull's smaller dialysis sacks should be used, rather than the fish skin membranes originally recommended. As a result of their studies, however, they feel that this test cannot be accepted as an accurate clinical method until it has been more thoroughly investigated and the possible sources of error corrected.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, February 17, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Spinal Ankylosis for Pott's Disease.—Dr. A. Ernest Gallant reported a case, with photographs and skiagraphs, in which he had performed Hibbs' operation. The patient, a woman thirty-four years old, who was referred to him by Dr. John D. Trezise of Brooklyn, stated that she had had spinal deformity for two years, and the diseased process was found to involve three of the lower dorsal vertebræ. The operation was done by Doctor Gallant on October 5, 1912; after which she was kept in bed for a few weeks. All pain disappeared in four weeks, and there had been no return of it. After leaving bed she had worn a brace for a time, and was now using a suitable corset. The deformity, as well as her general condition, was greatly improved, and in December she wrote from her home in Pennsylvania that she had gained six pounds and was able to walk two miles. It had been found impossible, Doctor Gallant said, to get a radiograph which would show whether there was actual ossification at present.

Eyestrain.—This paper, by Dr. Isaac Hartshorne, was published in the Journal, May 10, 1913.

Clinical Indications for the Mastoid Operation.—This paper was by Dr. W. Sohier Bryant, who said that the history of the recent development in the diagnosis, prognosis, and treatment in mastoid surgery was marked by four brilliant achievements: The deductions from bacterial examination of the discharges, the use of the x ray in disclosing intraosseus conditions, the short convalescence, and the improved hearing after the operation. Formerly the accepted indications for mastoid operation were, symptoms of cranial and hemic complications, labyrinthine suppuration, fistula of the mastoid process, facial nerve or abducens nerve paralysis, fluctuation, edema or deep tenderness over the mastoid region, rise of temperature, and headache, all associated with middle ear suppuration and chronicity. At times there was difficulty in estimating the true importance of the various symptoms, and it often happened that cases which required immediate operation were delayed because of absence of some of the classical symptoms. Atypical cases with absence of any direct evidence of mastoiditis were either not diagnosticated until it was too late to save the patient's life, or a tedious recovery followed a delayed operation. Until comparatively recently mastoid operations were on principle deferred until softening of the bone had occurred; expectant treatment holding out the encouragement of convalescence without operation. Formerly also the prognosis of the results of the operation were most discouraging: Usually a slow, weary convalescence with many painful postoperative dressings and, what was worse, considerable impairment or even complete loss of hearing. It was no wonder, therefore, that the operation was delayed as long as possible. The present day indications for a mastoid operation included, in addition to the former ones, several definite elements of preeminent value in both diagnosis and prognosis. The most important of these indications were: 1. Rise of temperature unaccounted for and the toxic appearance of a patient suffering from inflammation of the middle ear or with a history of such inflammation; 2, the infallible indication of the presence of the *Streptococcus mucosæ* in the discharge, together with the determination of the morbidity of the mastoid, reinforced by the skiagram; 3, the demonstrations of a solid mastoid in the presence of middle ear suppuration. An observation of the greatest importance was that a mastoid infection due to *Streptococcus mucosæ* run a remarkably insidious course, with absence of objective symptoms and slight tendency to resolution. Like the bacterial differentiation, the skiagram was of especial value in cases which, without its use, might be overlooked. It had been observed that in normal temporal bones the interior structure of the mastoid varied considerably, grading from pneumatic cellular, through diploetic, to dense ivory, bone. Clinical observation showed that in pneumatic mastoids infection ended either by frank abscess formation or resolution, while in cases where diploetic or dense bone surrounded the mastoid antrum it tended rather to eventuation in chronic middle ear suppuration or to the development of serious intracranial or hemic complications. The skiagram also gave a differential diagnosis between middle ear suppuration complicated by otitis externa without mastoiditis and otitis externa with mastoiditis, and where both ears were affected it was useful in determining which ear demanded operation, or whether both ears should be operated upon. The means by which the time for operation was determined were the following: 1. The history of the case; 2, the condition of the ear as determined by inspection; 3, the presence of general sepsis; 4, symptoms indicating intracranial complications; 5, the formation of an abscess requiring surgical drainage; 6, a skiagram of the mastoid region; 7, the bacterial examination; 8, chronic middle ear suppuration not yielding to other treatment or with cholesteatomata; 9, acute suppuration of the middle ear unreasonably prolonged; 10, acute suppuration with the skiagram showing absence of the antral pneumatic cell system; 11, suppurating labyrinthitis. Recourse to the Röntgen ray cleared up a doubtful diagnosis, giving, in connection with the clinical symptoms, positive indications for or against operation. In pneumatic mastoid suppuration it was advisable to delay operation until the formation of abscess, while in the dense mastoid, suppurative mastoid inflammation was sufficient indication for operating at once. The prognosis following the mastoid operation, if the operation were delayed, was much the same as formerly, but cases operated on at the earliest crucial moment indicated gave a prognosis of speedy convalescence, absence of complications, and restoration of normal hearing.

The Combined Laboratory and X Ray Indications for the Mastoid Operation.—This paper was by Dr George Sloan Dixon, who said that for many years it had been the routine practice in the Eno Laboratory of the New York Eye and Ear Infirmary to examine smears for the aural canal of every patient with suppurative middle ear disease admitted to the wards. For a short time cultures were made, but these were soon abandoned, as the germs were always mixed and much time was wasted in separating them. As the mastoid pus in cases coming to operation was also examined, comparison showed that the predominating germ in the canal was found in the mastoid pus with sufficient frequency to make it a good rule to regard the predominating germ in the discharge from the middle ear responsible for the mastoid involvement. In 5,496 examinations of aural pus made during the past eleven years, 26.6 per cent. had been mixed infection. A large number of germs were present, and it was not advisable to charge the infection to any particular one. The majority of these cases were chronic, and where a radical mastoid operation was done the smear usually showed mixed germs. Streptococcus occurred as the predominating germ in 24.8 per cent.; staphylococcus (aureus and albus), 7.4 per cent.; *Streptococcus mucosus capsulatus*, 4.8 per cent.; spirillum of Vincent, 1.8 per cent. The remaining 22.4 per cent. were represented by miscellaneous, negative, etc.; among which were the pneumococcus and tubercle bacillus. In the matter of the relative virulence of the various microorganisms in acute suppurative processes about the middle ear Doctor Dixon's experience had led him to regard the *Streptococcus mucosus capsulatus* as standing first, *Streptococcus pyogenes* next, pneumococcus third, and staphylococcus fourth. He desired to reiterate, with special emphasis, a statement he had made a number of times, namely, that among the microorganisms found in the middle ear the *Streptococcus mucosus capsulatus* in a manner stood alone; being the most insidious and destructive the otologist had to combat. Cases of this character demanded at least an exploratory mastoid operation. As a rule, every day over two weeks' duration was an additional and increasing menace to the life of the patient. To illustrate the force of this statement he gave brief histories of six cases ending fatally which had been picked at random. While other forms of infection might be equally dangerous, in them there was little likelihood of such a complete cessation of symptoms, and the danger signals were quite constant. In cholesteatoma the finding of cholesterin crystals in specimens from the canal or attic might aid in the diagnosis. The microorganisms found in this condition were not likely to be of much importance. In mastoiditis the blood count might be an excellent indication of the resistance of the patient or the onset of complications, but gave little information as to the condition of the mastoid itself. In blood cultures we had an excellent means of determining whether the patient was suffering from bacteremia or not, and a positive culture in the presence of middle ear suppuration might be regarded as evidence of thrombosis of the lateral sinus, provided that all complications of a suppurative nature below the neck could be eliminated.

If any advantage was to be derived from mastoid radiography, some knowledge of the variations met with in the normal mastoid process was, of course, necessary. Having made some reference to these, he said it might very properly be asked what we might reasonably expect to be obtained in the way of information from an x ray examination of the mastoid. First, it would show, in the vast majority of instances, the location of the lateral sinus, judged by the shadow of the anterior margin of the groove in its relation to the meatus and its angle to Reid's base line—which was most important. (Illustrative cases cited.) Second, we could learn the type of bone, the location of the large cells, whether the sinus was covered with cells or not, and the extent to which they had developed into the zygomatic region. If cells did not show on the diseased side, and did show on the normal side, the chances were about three to one that the pathological bone was of the same type. If no detail were found in the plate of the affected side, the chances were about five to one that the mastoid was diseased; though the clinical symptoms must back up the plate. (Cases cited.) Third, it was possible to diagnosticate perisinus abscess occasionally. More experience and improved technic should increase the number discovered. Epidural abscess, if it were not in line with the sinus, should be diagnosticated at least in a small proportion of instances. (Cases cited.) Fourth, fractures of the mastoid process could be shown, but not invariably. Stereograms would aid in these cases. Fifth, faults in the canal wall and tegmen tympani and antri might be shown. Furunculosis of the canal frequently gave marked symptoms, and in the vast majority of cases the diagnosis could be cleared up by an x ray examination. (Cases cited.) It could not be gainsaid that x ray examination of the mastoid was of great value. Ordinary common sense must be used in reading the plates, and the findings should be supported by the clinical symptoms. Where the latter alone were not sufficient for a diagnosis of mastoiditis, a positive plate would often supply conclusive evidence for immediate operation. Anything which would add to our knowledge would increase the chances of the patient's speedy recovery. The clinical symptoms were all important; without them our modern aids were of little value. We might have a rather violent streptococcus infection in the canal, or a pneumococcus infection which looked vicious in the smear, recover after myringotomy, even though there might have been considerable mastoid tenderness; and a *Streptococcus mucosus* otitis media might eventuate in the same way. Not infrequently, however, the clinical symptoms in this form of infection were not sufficient to warrant surgical intervention. When the acute stage had passed away we might have none, and the blood count might be normal. Only the otorrhea remained, and possibly even this might have ceased. If in these cases further clinical symptoms were waited for, the chances were greatly in favor of their indicating meningitis or sinus thrombosis when they did arrive, instead of a simple acute mastoiditis. A positive x ray plate in such a case, taken in connection with the form of infection, settled the diagnosis and made the mastoid operation, with as little delay as possible, imperative. Staphylococcus infections seemed to allow more latitude than any of the others, but even these would give plenty of trouble if the drainage was poor. A certain number of cases were met with in which symptoms of sinus thrombosis was the first indication that the time for operative interference had arrived. Here a positive blood culture would, of course, settle the diagnosis, provided that other sources of infection of the blood stream could be eliminated. In these cases the differential blood count was variable, and could not be regarded as affording any very positive assistance; but a large leucocyte count and a high polynuclear proportion were suspicious.

Dr. **Gorham Bacon** said that for a good many years he had worked with much satisfaction with Doctor Dixon in this class of cases. It was of very great value to know the nature of the infection, not only in one ear, but in both. In certain instances there was a mixed infection on one side and a very virulent infection on the other. The fact of such virulent infection indicated that the real trouble with which we had to deal was probably on the side where this was found. Hence, the laboratory findings helped very much in this class of cases. On the other hand, we might have sinus thrombosis with negative blood cultures, and with a positive blood culture fail to find a thrombus in the sinus; and we had, therefore, to rely more on the clinical indications than those furnished by the laboratory. The clinical were the most important, though the others undoubtedly helped out.

Dr. **Edward B. Dench** said that as to the effects upon the hearing, if the operation were done early this was seldom impaired, and his experience was that patients heard as well after the operation as before. This was an argument for operating early, and it should be borne in mind that the simple mastoid operation, if done sufficiently early, was not a dangerous procedure. As to infection by the *Streptococcus mucosus capsulatus,* during one winter he had thirteen cases of this, most of them in private practice, and out of these only two came to a mastoid operation. Still, notwithstanding this experience, he agreed that this microorganism was the most dangerous we had to deal with. He would say, however, that a case of such infection was not dangerous provided that it was drained early. But the patient should be watched very carefully for a long time, for one never could tell when serious trouble might suddenly develop, even though the patient was apparently in perfect health.

Dr. **T. Passmore Berens** said that of the fourteen cases of mastoiditis radiographed by Doctor Law of the Manhattan Eye, Ear, and Throat Hospital during the past two weeks, as they presented themselves at his (Doctor Berens') clinic, his reading of the plates in every instance was confirmed on operation. Doctor Dixon's x ray and other work was convincing, and could not be too highly praised, and he wished to congratulate Doctor Bryant on his able handling of his subject. He agreed with the latter as to the indications for operation, but thought he had not sufficiently emphasized the fact that there was a class of cases with practically no subjective symptoms which had been called "latent mastoiditis." Latent mastoiditis had, in many instances, simply a discharge from the middle ear, and this was frequently the only symptom on which we had to work—often there was no pain on pressure, no edema, no demonstrable sagging of the walls of the external canal; the blood count might be normal; fever was absent, and the patient might claim complete freedom from other discomfort—and yet the mastoid might be necrotic and full of pus. There was still another class of cases in which the drum membrane might be intact, with but little if any redness in it, and there might be simply vague pains referred to the ear and to that side of the head. Even here the blood count might be normal and fever lacking, and yet the mastoid might be full of pus, while operation might uncover a pernicious abscess. Doctor Bryant had not emphasized at all too strongly the importance of early operation in cases of *Streptococcus mucosæ*, but it was well to remember that even the comparatively innocent staphylococcus might invade the meninges and cause death.

Dr. **Charles E. Perkins** said he thought that as time went on we would rely more and more upon the x ray examination to aid us in the diagnosis of doubtful cases. Some two years ago he had reported four cases of mastoiditis without apparent involvement of the middle ear. One of these patients had had a swelling behind the ear for about three months. The fundus of the canal and membrana tympani were normal. At operation a large perisinus abscess was found. The infection in this instance was the *Streptococcus mucosus capsulatus.* In another case, which he had seen just before death, the fundus was normal, but at the autopsy mastoiditis, sinus thrombosis, and meningitis were found. In this case an x ray examination early in the course of the disease would doubtless have cleared up the diagnosis and perhaps saved the patient.

Dr. James F. McKernon said that the importance of the evidence afforded by bacteriological investigation in this class of cases was now generally recognized. Yet when he had asserted this in 1896 it was received with laughter by the surgeons of the New York Eye and Ear Infirmary. He had waited to hear Doctor Bryant say something about the atypical cases. The typical cases were easy of recognition, but those on the border line were more difficult. There might be no tenderness over the mastoid, but there were two significant signs. The first was a marked diminution in audition on the affected side, and the second was that when a speculum was inserted there was found a general narrowing of the lumen of the canal, though most marked as regards the superior wall. In addition, the appearance of the tongue would indicate the presence of an infection. Again, in children the development of serious trouble was sometimes very late. There might be nothing to attract attention but a continuous discharge, but the quantity of this would show that it came from a reservoir of greater capacity than the middle ear. He then went on to say that while the blood examination and x ray were undoubtedly of great confirmatory value, he would refuse to operate in any case in which he had to depend upon the evidence afforded by these alone.

Dr. Joseph A. Kenefick said that he, too, would emphasize the atypical cases as of the greatest importance to the general practitioner. Headache was a sign which ought not to be disregarded, and especially headache at night. Tension was a necessary result of mastoiditis, and this, naturally, was relieved to some extent when the patient was in the upright position, but continuous when he was in the recumbent posture. In mastoid disease the sooner one operated, the better. In the matter of diagnosis, in relation to the type of infection present, he personally depended upon the findings by Doctor Dixon. Mastoiditis often could be nipped in the bud, in infection of any type, and in every instance it was essential that the drum membrane should early be slit from top to bottom.

Dr. Arthur B. Duel said that all seemed now to agree as to the value of smears. This was not formerly the case, as it was asserted by many that only cultures could be of importance. For many years it had been his invariable practice to make smears from the ear, and he had come to look upon the findings as of prognostic value. Doctor Dixon's work had been of great value. As to infection by the *Streptoccocus mucosus capsulatus,* we should not be deceived into inaction by the fact that nothing very serious developed, if the discharge continued. These cases ought to be operated on precisely because the capsulatus was there, when the discharge continued for more than a fortnight; owing to the fact that tremendous destruction often occurred with no warning symptoms until intracranial structures were involved. The pneumococcus would produce high temperature, as it did in pneumonia, and this was likely to subside by crisis, without giving rise to mastoiditis. He believed the x ray would prove to be of incalculable value in diagnosis as experience with it increased.

The Results of Tonsillectomy.—Dr. Bryan DeForest Sheedy read this paper. Not all physicians, he said, had done tonsillectomies, to the exclusion of the old time tonsillotomy operation, and those who had done tonsillectomies might not have observed the results of their work months after the operation. The results of the modern operation, so far as removing pathological tonsils was concerned, were, he believed, very much better than those from the old tonsillotomy procedure, and though we had many physical throat defects following it, the constitutional benefits derived from it were far greater and outweighed such drawbacks. He was convinced, however, that some at least of these throat defects were due to the present customary method of removing the gland.

In tonsillectomy the aim had been to remove the gland with its capsule intact, and this had been accomplished either, 1, by seizing the tonsil with the forceps and pulling the whole gland from its bed, and then with sharp knives dissecting away the mucous membrane and cellular tissue; 2, by bluntly dissecting with the finger, thereby tearing through these structures; 3, by extracting the tonsil from its bed, incising through the mucous membrane, and then passing the snare outside, thus removing the whole tonsil; or 4, by the Sluder operation. Of a series of fifty patients, from fourteen to forty years old, examined from two to three months after tonsillectomy by some one of these procedures, Doctor Sheedy found deformed throats in more than eighty per cent., while not more than twenty per cent. had throats approaching the normal. Of the forty patients with abnormal conditions, seventeen complained of speech defects for two or three weeks, eight complained of speech and voice defects two months after operation, and two had practically lost the singing voice, while thirteen said they could speak better, and that their throats felt better than before the operation. About five per cent. complained of difficulty in using certain words and had nasal intonation. The deformities following enucleation seemed to be of three varieties: 1. The pillars on both sides had apparently disappeared, leaving a flattened surface where the tonsil had been and a much narrowed opening into the nasopharynx; 2, the pillars on both sides seemed to have grown together, so that there was but one pillar, with the uvula pulled to one side; 3, the anterior pillar had wholly disappeared, while a large amount of cicatricial tissue was deposited on the surface of the posterior pillar, altering its shape and function. In some of the cases the soft palate and uvula were pulled down to a much lower position than normal, thus accounting for the nasal intonation complained of by some of the patients. The question therefore arose how to enucleate the tonsil without incurring unsatisfactory afterresults. As a means to this end he had for some time been removing tonsils by a procedure which he had not seen described in the books. In adult patients he cocainized the surface of the tonsil with a ten per cent. solution of cocaine, after which he injected into the cellular tissue surrounding the capsule a one and one half per cent. solution of quinine bisulphate, making the operation absolutely painless. In young children he employed general anesthesia with ether. With a tonsil tenaculum inserted as far as possible into the centre of the gland, avoiding the capsule, he took hold of the bands of tissue extending from one side to the other and endeavored to invert the tonsil, just as one might invert the uterus by pulling on a retained placenta. Where the capsule was not too much contracted, the gland had not become a solid mass of hypertrophied tissue, or the capsule was not everywhere bound down by bands of tissue left from old abscesses, on slight traction the tonsil would completely invert, and after the inversion he passed a snare about it. By tightening the snare slowly the tonsil was removed without injury to the muscles and without hemorrhage. During the past two years he had employed this method in a very large number of cases, and had yet to meet with one where deformity had followed the procedure. From this experience, therefore, he was convinced that in cases to which it was adapted this operation surpassed any hitherto known for the removal of tonsils.

Dr. Frank C. Raynor said that for a great many years he had done tonsillectomy practically exclusively. He had had some of the deformities mentioned in the paper, but almost always an essentially normal throat afterward. When the tonsil ran very high up there was a greater risk of some deformity. He had met with no marked impairment of function, though it was difficult to follow up hospital cases. Most of his operations had been in children, and in this class of patients, on account of the gagging and other trouble caused, local anesthesia was not practicable. In practically all his cases he had employed general anesthesia, and this he thought preferable on account of the comfort of both operator and patient. He had been much interested in Doctor Sheedy's description of his method, and would certainly give it a trial.

Dr. William K. Simpson said that the question of tonsillotomy versus tonsillectomy was an old and vexed one.

There was no doubt in his mind, however, that a good tonsillotomy was better than a bad tonsillectomy. In skilful hands the old operation could in many instances be done as effectively as so called tonsillectomy. It was certainly a matter of wonder why tonsillectomy had not always been the one operation, and the most probable explanation was that something must have happened to throw discredit upon the procedure. We now had a great variety of methods for removing the tonsils, and it seemed that we ought to fix upon some simple, uniform way of doing this. There were one or two operations which appeared to work satisfactorily. One of these at present claiming considerable attention was the Sluder operation, and now we had another in the procedure described by Doctor Sheedy. The complete removal of the tonsil, i. e., tonsillectomy, should be done exceedingly carefully and in a manner which should reduce to a minimum the subsequent palatine deformities.

Dr. J. Alexander McIsaac said that both in children and adults he never did a tonsillectomy except under general anesthesia, so that he could have complete control of his patient. In his experience, where a tonsil caused trouble from inflammation and disease, he found that it was very adherent to the surrounding tissues. Therefore, the best technic was the one that caused the least possible trauma when removing it. He had found that the best method was to dissect carefully both the anterior and posterior pillars away from the adherent capsule. Following this further, he dissected the capsule from the superior constrictor muscle, and in doing this he directed pressure against the capsule of the tonsil. Then he used the wire snare to complete the operation He had had no experience with the method described by Doctor Sheedy in his excellent paper. In the hands of another physician he had seen a secondary hemorrhage follow the use of the snare where the dissection had not been done.

Doctor Sheedy, in closing, said that Doctor Simpson's remarks applied more particularly to children. The cases to which he had referred in his paper were wholly in adults. With the exception of one or two instances, in a very large number of cases, he had not seen unsatisfactory results in children when the operation was carefully and properly performed. In the various cutting and dissecting operations they necessarily had cicatricial tissue, and from this there naturally followed the contractions resulting in the abnormal conditions, especially of the pillars, of which he had spoken. There could be no question that tonsillectomy, as heretofore performed, was a major operation, and one that should always be done in a hospital, where proper assistance and appliances were ready at hand and where the patient could lie up for a day or two and have proper aftercare. The Sluder method was intended to do away with the difficulties associated with the work as now performed, but injury to the anterior pillar was almost inevitable under this procedure. The eversion operation, as he had described it this evening, was so simple a surgical procedure that any man with any surgical experience could do the work with safety, and if the snare were tightened slowly there would be no afterhemorrhage with which to deal. This statement applied to the operation in children as well as adults, and whether the operation were done under a local or a general anesthetic.

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Letters to the Editor.

APPARATUS FOR THE INTRAVENOUS USE OF NEOSALVARSAN.

24 West Sixtieth Street, New York, *May 20, 1913.*

To the Editor:

The article you publish in the issue of May 17, 1913, written by Dr. O. L. Suggett, entitled "A New Simple Apparatus for Its Use" (Neosalvarsan) describes an apparatus almost identical with the apparatus devised by me over two years ago, the description of which was published in the Journal of February 11, 1911. There is practically no difference except the use by Doctor Suggett of the Erlenmeyer flask, instead of the Jena flask.

Edward F. Kilbane, M. D.

DEAFNESS AND ITS PREVENTION AND TREATMENT.

Akron, Ohio, *May 30, 1913.*

To the Editor:

I desire to express my gratitude to you for the general excellence of your Journal and especially for those articles in the issue of May 24th by Kopetzky, Maloney, and Ballin, on the ear and its disturbances.

These I have reread with growing interest and profit.

While I am in general practice, I am intensely interested in a search for relief for the vast army of the more or less deaf. Their complaints hurt the cause of legitimate, rational medicine, and promote therapeutic nihilism in the minds of the laity and justifying it to them as they detect it in our profession. Ballin emphasizes the extreme vulnerability of the auditory nerve; Kopetzky's lucidity in the description of the anatomy and physiology of the auditory apparatus is charming and helpful, while Maloney's advice as to the training of the sense of hearing is most excellent and cheering.

Contrast the mighty works of the immortals in medical history with their limited resources, scant information, and small libraries, with the modern graduate, floated on a flood of literature, drenched with advice, overwhelmed with aids, and yet gradually isolating himself from their good influence, narrowing his own horizon, and chasing the elusive dollar. To counteract this and exalt the standing of the profession in the mind of the masses, preventive measures should be boldly and freely advocated to the whole community. The care of the ears, the dangers of cold water (as in diving), the importance of protection, of diet, the insidious approach of eustachian infection, reaction, swelling, occlusion; leading to mid ear infection, drum fixation, ossicular anchylosis, stampedic motor limitation—all are subjects suitable for popular instruction.

Mrs. K. had eustachian obstructive deafness in right ear six years, and in left ear one year. Life became burdensome; and after a few treatments during six months by an excellent aurist in vain she was treated by means of the Oudin current, applied by insulated electrode to the pharyngeal orifice of the eustachian tube, the external meatus being connected to a grounding wire. Three séances restored hearing, and she decided to postpone her contemplated suicide.

I have a number of chronic cases, hoping they may one day hear the sirens calling. In addition to common agents I employ the high frequency, slow and rapid sinusoidal currents, the faradic and galvanic currents, the effleuve and x ray flashes, in suitable cases. Surely the dismal problem of ages demands solution. Ears to hear were never more urgently required nor more essential to success in life. So I welcome, as you do, any light which may be shed upon this difficult problem, banishing narrowness of view and practice, hoping, struggling, reading, learning.

All honor to those who lend a hand in the doubtful battle.

I thank you for your scientific attainments, high ideals, faithful efforts, and excellent results.

Every doctor should attend regularly his local medical society's meeting. I believe a large part of the profession needs prodding.

S. St.J. Wright.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Textbook of Physiology. By Isaac Ott, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia, Consulting Neurologist, Norristown Asylum, Pa., etc. Fourth Edition, Revised and Enlarged. Illustrated with 434 Half Tone and Other Engravings, Many in Colors. Philadelphia: F. A. Davis Company, 1913. Pp. xvi-911. (Price, $3.50.)

In this, the fourth edition, the following changes have been made: Several old cuts have been removed and twenty-four new ones inserted. Twenty more pages have been added. Plates showing the movements of the stomach and intestines in man by the Roentgenkinematograph have been given and described according to the latest observations of the Munich school. These cuts have not appeared in any English textbook of physiology. The chapter upon Internal Secretions has been rewritten to a large extent. The pineal gland and the gonads have been considered. The correlation of the ductless glands has been explained according to the recent experiments upon this subject. A description of the string galvanometer has been given. Electrocardiograms of the normal heart and of the heart in Stokes-Adams disease have been described. The centres of localization of motion in the cerebellar cortex have been indicated. The new test of Abderhalden's for pregnancy has been explained. The increase of cholesterin in pregnancy has been noted. The researches from the Medico-Chirurgical Laboratory upon the exciting, inhibiting, and synergistic hormones of the milk secretion have been incorporated. The latest facts in physiology have been recognized.

Diabetes: Its Pathological Physiology. By John J. R. Macleod, M. B., Ch. B., D. P. H., Professor of Physiology, Western Reserve University, Cleveland, Late Demonstrator of Physiology London Hospital. London: Edward Arnold; New York: Longmans, Green & Co., 1913. Pp. xi-224. (Price, $3.)

The subject matter of this valuable volume formed the theme of a series of eight lectures delivered during the summer session of 1912 in the Physiological Laboratory of the University of London. As summarized by its author, its purpose is as follows: It is believed by those who have had extensive clinical experience that every person who has a low tolerance toward carbohydrates is to be considered as a mild case of diabetes, even although he may be otherwise in perfect health. The condition, left untreated, may, or may not, develop into the acute disease, but it seems to be an established fact that the tendency to do so can be greatly minimized by appropriate dietary control, by which also the risk of complications is much lessened. To apply this prophylactic treatment successfully no empirical rule for all cases can be laid down. It is necessary that each case be treated as a problem in itself, and that it be frequently examined, and the diet adjusted so as to meet its peculiar requirements. The physicians who have had most success with such cases are those who, by close attention to the reults of experimental investigations, have a thorough knowledge of the physiological processes that become upset in the disease. Many of these physicians have themselves taken part in the experimental work. It is for those who cannot find time to do this that the work is intended. The author has admirably succeeded in carrying out his aim, the book being filled with eminently practical facts.

The Treatment of Infantile Paralysis. By Oskar Vulpius, M. D., Professor Extraordinary at the University of Heidelberg. Translated by Alan H. Todd, M. B., B. S., B. Sc., House Surgeon Guy's Hospital, etc. With an Introduction by J. Jackson Clarke, M. B., F. R. C. S. New York: William Wood & Co., 1912. Pp. x-318. (Price, $4.)

Recent additions to our knowledge of acute poliomyelitis, especially concerning the etiology, pathology, and clinical study of the acute stages, have flooded medical literature for several years. At the same time, advances have been made along the line of orthopedic treatment of the sequelæ of this disease, although of a less revolutionary character. It is from the latter standpoint that the present work is developed, reviewing the entire subject and drawing upon the very extensive experience of the author. After a brief and rather superficial consideration of the etiology, symptomatology, and pathology of the disease, the main features of the book are set forth, and these are divided into two parts The first deals with general therapeutic measures, as well as treatment of the acute stage and the stage of repair during the first year of illness; the second, or special, part comprises descriptions of the paralyses of the various parts of the body, together with their surgical and orthopedic correction. The text is generously illustrated, especially as regards the various types of deformity and the forms of corrective apparatus. The translation is excellent, having scarcely a trace of the German construction, and the work as a whole is to be recommended as a valuable contribution in a hitherto somewhat neglected field.

Travaux sur la nouvelle bactérologie de la tuberkulose, dans ses rapports avec l'hygiene et la thérapeutique spécifiques de cette maladie. Par J. Ferrán. Barcelone: La Renaixensa, 1913. Pp. 175.

In this publication consisting of several articles Ferrán sets out to prove that the bacillus of Koch with its acid fast characteristics is derived from a nonacid fast organism which he has discovered. He devotes some thirty pages to a discussion of what he considers erroneous views concerning tuberculosis and its origin. The conclusions drawn are at some variance with the generally accepted ideas. To begin with, these readily grown, nonacid fast bacilli have been recovered from the sputum, pus, and the involved tissues. They are able to cause tuberculosis if an inflammatory condition has preceded. These organisms when spontaneously or artificially attentuated are well tolerated by human beings and susceptible animals. For that reason they are excellent antigens for the purpose of giving rise to immune antibodies. In another article Ferrán devotes fifty pages to a discussion of the new bacteriology of tuberculosis and to descriptions of his newly discovered bacilli. The author generously offers to send cultures of these bacteria to those who would like to confirm the work reported.

Golden Rules of Gynecology. Aphorisms, Observations, and Precepts on the Proper Diagnosis and Treatment of Diseases of Women By George B. Norberg, M. D., Kansas City, Mo., Professor of Diseases of Women and Clinical Gynecology, University Medical College, Gynecologist to the Kansas City General Hospital, etc. St. Louis: C. V. Mosby Company 1913. Pp. 253. (Price, $2.25.)

In the 250 pages of this book, under the title of "Golden Rules," a guide is furnished the practitioner, the rules of which, if observed and applied, will be important factors in getting results in this particular branch of medicine. A book of this sort is needed, since it contains what the title claims for it, and may be advantageously used as a ready reference work. It does not, in any sense, displace the textbook on gynecology, but it eliminates many of the details necessary in a textbook on the subject; also that which belongs to general surgery. The volume is convenient in size, is convincingly written, and contains that which every physician who treats diseases of women should be familiar with.

Meetings of Local Medical Societies.

Monday, *June 9th.*—Society of Medical Jurisprudence New York; Williamsburgh Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

Tuesday, *June 10th.*—Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine; Jamestown Medical Society; Rome, N. Y., Medical Society; Practitioners' Club of Jersey City, N. J.

Wednesday, *June 11th.*—Medical Society of the Borough of the Bronx; Brooklyn Medical and Pharmaceutical Association; Richmond County Medical Society; Dunkirk and Fredonia Medical Association (semiannual); Alumni Association of the Norwegian Hospital, Brooklyn.

Thursday, *June 12th.*—West Side Clinical Society; Brooklyn Pathological Society; Blackwell Medical Society of Rochester (annual); Auburn City Medical Society (annual); Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

Friday, *June 13th.*—Eastern Medical Society of the City of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 28, 1913:

Carter, H. R., Senior Surgeon. Detailed to proceed to Minneapolis, and such other places in Minnesota as may be necessary, to deliver addresses on public health. **Gammon**, W. H., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from May 29, 1913. **Guthrie**, M. C., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Southport, N. C., and assume temporary charge of the Cape Fear quarantine station. **McKeon** F. H., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, San Francisco, Cal., and directed to proceed to Fort Stanton, New Mexico, and report to the medical officer in charge for duty and assignment to quarters. **Ridlon**, J. R., Passed Assistant Surgeon. Granted one month's leave of absence, from June 23, 1913. **Scott**, E. W., Assistant Surgeon. Directed to proceed to Halifax, Nova Scotia, and report to the commanding officer of the Revenue Cutter *Miami* for temporary duty. **Slamberg**, N. L. A. K., Acting Assistant Surgeon. Granted thirty days' leave of absence from May 25, 1913. **Warner**, H. J., Passed Assistant Surgeon. Relieved from duty at the Revenue Cutter School of Instruction, Fort Trumbull, Conn., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty. **Wertenbaker**, C. P., Surgeon. Detailed to attend the eighteenth annual meeting of the Association of Surgeons of the Southern Railway Company, at Old Point Comfort, Va.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 31, 1913:

Appel, D. M., Colonel. Arrived in Honolulu, Hawaii, on May 14th, for duty as department surgeon, relieving Lieutenant Colonel H. I. Raymond. **Bradley**, A. E., Lieutenant Colonel. Granted five days' leave of absence. **Brown**, I. C., First Lieutenant, Medical Reserve Corps. Will be assigned as transport surgeon on the *Dix* durin the trip on or about June 7, 1913, to the Philippine Islands. **Byrne**, J. G., First Lieutenant, Medical Reserve Corps. Has been ordered to active duty and will proceed to Fort Lawton, Wash., and report to the medical superintendent of the Army Transport Service for Puget Sound, for assignment to duty on the transport *Dix*. **Ferenbaugh**, T. L., First Lieutenant. Left on May 24th for station at Fort Sill, Okla. **Frick**, Euclid B., Lieutenant Colonel. Relieved from duty at the Presidio of San Francisco, as chief surgeon of the third division, and from duty in the office of the chief surgeon of the Western Department, on or about June 30, 1913, and will assume command of the Letterman General Hospital, Presidio of San Francisco, Cal. **Guinan**, Edward R., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, and will proceed to his home, where he will be relieved from active duty in the Medical Reserve Corps. **Haines**, E. F., First Lieutenant, Medical Reserve Corps Arrived at Fort Leavenworth, Kansas, on May 22d, for duty. **Huggins**, J. B., Captain. Arrived at Fort Robinson, Neb., on May 23d, for duty. **Hutton**, P. C., Major. Will proceed at the proper time to Gettysburg, Pa., for duty as sanitary officer of the Gettysburg encampment. **Kendall**, William P., Lieutenant Colonel. Relieved from duty at Fort Riley, Kansas, and will at the proper time proceed to San Francisco, Cal., and will report to the commanding general of the Western Department on or about June 30, 1913, for assignment to duty as chief surgeon of the Third Division, and sanitary inspector of the Western Department. **Kinsey**, Oliver, Jr., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, and will proceed to Fort Washington, Md., and report to the commanding officer of that post for duty. **Lynch**, Charles, Major. Has been granted four months' leave of absence, on or about June 15th. **Page**, Henry, Major. Left Army Service Schools, Fort Leavenworth, Kansas, on May 23d, for Walter Reed General Hospital, for observation and treatment. **Reynolds**, C. R., Major. Left Washington Barracks, Washington, D. C., on May 24th for duty with militia camp, Staunton, Va., and arrived on May 25th. **Saurman**, John S., First Lieutenant, Medical Reserve Corps. Has resigned his commission in the Medical Reserve Corps, and it has been accepted by the President, to take effect June 2, 1913. **Shook**, J. R., Major. Left Army Service School, Fort Leavenworth, Kansas, for Fort Logan, Colo. **Strong**, Francis X., First Lieutenant. Will report to the commanding general of the Western Department for temporary duty, pending the sailing of the transport for Manila, on or about June 20, 1913. **Tarleton**, L. O., First Lieutenant. Ordered to Benecia Arsenal from Vancouver Barracks, for duty during the absence of First Lieutenant Elsworth Wilson, who is on sick leave **Wilber**, Leon M., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, Washington, D. C., and will proceed to his home and report his arrival by telegraph to the adjutant general of the Army and will be relieved from active duty in the Medical Reserve Corps.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 31, 1913:

Allen, D. G., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the navy from October 3, 1911. **Cather**, D. C., Passed Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa. **Furlong**, F. M., Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the *New Jersey*. **Hoyt**, R. E., Surgeon. Ordered to the Atlantic Reserve Fleet. **Neilson**, J. L., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., on June 3, 1913, and ordered to the *Illinois*. **Noland**, Lloyd, Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon in the Medical Reserve Corps from April 16, 1913. **Rosenau**, M. J., Assistant Surgeon. Medical Reserve Corps. Commissioned an assistant surgeon in the Medical Reserve Corps from March 28, 1913.

Births, Marriages, and Deaths.

Married.

Cobb—Nagle.—In Boston, Mass., on Wednesday, May 28th, Dr. Frederic Codman Cobb and Dr. Evelyn W. Nagle.

Died.

Baker.—In Rochester, N. Y., on Tuesday, May 27th. Dr. Samuel B. Baker, aged forty-three years. **Belknap.**—In Mayville, N. Y., on Tuesday, May 27th, Dr. Milton C. Belknap, aged seventy years. **Brown.**—In Trenton, N. J., on Sunday, May 18th, Dr. Wade Hampton Brown, aged sixty-six years. **Francis.**—In Washington, D. C., on Friday, May 23rd, Dr. John R. Francis, Sr., aged fifty-seven years. **Gottschalk.**—In Chicago, on Thursday, May 22nd, Dr. F. B. Gottschalk, aged forty-five years. **Hoffman.**—In Cambellsport, Wis., on Sunday, May 18th, Dr. M. A. T. Hoffman, aged thirty-four years. **Hoyt.**—In Newark, N. J., on Monday, May 26th, Dr. Eugene F. Hoyt, of New York, aged sixty-six years. **Leland.**—In Brooklyn, N. Y., on Thursday, May 29th, Dr. Matthew J. Leland, aged sixty-two years. **Magee.**—In Lawrence, Mass., on Friday, May 23rd, Dr John A. Magee, aged sixty-five years. **Richards.**—In Palmyra, N. Y., on Wednesday, May 21st, Dr. John Richards, of Marion, N. Y., aged eighty years. **Thompson.**—In Newport, R. I., on Friday, May 30th, Assistant Surgeon Frank William Thompson, United States Navy. **White.**—In Fort Wayne, Ind., on Monday, May 19th, Dr. Robert Parks White, aged fifty-three years.

New York Medical Journal

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GONORRHEA FROM A PATHOLOGICAL STANDPOINT.*

By GEORGE A. WYETH, M. D.,

New York,

Assistant, Genitourinary Department, New York Polyclinic Medical School and Hospital.

Before going into the pathology and treatment of gonorrhea I wish to review hurriedly the histoanatomy of the parts chiefly involved and point out a few of the anatomical obstacles met in treating this most prevalent, yet most neglected of all diseases. As you recollect, the male urethra is divided into the anterior and posterior portions by the anterior layer of the triangular ligament. The anterior portion is divided again into the fossa navicularis, the penile, and the bulbous portions. The posterior portion is divided into the membranous and prostatic. The urethra, it will be recalled, is not a tube of uniform calibre throughout, but varies greatly in its diameters throughout its course, so that when an instrument, such as a sound, is introduced, pressure is not equally exerted on all its surfaces.

The first point of physiological narrowing is the meatus, behind which it broadens out into the fossa navicularis, to again become constricted posteriorly. It then gradually increases in diameter as it extends backward until it reaches its larger dimension in the bulb. Next piercing the two layers of the triangular ligament, it becomes surrounded by the compressor urethræ muscle. Here it has its narrowest and most fixed portion, beyond which it again broadens and is surrounded by the prostate. This is well illustrated by the cross sections of the normal urethra, shown in Fig. 1. Besides the changes in the size and shape of the urethra, I would call attention to the many folds and pockets of the mucous membrane and the numerous simple and compound racemose glands, the latter often extending into the depths of the corpus spongiosum. This is nicely shown in the two photomicrographs of slides 3 and 6 (Figs. 2 and 3).

Figure 4 shows section of a normal prostate of a man of twenty-seven years. The prostate, as you know, is made up of from thirty to fifty individual alveotubular glands surrounded by smooth and striped muscle enclosed in a fibrous capsule. Here we see the acini lined by cylindrical epithelium and containing a few amyloid bodies.

Figure 5 is a section of the seminal vesicle of the same individual and shows nicely the labyrinthine disposition of the mucous membrane, which is covered with low cylindrical cells. Each seminal vesicle is, as it were, a continuous, tortuous tube, with its many windings and numerous diverticula springing from same. Within, its membranous coat is thrown into myriads of folds containing elastic fibres, so that in health it is as one great labyrinth.

From the complicated anatomy of these parts and the numerous hiding places for the gonococci, it may appear quite impossible ever to eradicate the infection once it has gained a foothold. And, indeed, it might be were it not for the part Nature plays in it.

The first effect of the entrance of gonococci into the urethra is a simple inflammation with the characteristic symptoms, heat, pain, swelling, redness, etc. Little of the exact pathology of acute gonorrhea was definitely known until the classic experiments of Professor Finger, who, with his colleagues, Ghon and Schlagenhaufer (1894), was given permission to inoculate patients in the moribund state with a pure gonococcus culture. I wish to describe briefly their findings in a three days old, uncomplicated, untreated case.

Their sections showed the mucous membrane of the urethra swollen and loosened from the meatus to the middle of the pars pendulosa. The upper surface was covered with a stratum of pus corpuscles, lying cell on cell in four or more layers upon the epithelium and filling in the infoldings so that each of these pockets appeared as if filled by a cork made up of closely packed pus cells. The changes in the epithelia depend upon their variety. The squamous epithelium of the fossa navicularis shows relatively few changes. It remains intact, and only at the surface are occasional cells desquamated. Gonococci are found in the pus cells lying upon the surface and spread out as a turf upon the uppermost layer, *but nowhere is a penetration of this epithelium to be seen.* In the cylindrical epithelium, however, are noted more marked changes, which are not evenly distributed over the surface of the urethra, but are most pronounced around the openings of the lacunæ and glands. Where the upper surface of the mucosa is smooth, without lacunæ, gonococci are present in the pus cells lying on the firmly attached epithelium. They push themselves forward, pair by pair, into the intercellular spaces and gather in groups. Gonococci are also found in the pus cells, which are squeezed between the epithelia as well as in the pus cells which lie between the compensatory epithelial cells and the connective tissue. But here their number is few. On the other hand, gonococci are found in large numbers in the perifollicular

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*Read before the New Rochelle Medical Society, May 12, 1913.

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regions. Here the pus cells that lie upon the surface and are squeezed between the disintegrated cylindrical cells are tightly thronged with gonococci. The Morgagni's lacunæ and the glands of Littré show changes analogous to those of the epithelium of the surface. The cylindrical cells are displaced, and between them numerous pus corpuscles are found; but noteworthy is the fact that the secreting epithelia in the acini at the base of the gland show no changes, but remain intact and free from gonococci, even though covered with pus corpuscles containing gonococci. The changes in the connective tissue consist in a preponderant infiltration of round cells, extending in places even as far as the corpora cavernosa. Gonococci groups which are located between the transitional cells of the lowest layers of the epithelium send off shoots into the connective tissue and settle themselves between the fibrillæ, partly extracellular and partly intracellular, but always involving only the uppermost portion of the submucosa. The capillary vessels are strikingly dilated, their lumen is filled to bursting with polynuclear leucocytes, and their walls, except for the wandering out of leucocytes, show no changes.

Considering the relatively short duration—only a three days' process—which has been described, it is striking that the histological picture is already so intensely pronounced, and it is especially to be noted that *the process is not evenly distributed over the entire surface of the urethra, but is predominantly lacunar and perilacunar.* Also that the gonococci seen upon the surface of the epithelium and squeezed between the degenerated epithelial cells are practically all enclosed in the pus cells, while of those seen in the subepithelial spaces some are intracellular, but many more are extracellular. Here, then, is Nature's battle ground for the struggle against this invading enemy. She has dilated her bloodvessels to the utmost capacity and is sending forth her warriors, the leucocytes, to engulf the rapidly increasing army of gonococci by her usual means of defense, *phagocytosis.* The belief that the gonococcus is a parasite of polynuclear cells, in which it thrives and has its well being, and that the extracellular ones are shortlived, is not shared by the writer. That the gonococci are found intracellularly is not a predilection of the gonococcus, nor is it a mere coincidence, but is a definite, specific act of Nature. If one incubates an emulsion of gonococci with washed human blood corpuscles for ten or fifteen minutes, after the method of Sir Almroth Wright, he finds practically no gonococci within the leucocytes. But let him add an equal amount of fresh blood serum, and incubate for a few minutes, and he will find the leucocytes filled with gonococci, just as happens with staphylococci, streptococci, etc. Again, gonococci are nonmotile organisms, and it is rather fanciful to believe that they must depend for their existence upon some charitable leucocyte moving toward them to afford them sustenance. The leucocytes that have performed their function of phagocytosis and contain gonococci show no evidence of having been injured by the latter. Indeed, if gonococcal pus be stained with neutral red, the intracellular cocci are stained red, while the extracellular ones remain unstained. This procedure was used by Metchnikoff to demonstrate the secretion of an acid peptic fluid by the phagocytes, and the staining of the intracellular, and not the extracellular, gonococci shows similar action on the part of the gonorrheal pus cells. As has been pointed out above, gonococci on the surface of the epithelium were almost entirely intracellular, while of those below, in the lower strata, some were intracellular, but many others extracellular. It is evident, therefore, that the gonococci are not dependent for their existence upon the protoplasm of the polymorphonuclear leucocytes. It is the writer's custom to examine microscopically the discharge of every patient at each visit, and it has been his observation that the new, well developed cases where no evidence of phagocytosis is shown are invariably more stubborn and yield to treatment much more slowly than do the cases where the gonococci are mostly intracellular. It is in these cases that I feel that vaccines are indicated, for I believe the degree of phagocytosis and the opsonic index go hand in hand in this process. Finger failed to infect patients suffering from fever with general leucocytosis, and cases of spontaneous cure have been reported in attacks of pyrexia, to say nothing of that proportion of cases that Nature herself has cured.

Since in the early stage of gonorrhea Nature's mode of fighting the gonococci is by phagocytosis, the indication in treating this disease is to employ that remedy which will, first, stimulate leucocytosis; second, act as a mild gonococcicide; and, third, which will thoroughly cleanse the urethra without injury to the tissues. *Thus, in the early stages, the purpose is to increase the discharge, and not to check it, as has been the time honored custom.* Nothing is more clearly contraindicated than the prevailing use of astringents, which, by their constricting effect on the mucous membranes and bloodvessels, hamper instead of assist Nature's remedial processes. In the writer's experience, after much experimenting, chemically, bacteriologically, and serologically, the indications stated above at present are best met by the use of Neisser's own remedy, protargol, in a ¼ to ½ per cent. solution. This agent so acts on the urethra that its injection in a normal urethra will produce a discharge macroscopically and microscopically identical with that of gonorrhea, lacking, of course, the gonococci. Protargol in a two per cent. solution, however, is astringent, like most of the popular silver salts, and is to be avoided so long as gonococci are present. The use of strong astringent injections in this condition is to be condemned severely, as their working is distinctly contrary to Nature's, and their effect is to predispose to complications and to chronicity of the process.

In too many instances the term "abortive treatment," as used in the text books, appears to mean the cocainizing of the urethra and the injection of some strong, irritating, astringent antiseptic, such as two per cent. silver nitrate solution. Indeed, in the 1912 edition of Keyes, where he introduces the subject of abortive treatment, one notes the following: "In the production of chronic urethritis the abortive treatment has taken the place of the sound of our forefathers." And a little further on, in italics, appears, "the surest way to abort gonorrhea is not to try to abort it." This is a very unfortunate teaching if it should result in fixing the belief in the mind of the physician that no patient who becomes infected with gonorrhea can be cured within a few days. Whether or not the word *abortive* correctly describes the treatment, certain it is that a large proportion of patients with acute, uncomplicated cases, seen within twenty-four hours after a frank discharge is established can be cured within five or six days, except in cases of primary infection.

Our so called abortive treatment is practically the same as that employed in corresponding cases of simple anterior urethritis of longer standing. It is in principle the same as that described by Frank, Lewin, Bierhoff, and others. If a patient is seen within twenty-four hours after discharge has begun, a microscopical examination of the pus is made. The patient is instructed to urinate into two glasses, passing most into the first glass, the last two or three teaspoonfuls into the second glass. If this second urine is clear, and the patient gives no clinical evidence of a posterior involvement, we may hope to succeed with the so called abortive treatment. By means of a Janet-Frank syringe and a Wheeler tip, the anterior urethra is flushed with 300 to 450 c. c. of a ¼ to ½ per cent. solution, depending upon the intensity of the inflammation. The head of the penis is held firmly between the thumb and first finger of the left hand, the tip is inserted into the meatus, and the solution slowly injected until the urethra is distended. The syringe is then slightly withdrawn, and the solution is allowed to flow out. Successive flushings are continued until the whole amount of solution is used. A hand syringe of a capacity of at least two drachms is prescribed, and the patient is instructed how to inject himself every four hours. He first urinates and then slowly and gently injects the solution, which is to be retained in the urethra for three minutes. This procedure is to be repeated, thus making two three minute injections every four hours. Very often on the occasion of the patient's visit on the following day I have found that the microscope showed no gonococci whatever. In such cases a fair prognosis can be made. Even if a few germs are still to be seen, there is no reason for discouragement as to the possibility of cure within five or six days. The initial treatment is repeated, and the patient reports on the following day. No internal medicine is given, and no diet regulation is attempted beyond the advice that the patient abstain from alcohol and highly seasoned foods. Exercise should be interdicted to prevent complications, and the patient is directed to drink freely of water. After the third treatment, if no gonococci are found, the frequency of the patient's injections is decreased, and after the fourth treatment they are discontinued altogether, and the patient is kept under observation. Should he remain free of gonococci the case is said to be aborted. If, on the other hand, not all of the gonococci have been eradicated and they reappear, immediate treatment is again instituted, and regulated by the microscope. Though our hope may not have been realized, at least we have the satisfaction of knowing that we have not unduly prolonged the attack, and by continuing the treatment

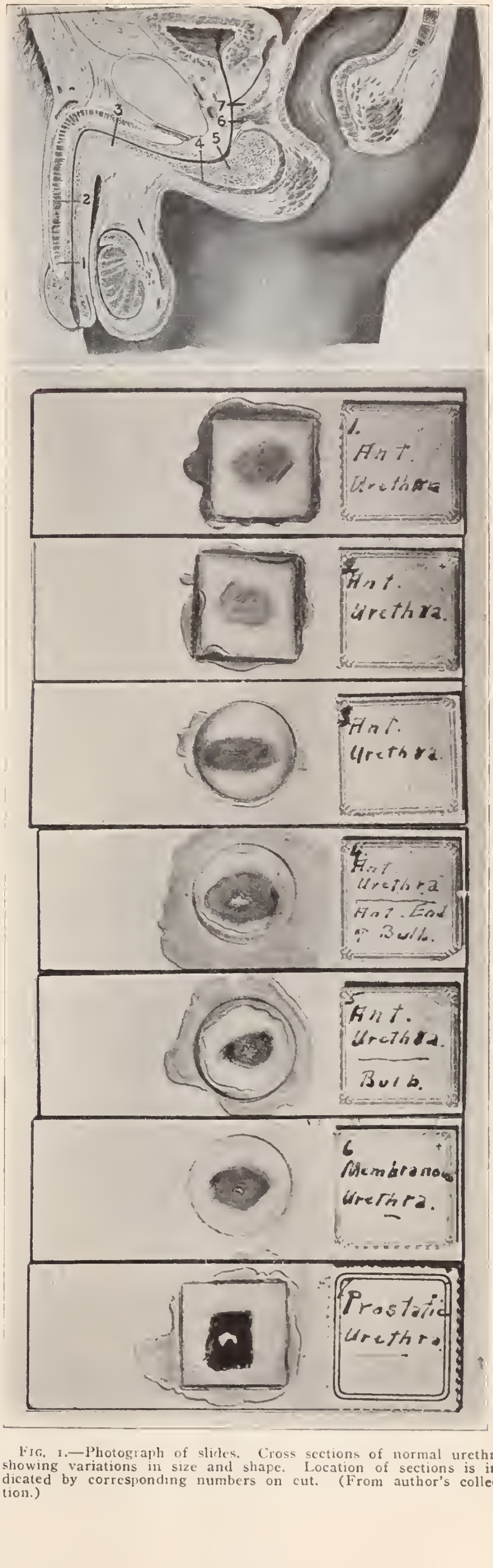

FIG. 1.—Photograph of slides. Cross sections of normal urethra showing variations in size and shape. Location of sections is indicated by corresponding numbers on cut. (From author's collection.)

we can limit the average duration of the gonococcal infection to from three to six weeks instead of the usual six weeks to three months.

If at any time the second urine becomes turbid or the patient gives clinical evidence of posterior involvement, the prostate and vesicles are examined. This procedure is carried out by first injecting 150 c. c. of one half per cent. solution into the bladder and instructing the patient to void it. Should the cut off muscle prove resistant, a small quantity of one half per cent. cocaine solution is injected by a hand syringe, and is permitted to remain in the urethra for from three to five minutes. The prostate and vesicles are then *gently* massaged, and the secretion is expressed on a slide and examined microscopically. The entire urethra is again washed with 150 c. c. of the solution, and the patient is again instructed to void. Should the prostatic secretion show involvement of the prostate and vesicles, regular massage should be instituted about every second day, unless contraindicated by the extreme severity of the inflammation. This should be continued until the secretion is free of gonococci and only occasional pus corpuscles are seen.

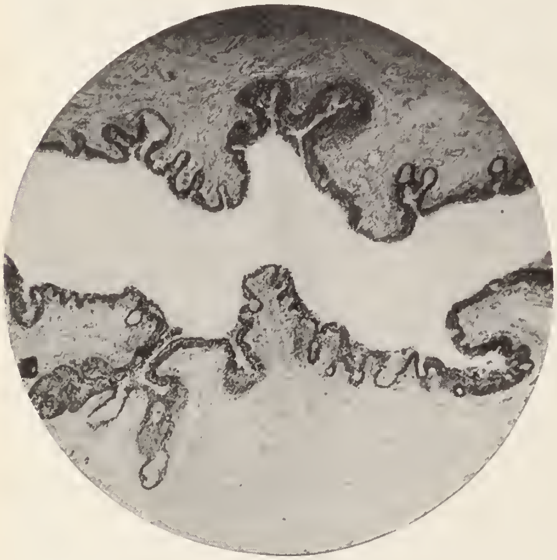

FIG. 2.—Cross section of anterior urethra (slide 3, Fig. 1), × 30, showing lacunæ and glands which harbor gonococci.

Should the prostatic secretion prove free of infection and the anterior condition show a tendency to persist, local treatment is begun to destroy the gonococci which have been harbored in the glands and lacunæ, and to cause an absorption of the round cell infiltration. This is best accomplished by means of the Frank modification of the Kollmann dilator, which is an anterior, irrigating dilator with three prongs instead of four. It has an irrigating attachment with holes in the shaft of the instrument to allow the inflow of fluid and an outlet to permit the escape of fluid while the instrument is *in situ*. Irrigation and dilatation are performed simultaneously, and the advantage of the three prong construction is readily appreciated. Since most of the folds, lacunæ, and glands are located on the upper surface of the urethra, the four prong dilator makes pressure directly against this surface, while the three prong instrument dilates it laterally and allows a full irrigating flow against the upper aspect, where it is most needed. The urethra is first flushed thoroughly with 150 c. c. of solution, and the instrument is introduced as far as the cut off muscle. Slow, gradual dilatation is begun, and at the same time the canal is irrigated with a liberal amount of the solution. Care must be taken against overdilatation, and after the withdrawal of the instrument the entire urethra is again thoroughly flushed. Dilatations are made every second or third day, the patient continuing his hand injections until the urethra is well dilated, when all treatment is discontinued and the patient is kept under observation. I have never seen any complications resulting from the use of this instrument, and have yet to find the first case where the disease has been carried posteriorly by its use.

Should gonococci reappear after such a course of treatment, it is generally an indication that the deeper seated glands are involved and should be destroyed by electrolysis. After thoroughly cleansing the urethra an endoscopic examination is made, and the infected glands located by their wide gaping mouths. The apparatus for electrolysis comprises an electrolytic needle, a milliampère meter, rheostat, and sponge electrode, so disposed that the patient holds the positive pole (sponge electrode) against the groin, while the negative pole (the needle) is passed through the endoscope into the open mouth of the gland. By making pressure on the small button in the handle of the needle, electrical contact is made, the rheostat is set for three to five milliampères, and the application is maintained for from one to two minutes. Bubbles of hydrogen are seen to evolve from the gland opening. Four or five glands are thus electrolized at each treatment, after which the urethra is irrigated. It is important that the current for the light of the endoscope and that for the electrolytic needle be taken from different

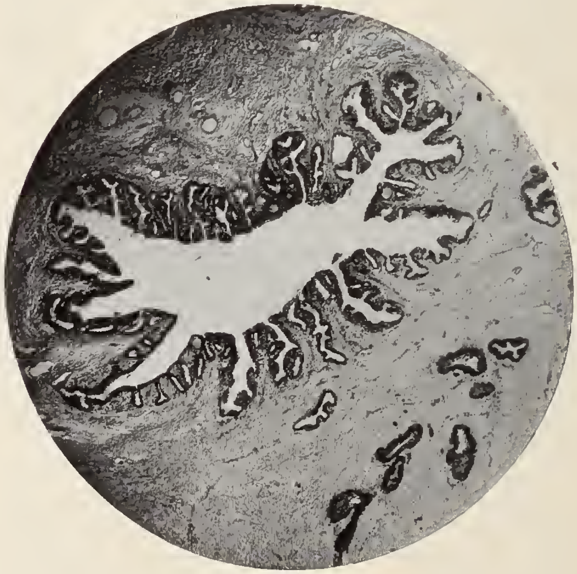

FIG. 3.—Cross section of membranous urethra (slide 6, Fig. 1), ×28.

sources, so as not to cause a short circuit when the instruments are in place.

Generally speaking, gonorrhea begins as an acute and usually ends as a subacute or chronic process. It seems that Nature at first makes a great effort to rid herself of the offending organisms, but eventually comes to tolerate their presence under mild protest. Should the patient be in the chronic stage when first seen, our primary effort is to determine the presence or absence of gonococci. If present, their exact location, whether anterior or posterior, must be determined, and with these points definitely settled the above indicated treatment is followed.

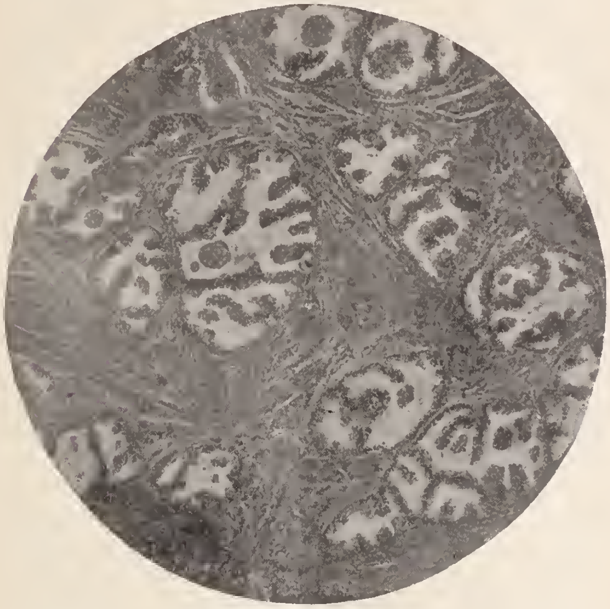

FIG. 4.—Cross section of normal prostate gland—man of twenty-seven years—, × 30, showing arrangement of acini. Amyloid bodies in acini. (From author's collection).

It is not within the scope of this paper to describe minutely the treatment of female patients, and I can only mention that our method follows the same general principles as outlined—first, definitely locate the seat of infection and treat it locally by irrigations and applications. Here, too, mild solutions of protargol have served us well.

In conclusion, I wish to emphasize the importance of the systematic use of the microscope in treating this disease. First, from a diagnostic standpoint. Surely no one can say positively of any given case of urethral discharge that the cause is gonorrheal unless gonococci are demonstrated. More than once has it been my pleasing experience to convince a patient (who though himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation. The increasing frequency of these chemical discharges leads to the opinion that women are using more and more some strong antiseptic douche before intercourse, which douche is so irritating to the male urethra that only the microscope can convince us that the resulting discharge is not of gonorrheal origin. Not infrequently, too, we find a discharge containing a flora of bacteria consisting of myriads of mixed cocci and bacilli, but unless gonococci are present we can assure the patient that, although his partner in coitus may not have observed the rules of highest cleanliness, there was no gonorrheal infection.

From the standpoint of treatment. Since there can be no hard and fast rule as to the duration of an attack of gonorrhea, the physician is, and must be, dependent upon the microscope for definite information as to the progress of his patient. No objection can be urged on the score of time needed, for a slide can be prepared and stained in a very few minutes. It is impossible to emphasize too strongly the need of employing all the scientific aids at our command in the fight against gonorrhea. For when the physician determines to eradicate the gonococcus, and persists with every means at hand until success is achieved, there will disappear that menace—the old chronic gonorrheics with their trail of infected wives and blind babies who are now paying the penalty of neglected treatment.

CONCLUSIONS.

1. Gonorrhea, on account of its complications and sequelæ, must be recognized as a most serious infectious disease.
2. Gonorrhea can be cured if the seat of infection be definitely located and scientifically treated.
3. Gonorrhea can be aborted in a large proportion of cases if patients are seen early.
4. In the acute state phagocytosis is the chief means of combating the infection.
5. It should, therefore, be our endeavor to promote a local leucocytosis by increasing the discharge.
6. Time honored astringent injections which aim to check the discharge are to be condemned so long as gonococci are present.
7. Only by the systematic use of the microscope can we intelligently direct our course of treatment.

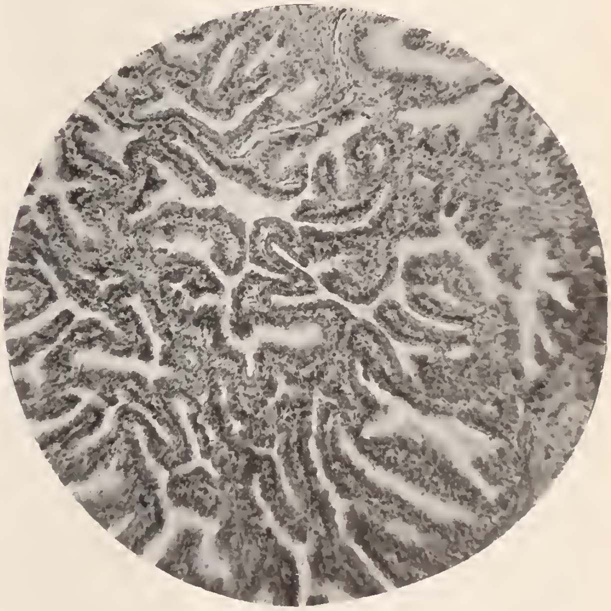

FIG. 5.—Cross section of normal seminal vesicle, ×70, showing labyrinthine disposition of mucous membrane. (From author's collection.)

30 EAST FORTY-SECOND STREET.

THE RELATION OF TRAUMA TO BONE TUBERCULOSIS.*

By H. Augustus Wilson, M. D.,
Philadelphia,
Professor of Orthopedic Surgery, Jefferson Medical College,
AND
Randle C. Rosenberger, M. D.,
Philadelphia,
Professor of Hygiene and Bacteriology, Jefferson Medical College.

Courts of justice, as well as medical societies, have many times been the scene of animated controversies between physicians as to the cause of bone tuberculosis and its relation to trauma. Hag (1) reports a case of a man who received an injury to the great toe, later becoming the subject of a cold abscess of the cervical vertebra and one in the upper portion of the sternum, and, later, tuberculosis of the elbow. It is noted that experts for the defendant, an insurance company, contended that the man had tuberculosis before the accident, that the development of the subsequent lesions would have followed in the natural course of the disease, and that the accident was merely a coincidence, and not the cause of the disease. The court decided in favor of the defendant. In this country similar conditions have resulted in favor of the plaintiff, or defendant, depending upon the impressions made upon juries.

The apparent causes of the confusion lie (a) in the varying interpretations of the experiments upon animals that have been performed; (b) a failure to critically analyze the kind of trauma used; (c) the impossibility of actually reproducing the human clinical process and phenomena by the methods resorted to in animal experimental research; (d) the extreme difficulty of determining whether trauma is a cause or an effect; (e) finally, reluctance to accept the established fact that infection is the only essential etiological factor, and that contributory sequelæ are to be found in any condition that lowers vitality and diminishes the powers of resistance.

While Krause's animal experiments, (2) in 1891, are the most frequently quoted to prove that trauma was an important factor, Schuller's (3) experiments in 1880, and Salvia's (4) in 1904, also pointed in the same direction. Krause injected pure cultures of tubercle bacilli subcutaneously into guineapigs and intravenously into rabbits. Schuller injected tuberculous material, sputum, glands, etc., through a tracheotomy opening into the lungs of dogs and rabbits. Salvia injected virulent cultures of tubercle intravenously into rabbits. Krause, directly before or immediately after, or after a varying space of time, injured a joint or broke a bone. Schuller, coincidentally, injured one of the knee joints. Salvia simultaneously subjected various parts of the body to traumatism. Results: Krause.—In no case was there evidence of tubercle at the site of the fracture. In thirty-three and one third per cent. of the guineapigs, fifty per cent. of the rabbits, the injured joints became tuberculous. The uninjured joints with a single exception, remained healthy. Schuller.—A generalized tuberculosis and a tuberculous synovitis of the injured joints. Salvia.—In the flat bones the violence practically always decided the localization of tubercle. Slight injuries to the parts sometimes resulted in tuberculous disease.

In direct opposition to the reported results in the foregoing, the following animal experiments are convincing that infection, and not trauma, is the cause of bone tuberculosis. Muller (5), in 1886, injected the nutrient bone vessels of goats without trauma. Benda (6), in 1899, made numerous experiments upon rabbits without trauma. Lannelongue and Achard (7), in 1899, inoculated guineapigs in various ways, and directly afterward, or some time later, produced local injuries to the bones and joints. Friedrich (8), in 1899, introduced tuberculous cultures of low virulence into the left ventricle of rabbits, certain of the joints having been previously injured. Fraser (9), in 1913, resorted to the following methods: (a) Inoculating dried bacilli without trauma; (b) infection by ingestion; (c) infection of the metaphysis; (d) direct infection of a joint; (e) direct infection into a mesenteric vein; (f) direct infection into the left ventricle; (g) direct infection into femoral artery. Results: Muller.—A multiple tuberculous osteomyelitis of the bone supplied by the infected blood vessels. Benda.—Found an actual focus of tuberculous disease in the tunica interna of the bloodvessel from which there was a continuous liberation of bacilli into the blood stream. Lannelongue and Achard.—Failed to produce tuberculous lesions in the joints subjected to trauma. Friedrich.—Found that the joints subjected to traumatism were less likely to become infected than the apparently healthy ones. Frazer.—Without trauma, tuberculous lesions were produced by injection. He offers the following conclusions: 1. Direct infection of the medulla of the long bone is unlikely to lead to the development of a tuberculous osteomyelitis. 2. Inoculation of the interior of a joint with tubercle bacilli readily produces tubercle of the synovial membrane. 3. From such infected joints the epiphysis or metaphysis of the bone become diseased. 4. Infection of the arterial blood does not result in the local development of tubercle of the bones and joints. 5. Infection of the main artery supplying a limb leads to the development of tuberculous disease of certain of the joints of that limb. 6. Direct infection of the nutrient artery does not result in tuberculous osteomyelitis of the bone.

A study of all of the animal experiments, referred to above. demonstrates that trauma does not influence the development of tuberculous infection, inasmuch as the same kind of resulting disease was obtained by infection without trauma as when trauma was employed, and, notably, Friedrich's statement that injured joints were, in reality, less affected than the apparently healthy ones. It is impossible to accurately compare animal experiments with the process as seen in human beings, for the reason that the means of infection employed in animals essentially differs from the infection of children. Animal experiments are wholly artificial, and necessarily so. Direct inoculation of a child's joint does not occur, nor is trauma of any kind ever applied in the manner resorted to in experimentation. The results of animal experimentation are therefore interesting, instructive, and illuminating, but too much reliance should not be placed upon them in determining a solution of the problem. Very little information is obtainable as to the kind of trauma that was employed in the experiments. It is impossible, therefore, to determine the relative value, as causative or contributory factors, of severe injuries, sprains, contusions, lacerations, bruises, indirect trauma, functional trauma. Krause stated that there was never found any evidence of tuberculous disease at the site of a fracture. If it were possible to study the bone or joint before the massive or gross lesion was perceptible, there seems little doubt that a progressive tuberculous process would be found existing in such a structure.

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*Read by title before the American Orthopedic Association, May 7, 1913.

Senn (10), Cornet (11), Van Meter (12), Gross (13), Stern (14), Mircole (15), Honsall (16), are among those who oppose the theoretical consideration of trauma as a cause of bone tuberculosis, while Ely (17), after his elaborate and convincing study of bone tuberculosis, states: "It is no more necessary to predicate an injury in joint tuberculosis than in pulmonary or lymph node tuberculosis." La Peyre (18) observes that a great number of cases of tuberculosis, in spontaneous development, are frequently brought into connection with a trumped up accident. George R. Fowler (19) says that animal experiments have shown that traumatism does not favor the localization of tuberculosis. Whitman (20) states that the exact relation of traumatism to disease can only be conjectured. L. A. Sayre (21), in 1888, expressed the view that the origin was always the result of trauma. Nichols (22) considers injuries of moderate severity as favoring the production of the disease. Goldthwait, Painter, and Osgood (23) speak of trauma as an exciting cause. H. L. Taylor (24) says it may or may not be a cause; and Bradford and Lovett (25) state: "It therefore seems rational to assume that trauma may cause tuberculous joint disease in children with a tuberculous tendency." W. Watson Cheyne's (26) strong presentation in advocacy of the etiological position of trauma throws doubt upon the subject in the following words: "It would be interesting, if the points mentioned above should be confirmed by more extensive statistics, to establish, if possible, some relation between the pathology of these diseases and the injury, in order to account for the facts."

The oft repeated statistics giving the history obtained from parents show:

C. F. Taylor (27) found traumatic history in..	53 per cent.
Konig (28) found traumatic history in.......	50 per cent
Gibney (29) found traumatic history in.......	42 per cent.

Pietrzikowski (30) expressed the opinion that twenty per cent. of all tuberculous affections of the bones and joints were connected with some form of injury; this rarely amounted to a fracture or dislocation, but was usually an injury of lesser degree, such as a sprain or a bruise. Whitman (20) quotes Voss (31) as finding an injury as an exciting cause in more than twenty per cent., but that its influence could be clearly established in only seven per cent. These figures are entirely without significance because they are based upon the crude statements of parents, and express their opinion as to cause and effect. It is a matter of observation that in the history of infantile paralysis and many other conditions, a history of trauma is almost always obtainable and equally irrelevant. If these figures are for the moment accepted for the sake of argument, the natural inquiry will be as to what has occurred in those cases where there was no trauma to produce exactly the same conditions? One is forced to the conclusion that infection is the essential etiological factor, and that if trauma has occurred it is incidental and without prejudicial influence.

The kind or grade of trauma deserves consideration. Krause's experiments and the clinical observations of surgeons are convincing that fractures do not cause bone tuberculosis. It is inconceivable that slight injuries of sprains and contusions can be causative factors. The revelations of the radiograph have many times proved that the trivial injuries of sprains were, in the majority of instances, fractures not easily recognized clinically. Sprains must, therefore, cease to be classed as slight injuries and assume rank with other severe injuries. Cornet (11) has given emphasis to the fact that the hands are more exposed to trauma than any other part of the body, and yet statistics show that they are less frequently involved in bone tuberculosis than the spine, hip, knee, etc. Functional trauma, or the injury sustained by the normal use of a part, is resorted to in the attempt to explain the occurrence of bone tuberculosis when the spine, hip, and knee are the most frequently invaded joints, but it lacks rational explanation.

The natural protection of joints is too large a subject to be considered at this time. It must suffice to refer to the knee joint as an example. In falling and striking the knee the tuberosity of the tibia receives the impact, while the patella and the entire knee escape direct injury, and yet the condyles of the femur are far more frequently the original site of tuberculosis than the tibia. In the Army Medical Museum in Washington, D. C., there is a most instructive exhibit of thin sawed sections of supposedly normal bones that were made by Dr. Edwin R. Hodge in 1892. A careful examination of these bone sections revealed some ivory-like masses and walled in cavities. The examination of specimens after excisions and amputations have revealed exactly similar bodies, so that a correct interpretation may be accepted. These white bodies are the site of original bone tuberculosis that have occurred in favorable conditions. The tuberculous process has been walled in; the osteoblasts have ceased to be active; and proliferation of bone has effectively isolated the minute cavity formed by the stage of destruction. The shell like walls gradually thickened until finally a solid mass formed, to be discovered after death, or separation of the parts, as evidence of a preexisting, although, possibly, unrecognized bone tuberculosis.[1] At autopsy a large number of healed or arrested areas of tuberculosis, in soft tissues and in bone, are diagnosticated both histologically and bacteriologically, though during life no evidence or symptom of the disease appeared to exist. The bronchial, the mesenteric, as well as the cervical glands are the structures that appear to harbor tubercle bacilli which have proved pathogenic to the lower animals, and may not have caused any active lesion in man.

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[1] The interpretation herein placed upon the sawed sections, referred to above, was confirmed by personal inspection by Leonard W. Ely, Edwin R. Hodge, J. Louis Ransohoff, William Hessert, and William Fuller, on May 7, 1913.

When tubercle bacilli do exert pathogenic properties in man it appears that some tissue, which had previously harbored the organism, becomes altered in some manner, resulting in a lowered state of health and resistance, and allowing a diseased condition to result. There is certainly some materials or substances existing in the blood serum, lymph, or other tissues of the body, which, in health, exert bactericidal properties and thus protect the individual against disease. When a person has been exposed to cold, heat, or irritating fumes or dusts, in the organs or tissues attacked or affected the normal resistance is lowered, resulting in a difference in cellular elements, difference in fluid content, and as a consequence the organism overcomes the lessened resistance, multiplies, elaborates its products, and the resulting process is brought about, sometimes after a few months or sometimes after years. As the process goes on, the organisms find their way to different structures or organs by way of the circulation of lymph, and take up lodgment and may remain quiescent for years. Thus in pulmonary tuberculosis, if histological and bacteriological studies are made of other tissues and organs, the changes that were present in the lung will also be found present in these organs or tissues; yet, before death, no symptoms were ever referred to any other organ than the lungs. It is highly probable that when pulmonary tuberculosis exists there is widespread distribution of the bacillus by the circulation, and the organism lodges in tissues or organs, sometimes producing active disease, while in other instances no lesion ever develops.

The relation of trauma to bone tuberculosis must, sooner or later, be established as having no existence in the etiology—or in the beginning of the process. The primary cause of bone tuberculosis is essentially infection by the bacillus of tuberculosis. Any condition which lowers the vitality, and therefore the resistance of the patient, must be considered contributory. Fractures and other severe traumatism will not cause bone tuberculosis in animal experimentation or in human beings. It is inconceivable that lesser injuries should do what greater injuries fail to do. A patient with a hip ankylosed from any previous affection, when subjected to trauma, would be less capable of resisting or avoiding the injury. The affected hip would be more easily broken, torn, lacerated, or hurt in various ways. A person convalescing from typhoid, or other depressing disease, would not be in a condition to avoid trauma, or quickly recover from the effects of trauma. In exactly the same way, trauma should be considered in its supposed connection with bone tuberculosis. The bacillus tuberculosis is the recognized cause of all tuberculous processes. A tuberculous disease cannot exist without the presence of the organism. How this bacterium gets into the system, whether by ingestion or inhalation, is still a problem which is not yet settled. How this bacterium exists in an organ or tissue for an indefinite time, without producing definite lesions, is another unsettled problem.

When the tubercle bacilli lodge in a tissue, the picture does not change as rapidly as in an acute inflammation brought about by pyogenic bacteria. In an acute inflammation there is an increase of cells in the part, followed by migration of leucocytes (polynuclears) to that area, and these cells soon become what are commonly called pus cells. In fact, the product of a pyogenic process is always pus, which consists of liquor puris and cells. In a tuberculosis process, as a result of the lodgment of the tubercle bacillus, its multiplication, and the liberation of its products, what takes place? The organism lies in a susceptible area or tissue, and instead of its attracting the polynuclear leucocytes, there seems to be a positive chemiotaxis toward the small lymphocytes or lymphoid cells. At, or near, a small bloodvessel the lesion first commences, and we have a cellular accumulation made up of lymphoid elements, proliferated endothelial cells (or epithelioid cells), and some few polynuclear leucocytes. In most cases there is formed the histological unit known as a tubercle, and we may or may not have the large multinucleated cell called the giant cell. Giant cells are not always found in tubercles. Following the formation of a tubercle, which progressively increases in cellular elements, there is a change which has been described as coagulation necrosis. As there is no new blood supply furnished this area, and as a result of the continued proliferation of cells, pressure occurs, and, together with the action of the toxine, a further change is brought about, known as caseous necrosis or caseation. This latter process is made up microscopically mostly of debris, broken down tissue elements and disintegrated cells.

This whole process is distinctly different from an acute inflammatory one because, in the latter, we get the redness, swelling, heat, and pus formation, whereas in the tuberculous process the successive changes are distinctly different. It usually takes months for the process to mature or go on to the formation of tubercles; or tubercle formation may take place in various organs without giving any evidence of it to the naked eye. This is well instanced in submiliary tubercles of the kidney, spleen, lymph glands, liver, and even the lung. These submiliary tubercles might also be found present in the bone marrow, the periosteum, or the cancellated structure of bone if systematic histological studies were made similar to those made in other organs. If a blow or trauma is received upon the hand, or any part of the body, redness at once develops. If this injury is delivered with sufficient force, or if bacteria gain ingress to that area, acute inflammation supervenes. Let us take up the subject in question, tuberculosis of bone. Where does this process first manifest itself? (a) In the bone marrow? (b) In the cancellated structure? (c) In the periosteum or capsule of a joint? If, in any of these structures, the histological process is the same, that is the formation of macroscopic or microscopic tubercles, the same pressure necrosis and consequent caseation with destruction of the bone and the connective tissue of the joint. This process can be explained in the same way as the latent infection in other structures. In other words, a small focus or, it might be, foci existed or persisted for months or years, and in an insidious, irregular manner, gradually but certainly grew until the typical lesion of a fully organized tuberculous process developed. It is well known that a person suffering from pulmonary tuberculosis will present constant histological lesions in the spleen, liver, and kidney. Are these microscopic lesions the result of trauma over the liver, spleen, and kidney? Would it be correct to surmise that injury caused the formation of hundreds of tubercles deep in the parenchyma of these structures? Or, as suggested previously, if a more thorough and systematic study of the cancellated structure of bone were to be made, there is very little doubt that tubercles (as a result of dissemination by the blood of tubercle bacilli to this structure) would be as prevalent as in the other organs just mentioned. Too much importance cannot be given this question of latent or quiescent tuberculous condition in any tissue of the body. The areas containing these latent foci must, of necessity, have first harbored the tubercle bacillus, and there is no way more probable than that they had been transported by the blood stream, deposited there, became encapsulated with the cells of the part; then, again, had been stimulated into activity, multiplied, and produced a typical or nontypical tuberculous process. All histological tubercles are not alike, and a tubercle may simply be an irregular mass or accumulation of lymphoid cells without giant cells and with very few epithelioid cells. Infestation differs from tuberculous infection, and therefore protracted illness (such as typhoid fever) would act as a predisposing or contributory cause to the tuberculous lesion and not as the specific or exciting cause. It is impossible to determine upon any rational basis that trauma bears any other relation to tuberculosis than a coincidental condition.

The three following quotations are given as a fitting conclusion to this presentation of the subject, as expressive of the present status and confirming the statements made by Gross in 1872 and Senn in 1892. Gross (13), the profound surgical pathologist, 1872, says:

> The exciting causes of this affection are generally very obscure, if not utterly inscrutable. The surgeon is often told that the patient, perhaps weeks or months before the appearance of the characteristic phenomena, received some injury, as a blow, fall, kick, or that the affected joint had been sprained, bruised, or twisted, but such information is usually not trustworthy, or if such an occurrence did take place, it probably exerted little, if any influence in developing the complaint. Unless very severe, it could no more provoke tuberculosis of a joint than a similar injury of the chest, tuberculosis of the lungs, or of the head, tuberculosis of the arachnoid membrane. . . . The use of unwholesome food, chronic disorder of the digestive apparatus, imperfect assimilation, or inadequate nutrition, protracted courses of mercury, and the exhaustion consequent upon copious and repeated hemorrhages, infantile cholera, chronic diarrhea, scarlatina, measles, smallpox, typhoid fever, and, in short, whatever has a tendency to enfeeble the system and derange the blood, are so many predisposing causes of the disease, if they do not actually call it into activity.

N. Senn (10), 1892, states:

> *The trauma only serves as an exciting cause in the production of bone tuberculosis in persons already infected with the essential cause. Clinically, tuberculosis of bones can be traced only in a small percentage of the cases to a traumatic origin.* It is, as Volkmann asserted long ago, characteristic that the traumatism is always slight often quite insignificant; tuberculosis of bone, even in tuberculous subjects, seldem, if ever, follows a fracture as the injury in such cases is productive of such active cell proliferation that it will hold in abeyance the pathogenic action of the bacilli which might reach the seat of injury with the extravasated blood. It is also possible that, in many cases at least, the attention of the patient or his friends is first accidentally called to the existing tuberculous focus by the immediate effects of the injury, the latter having had no influence in the causation of the disease. Every child large enough to run around injures himself more or less almost daily, and yet tuberculosis of bones and joints follows as a consequence only in comparatively few; and in such cases the essential cause must be present in the blood or tissues at the time the injury is received.

Richard Stern (14), in his elaborate study, *The Traumatic Origin of Internal Diseases,* 1910, states:

> Upon the basis of clinical experience the majority of surgeons, at the present time, have reached the conclusion that the influence of trauma is not concerned with the development of bone or joint tuberculosis but with an effect upon bones and joints that were previously diseased with tuberculosis.

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A DIAGNOSTIC STUDY OF THE FACE.

By HOWARD A. KNOX, M. D.,
Ellis Island, New York,
Assistant Surgeon, United States Public Health Service.

After having scrutinized some fifty thousand faces during the past year, and after having examined the five thousand most interesting of these with some care, I have arrived at the conclusion that in the physiognomy and external anatomy of the face we have a field for diagnostic study that cannot profitably be eliminated from the consideration of any medical, surgical, or mental case. To derive the most from facial inspection one must regard it as he would an impressionistic painting where a few scattered lights, a shadow, and an indistinct skyline bring to the inner eye a vision of a noble city in all its grandeur. He must have catalogued in his superficial consciousness every entity to which a given symptom may belong, and this is not nearly so difficult as it would seem if one will frequently epitomize.

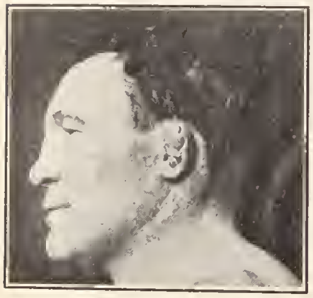

FIG. 1.—A study for the physiognomist; the profile of this pugilist indicates strength and physical courage, but not pugnacity.

Subconscious psychic reflex frequently plays a part in the so called "snap" diagnoses made by some men. I have, for instance, observed a certain physician who often, after a general glance at a patient's face, made a more thorough examination and found decided physical or mental abnormalities. This doctor realized that it was entirely because of the primary inspection that the secondary examination was made, yet he could not tell what it was in that special face that had attracted his attention. This accomplishment is an interesting one in this connection, but, of course, it is not one to be sought after or hoped for by most of us, since accurate diagnosis depends in most cases on more tangible knowledge.

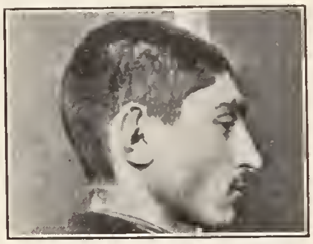

FIG. 2.—A simian reversion type with stigmata including malformation of helix. This case was selected by a lay worker from a school for the feebleminded as a mental defective. Competent examination revealed the fact that this subject was of normal mental balance, above the adult average for his race, and spoke three languages fluently.

When a given symptom is observed on the face of a subject, two things should be done: First, consider the conditions in which the symptom is most often present, and then rule out the conditions where it less frequently occurs in the direct order of their infrequency. The first of these almost every one does, as when he sees contracted pupils he thinks of opium poisoning; a long narrow nose suggests adenoids; rhagades and saddle nose suggest hereditary syphilis; enlarged bones suggest pituitary disease; a malar flush suggests pthisis pulmonalis; drooping lids bring up trachoma, and so on; suffice it to say that there are at least one hundred and fifty-four distinct, not uncommon disease entities that present more or less prominent facial symptoms. The symptoms and maladies considered here are the ones not uncommonly seen in average work, and I think the ones most commonly forgotten and which should be kept in mind in order that they may be utilized on short notice.

The following somewhat heterogeneous group of conditions and diseases present facial signs with considerable regularity: Nationality, temperament, occupation, sexual relations and habits, sensuality, drug addictions, alcoholism, emotional excitement, loss of sleep, hereditary syphilis, intracranial syphilis, paresis, tabes dorsalis, brain tumor, psychopathic predisposition, psychogenetic disorders, sane and insane pananoiac systems, dementia præcox, epilepsy, hypomania, cyclothymia, paralysis agitans, exophthalmic goitre, hysteria, neurasthenia, melancholia, manic depressive insanity, chorea, hydrocephalus, idiocy, imbecility, feeblemindedness, higher feeblemindedness (moron), moral obliquity, local and other paralyses and atrophies, acromegaly, cretinism, myxedema, osteitis deformans, torticollis, lupus, local epithelioma, and malignant tumors of other parts, herpes zoster, erysipelas, anthrax, glanders, purpura, hemophilia, leprosy, rhachitis, acne, goundou, menstruation, pregnancy, menorrhagia, fatigue, severe pain, exhausting diseases in children, iritis, glaucoma, conjunctivitis, keratitis and its sequelæ, trachoma, recession of the eyeball, psoriasis and other skin diseases, sarcoma of superior maxilla, tetanus, actinomycosis, phosphorus, silver, lead, arsenic, and opium poisoning (chronic poisoning by the first four), acquired and congenital heart disease, simple cardiac hypertrophy, pseudoleucemia, both varieties of true leucemia, chlorosis, pernicious anemia, malaria, Addison's disease, parasitosis, chronic atrophic rhinitis, nasal obstruction, sprue, chronic gastrointestinal diseases, hepatic congestion, cirrhosis and abscess of the liver, cholecystitis and acute catarrhal jaundice, arthritis deformans, rheumatic fever, typhoid fever, scarlet fever, measles and German measles, smallpox, varioloid, varicella, yellow fever, pneumonia, tuberculosis and other febrile affections, atheroma, renal disease, appendicitis, peritonitis, pancreatitis and acute yellow atrophy of the liver, local reaction to irritant cosmetics and applications, such as oil of cade, hernia and weak abdominal walls, fibroid tumors and ovarian cystoma in fair complexioned people, gout, lithemia and intestinal toxic absorption, parasitic affections of the face and scalp, such as ringworm, sycosis barbæ, and favus, and impending death.

Of all these, an enumeration and short explanation of the cardinal facial symptoms of the most interesting will be given. The symptoms and signs described are objective ones, and may be studied without cooperation on the part of the patient or subject.

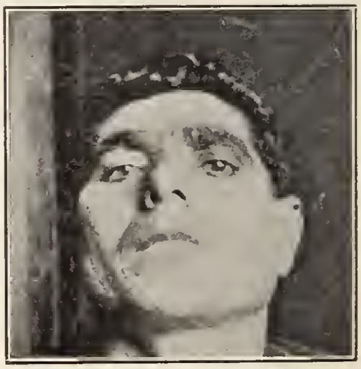

FIG. 3.—The features, countenance, and position of the head shown here are absolutely diagnostic of eunuchoidism of congenital origin. Note the labial circle herein described. This subject was slightly above the normal mentally for his age, race, education, and previous environment.

1. *Nationality and race.* By a mental survey, based on experience, of complexion, contour, shape, and expression, along with a study of the type of each feature, one may arrive at an accurate conclusion regarding the nationality, providing the subject has recently come from his native heath. The latter proviso is an important one, since it is probably true that all white races after being in the United States ("the melting pot

of the nations") for a period of ten years or more, even though the blood retain its original purity, lose many of their native facial characteristics, and tend toward one common American type.

I am informed by Dr. Matthew K. Gwyn, of the Anthropological Division at Ellis Island, that it is possible to differentiate members of distinct races (the word "race" is used here in its broader sense) by measurement, provided they approach the racial average; in other words, the anthropometric average of each distinct race is decidedly different. In contrast to the white race in general, the African negro retains certain of his racial points of distinction through generations of admixture and contact with Caucasian peoples and long after his skin has lost its original pigment. The facial points to which I allude are: Unity of the cartilages at the tip of the nose (a separation of the lower lateral cartilages at the tip of the nose will be noted in the white race); the lower lateral measurement of the nose will be found to be at least two thirds of its greatest length in the great majority of cases, and Doctor Gwyn's measurements of West Indian negroes show that in these people the two measurements are nearly equal, there seldom being more than 0.2 cm. difference between the length and greatest breadth of the nose; the zygomatic processes are somewhat more prominent than the average for any white race; there is a wider vertical concavity between the superciliary ridges and the frontal eminences than exists in the average of any other people. The condition, however, is sometimes seen in the simian reversion type of whites; the nostrils are more or less circular in outline; even though the skin be white, there is usually a certain kinky appearance of the hair, especially over the temporal bones.

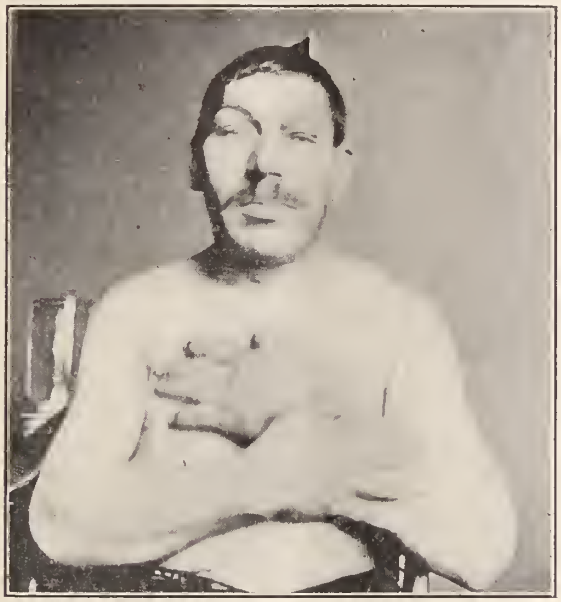

Fig. 4.—A case of acromegaly that was mistaken for an atypical myxedema.

2. *Pneumonia and phthisis.* The former in the prodromal stage is usually accompanied by unilateral flushing, or at least one cheek is of a deeper hue than the other. Active alæ nasi, pallor, and apathy are later symptoms. The malar flush of pulmonary tuberculosis is a well known symptom.

3. *Renal disease* gives rise to a pallid, puffy face, with pouches under the eyes; this only holds true in chronic parenchymatous nephritis, and unless some edema has occurred in other parts the symptom is at best but a probable one. The waxlike pallor is seen in many other conditions. Acute nephritis may give rise to a permanent expansion of the ear lobule and might lead to the detection of chronic forms of the disease.

4. *Addison's disease* presents first a yellow then a light brown, and later a bronze discoloration of the skin. Leucoderma may be present. The facial expression gives the impression of languor, lassitude, and malaise; there may be pallor or flushing, or these may alternate.

5. *Hereditary syphilis* in infancy shows snuffles, ulceration of the nostrils, necrosis of the nasal bones, rhagades, eruption, an "old man" appearance, and anemia. The later symptoms are faulty development, keratitis, iritis, Hutchinson's teeth, characteristic facies, and saddle nose.

6. *Exophthalmic goitre* presents proptosis, with possible inability to close the lids, von Graefe's sign, where the upper lid does not follow the eyeball on looking downward, arterial pulsation, and in many cases facial evidence of nervous agitation, or, more rarely, depression. The thyroid gland will be found to be enlarged, and tremor of the head may be present. It is, however, true that symptoms of hyperthyrea are frequently noted where no enlargement of the thyroid gland exists.

7. *Hernia,* either femoral or inguinal, is frequently associated with a prominent facial symptom, namely "masseteric wrinkling." This sign is seen mostly in presenile men and is of most value in the cases where other parts of the face, especially the forehead and eyes, are not markedly wrinkled. This symptom, under the conditions stated, if not pathognomonic of hernia, is a certain sign of weak abdominal walls or potential hernia. Acute accidents, in cases of rupture, give rise to facial symptoms that all are familiar with.

8. *Sexual habits and relations.* When there is an absence of the physiological stimulus (corporeal contact with males) for the production of the ovarian internal secretion, which is a determiner of sexual intensity and development, hair is quite likely to grow on the lips, cheeks, and chin of women over twenty-five years of age. When these hairy individuals marry, prior to the menopause, the growth frequently disappears after a few months of connubial existence. A fine hairy growth on the face of women between the ages of twenty-five and forty-five is at least evidence that they do not indulge in sexual congress with any degree of regularity or frequency. As to facial in-

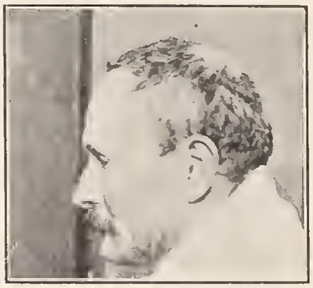

Fig. 5.—Masseteric wrinkling, as shown here, if not always indicative of hernia, is a certain sign of weak abdominal walls, which is potential hernia.

dications that lead one to suspect unusual sexual proclivities in young males, the accompanying photograph showing the abdominal tattooing illustrates a result of my observations, which will be published later, regarding this and other cases.

9. *Organic congenital cardiac disease.* In patients of minor degree who live through childhood, and who may present no other external or obvious symptom, there will be seen, in the vast majority of cases, what I have termed in practical work the "waxy lip." This consists of a lower lip that stands out smooth, full, and usually everted. The color is not the cyanotic one seen in the more marked cases of this affection, but is of a crimson shade only slightly darker than that seen on the lips of plethoric persons in a warm atmosphere. This appearance of the lips reminds one of the painted lips of wax models.

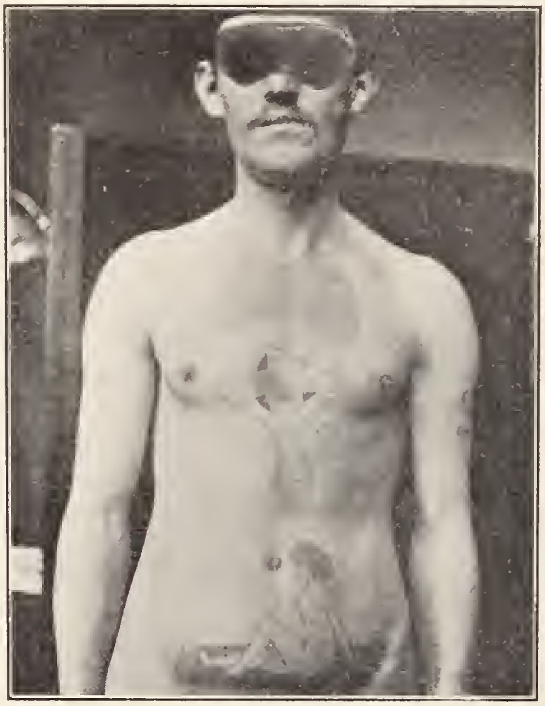

Fig. 6.—Abdominal tatooing of a sensual nature from a constitutionally inferior pervert whose case was diagnosticated by facial inspection.

10. *Eunuchoidism.* This condition seems to me to be an attempt on the part of Nature to sterilize lines of defective stock. The patients that have been examined by my colleagues and myself have usually possessed intelligence commensurate with their age, education, and station, but it is a significant fact that where a history could be obtained there were insane, "peculiar," or defective close relations, usually brothers or parents. The term eunuchoidism here used refers to an exaggeration of Fröhlich's syndrome and is due to hypopituitarism. Now, if hypopituitarism erases the male characteristics, and if hyperpituitarism accentuates them, as in acromegaly, might not pituitary derivatives have some influence on the determination of sex? It would be interesting to know. It is probable that the inherent peculiarities of the anterior lobe of the pituitary body, along with certain actions of the adrenal secretions, largely determine our size, shape, and physical individuality. The facies of the congenital eunuch are distinctive, and once seen should never be forgotten. At this point I wish to mention a facial sign that occurs in these individuals, and also in the lesser degrees of the condition where propagation is still possible. This sign, which I have not before seen described, is the "labial circle" or "oval." The upper portion of this circle or oval consists of the nasolabial folds, and the lower of a depression in the skin in continuation of the lower terminations of these folds and extending to the mental eminence below. The whole picture is one of a rather well defined oval or circle. Anthropological racial peculiarities are partially obliterated in the more marked cases, so that men of various nationalities afflicted with this abnormality resemble each other more than they otherwise would.

11. *Acromegaly, myxedema, and "Paget's disease."* If the anterior portion of the hypophysis cerebri (pituitary body) becomes overactive after maturity, acromegaly is the result. This condition in the earlier stages may be mistaken for an atypical myxedema. The former disease, however, always presents some bony overgrowth, especially of the maxillæ, as well as separated teeth (usually on the upper jaw if but one is involved), enlarged ears, lids, nostrils, tongue, and supraorbital ridges, myxedema; patients possess a dry, rough, thickened skin, with coarse, ill defined features, and require a therapeutic test for the certain establishment of their identity. In "Paget's disease," or osteitis deformans, there is a triangular face with the base upward, and the head occupies a more anterior inferior position than it normally does. In these three conditions, and in others where facial individuality is destroyed, photographs taken at an earlier age should be studied.

12. *Trachoma* presents heavy, drooped, and thickened lids. The disease cannot be definitely diagnosticated without everting or doubly everting the lids and later submitting them to treatment.

13. *Uncinariasis or hookworm disease.* The skin of the face may be of a light tan or tallow color. Edema and bony prominence are common symptoms. There is a fishy, cadaveric stare and the sclera is of dull, chalky whiteness.

14. *Leprosy.* The leonine aspect of advanced leprosy is a well recognized condition. In the early stages of the tubercular form there may be seen a few scattered tuberous nodules on the chin and the nasolabial folds are enlarged and thickened. The skin is indurated and the hair of the eyebrows may be scanty, thin, patchy, or missing altogether. Ulcerations and cicatrices are later seen. Brownish pigmented spots are sometimes present. There may be atrophy of the skin or leucoderma.

15. *Cyclothymia and hypomania.* The first has its normal analogue in the individual who has the "blues" to-day and who is "tickled to death" tomorrow, and the second in the person of the old and chronic "kicker" with a weak inhibitory apparatus and who frequently finds it necessary to apologize. Both are mild forms of functional insanity, but are classed by some as symptoms of other conditions. The cyclothymic in periods of elation or hyperthymia presents a countenance lit

up with uncontrollable joy, and when possessed by a period of depression or hypothymia he presents a picture of extreme despair and is not a stimulating person to associate with. In genuine cases the periods alternate regularly, as in manic depressive insanity, except, of course, at much shorter intervals. The facies of hypomania suggests to us a mind that is preoccupied with a state of abnormal irritability and facetiousness. Smiles may be frequent, yet the tongue is sharp, and the individual will sputter and complain with a full knowledge and realization that he is injuring his personal interests thereby.

16. *Feeblemindedness and moral obliquity.* The two are often associated, the former nearly always with the latter, but the latter not by any means always with the former. There are some brilliant criminals in this world who are apparently lacking in but that one sphere. There were formerly many facial signs that were considered indicative of these conditions, and I wish to speak of some of them here merely to condemn them. The ones to which I especially allude are the various stigmata of degeneration, congenital malformation of the head or special features, and the various reversion types of face and cranium. The latter are but accidents due to special ancient ancestral "determiners" that existed in perhaps one of the numerous ovules of the mother. In the cases that I have observed the other members of the family (except in one instance) possessed no features that were suggestive of reversion. Dr. Eugene H. Mullan, who has had a wide experience with alien defectives, is of the opinion that while anatomical facial characteristics are worthless as a means of recognizing mental deficiency, facial expression is a very valuable aid. Individuals possessing dull, stupid, indifferent, and apathetic countenances devoid of expression should be investigated more thoroughly for feeblemindedness.

The facial symptoms of the insanities are too complex and manifold to be described in a paper of this nature. Suffice it to say that each one has its own typical expression.

There are certain common facial symptoms which when seen alone are often passed by because of the otherwise normal appearance of the subject. These signs may be the outward manifestations of deep seated organic disease, and should be given due weight and consideration accordingly. The most important, with their significance, are as follows:

1. *Facial expressions.* An anxious expression is seen in pain, angina pectoris, aneurysm, pleurisy, colic, pneumonia, and peritonitis. A worried and anxious look is observed in local peritonits, pneumothorax, large pleural effusions, and edema of the glottis in the early stages. An expression of fright is seen with large hemorrhages, and in acute disorders of hypochondriacal people. A vacant, unmeaning expression is seen in facial paralysis, congenital mental deficiency, deterioration from organic insanities, dementia præcox, and the depressed phase of manic depressive insanity.

2. *Pallor* is seen in carcinoma (yellowish), chlorosis (yellow green), chronic arsenical poisoning, cardiac diseases, especially degenerations, mitral and aortic stenosis, chronic suppurations, chronic mercurial poisoning, chronic lead poisoning, (blue line on the gums), chronic gastrointestinal disease, chronic febrile disease, recurring hemorrhages, leucemia, malarial cachexia, parasitosis, including uncinariasis, nephritis (tallow color), pernicious anemia (lemon color), Hodgkin's disease, syphilis, and tuberculosis.

3. *Redness* is seen in health due to cutaneous hyperemia, from blushing, heat, exercise, and simple hypertrophy of the heart. It is sometimes congenital. Long exposure to moisture, heat, and cold produces a permanent redness, which, when due to prolonged exposure to the sun, is Nature's protection from the actinic rays. The latter redness is seen after "water burn," "snow burn," and continued ordinary sunburn. The Indian of great altitudes is the only true "redman," for here the ultra violet rays are most felt and Nature gives him his redness for protection.

4. *Cyanosis* is due to imperfectly oxygenated blood, and there are four general conditions which produce it, namely: 1. Conditions interfering with the entrance of air into the lungs; 2, conditions which limit the normal excursion of the lung; 3, conditions which inhibit the greater or lesser circulatory systems; and, 4, certain poisons. Under the first come oral abscesses, glossitis, angina Ludovici, retropharyngeal abscess, laryngismus stridulus, simple croup, laryngitis, either acute, chronic, tuberculous, or syphilitic, diphtheritic or membranous croup, traumatism, foreign bodies, laryngeal muscular paralysis, a paralysis of respiratory muscles. pressure on the trachea or bronchi by aneurysm, goitre, enlarged glands or tumors of the mediastinum, spasmodic or bronchial asthma, capillary, fibrinous or plastic bronchitis, bulbar paralysis, peripheral neuritis or poliomyelitis, peritonitis where the diaphragm is paralyzed, epilepsy, tetanus, and strychnine poisoning. Because of the pain which inhibits muscular action, pleurisy, pneumonia, intercostal neuralgia, and peritonitis frequently give rise to facial cyanosis.

Under the second set of conditions come pulmonary collapse, pneumonia in all its forms, edema, tuberculosis, emphysema. pleural effusion, pneumothorax, pericarditis with large effusion, tumors of the thorax, abdominal effusions, and tympanites.

Under the third set of conditions come all the factors heretofore mentioned which take up lung space or produce pulmonary pressure, general cardiac weakness with failure of the right ventricle and the valvular and degenerative diseases which give rise to it, and tumors and effusions which press on the venæ cavæ where they enter the right auricle.

The fourth set of factors comprise poisons, such as the coal tar derivatives, and drugs, like opium and its preparations, which depress the respiratory centres. There are other poisons which chemically alter the blood, such as carbon monoxide, calcium chloride, hydrocyanic acid, and the cyanides and nitrobenzol, producing some degree of cyanosis.

5. *Jaundice.* In true jaundice the conjunctiva is always affected. Icterus is due to obstructive causes, such as gastroduodenitis and catarrh of the ducts. Lodgment of roundworms or stones in the common duct, tumors or scar tissue in the wall of the duct, pressure on the duct by gastric, hepatic,

renal, pancreatic, or omental tumors, aneurysm, enlarged uterus, retroperitoneal abscess, or fecal accumulation may obstruct the duct. Toxic causes may play a part in acute cases by acting on the liver cells or blood corpuscles, as is seen in yellow fever, acute yellow atrophy of the liver, Weil's disease, influenza, malaria, pneumonia, typhoid, typhus, scarlet, and relapsing fevers, pyemia, and poisoning from chloral, chloroform, ether, mercury, phosphorus, potassium chlorate, arsenic, antimony, and snake venom. I have personally observed a marked case of jaundice, with hepatic symptoms and death, following the use of chloroform in an obstetrical case. The cause of death was given as acute yellow atrophy, but I am convinced that the chloroform was responsible, especially since the symptoms extended over a period of four months following the anesthetization and began about four days after it.

6. *Edema and swellings.* The face shares in general anasarca due to cardiac or renal disease, and intrathoracic tumors, emphysema, interstitial pneumonia, and pneumothorax frequently cause edema of the face. Pertussis, measles, erysipelas, dengue, variola, and trichinous disease may cause general or evenly distributed facial swelling. Localized edema may be due to plant poisoning, insect bites, urticaria, angioneurotic edema, exophthalmic goitre, or thrombosis of one of the intracranial sinuses. Alveolar abscess, antrum disease, and phosphorus poisoning may cause enlargement of the superior maxilla, while alveolar abscess and actinomycosis may cause the same symptoms in the lower jaw. A swelling behind the angle of the jaw in front of the ear, and pushing it outward, is usually parotiditis. A soft, tender tumor over the mastoid process means mastoiditis or thrombosis of the lateral sinus, or both. Boils, scurvy, cancrum oris, or anthrax may cause swellings of the cheek or other parts of the face.

7. *Nystagmus,* a very common symptom, is due to an irritation or incoordination of the centres presiding over the ocular muscles. It may be of functional or organic cause, and its commonest origins are in hereditary visual defects, acquired occupational refractive errors (miners' nystagmus), cataract, corneal opacities, and amaurosis. It is seen in chorea, hysteria, neurasthenia, all forms of convulsions and insanities, and in albinos. The symptom is seen with considerable regularity in disseminated sclerosis, neuroglia, and other growths of the crura, pons, or cerebellum, and in Friedreich's ataxia. With less frequency it is seen in hydrocephalus and the late stages of tabes dorsalis.

8. *Pupillary symptoms.* There may be three varieties of iridoplegia; first, loss of response to light or reflex iridoplegia; second, loss of response to accommodation or accommodative iridoplegia (this is unimportant); third, loss of response to pinching of the neck or absent sympathetic reflex.

(a) *Anisocoria,* or irregularity of the pupils, is frequently a symptom of organic disease, although it occurs in persons whose eyes refract unequally and after the local use of mydriatics. Unilateral dilatation of the pupil may be due to optic atrophy, cataract, glaucoma, and other conditions that lessen the transparency of the media. If the pupil of a diseased eye only reacts to light thrown into the sound eye it is certain evidence that the disease is in the optic tract or nerve and that the motor oculi nerve, its connections with the corpora, quadrigemina, and the optic tract of the sound side, are sound and uninvolved. Dilatation of one pupil may be caused by affection of the cervical sympathetic by an aneurysm of the aorta or innominate, by tuberculosis of the apex of the lungs, or by a tumor in the neck. When one oculomotor nerve is paralyzed, one pupil is dilated.

(b) *The Argyll Robertson pupil* is too well known to require description, and is seen in tabes and less frequently in paresis and intracranial syphilis. It is due to fibrous tissue changes in the portion of the third nerve nucleus, which presides over the light reflex.

(c) *Absent sympathetic or skin reflex.* This is most often seen in general paralysis of the insane, but may be due to an old iritis with posterior synechiæ, to atrophy of the smooth muscle of the iris, or to glaucoma.

(d) *Dilatation of both pupils.* This condition is seen in the anemia of the brain which accompanies general anemia, nausea, shock, syncope, and cardiac weakness. Blindness, of course, will always cause it. Cerebral abscess, thrombosis, tumors, or hemorrhage, meningitis, and toxic paralysis are common causes. The pupils may be dilated in functional nervous diseases, such as hysteria, neurasthenia, and trance, but in these maladies they react promptly to light and accommodation. Among the drugs that produce mydriasis are stramonium, strychnine, tobacco, duboisine, hyoscyamus, nitrous oxide, cocaine, holococaine, conium, chloroform, chloral, atropine, homatropine, aconite, and alcohol. Some of these act locally and some constitutionally.

(e) *Contraction of both pupils.* Contraction of the pupils is normal during sleep and in advanced age. They are contracted in iritis and retinitis, and wherever photophobia or congestion of the iris exists. Any bilateral disease of the cervical cord may cause paralysis of the sympathetic dilator fibres; therefore, myosis may be indicative of disseminated sclerosis, paresis, locomotor ataxia, tumor, or hemorrhage of the cord, hemorrhage of the pons, bulbar palsy, disease of the cervical vertebræ, or spinal meningitis. The same conditions in the brain may cause the symptom by irritating the third nerve nuclei. Eserine, pilocarpine, and opium, and its alkaloids are the common drugs that produce contraction of the pupils.

(f) *Unilateral contraction* is an indication in most cases of a serious affection. It may be congenital. Aortic aneurysm may paralyze the sympathetic dilator fibres and produce the symptom. Any unilateral lesion affecting the cervical cord, such as, at times, those of paresis or tabes dorsalis, may cause contraction of one pupil. It may be brought about also by unilateral brain lesions situated in such a way that they irritate one motor oculi nerve or centre.

9. *Ptosis.* This is due to paralysis of the levator palpebræ muscle, which is supplied by the second portion of the third nerve; therefore, the trouble is

in the motor oculi itself, its cortical centre, or its nucleus. Ptosis may simply be one of several obvious symptoms of an oculomotor palsy; it may be congenital, that is, due to the absence of muscle tissue, so that the person cannot roll his eyes upward; transient bilateral ptosis is sometimes seen on waking in the morning in "half sick," overworked people, especially women; bilateral ptosis on attempting to look upward is seen in hysteria, along with other spastic local muscular disturbances. Any drug that reduces the irritability of, or paralyzes nerve or muscle, may cause ptosis. It is possible that conium and gelsemium have a somewhat selective action in producing this symptom. Unilateral ptosis with red edematous skin and a contracted pupil on the same side make a clear picture of sympathetic nerve depression, usually of organic origin. This complex is known as pseudoptosis. Rather infrequently, a one sided ptosis follows an apoplectic attack, while the other branches of the third nerve may be uninvolved.

THE PRINCIPLES OF FREUD'S PSYCHOLOGY.

By Morris J. Karpas, M. D.,
New York,
Assistant Resident Alienist, Psychopathic Department, Bellevue Hospital; Formerly Senior Assistant Physician, Manhattan State Hospital.

The history of psychology has passed three important epochs. The first is known as the metaphysical; during this period the manifestations of the human mind were interpreted from a metaphysical standpoint; indeed, these interpretations varied according to the different conceptions of the individual schools of philosophy. The second period in the history of psychology is known as the *Renaissance*. It was through the efforts of the great German psychologist, William Wundt, that the first steps were taken in the proper direction for the study of objective mental phenomena, and the subjectivity was likewise investigated on purely objective bases. Nevertheless, had it not been for his school, the third or present epoch in the history of mental science would never have been evolved. During this present period the phenomena of the human mind have been studied analytically and synthetically. These investigations were initiated by Charcot, Bernheim, and Janet, and later this subject matter came to a more critical scrutiny by Sigmund Freud, the renowned Austrian psychopathologist.

Freud's psychology is unique. It is highly individualistic—it deals with the experiences peculiar to the individual; these experiences are gauged and interpreted for what they are worth to the individual alone. All mental phenomena, be they normal or abnormal, are determined by definite causes or motives which are either of conscious or unconscious origin. Each individual experience becomes a part of the personality which is influenced according to the intensity of the experience; that is, a painful experience will cause a greater reaction than a less painful one. All forms of mental activity are dependent upon and modified by our past experience, and, as Putnam very thoughtfully remarks, "No atom of our past is ever really lost, and the only question is how vitally it is still active." From the objective point of view, the human mind is composed of three important parts—emotion, volition, and intellection, whose harmonious activity is necessary for the proper adjustment of mental life. Hence the function of the mental organism is the adjustment or adaptation to the environment—the more complex the environment, the more difficult is the adjustment. The underlying phenomenon of mental activity is the *wish to exist from the nutritional and the reproductive standpoint*. These two factors, nutrition and reproduction, form the foundation of all animal life. Deny the animal food, death will result; deny the sexual object, death will likewise ensue. To the simple organism not bound by conventional ties the adjustment between internal and external relations is comparatively easy. However, men who are controlled by civilization, conventionality, religion, and education exhibit greater difficulty in the gratification of their wishes. It must be admitted that the wishes which pertain to nutrition are relatively easily fulfilled. Society is not ashamed of providing food for the hungry, clothing for the naked, and assisting them in other physical wants. But when it comes to the higher psychosexual cravings (I mean love in all its ramifications), one experiences considerable difficulty in curbing such desires. From this it may readily be seen that not all of our wishes are gratified; indeed, if such were the case life would be a comparatively simple task. The very fact that our wishes are not satisfied makes our life so complex, and its complexity bears a direct relation to the intricacy of our conventions. The dynamic forces of mental life present a complicated biological economy.

In order to understand Freud it is necessary to define the conception of repression. This term implies the forgetting of painful or disagreeable experiences, which is usually an unconscious process. These repressions or forgotten experiences do not lie inactive in the unconscious mind, but may affect the personality to such an extent as to bring about a conflict between the conscious and unconscious life of the individual; which may sometimes lead to a nervous or mental breakdown. The following will illustrate this psychological mechanism. Suppose Mr. A. falls in love with the wife of his dear friend, though he realizes that for various reasons his love cannot be requited. There are two methods by which such a situation could be dealt with. In the first place, the normal adjustment would be to allow this experience to continue as a part of his conscious life, and resort to "a normal draining off of the emotion of the exciting process." The other one, the abnormal one, which most of us unfortunately use at times to the detriment of our mental organism, would be to forget entirely the unrequited love affair, and thus make this experience a part of his unconscious life. Our psychoanalytic experience, however, teaches us that ungratified repressed wishes are compensated in one way or another. The compensation may take the following forms: First, there may develop a hatred for the female sex, especially for married women in the disappointed lover. His attitude will be similar to that of the fox in *Æsop's Fables*, who pronounced the grapes sour because he was unable to reach them. In daily life such behavior is frequently observed—for instance, the old maid is a man hater; the old and feeble scorn the young; the poor man decries riches; the barren woman detests children; the defeated candidate derides the offices; and many more examples might be cited. Second, the repressed wish can be compensated by transferring its affect to another object or subject. The compensatory reaction will surely be guided by the character of the repressed unfulfilled wish. For instance, the unfortunate lover who was disappointed by the married woman may suddenly become interested in matrimonial affairs; he may organize a matrimonial bureau; divorce suits may become the object of his curiosity, and so on. Or he may ultimately find a woman who will be able to fulfill his ideal. Guy de Maupassant's striking story, *Boitelle*, presents such a mechanism. "Father Boitelle (Antoine) made a specialty of undertaking dirty jobs all through the countryside. Whenever there was a ditch or a cesspool to be cleaned out, a dunghill removed, a sewer cleansed, or any dirt hole whatever he was always employed to do it." The story revealed that he had "no heart for anything—anything at all. No trade suited me any longer, and so I became what I am—a night scavenger." Boitelle was disappointed in love—he was not allowed to marry a negress with whom he was deeply in love. Thus his ungratified wish—to marry a negress, who was forbidden him by his parents and by society—found a substitute in the selection of a particular vocation which was likewise dirty and disagreeable to society. Third, there is the insane way of compensating unfulfilled wishes; for instance, the disappointed lover would develop fancies about the married woman; he would imagine that he heard her voice calling him endearing names; or, again, he might develop ideas of persecution, as that he was being followed by her, trailed by detectives, and so on. Such mechanisms occur in various forms of hallucinations and delusions. For instance, one of my patients, an Italian woman, who had lost her child, was seized with a maniacal attack, and continually talked about her deceased child, imagining that she was in Heaven, where she saw her child, whom she held in her arms; in consequence of which she was happy and sang songs. Another patient, a Rumanian, about thirty-nine years of age, maintained that he was under the influence of the Goddess Iede Iededere, whom he had married several years before. Upon analysis it was proved that he symbolized his father. Another patient, a Russian, about twenty-seven years of age, maintained that he heard voices which told him that he could reproduce a generation of good people and that a wife was chosen for him from every country; while in reality he was weak sexually. Another patient, a young Rumanian girl, who had been jilted by her lover, during one of her hallucinatory seizures held imaginary conversation with him, spoke of her marriage, honeymoon, etc. The fourth method of compensation is by means of day dreams or by dreams during sleep. Since dreams occupy such an important part of Freud's psychology, it will not be amiss to refer to the underlying psychological mechanisms.

Since time immemorial, dreams have been of great interest to students of speculative psychology and of philosophy. Even the ancients tried to explain the dream phenomena and, with the advancement of science, various theories have been propounded to account for the genesis and psychology of dreams. It is not within the province of this paper to outline the various hypothetical considerations of dreams. I shall therefore limit myself to Freud's conception of this subject. According to Freud, dreams are not meaningless or absurd, but express definite mental undercurrents and have well defined functions. Metaphorically speaking, the dream is the mirror of the unconscious mind, and when it is thoroughly analyzed one is able to get an inkling of the individual's life. As a general rule, *dreams express a wish fulfillment*, which may sometimes be veiled and only after thorough analysis can be brought to light. In other instances, the dream may represent a compromise between two difficult situations. The dream is highly egoistical. The dreamer dreams of things which are denied him in reality. Such methods of compensation are frequently employed by day dreamers. The poet finds recourse to his fancies; the philosopher gives vent to his theoretical speculation; the scientist resorts to his inventions and hypothetical theories; and, indeed, many others employ similar means of compensation by building castles in the air. Byron's verse is very suggestive:

> Dreams in their development have breath,
> And tears, and tortures, and a touch of joy;
> They leave a weight upon our waking thoughts;
> They take a weight from off our waking toils;
> They do divide our being; they become
> A portion of ourselves, as of our time,
> And look like heralds of eternity.

The psychology of dreams is somewhat complicated, and the following important points must be borne in mind. The dream is the result of two mental forces—one is the wish and the other is the inhibitory force, or the psychic censor which controls the wish. By the psychic censor is meant the inhibitions which are forced upon us by conventionality, religion, and education. It may be compared to the censor in Russia, who accepts those things that are harmless to the government, but rejects such matters as are detrimental to its welfare. This explains why our dreams are so distorted and symbolic; in order to outwit the censor, the dream substance becomes thus masked. All dreams are composed of two important parts, the manifest and latent content. By the former we mean that part of the dream which has an immediate connection with our recent experience, usually an occurrence of a day or two preceding the dream. The latter (the latent content) indicates the innermost wishes which have been repressed and have lain dormant for some time; these repressions are modified by infantile fancies and tendencies, and in some cases intensified by traumatic experience. The experience of the manifest content unconsciously arouses the latent trends and wishes, and causes a dream.

Two other phenomena are of great importance in the dream, viz.. condensation (Verdichtung) and displacement (Verschiebung); the former implying the merging of two or more ideas, objects, or words into one mass; the latter meaning the transference of one form of psychic energy into another in order to conceal the true meaning of the dream and furthermore distort the relation between the dream content and dream thought. Dreams are highly individualistic; while it is true that there are dreams which may be interpreted objectively, nevertheless dreams should be carefully analyzed in order to determine their real meaning to the particular person. Ferenzci very thoughtfully remarks:

> It would be an enticing problem to assemble the fragments of dreams which can be explained symbolically and to write a modern dream book in which the explanation could be found for the separate parts of dreams. But this is not possible, for although much typical material recurs in dreams and in most cases can be rightly explained without analysis, symbols may have different meanings with different individuals, and even with the same individual at different times. Accordingly, if we wish to know in any particular case all the determinations of the single dream fragments, there is nothing left for us but painful analysis, for which the investigating power and the wit of the interpreter of the dream alone will not suffice, but the industrious cooperation of the dreamer is indispensable.

Symbolism in dreams serves the same purpose as figures of speech in poetry. The more complex the wish, the more strict the psychic censor, and the more active the human mind, the more symbolic is the dream. There are a few symbols which may be considered fairly characteristic; for instance, the czar and czarina, or the king and queen, are the symbols of parents; the mayor or governor stands for the father. and wood for mother: the prince or princess, or the main actor, for the dreamer; fire for love; animals for animal passion; and there are other objects which may express sexual symbols. Dreams may be divided into three main classes—simple, inconsistent, and symbolic and distorted. Simple dreams are common in children and in people who are intellectually below par. In such cases the wish fulfillment is on the surface. For instance, a child to whom candy was denied during the day because of sickness dreamed at night that she was given bags of sweets. A girl who had a short boat trip one day, and cried with disappointment because of its ending so soon, dreamed at night that she was having a long boat trip over a lake. To this group belong also the so called primitive or physiological dreams. For instance, a man who ate highly spiced food before retiring dreamed that he was quaffing large draughts of cold water and lemonade; another who went to bed hungry dreamed that he was having a bountiful meal. In the inconsistent dreams the wish fulfillment appears paradoxical. For instance, a young man dreamed that he was taking an old man to prison in the "Black Maria"; he—the old man—bade his friends farewell, and it appeared to the dreamer that the old man was going away forever. In the analysis it was shown that the old man represented his father; and to him (the dreamer) prison meant death. Why should he wish his father dead? By knowing some of the intimate affairs of the dreamer's life, we can appreciate the consistency of such a wish. The dreamer is an Englishman and an Episcopalian. The girl, of whom the dreamer is so fond that he even seriously thinks of marrying her, is of Irish descent and a Roman Catholic. His father undoubtedly would strongly object to the match, not only because of religious differences, but also because of the national feeling. In the dream the patient removes his father from his way—thus resorting to a childish method of adjusting a difficult situation. To the child death means absence or going away, hence, he takes his father away in order to fulfill his innermost wish. Such dreams are of frequent occurrence. not only in the abnormal but also in the normal, who exhibit a profound attachment for their family; which brings them into conflict with the carrying out of their own wishes.

The symbolic dreams form the most important group, and, indeed, they are the most difficult ones for analysis and interpretation, especially with those individuals who show lack of appreciation for abstract thought. One of my patients, who was very much attached to his sister and at times would have fancies about her, dreamed at the age of twelve that he was Adam and his sister Eve, and both of them in the Garden of Eden. The symbolic wish to marry his sister is quite apparent. Another patient, who was in love with a man whom she later found was already married, in consequence of which she was disappointed in her love and a neurosis developed, related the following dream: "I dreamed that I was dressed in a white dress with a long train, my hair flowing down my back, and I was running as fast as I could up the stairs of the elevated railroad to the platform. People laughed and jeered at the strange sight I presented. There I met an elderly gentleman, with whom I shook hands, boarded the train, and went directly to the City Hall. We then went before a magistrate. Following this we took a train, and we felt happy in each other's company." In the analysis it was demonstrated that the white dress she associated with a wedding gown: the elderly gentleman represented her friend by whom she was disappointed and whom she tried to repress from her conscious life: going to the City Hall meant getting a marriage license; and the journey alone with the man typified a honeymoon. The wish fulfillment in this case is quite apparent. Another patient, who suffered from psychosexual anesthesia, told the following dream: "I dreamed that I was in Scandinavia and walked with a young man through the streets of a village. The streets were unpaved. It appeared as though there had been a shower during the night, as it was awfully muddy and there were puddles. Peasants were clearing the paths. As we were waiting for the paths to be cleared the young man raised a little round, white, wooden basket, about four inches in diameter, and said, 'Here, sip.' The contents were minute seeds and white syrup. When these seeds are pressed they produce milky syrup." The young man was tall and dark. He reminded her of a candidate for mayor; had speaking ability, and was a public speaker. The village was the one where she visited her father, with whom she indulged in sexual practices. The basket she associated with the vagina, the seeds with chicken ovaries; and the fluid from the seeds meant to her milk from the breast and semen. "Here, sip," meant to her intercourse. In her early childhood she used to play with small girls, and they would suck each other's clitores. This dream expresses the wish for cunnilingus with her father, the idea of which she had cherished all her life.

By means of dream analysis we are enabled to unfold causes and conflicts in the various nervous and mental affections, and to determine the inner workings of the patient's unconscious life; whereas it would be impossible to do so from an objective examination, inasmuch as the patients themselves are not aware of their own repressed feelings.

The sexual theory forms one of the most complicated and difficult chapters in Freud's *Psychology*. Freud's ideas of sexuality are frequently not understood, or misunderstood, by his critics because of superficial scrutiny of the subject matter. It cannot be too strongly emphasized that Freud's conception of the word *sexual* does not limit itself to the *gross sexual,* but embraces a wide scope of psychic manifestations of the sexual life. He employs the word libido, meaning love in the broadest sense, which "naturally indicates sexual desires and longings in all their aspects; this corresponds in its connotation with that possessed by the word hunger to the nourishment instinct" (Jones). Putnam uses the word craving for libido. In this paper it is proposed to refer only to the important underlying trends of the sexual theory. Freud maintains that the sexual life originates in the early period of childhood—the child's sexuality is *polymorphous perverse,* which implies that it is made up of four rudimentary instincts, viz., heterosexual, hemosexual, masochistic and sadistic. In this connection it would be interesting to call attention to the characteristic features of infantile sexuality. It is differentiated from that of the adult, inasmuch as it derives the sexual pleasure entirely independent of a sexual object—it is autoerotic. Furthermore, the erogenic zone is not restricted to the sexual organs only, but may extend to other anatomical parts, such as the mouth, lips, breast, etc., and moreover the sexual pleasure is less complex than in the adult. At puberty important changes occur—*pari passu* with the maturity of the sexual organs the psychic content of sexuality takes a different form. Thus the sexual object of the opposite sex begins to attract attention. At this time two important factors of sexual pleasure became manifest, *Endlust,* end pleasure, and *Vorlust,* fore pleasure; the former attended with the act and the latter with the pleasurable excitation produced by the erogenic zones. In the normal evolution the sexual object of the opposite sex persists, that is, the heterosexual component predominates, but the other three (homosexual, masochistic, and sadistic) are repressed, though some of these retain sufficient vitality for adjustment. For instance, we need some of the homosexual instinct to be able to carry on social life with the same sex, and some of the masochistic instinct to endure pain when necessary, while the sadistic component is necessary for the defense of the organism against injurious agents. It is also shown that a part of the sadistic component is an important attribute to the normal sexuality in men and the masochistic in women. Should, by reason of environment or defective training, any of the three components (homosexual, masochistic, and sadistic) fail to undergo the necessary repression, inversion of the instinct may result and, in association with some other complicated psychological processes, the homosexual, masochist, or sadistic is developed.

The psychic energy emanating from repressed sexuality is sublimated—that is, directed in different channels of a nonsexual end which enhance definite social value. The sublimation of the homosexual component is characterized by loathing and morality; the sadistic and masochistic components are sublimated into disgust, pity, sympathy, and allied feelings. In the words of Freud:

> We know a far more purposive process of development, the so called sublimation by which the energy of the infantile wish—excitation—is not secluded but remains capable of application, while for the particular excitations, instead of becoming useless, a higher, eventually no longer sexual, goal is set up. The components of the sexual instinct are especially distinguished by such a capacity for the sublimation and exchange of their sexual goal for one more remote and socially more valuable. To the contributions of the energy won in such a way for the functions of our mental life we probably owe the highest cultural consequences. What are the means that accomplish these very important constructions so significant for the latter personal culture and normality? They are probably brought about at the cost of the infantile sexuality itself, the influx of which has not stopped even in this latency period, the energy of which, indeed, has been turned away either wholly or partially from sexual utilization and conducted to other aims. The historians of civilization seem to be unanimous in the opinion that such deviation of sexual motive powers from sexual aims to new aims, a process which merits the name of sublimation, has furnished powerful components for all cultural accomplishment. We will therefore add that the same process acts in the development of every individual, and that it begins to act in the sexual latency period. We can also venture an opinion about the mechanism of such sublimation. The sexual feelings of these infantile years on the one hand could not be utilizable, since the procreating functions are postponed—this is the chief character of the latency period; on the other hand, they would in themselves be perverse, as they would emanate from erogenous zones and would be the norm of impulses which in the individual's course of development could only evoke a feeling of displeasure. They therefore awaken contrary forces (feelings and reaction), which, in order to suppress such displeasure, build up the psychic dams mentioned above, loathing, shame, morality.

Perhaps a few illustrations will serve to make the idea of sublimation clear. A disappointed lover may sublimate a part of his sexuality by taking up the life work of the monastery. Bachelors or spinsters sublimate some of their sexuality by conferring their love and admiration upon pet animals. Some men and women sublimate in alcoholism, drugs, neurosis, etc. The married woman who is ungratified sexually undertakes special work which fortunately has a definite social or educational value. Yet one must remember that oversublimation may lead to disastrous results, and Freud truly remarks:

> The claims of our civilization make life too hard for the greater part of humanity, and so further the aversion to reality and the origin of neurosis without producing an excess of cultural gain by this excess of sexual repression. We ought not to go so far as to fully neglect the original animal part of our nature; we ought not to forget that the happiness of the individual cannot be dis-

pensed with as one of the aids of our culture. The plasticity of the sexual components, manifest in their capacity for sublimation, may cause a greater temptation to accomplish greater cultural effects by a more and more far reaching sublimation. But just as little as with our machines we expect to change more than a certain fraction of the applied heat into useful mechanical work, just as little ought we to strive to separate the sexual impulse in its whole extent of energy from its peculiar goal. This cannot succeed, and if the narrowing of sexuality is pushed too far, it will have all the evil effects of a robbery. I only venture the indirect presentation of my conviction if I state it as an old story whose application you may make yourself. German literature knows a town called Schilda to whose inhabitants were attributed all sorts of clever pranks. The wiseacres, so the story goes, had a horse, with whose powers of work they were well satisfied, and against whom they had only one grudge, that he consumed so much expensive oats. They concluded that by good management they would break him of his bad habit by cuting down his rations by several stalks each day, until he had learned to do without them altogether. Things went well for a while, the horse was weaned to one stalk a day, and on the next day he would at last work without fodder. On the morning of this day the malicious horse was found dead; the citizens of Schilda could not understand why he had died. We should be inclined to believe that the horse had starved, and that without certain rations of oats no work could be expected from an animal.

There is another fundamental principle in the psychosexual theory, and that is in the nature of the child love for its parents. The child's first impression of sex is received from its parents, foster parents, or others that may take care of it. To quote Freud:

> The child takes both parents, and especially one, as an object of his erotic wishes. Usually he follows in this the stimulus given by his parents, whose tenderness has very clearly the character of a sex manifestation, though inhibited so far as its goal is concerned. As a rule, the father prefers the daughter, the mother the son; the child reacts to his situation, since as as son he wishes himself in the place of his father and as daughter in the place of the mother.

The first object love for the child is father or mother, according to sex; later the brother or sister; and still later the love is transferred to somebody else's brother or sister. However, in some cases, the attachment for the parent may be so strong that it is impossible to detach it, and one not infrequently sees men remaining bachelors because they cannot separate themselves from their mothers. In other instances the individual finds his or her ideal as a wife or husband in a woman or man representing the mother or father. In other cases the daughter or son may identify her or himself with the father or mother—that is, take their place. In life we encounter such interesting cases. How many men marry widows with children and consider their married life one of benign happiness? Again, how many young women marry old men for whom they exhibit profound affection and admiration? Why is a stepmother considered so cruel by a stepdaughter, especially by the eldest? The solution of this problem is simplified by the fact that they are each other's rival for the father. I recall the very interesting case of a musician who was the eldest son in the family and whose affection for the mother was reciprocated. At the age of twenty or twenty-two he fell in love with a cousin who was the child of his mother's brother. Owing to unfortunate circumstances he was prevented from marrying her. He felt the disappointment keenly, and unconsciously was forced to find another substitute for his mother. He finally entered into a liaison with a woman probably fifteen years his senior, who, like his mother, had children and a husband. From the latter she cannot obtain a divorce because of religious complications. This woman he adores and worships. He supports her children and is proud of his union. He has become the enemy of many of her former friends who have ridiculed his peculiar attachment for the woman. The great danger lies not only in the attachment to the parent, but even more so in the identification with the parent of the opposite sex. When the son commences to imitate his mother he unconsciously commences to imbibe a certain degree of effeminacy. Thus, we have the "mamma's boy," who eats candy, talks in an affected manner, feels, thinks, and acts like a woman, wears fancy costumes, uses perfume, and, in other words, is a homosexual ideally, if not in reality. The masculine woman may also be understood on the same basis in relation to her father. It would take one too far to dilate further on the manifestations of abnormal love of child for the parent, but suffice it to say that it forms the nucleus of many forms of mental and nervous disease. It will be readily seen that a proper understanding of a child's bringing up is important from the point of view of mental hygiene.

To recapitulate briefly, Freud's contributions to psychology are of infinite value. By his methods we are enabled to penetrate deeply into mental life, which we can study in all its phases and ramifications, be they normal or abnormal. His theories of sexuality are of great importance to the physician, psychologist, and educator. Formerly, the psychological manifestations of sexuality were neglected in our studies. In the field of nervous diseases, such as hysteria, compulsive neuroses, and allied conditions, the psychoanalytical method, as developed by Freud, can be successfully carried out under certain conditions and in cases suitable for such treatment. By the older methods, such as hypnosis, suggestion, or rest cure, it was possible to remove the symptoms, but not their underlying causes. Indeed, the fundamental principle in therapeutics is to remove the cause of the abnormal phenomena. In mental diseases Freud's method has aided us in understanding the psychology of psychotic symptoms, and hence has enabled us to understand the mechanism of functional psychosis. Thus rational prophylaxis can be intelligently instituted. It should be emphasized that no claims are made of curing dementia præcox, paranoid conditions, or other severe mental disease by psychoanalysis. Psychoanalysis bears the same relation to psychiatry that bacteriology does to infectious diseases. Through the aid of Freud's psychology we have obtained a clear conception of the psychopathology of everyday life, wit and humor, mythology and other psychological riddles which were formerly ascribed to supernatural forces or explained by fantastic theories which, as a rule, failed on their practical application. Young as the science is, it has achieved some results for the advancement of our knowledge of human nature.

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ON THE INSTANTANEOUS TRANSFORMATION OF MERCURIC COMPOUNDS TO CALOMEL, AND THE APPLICATION OF THIS PROCESS IN CASES OF MERCURIC POISONING.*

From the Kent Chemical Laboratory, Yale University.

By G. A. LINHART, Ph. D.,
New Haven, Conn.

It has been shown in a recent article[1] that the initial rate of the reduction of mercuric chloride by phosphorous acid in aqueous solution is greater than in one tenth normal hydrochloric acid solution, and that this rate falls off owing to the formation of complex compounds between the mercuric chloride and the hydrochloric acid formed in the reaction. However, after sufficient hydrochloric acid has accumulated, the reaction is accelerated by the hydrogen ions. This accounts for the minimum in the velocity coefficient K.[2] From these observations it is evident that if the hydrochloric acid could be neutralized as rapidly as it is formed, the reduction of mercuric chloride by phosphorous acid would be instantaneous. Since soluble hydroxides or carbonates precipitate mercuric oxide, or basic mercuric carbonate, the action of sodium salts of weak acids, such as acetic or citric, were tried, and it was found that the reduction was greatly accelerated, but was not instantaneous, on account of the presence of the acetic acid set free by the hydrochloric acid and also of the presence of phosphoric acid formed in the reaction mixture. The reactions taking place may be represented by the following equations:

(a) $HgCl_2 + H_3PO_3 = HgCl + HCl + H_2PO_3$[3]
(b) $NaC_2H_3O_2 + HCl = NaCl + HC_2H_3O_2$

However, if the phosphorous acid is first neutralized with sodium bicarbonate in excess, the reduction is instantaneous and quantitative, for the filtrate, after being neutralized with hydrochloric acid in slight excess, gives no reaction for mercury either with hydrogen sulphide or with stannous chloride; these being the most delicate reagents for mercury. The neutralization of the phosphorous acid and its subsequent action on the mercuric chloride are represented by the equations:

(a) $H_3PO_3 + 2NaHCO_3 = Na_2HPO_3 + 2CO_2 + 2H_2O$
(b) $HgCl_2 + Na_2HPO_3 = HgCl + HCl + Na_2PO_3$
(c) $HCl + NaHCO_3 = NaCl + H_2O + CO_2$

or (b) and (c) may be written in one equation:

$$HgCl_2 + Na_2HPO_3 + NaHCO_3 = HgCl + Na_2PO_3 + NaCl + H_2O + CO_2$$

The phenomena observed in these experiments suggested the desirability of testing this reagent (H_3PO_3 or NaH_2PO_3 in an excess of $NaHCO_3$) as an antidote for mercuric poisoning. Preliminary experiments were performed on cats and dogs, and it was found that by administering the antidote from fifteen to thirty minutes after a fatal dose of mercuric chloride had been given, either by mouth or intravenously, the animals recovered and regained their normal condition after about twenty-four hours.

Preparation of the Reagent. The commercial sodium phosphite is chiefly NaH_2PO_3, and should, therefore, be suspended in water at *room temperature,* and treated with a saturated solution of sodium bicarbonate until effervescence ceases and until the solution is perfectly clear. The sodium bicarbonate solution is then added in excess for the purpose of decomposing any acid, as is indicated in the equation combining (b) and (c). The reagent thus prepared may be administered either by mouth or intravenously. The calomel formed in the system due to this reaction may be removed after several hours by means of magnesium citrate.

This reagent is not confined to the reduction of mercuric chloride alone. Any soluble mercuric salt in the presence of chlorine ions will be converted into calomel, provided, of course, the mercurious compound thus formed is also soluble. For example, mercuric nitrate, $Hg(NO_3)_2$, or mercuric acetate, $Hg(C_2H_3O_2)_2$, may be substituted in place of mercuric chloride, $HgCl_2$, in the presence of sodium chloride, NaCl, which is present in the human system, or the sodium chloride may be added initially. The reactions taking place are given below in stages, although they take place simultaneously.

(a) $Hg(NO_3)_2 + Na_2HPO_3 + NaHCO_3 = HgNO_3 + NaNO_3 + CO_2 + H_2O + Na_2PO_3$
(b) $HgNO_3 + NaCl = HgCl + NaNO_3$

The reactions, in case mercuric acetate is used, are as follows:

(a) $Hg(C_2H_3O_2)_2 + Na_2HPO_3 + NaHCO_3 = HgC_2H_3O_2 + CO_2 + H_2O + NaC_2H_3O_2 + Na_2PO_3$
(b) $HgC_2H_3O_2 + NaCl = HgCl + NaC_2H_3O_2$

Great care must be exercised in the purchasing of the commercial phosphite, as this substance is usually impure, for up to the present time it has not been used for medicinal purposes. In a subsequent paper improved methods will be given for the preparation of this compound, as well as further results obtained by using it as an antidote for mercuric poisoning.

HALLUCINATIONS OF HEARING AND DISEASES OF THE EAR.*

By JOHN H. W. RHEIN, M. D.,
Philadelphia, Pa.

Professor of Diseases of the Mind and Nervous System at the Philadelphia Polyclinic and College for Graduates in Medicine; Neurologist to the Howard Hospital; Physician to the Philadelphia Home for Incurables, etc.

Recently there have come under my observation three cases of hallucinations of hearing associated with disturbances in the peripheral auditory apparatus, in which the hallucinations were the only manifestation of mental disease. In referring to the literature I find that this condition, while well recognized by some writers, Kraepelin (1), Wernicke (2), White (3), and others, has been infrequently described. Several phases of the subject are of interest, namely, the peripheral origin of hallucinations, the bearing that disease of the bloodvessels of the brain has upon the development of this symptom, and the influence of heredity. In the first place, recognizing that three theories exist to explain the occurrence of hallucinations, namely: 1. The theory of the cortical origin; 2, the theory of the subcortical origin; and, 3, the theory of the peripheral origin, the association of hallucinations of hearing with aural disease in individuals otherwise psychically healthy, has a bearing on the study of hallucinations as relating to the theory of their peripheral origin. It may be stated in passing that the first two are acknowledged to be the most plausible of these theories.

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*Read before the Yale Chemical Club, Kent Chemical Laboratory, January 24, 1913.

[1] G. A. Linhart, *American Journal of Science,* xxxv, 353.

[2] *Ibidem,* p. 356.

[3] *Ibidem,* p. 355.

*Read before the Philadelphia Psychiatric Society, March 14, 1913.

While in this paper the object is not to discuss at length the various theories advanced to explain the physiological pathology of hallucinations, I cannot escape a reference to some features bearing upon their peripheral origin. While some authors deny that hallucinations are ever of peripheral origin, Tanzi (4) and Tamburini (5), there can be no doubt that irritation of the peripheral sensory organ plays some part in the causation of some hallucinations. Thus, there are numerous examples on record of hallucinations of sight related to diseases of the optic nerve, Briand (6), to injury of the cornea, Nagelli (7), and to chorioiditis with central scotoma, Uhthoff (8). Furthermore, hallucinations of sight have resulted from pressure on the eyeball in alcoholics, a phenomena described by Liepmann (9). Again, electrical stimulation of the acoustic nerve has caused hallucinations of hearing, Jolly (10) and Moravcsik (11). In addition, there are on record a few cases which seem to demonstrate more than an accidental relation between irritation in the sphere of the peripheral apparatus of hearing and hallucinations of hearing. Stein (12) described the case of a man of seventy-eight years, who heard words in association with melodies occurring in the right ear, which disappeared when a plug of cerum was removed. Further examination showed that the psyche of the patient was changed and that he showed symptoms in the nature of a slight *Beziehungswahn*. Stein believed there was a sclerotic senile change in the gray substance of the brain in the region of the word centre.

Klieneberger (13) reported three cases which are sufficiently interesting to cite in abstract. The first was that of a woman of fifty years who suffered with middle ear disease. The right ear drum was retracted and was the seat of a scar. She heard voices of a threatening character. The voices located themselves first in the room and later in the ear. These hallucinations were preceded by various sounds which were in the nature of hissing and the like. There were no other symptoms of mental disorder, and the voices, though at first influencing her conduct, later were disregarded. There was a history of nervous disease in the ancestry. The second case was that of a man of fifty-three, without history of hereditary taint, who, following an accident, suffered from neurasthenic manifestations and later heard voices calling him by name and insulting him. The voices disturbed him, causing depression and disquietude. In one ear the voice was that of a man, in the other of a woman. There were no delusions. There was a catarrh of the Eustachian tubes, and the ear drums were retracted. Under treatment the voices disappeared, though his power of comprehension suffered. The third case was that of a woman of fifty-two with a negative family history who had sixteen years previously suffered from an attack of hypochondriasis from which she recovered entirely. She heard voices and whistling in both ears, later singing in the left ear, then the right, and finally sounds like a harmonica, a trombone, and a phonograph. Melodies and songs of her childhood days which she had forgotten were heard. These were more noticeable when not working and alone. Her actions were uninfluenced by them. She was otherwise, psychically as well as physically, intact, except for a chronic change in the ear drums and catarrh of the Eustachian tubes. All his patients were old people in whom the symptoms indicated a suspicion of disease of the arteries of the brain.

Hudovernig (14) placed on record an interesting case of a lad of eighteen who, besides akoasms, heard unpleasant voices (phenomes) which caused anorexia and insomnia. The patient had a neuropathic history and was himself neuropathic. There was a large amount of wax in the external auditory meatus which impinged upon the ear drum, and after this was removed the tinnitus and hallucinations gradually disappeared. Regis (15) published a report of a case in which the patient, suffering from otitis, first heard simple noises, then hallucinations, and finally delusions of persecution developed. He called attention to the fact that the relation of hallucination and disease of the ear had been already described by Séglas, Bechtereff, and others.

Most of the text books on diseases of the mind and diseases of the ears neglect to mention this subject. However, Kraepelin called attention to the frequency of hallucinations in ear disease, and concluded that there existed some association between the two conditions, and Wernicke stated that in cases of unilateral hallucinations of hearing, which he believed were not rare, there was usually more or less diminution of hearing. He cited a case illustrating this association. Tanzi, who believes that hallucinations of peripheral origin do not occur, looks upon the production of elementary images in consequence of excitation of peripheral nerves such as develops as the result of pressure upon the eyeball, causing luminous objects, or the occurrence of musical sounds in otitis, and hallucinations following galvanism of the acoustic nerve, as perfectly normal occurrences, and outside the domain of psychiatry. There is according to Klieneberger, Forster (16), and Bonhoffer (17), reason to believe that a cerebral arterial sclerosis has an important bearing upon these cases. Apropos of arterial changes in the brain, Ballinger (18) described, as symptoms of arterial sclerosis of the labyrinth, unilateral or bilateral tinnitus, with progressing deafness, impairment of air and bone conduction, dizziness, and, later, hallucinations of hearing. Mc-

Bride (19) refers to auditory hallucinations, such as hearing melodies and human and animal voices, in cases of ear disease in which insanity could not be suspected, while Knight and Bryant (20), on the contrary, describe this association in the insane.

The question arises whether it is proper to speak of these as hallucinations at all, in the strict interpretation of the term. If an hallucination is a perception without a sensory impression, would it not be proper to look upon such phenomena really as illusions, inasmuch as there is actually a sensory sensation always in these cases? However, whichever position we may take, it does not really detract from the importance or significance of the phenomena as indicative of mental disease.

The following cases illustrate several features of this discussion.

Case I. A woman of fifty with negative family history suffered from fifteen to twenty years with attacks of vertigo and noises in the left ear. About a year before coming under observation at the Philadelphia Polyclinic Hospital in November, 1912, she imagined people were talking about her. She could hear the voices saying, "Slop boy," "Granny," "Grandmother," "Cheese it!" The voices were referred to the school nearby and to the houses of neighbors. She believed that the neighbors incited the boys to annoy her. At first the voices disturbed her, but more recently the voices at times disappeared and ceased to upset her. She talked at times unintelligently to her husband, but otherwise the examination was negative as to delusions, orientation, and other psychic phenomena. She slept well, her appetite was good, and she was able to do her work properly. She had been for some time previous to the onset of the hallucinations deaf in her left ear.

Case II. A Jewish woman of sixty-five applied for treatment at the Philadelphia Polyclinic Hospital. The family and previous histories were negative. For four years she had heard voices expressing themselves in songs. These songs were those of her childhood days. At first there was only one song, but within a few weeks previous to her coming under observation many songs of her childhood days were heard. These songs were located in her ears, that is to say, they did not seem to emanate from without. While the songs disturbed her sleep and were annoying, they did not affect her conduct of life. There were no other mental symptoms that could be elicited. She complained of general tenderness of the subcutaneous fat, more marked in the arms, over the triceps, and also in the fat of the thighs and sides, suggesting adiposis dolorosa. The examination of the nervous system, as well as that of her heart, lungs, and other organs, was entirely negative.

The examination of the ears made by Dr. George W. Coates showed the following: There was some nerve degeneration accounting for the deafness. There was a slight retraction of the ear drums, and some catarrhal condition of the middle ears. The Eustachian tubes were patulous, and the labyrinths reacted readily to the caloric test, showing that they were functionating.

Case III. A woman of sixty-nine, whose father and mother died of apoplexy and two sisters of phthisis. Outside of having had a fibroid tumor, which was removed twenty-five years ago, the patient was apparently well until twelve years ago, when she had an epileptic convulsion. She suffered from a number of these attacks until three years ago; since when she had had no attacks whatever. She had had a progressive catarrhal condition of the middle ear, with retraction of the ear drums for several years. Her condition was briefly as follows: There was a marked anterolateral curvature of the spine due to spondylosis rhizomylique. She also complained of pain in the right knee joint and in both hips. Otherwise the physical and nervous examination was negative. An examination of the ears showed retraction of both drums and marked deafness on both sides. There had been for some years ringing and roaring in both ears which progressively increased. In the last few months she had heard voices in her right ear. These voices said over and over again, "Walk in," "Walk in." The voices also said other things, but these she could not recall at the time of the examination. Her mental condition in all other respects was entirely normal.

In all three cases described the possibility of arterial change in the brain must be recognized and especially in the last two patients, whose ages were, respectively, sixty-five and sixty-nine. It is difficult to avoid the conclusion that the nutrition of the auditory centres has been implicated in these cases and that, therefore, they react abnormally to peripheral irritation. While the occurrence of hallucinations of hearing associated with disturbances of the peripheral auditory apparatus does not necessarily indicate the onset of insanity, there can be little doubt that this phenomenon is an expression of an unstable psychic equilibrium and is therefore actually within the domain of psychiatry. A history of nervous disease in the ancestry is usual, and a study of the cases shows a tendency at some time to exhibit neuropathic manifestations.

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1732 Pine Street.

ERYTHROMELALGIA.

Report of Two Cases, with Cure.

From the clinic of Dr. Otto Lerch, professor of medical diagnosis, postgraduate department, Tulane University.

By A. E. Fossier, A. M., M. D.,
New Orleans, La.,
Lecturer on Medical Diagnosis, Postgraduate Department, Tulane University.

Erythromelalgia is described by Weir Mitchell as a chronic disease in which a part, or parts, usually one or more extremities, suffer with pains, flushing, and local fever, which are made far worse if the parts hang down. There are mild cases that do not progress and which may come and go. There are others which exhibit all symptoms to such a degree as to make the disease one of horrible torment. This intractable malady is comparatively rare and little known. Since 1872, when it was first described by Wier Mitchell, only 148 cases, some more or less doubtful as to their diagnosis, have been reported by ninety observers. Many writers maintain that the disease is of greater frequency, especially in its milder forms, but overlooked and unrecognized by the physician. It is with pleasure that I report the following typical cases:

Case I. Miss A., a young woman, born in New Orleans, had spent the greater part of her childhood in the country Lived a regular life; of active disposition and regular habits Performed her usual work of light housekeeping and exercises moderately. Was a healthy, robust, and stout child; escaped all the infectious diseases of childhood, except measles. She gave the history of always suffering from cold feet and had had frequent attacks of chilblains. Father died of tuberculosis at the age of forty-six; mother living and in good health; a brother and sister living, both healthy, but of neurotic temperament. The sister frepuently suffered during cold weather from cyanosis of the feet and toes, which was very painful; but she had never been treated for this condition. Most members of her family had been active and long lived, as far as can be ascertained. Her maternal grandmother was hysterical and subject to melancholia; was also a sufferer from so called "chilblain." Until October, 1906, the patient always enjoyed excellent health, but at this time she had an attack of dyspepsia (a feeling of weight in the stomach and heart burn), which was followed a month later by swelling of the feet. They became hot and sore, and so continued off and on until the return of settled warm weather in the spring. During the summer she was not inconvenienced except upon walking and standing with prolonged exposure to the sun or heat, which would cause swelling and a burning sensation. The winter following the attacks were less severe. An erythematous rash appeared early, but the pains were very much less severe, and the symptoms again disappeared in the spring. The winter following the swelling and pain once more made their appearance, but the attacks were of shorter duration, less severe, and no attention was paid to her condition by the patient, as she thought the trouble would gradually wear away. I saw the patient in January, 1908, when she presented the following condition:

Robust and healthy in appearance; weighed 132 pounds; five feet, four inches tall. No expression of pain, no drawn features; nor could it be detected from her appearance that she had not been able, for several preceding weeks, either to wear her shoes or leave her bed, because of the excruciating pains from which she said she was suffering. The thoracic organs were normal; also the abdominal organs, except for a slight right nephroptosis. Pulse full and regular, all superficial arteries soft. Blood pressure, 120 millimetres of mercury; blood normal, both as to hemoglobin and the white and red cells; urine normal. Examination of the nervous system showed some hysterical stigmata, dermographia, and diminution of uvular and corneal reflexes. The feet were swollen to twice their usual size to about one inch above the ankle, where the swelling ended abruptly (forming a distinct line), were covered with an erythematous rash, and had enlarged veins. The first and second toes of both feet were partly webbed, a feature that could be traced in members of the family for several generations. Covering the feet would cause excruciating pain and increase the swelling, and even on the coldest days no heat could be tolerated in the room. The only relief was obtained by allowing ice cold water to flow on the feet for hours at a time, or by massaging the toes, each individually with an upward movement stroke until the patient would have to give up from exhaustion. This condition remained the same, the swelling never disappearing, pains would come and go, first in one foot and then the other, and at times would be felt simultaneously in both. Yet with all this acute suffering, both night and day, the patient, who was very healthy in appearance, was cheerful, never betraying the agony she said she endured. The diagnosis was then made and the case pronounced one of erythromelalgia.

Internal antiseptics, salicylates, and large doses of sodium bromide and valerian were given with no effect, and various astringent preparations were applied locally without benefit. The only relief was found in ice cold water Arsenic, by hypodermic injection, was then tried (sodium cacodylate in full doses was used), and from that time improvement became apparent; the patient could walk, pain and redness disappeared, and swelling subsided, and in a short while she was able to come to the office, where electricity (the galvanic bath to the feet) was applied. During the attacks, all hair on the legs and feet disappeared, but as the improvement progressed it gradually returned. Up to now the patient has continued to feel well. There has been no recurrence of the disease, and she can walk, tolerate warmth in the room, and even cover her feet. There is only some occasional slight flush and some tenderness after excessive fatigue.

CASE II. Mrs. B., fifty-seven years of age, born in Louisiana, mother of seven children; lived a sedentary life of rather indolent disposition and took very little outdoor exercise; family history negative. Had two nervous prostrations, one in 1898, following a severe shock, and the other about eight years ago; since which time she traced her present condition. She suffered from pains and stiffness all over the body, and had noticed that her hands and feet often swelled and turned a purplish red color, accompanied by tingling and sometimes burning, especially when she felt nervous. As she herself expressed it: "It was a soreness of the hands and feet which was present all the time."

I saw the patient about three years ago, and she presented the following condition: Obese, weighing 199 pounds; five feet, three and a half inches tall; blood pressure 165 millimetres of mercury; arteries sclerosed, or slightly enlarged; heart sounds pure, with accentuation of the second aortic sound; both kidneys displaced downward; the abdomen pendulous and flabby; urine free. Suffered from constipation; very nervous, with hysterical stigmata. The palm and fingers of the right hand and upper surfaces of those of the left foot showed a scarlet red hyperemia; swollen and painful, with a smarting, tingling sensation. She described the feeling of warmth in the extremities by stating that she was always seeking a cool place to put her affected hand and foot, and uncovering portions of her bed so that she might have a place to spread and cool her limbs. Sudden changes from cold to warm weather increased the pain, redness, and swelling and, as in the previous case, continuous hot weather was not injurious unless preceded by a cold spell. Allowing the hands to hang down would cause a rush of blood to the part, the color becoming more brilliant, the pain more intense, the swelling more pronounced, and, upon raising this extremity above the head, the symptoms would subside and the patient was relieved.

A paper on certain painful affections of the feet, by Weir Mitchell, appeared in the *Philadelphia Medical Times* in 1872, but attracted little attention. In 1878 he named this disease "erythromelalgia," derived from the Greek words meaning "red," "pain," "member," which so graphically describes the malady. This condition was previously recognized and mentioned by Graves in his *Clinical Lectures* in 1848, and again by Sir Thomas Paget in his article, A Case Illustrating Certain Nervous Disorders, in *Saint Bartholomew's Hospital Reports*, 1871, p. 67. Very few cases were described and little was said about the new disease until 1892, when Gerhardt, Senator, and Bernhardt presented cases to the Medical Society of the Charité, in Berlin, in June, 1892, pronouncing it a new malady and recognizing its discoverer, Weir Mitchell. This epochal event in the history of erythromelalgia caused the publication of numerous articles, comments, and reports of cases, and many were the theories advanced as to the cause of this perplexing trouble.

It is the consensus of various authorities on the subject that it is a very rare affection. Oppenheim states that he found only two cases of erythromelalgia in 12,000 patients in his clinic. Osler states that he saw only one case in private practice in which the diagnosis seemed clear, and at the Johns Hopkins Hospital in twenty years (up to 1909) there were only three cases. Although there are about one hundred and fifty cases in the literature, only a few appear typical and bear all the earmarks of the disease. A study of the reported cases shows that the feet are generally the seat of the trouble and that there are about as many women as men affected, which is contrary to the usual opinion; and that the majority of those afflicted are individuals between twenty and forty years of age.

There are many theories as to the cause of this intractable disease, but even to this date nothing definite and tangible has been advanced to help elucidate its etiology. The rarity of the affliction and the scarcity of autopsies are no doubt the reasons why its etiology and pathology are not better known. At the close of their careful and thorough article on this disease, Lewin and Benda say: "We conclude that erythromelalgia is not a disease *sui generis,* but partly an accompanying syndrome to diseases of brain and spine, or to the neuroses, hysteria and neurasthenia, and sometimes a neuralgia or a neuritis." Weir Mitchell said he had no doubt that some of the cases of erythromelalgia were spinal in origin, but was not at all certain as to the spinal condition; and later said that the typical form is probably a painful nerve end neuritis, with or without coexistent inflammation of the parent stems; probably, too, although the skin may be of normal tint, when the limb is at rest, the deeper tissues are always too full of blood and the temperature supranormal.

Dana in his paper on the Acroneuroses states: "It appears to me after a careful reading of all of Mitchell's cases, and of many of Raynaud's, that these two observers have independently described closely allied, if not identical diseases." Baginsky believes that it affects only the vasomotor nerves. Dehio states that it is an independent disease. Collier reports ten cases, all in connection with diseases of the spinal cord.

Many observers think that it is a disease of the periphery and a malady *per se;* which opinion I am forced to embrace from a study of these two cases. One patient apparently cured for five years (a typical form of the disease), has never at any time displayed any symptoms of organic diseases of the spine and brain, and as for the other, although a milder, but still typical case, I can make the same assertion. Weir Mitchell states that he has known cases of erythromelalgia of milder type, which after twenty years have not become worse or added a single spinal symptom. I think that exposure to cold is the predisposing, as well as the exciting cause, of this disease. It is known that certain agencies, among which is prolonged exposure to cold, have a weakening effect on the involuntary fibres of the tunica media of the arteries. When the extremities are exposed to severe cold we have first contractions of the bloodvessels, which cause blanching of the skin, numbness, and extreme coldness to the touch; then, with the sudden application of heat, the capillaries dilate, the blood rushes to the surface, there is a glow, redness, warmth, and tingling, which gradually subside a short time after the vascular shock. Many cases in the literature on this subject give a history of exposure to cold, and among the most prominent are those of Weir Mitchell, Elsner, Paget, and Osler. Some authors, again, state that their patients had had chilblains some time previous to their first attack of erythromelalgia, as the disease generally comes in spring, in very cold climates, or sometime subsequent to a cold spell, and that exacerbations take place only when there is a sudden change in temperature. In my first case the patient was relieved during either a continuous spell of cold or warm weather, and was affected only when there was a sudden change of cold to warm, or of warm to warmer, as on entering a hot room, putting the feet to the fire, or in summer exposing the feet to the sun.

The pain varies in intensity and character according to the condition of the feet. With the beginning erythema the torture commences; in fact, it comes with the very first flush, which can be relieved by cold weather, or cold application. When the flush subsides and the redness diminishes, although the swelling remains, there is a more severe pain, neuralgic in character, which is persistent and may last for days and nights and can only be relieved by massage, cold applications being of doubtful service.

The clinical picture of this disease, especially in its severe form, is characteristic, and the symptoms so pronounced that it is readily diagnosticated. The color of the affected part varies from a livid, glistening red to a light purplish shade. Then we have the distention of all the superficial veins of the diseased member, the swelling of the extremity, with a puffy appearance but without pitting on pressure, the exaggerated temperature (decidedly high on the affected side), the skin dry and hot to the touch and drawn tightly over the surface, and the most excruciating pains, of which Musser says, "I know of no peripheral pain which is the source of greater agony," the pain which is described by the patient as a sensation of burning, as if the foot were put on hot coals or in boiling water, the erythema and pain which are aggravated if the member is allowed to hang down and relieved if elevated or placed in a horizontal position; the relief afforded by cold and the intensification of the symptoms by heat; all acute exacerbations coming after a cold spell, usually in the early spring months, following a rigorous winter; or, in warmer climates, constant changes of weather, occurring in winter, especially after a sudden rise of temperature from severely cold to hot weather. These symptoms are too vivid, typical, and pronounced to leave any doubt whatsoever regarding the diagnosis.

Erythromelalgia may be mistaken for the following diseases: Raynaud's disease, angioneurotic edema, certain affections of the spinal cord, endarteritis obliterans, peripheral neuritis, and red neuralgia.

It is the universal opinion that erythromelalgia does not yield to treatment, and this is the only point on which the different writers on the subject agree. Weir Mitchell never saw a severe case in which the patient fully recovered, nor is there any on record. A review of the literature will show that these unfortunates will go from one physician to another in the hope of securing relief from their intense agony. It would seem as if every drug in the pharmacopeia had been tried, and that each in turn had proved useless and was abandoned. One would think that vasoconstrictors ought to be beneficial; yet every drug in that group has been tried, and all without effect on the hyperemia, swelling and redness of the parts. All physical means have been tried, including electricity in all its modifications and different methods of application—static, high frequency, galvanic, faradic, also the x rays, violet rays, etc.; all to no avail. Suggestion has been beneficial in a few cases, especially those cases of erythromelalgia in patients of hysterical and neurasthenic tendencies. Bier's hyperemia, hot air, and the bandage have proved injurious, aggravating the disease, and had to be abandoned. Unlike Reynaud's disease, in the treatment of which atropine is such a valuable drug, this only makes the condition worse, the feet becoming redder and warmer and the pains more excruciating.

The only relief attainable in this malady in nearly all cases is the application of cold to the affected parts, in the form of refrigerants or cold applications, or, as in the case of my patient, allowing ice cold water to flow for hours at a time on the burning foot. In one of the latest articles published on the subject, suprarenal extract is advocated as a curative agent; yet, judging from the frequent remission of symptoms in this affection, the value of the remedy must still be considered doubtful. In the first case, I tried various glandular extracts, including the thyroid and pituitary, and also epinephrin; but in spite of these the disease continued its course without the slightest influence being noted.

Arsenic, acting as a powerful tonic, improving the condition of the blood and circulation, has proved to be valuable. Wendel reports a case that has been materially improved by means of the liquor acidi arsenosi. In the cases reported by me the patients have been entirely cured (so that they are well after several years) by the injection of sodium cacodylate combined with other physiological methods.

1231 Maison Blanche Building.

THE PROGNOSTIC VALUE OF THE ARNETH BLOOD COUNT IN PULMONARY TUBERCULOSIS.

By Jacob Kramer, M. D.,
New York.

In 1904 Dr. J. Arneth, of Leube's clinic, published the result of his studies on the changes that take place in the nuclei of the neutrophiles during various infectious processes, including pulmonary tuberculosis. He divides the neutrophiles into different classes according to the fragmentation of the nuclei, i. e., those containing an undivided nucleus he places in class 1, those containing two fragments in class 2, and so on. The most important fact that he calls attention to is that during an infectious disease we can foretell the ultimate outcome by a careful study of the nuclei in the neutrophilic cells. The following table he gives as the average normal count by his method:

Class 1	2	3	4	5
5	35	41	17	2

Any increase in the number of cells in classes 1 and 2 is termed a shift to the left. The neutrophiles in these classes Arneth considers as young cells, and he believes that they are not as phagocytic as the more mature cell, i. e., those containing three or more nuclei; therefore, during the course of an infectious disease, a large increase in the cells of classes 1 and 2 would denote a condition where the young neutrophiles predominate. The prognosis in such a condition, according to the theory stated above, would be unfavorable in that the main defense of the organism depends upon cells poor in phagocytic power. Minor and Ringer, in 1911, examined the blood according to Arneth's method with special reference to the changes occurring in pulmonary tuberculosis. As a guide to their work they studied the blood of ten normal individuals, with the following result:

Class 1	2	3	4	5
2.5	18.2	55.6	18.6	5.1

The results they obtained in one hundred cases of pulmonary tuberculosis seem to indicate that the method is of great value as an aid in prognosis.

During my residence at the Montefiore Home Country Sanatorium at Bedford Hills, N. Y., I began an investigation of the blood of tuberculous patients according to Arneth's method, and I believe from my results that we have a scientific means of prognosticating the outcome in this disease. As a preliminary I determined the average count in fifteen presumably normal individuals taken from the various employees at the institution. The following table is the result obtained:

Class 1	2	3	4	5
4	30	45	18	3

The blood of one hundred patients in various stages of pulmonary tuberculosis was analyzed and compared with the normal count given above used as a standard. Wright's stain was employed throughout the work, as it gives a uniform picture, bringing out the nuclei in the neutrophiles clearly. To make the results as accurate as possible two hundred cells were counted in all instances; the smears in the majority of the cases were taken by another member of the staff, so that no prejudice should enter into the calculations. The results obtained may be tabulated as follows:

Type of cases.	Class 1	2	3	4	5
1—15 Normal	4	30	45	18	3
2—35 Incipient	6	40	42.5	10	1.5
3—34 Moderately advanced	10	45	35	9	1
4—22 Advanced	17	50	28	5	
5— 9 Terminal	22	54	21	3	

In looking over this table one sees at a glance the gradual shifting to the left of the nuclear count as we approach from the incipient to the advanced cases, corresponding apparently with the condition of affairs in the lungs and the resisting powers of the patient; in other words, in patients who are doing well the picture resembles the normal count, while in progressing or advanced cases the opposite takes place, i. e., a shifting to the left.

To illustrate how the Arneth count may indicate an improvement or a relapse, I cite the following few cases:

Case I. R. G., female, thirty years old, married, housewife, admitted June 12, 1911, first stage. Two years before admission began to complain of pains in the chest, cough, expectoration, and debility; had blood streaked sputum at times; lost thirty pounds in weight in one year. Pulmonary condition, infiltration at the left apex. Arneth count, June 12, 1911.

Class 1	2	3	4	5
9.5	49	36.5	4	1

Progress of case: Patient gained sixteen pounds, and felt fairly well until October 20, 1911, when the blood showed the following picture:

Class 1	2	3	4	5
3.5	18	49.5	27.5	1.5

Sputum was negative throughout. Discharged December 10, 1911; disease arrested.

CASE II. E. S., female, fifteen years old, hairdresser Admitted July 10, 1911, first stage. Eight years before admission was operated upon for empyema. In January, 1911, while in apparent good health, had an attack of hemoptysis, with a loss of about four ounces of blood, followed by debility and shortness of breath; three weeks later had another attack of hemoptysis and began to lose weight. In June, 1911, patient again expectorated blood, and then began to complain of a constant dry cough. Pulmonary condition, infiltration at left apex and base. Arneth count, July 19, 1911:

Class 1	2	3	4	5
12	49	33	5	1

Progress of case: Patient gained thirteen pounds and subjective symptoms ceased. October 13, 1911, the Arneth count was as follows:

Class 1	2	3	4	5
4.5	28	54	13	5

Sputum negative; discharged October 8, 1912; disease arrested.

CASE III. S. F., female, seventeen years old, single, operator, admitted July 26, 1911, first stage. Eight months before admission began to cough; had fever and was bedridden for four weeks; while in bed had a hemorrhage followed by severe cough, debility and night sweats. Pulmonary condition, infiltration of both apices and at the left base. Arneth count, July 27, 1911:

Class 1	2	3	4	5
13	60.5	25	1.5	

Progress of case: Patient gained eight pounds and râles disappeared.

October 10, 1911:

Class 1	2	3	4	5
5	23.5	51	19	1.5

Discharged June 19, 1912; improved.

These three cases may be taken to illustrate the variations in the Arneth count in favorable cases. The following will serve to show the reverse condition:

CASE IV. F. M., female, fourteen years old, housework, admitted January 21, 1903, second stage. Mother died from pulmonary tuberculosis. One year before admission patient began to cough and had profuse expectoration and hemoptysis; had fever, chills, dyspnea, and debility. Pulmonary conditions, consolidation at the left upper lobe with infiltration at base and at right apex; sputum contained tubercle bacilli. Progress of case: Patient did very well, and lesion showed signs of arrest.

June 16, 1911:

Class 1	2	3	4	5
8	37	41	12	2

During July, 1911, patient began to show signs of relapse; had fever and hemoptysis; cough returned. On July 31, 1911, the Arneth count showed the following:

Class 1	2	3	4	5
23	49	24	4 ·	

The patient has not been doing well since.

CASE V. M. Y., twenty-one years old, female, single, embroidery, admitted June 20, 1911, third stage. In the fall of 1908, while apparently well, had a hemoptysis of about half an ounce; felt well after this until February 1910, when another hemoptysis occurred, followed by cough and expectoration. Pulmonary condition, consolidation of left upper lobe with cavities; pleurisy at base; infiltration at the right apex. Arneth count June 21, 1911:

Class 1	2	3	4	5
22	46.5	28.5	3	

Progress of case: Patient began to gain weight, felt well, and the râles became less pronounced until September 19, 1911, when the blood showed the following picture:

Class 1	2	3	4	5
6	41	45.5	6	1.5

Patient began taking tuberculin treatment November 17 1911, with 0.00000015 gramme O. T., and stopped October 15, 1912, at 0.005 gramme. The treatment was discontinued on account of repeated rise in temperature and loss of weight. January 30, 1913, patient had lost eleven pounds in weight since July, 1912; had occasional pyrexia; marked extension of lesion on the right side. Arneth count January 30, 1913:

Class 1	2	3	4	5
33.5	50	14.5	2	

The patient is still under observation.

Some one once remarked that there is nothing so certain about tuberculosis as its uncertainty. Every one working in this branch of medicine appreciates how difficult it is to give a prognosis even in the incipient stage of the disease. How frequently does one see a light case suddenly flare up for no apparent reason, and a fairly well advanced case come to an arrest. Therefore we should take advantage of any means to aid us in forming an opinion concerning the patient's chances. In conclusion, I wish to summarize as follows:

1. The Arneth method of blood examination is a distinct aid in the prognosis of pulmonary tuberculosis.

2. It may be employed as an index in the treatment, by placing us on guard when a shift to the left occurs.

3. The method undoubtedly deserves a more extended trial.

I wish to thank Dr. M. Schaie, senior physician at the Montefiore Home Country Sanatorium, for his aid in the preparation of this report.

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1695 BATHGATE AVENUE, BRONX.

REPORT OF THREE CASES OF CÆSAREAN SECTION.*

By A. M. HILKOWICH, M. D.,
New York,
Attending Surgeon, Jewish Maternity Hospital; Attending Gynecologist, Gouverneur Hospital Dispensary.

There are absolute and relative indications for Cæsarean section. The absolute indication is met with when the parturient canal is so narrowed that the child, even reduced in size by mutilating operations, cannot be brought through with safety to the mother. The relative indication, speaking broadly, will exist when the accoucheur decides that the abdominal delivery offers better chances for both mother and child than delivery from below. It is largely subjective. In a contracted pelvis, excepting the absolutely contracted, Cæsarean section is usually considered only with a view to saving the life of the child, because we can, by a mutilating operation on the child, such as craniotomy and embryotomy, deliver with reasonable safety to the mother, from below. This relative indication is held to be present in a pelvis the conjugate vera of which is from six and a half to nine cm., the size of the child being deemed to be prohibitory. If, however, the woman has been examined by questionable hands, or has become exhausted by many hours of labor; if the membranes have been ruptured for a long time or repeated attempts at delivery have been made, Cæsarean section becomes a very risky operation. Pubiotomy should be performed instead. In borderline cases, if the attending obstetrician does not feel that he could deliver a living child from below, and the mother, who is very anxious for a living child, has not been exhausted by labor pains, I believe he is justified in putting the question squarely to mother and father, explaining to them the risks and leaving the dicision to them. When they decide to take the risk, Cæsarean section may be performed under perfect conditions, such as are found in modern hospitals. Thus, Reynolds and Newell, of Boston, even advocate this procedure in women who, owing to their nervous constitution, are unfit to undergo the strain of a hard and prolonged labor.

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*Read before the Eastern Medical Society, February 13, 1913.

In the cases I am about to report each patient presented to my mind a distinct indication for the operation.

Case I (History No. 532). Mrs. F. S., age twenty-four, married five and one half years, Rumania. Generally contracted pelvis; para II.

Family history: Negative, husband suffering from some liver trouble.

Personal history: Menstruation began at eighteen years; regular, three days, moderate in amount; had one child, by Cæsarean section, four and one half years ago, at the Lying-in Hospital; no abortions.

Present history: Last menstruation seven and one half months ago; quickening two and one half months ago; applied to the Jewish Maternity Hospital, November 17th. On examination the following was found: Height, small; examination of heart and lungs negative; no edema; breast normal; abdomen, old scar present; uterine contraction; uterine murmur. Head, below; fetal heart sounds 150 and of good quality. Measurements: Circumference, 88 cm.; intraspinous diameter, 23 cm.; intracrestal, 25 cm.; external conjugate, 17 cm.; external oblique, right, 20 cm ; left, 20 cm.; diagonal conjugate, 9 c. c.; vagina, small! Patient reported to the hospital on February 16th, not in labor. Upon examination the head was found floating; no tendency to descend; could not be made to engage. After due preparation patient was operated upon February 19th.

Operation:—Incision to right of scar, six inches long; omentum found adherent to old scar; separated after ligation; intestines walled off with gauze pads. There was found a bulging area about the size of an orange in anterior wall of uterus, at site of old incision; uterine wall very thin and covered by large plexus of veins, some as large as a pencil. Incision in uterus to left of old scar; protruding membranes ruptured; arm, presenting, quickly replaced; leg grasped, and fetus delivered. Placenta removed. Uterus, sutured; muscle with chromic suture No. III, interrupted; peritoneum with No. I, plain, continuous; abdominal wall sewed up in layers. A hypodermic injection of a preparation of ergot was given, and repeated in ten minutes. Temperature 98.6° F., pulse 120, respiration 20 before operation. Temperature 99.6° F., pulse 90, respiration 20 after operation. Wound healed by primary union; temperature never above 100.6° F.; patient out of bed on fourteenth day; mother and baby discharged from the hospital in good condition.

Being certain, in this case, that delivery of a living child could not be accomplished from below, it was advisable not to wait for labor pains, which was fortunate for the mother, because, owing to the extreme thinning of the uterine wall and the large plexus of large veins over the site of the old scar, uterine rupture might have taken place, with fatal intraperitoneal hemorrhage. Owing to the suspicious appearance of the Fallopian tubes, it was not deemed advisable to sterilize the woman, although that was her wish.

Case II (History No. 3120). Mrs. F. G., age twenty-four years, Austria, para II.

Family history: Negative.

Personal history: Menstruation began at eighteen; regular and painless; married two and one half years; one year after marriage a full term, microcephalic dead fetus was delivered by version, with great difficulty.

Present history: Admitted to Jewish Maternity Hospital, May 3, 1912, at 5 a. m. Examination of the heart and lungs, negative; general condition, good; rather obese. Measurements: Symphysis to umbilicus, 25 cm.; fundus, 42 cm.; ensiform cartilage, 47 cm.; intraspinous diameter, 26 cm.; intracrestal, 30 cm.; external conjugate, 21 cm.; diagonal conjugate, 11 minus; sacral promontory, very prominent. Head, below dorsal plane, left; heart sounds, good, about 150, to the left and below; presenting part, vertex, above brim. Vagina, moderate size; cervix, dilated sufficiently to admit two fingers. Patient had strong pains for several hours; head not engaged. At 8 p. m. os would admit four fingers; head not engaged; membranes ruptured. 9:30, no progress; head still above brim; no tendency to engage even with strong pain. Cæsarean section performed at 9:40; classic operation. Measurements of child: Weight, 8 pounds, 14 ounces; total length, 50 inches.

In Case II we have a distinct borderline case. This woman was given a good test of labor, even to the extent of rupturing the membranes, but the head refused to come down. High forceps would surely have resulted in the death of the fetus, even if delivery could have been accomplished. The situation was fully explained to the mother and her husband, and both decided on Cæsarean section. With the exception of a slight excess of temperature during the first few days, convalescence was normal and mother and child left the hospital, in good condition, on the seventeenth day.

Case III (History No. 3426). Mrs. R. K., age twenty-nine years, Russia, para II.

Family history: Negative.

Personal history: Menstruation began at fifteen; regular; married seven years; aborted six and five years ago, in third month; two and one half years ago was delivered, instrumentally, of a dead fetus, said to have weighed eighteen pounds. Very protracted convalescence. June 10, 1912. Examination of heart and lungs negative; abdomen large for the period of pregnancy, seven and one half months; fetus in transverse position; head in right iliac fossa; fetal heart sounds, 140, and of good quality. Measurements; Symphysis to umbilicus, 22 cm.; fundus, 34 cm.; ensiform cartilage, 45 cm.; external conjugate, 20 cm.; diagonal conjugate, 10 cm. External version tried without success; woman very anxious for a living child; refused induction of labor; was willing to have anything done to secure the birth of a living child.

Admitted to hospital, July 28, at 10 a. m. Examined at 2 p. m.; two fingers' dilatation of os; breech presenting; labor pains good; membranes ruptured spontaneously at 2:20. The possibility of a still birth was explained to the mother, owing to the position of the child and the flat pelvis, and both parents not only agreed to but begged for Cæsarean section, which was performed at 3:10 p. m. with the usual technic. Mother and baby were discharged in good condition on August 12. Measurements of child, weight, 7½ pounds; total length, 52 inches; biparietal diameter, 12 cm.

In regard to Case III opinions will perhaps differ more on the mode of procedure than in the previous two cases. However, the history of a large child, instrumental delivery with death of fetus, a protracted convalescence probably due to a severe infection, owing to traumatism of instrumentation and the malposition of the child, seemed to call for

Cæsarean section. Had there been a normal vertex presentation, I would have been inclined to give the patient a good test of labor, and delivery from below might perhaps have been accomplished, with the aid of forceps. But, owing to the flat pelvis, the aftercoming head would certainly have become impacted, resulting in the death of the fetus. The great insistence on the part of the mother for a living child and the conviction of her husband that, if "she had another dead baby she would surely go crazy," caused me to choose Cæsarean section. An interesting point in this case was the adherence of the placenta, which was removed piecemeal and with great difficulty. This was probably due to the fact that the previous post partum infection had caused a metritis. With the exception of slight uterine bleeding for a few hours, convalescence was perfectly normal.

As to the prognosis in Cæsarean section, Routh, in 1910, collected statistics in Great Britain, comprising 1,282 cases, which show that there has been a steady decrease in mortality. In favorable cases, this is from two per cent. to four per cent. In cases where labor has been prolonged or attempts made with forceps, there is a mortality of thirty-four per cent. and over. The lowest mortality is in cases where the operation is done when labor just began and the membranes are intact, 2.2 per cent. After labor has been in progress for some time, with membranes ruptured, the mortality is 10.8 per cent.

280 East Broadway.

CHRONIC MEDIASTINITIS FOLLOWING OSTEOMYELITIS OF THE STERNUM:

Report of a Case and Operation.

By H. M. Armitage,
Chester, Pa.,
Surgeon, Chester Hospital.

Chronic inflammation of the anterior mediastinum is usually due to chronic osteomyelitis of the sternum or ribs, and is more common than the acute septic variety. Syphilis and tuberculosis are the most potent factors causing chronic osteomyelitis of the sternum or ribs, and, clinically, the differentiation may be almost impossible. Syphilitic osteomyelitis of the sternum pursues a slow and generally painless course. It most frequently begins in the periosteum as a gummatous infiltration, forming an elastic fusiform swelling. Its presence is associated with marked endarteritis, which so diminishes the blood supply to the bone that necrosis occurs; which, extending to the surrounding tissues, may lead to external evacuation followed by pyogenic infection.

The tuberculous form of osteomyelitis of the sternum presents the same pathological picture as tuberculosis of the long bones of the body, except that the symptoms are not complicated by symptoms of joint infection; but the pathological changes are not always confined to the bone and frequently involve the surrounding soft tissues lying superficial to the sternum, and, less frequently, the anterior mediastinum behind. Tuberculosis of the sternum is always dependent upon infection of the marrow of the bone with the tubercle bacillus. This feature of the pathology is of interest because, as we have seen, the syphilitic form usually attacks the periosteum first and begins as a swelling. The end results of the two forms are so similar, however, that this will not be of any material aid in the diagnosis later in the disease. The tubercle bacillus, having gained access to the bone marrow, causes the formation of miliary tubercles, which arise from proliferation of the connective tissue of the marrow around the primary tubercle. Secondary tubercles are formed, the centres become caseous, and by fusion of adjacent caseous areas, an area of softening is produced in the bone marrow. After the process becomes more extensive, involvement of the bony trabeculæ, with subsequent softening and the formation of a definite cavity in the softened trabeculæ, may persist as a definite sequestrum, surrounded by tuberculous tissue. Rutizky, Ribbert, and others believe that osteoclasts are not necessary for the absorption of bone in the presence of granulation tissue. Certainly, along the lines of osseous invasion in tuberculosis, there is evidence clearly indicating that decalcification and removal of the bone matrix, without the presence of osteoclasts, are in progress. Unlike tuberculosis of the spine and long bones, it frequently follows injury, and is more common in middle aged adults than in children, and is often associated with pulmonary, glandular, or other manifestations of the disease. While the tuberculous process is limited to the sternum or ribs the pain is very slight, or absent altogether, but when mediastinitis becomes established this becomes severe, although the constitutional symptoms are slight in the chronic form under consideration.

The prognosis is bad, and when the disease does limit itself, and recovery takes place, the convalescence is long and tedious. Operation, with thorough removal of diseased bone, and ample drainage of the mediastinum, is the logical treatment. The case about to be submitted is unusual because of the peculiar relationship which appeared to exist between the mediastinitis and a long standing asthmatic condition, and the relief of the asthma by draining the anterior mediastinum.

Case. Woman, aged thirty-eight years; consulted me in July, 1911, in regard to a lump in the lower inner quadrant of the breast. *Previous history.*—Fifteen years ago she had a severe attack of pneumonia and since that time she has suffered continually from asthma. During the past seven years the attacks had been occurring with greater frequency and becoming more severe in character. She had tried every known method of treatment, but was forced to rely upon morphine during the paroxysm, and often received three hypodermic injections before the seizure was broken. *Present trouble.*—In June, 1911, she noticed a small nodule in the left breast. It was not painful, and after the application of poultices it broke, discharging a thick pus. Examination revealed a mass in the lower inner quadrant of the left breast. It was fairly well defined in outline, but the centre was ulcerated and a thin serum exuded from a small opening in the centre of the ulcerated area.

Operation, on December 30, 1911. An incision was made through the mass, and the sternum curetted. The opening was packed with iodoform gauze and free drainage established. It continued to drain freely until May, 1912, when the discharge became much thicker and diminished in quantity. She began to suffer excruciating pain at the chondrosternal junction, radiating around the border of the sixth rib toward the spine. Operation was again advised and was performed, May 22, 1912. A much wider incision was made at the junction of the sixth costal cartilage with the sternum. The sternum had undergone necrosis in its lower third. The diseased bone was thoroughly removed with rongeur forceps, no effort being made to save the involucrum, since the cavity kept rapidly filling with fibrous tissue and I felt that it would be of no benefit to save it. The anterior mediastinum was entered at the border of the sternum, between the fifth and sixth costal cartilages, the opening being made with the rongeur forceps and gradually enlarged; and while in the majority of instances it would probably be better to trephine through the centre of the sternum and drain, in this case the primary opening led to the border of the sternum and free drainage of the mediastinum was easily established. Iodoform gauze was packed under the sternum into the mediastinum, and the rest of the cavity filled with the same material. The cavity was kept open and continued to drain freely until December 23, 1912. The only treatment during this period consisted in removal of granulation tissue and the application of tincture of iodine to the cavity. After the drainage ceased, healing rapidly took place, and within two weeks patient was entirely well.

The laboratory findings were negative, the microscopical examination of the tissue removed revealing chronic inflammatory tissue, with a slight tendency toward breaking of the basement membrane in the sections which were covered with epithelium. This feature was not marked enough to diagnosticate it as beginning malignancy, and I am convinced from the clinical aspect of the case that the entire process was due to tuberculosis of the sternum. Since the second operation she has had one attack of asthma, but it is impossible to state whether this relief, which has now lasted ten months, will be permanent, and likewise whether the operation relieved the asthma or if it was merely a coincidence that the asthma was relieved at that time.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

CXXXVI.—How do you treat cholera infantum. (Answers due not later than July 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXIII was awarded to Dr. W. A. Wallace, of Spartanburg, S. C., whose article appeared on page 1192.

PRIZE QUESTION CXXXIII.

THE TREATMENT OF INFLUENZA, ESPECIALLY IN VIEW OF SEQUELÆ.

(Concluded from page 1195.)

Da. Joseph Di Rocco, of New York, states:

In the treatment of influenza one has to deal with a specific, infectious disease, associated with catarrh of the nasal mucous membrane, followed by an unexplainable and complete prostration. The duration of the disease is about one week; but the danger of it is that the person very often neglects to pay any attention to the ailment, and there are apt to develop complications directly traceable to the involvement of the mucous membrane. The complications that one has to guard against are as follows: 1. Pulmonary, in which pneumonia predominates; 2, involvement of the frontal sinus; 3, middle ear disease; 4, antrum disease. Besides the above mentioned complications, the etiology of the disease tells us that mental depression or cardiac weakness may develop. The cases, as usually seen, can be divided, because of the respective predominating symptoms, into: 1. Catarrhal; 2, nervous or cephalic; and, 3, abdominal.

The treatment of the disease is expectant and supportive, and by far the most important point is to make the convalescent stage complete. No prophylactic measures can be taken, but it is believed that five grains of quinine every night will prevent an attack. When once established, because of the nature of the disease, one can institute some prophylaxis by isolating the patient as much as is convenient and disinfecting the discharges from the nose and throat by any of these means: Formaldehyde, 1 to 40; mercury bichloride solution, 1 to 1,000. The patient usually sends for the doctor because of the pains and the general malaise. During the invasion a hot bath followed by ten grains of Dover's powder, or a hot lemonade, will often relieve.

As to the general management of the case: Place the patient in a room, well ventilated, with a temperature of about 70° F. He must stay in bed for two or three days. The diet should be a light one, such as soups, milk, possibly koumyss if there is any disinclination toward milk. Later on, eggs, soft boiled. When the irritability of the stomach has settled down, give small quantities of food, but repeated oftener. Such foods as beef juice or extracts should be avoided. There is a marked tendency to a good deal of gastrointestinal irritation. For the bowels, at the beginning give a strong dose of calomel, followed by a saline. During the course of the disease be careful in the use of cathartics. The most distressing symptom in most cases is coryza, and as the inflamed mucous membrane serves as the starting point of the various complications, one has to be very careful to relieve and overcome the condition. The coryza can be relieved by several methods: 1. Warm saline irrigation through the nasal passages; 2, irrigation with a solution of this type:

℞ Sodium bicarbonate, }
Sodium borate, ... } ....āā ʒii;
Glycerin, ...ʒiv;
Phenol, ...♏xxx;
Water, q. s. ad..................................℥xvi.
M.

3. The application of a two per cent. solution of cocaine; this relieves pain due to involvement of the frontal sinus and also the plugging of the nose; 4, spraying with adrenalin solution, one in 10,000. The careful treatment of this symptom accomplishes a good deal in preventing any involvement of frontal sinus, middle ear, and antrum. For the pains and

general malaise: Ordinarily these are not affected by doses of quinine. The coal tar products, such as acetphenetidin and acetanilide, answer the purpose; and they seem to act better in small than in large doses. Of course, the objection to using these is the danger of depression; but when they are given in various combinations, and with moderate doses of quinine sulphate, the depression is minimized. This combination I find to work very well:

℞	Acetanilide,	gr. ii;
	Citrated caffeine, Monobromated camphor,	āā gr. 1;
	Quinine sulphate,	gr. ii.

Made up in capsule and given every four hours.

For the headache: Generally the coal tar products relieve the condition. Quite often the application of cold to the head will suffice. When due to nervousness, I give these two drugs in combination:

℞	Sodium bromide,	gr. xx;
	Sodium salicylate,	gr. x.

M.

Quite often the headache may be frontal in type and is due to congestion of the frontal sinus; the treatment of the coryza, as described, will relieve the pain.

During the progress of the case, if the temperature remains high and is not affected by the administration of the coal tar products, I give Liquor ammonii acetatis, in half ounce doses, every four hours. Cold sponging is often disagreeable to the patient, but in case of pulmonary involvement, with high temperature, I resort to that method in reducing the fever. Quite often there is a cough to contend with. If mild, it can be controlled by inhalations, using such ones as: 1. Oil of turpentine; 2, compound tincture of benzoin; 3, inhale from a sponge containing a mixture of chloroform, alcohol, and creosote, ten minims of each. If very bad and obstinate, I resort to drugs, such as heroin, 1/12 grain, or codeine, ⅛ grain, every two or three hours. Insomnia can be relieved by trional, twenty grains, and codeine, ¼ grain. Stimulation in any form is seldom called for; but one must remember—and this is very important—that the administration of strychnine during the course and convalescence is an ideal way of combating the depression and cardiac weakness. I give it as strychnine sulphate, 1/40 grain, every four hours. With the digestion much improved, the patient can take concentrated nourishment, and some form of alcohol (light wine, etc.) with meals. A very good tonic to give after the convalescent stage is established is the elixir of the phosphates of iron, quinine, and strychnine in two drachm doses after meals.

Dr. A. Delcourt, Jr., of Schriever, La., observes:

The treatment of influenza, especially in view of the sequelæ of the disease, is best considered if for practical purposes we recognize three distinct types of influenza, which we may classify as those affecting the respiratory tract, the digestive tract, and the nervous system. While we are called upon at times to attend a patient who belongs markedly to one of these three types, there are, however, symptoms common to all, with which we have to deal even before a distinction can be made. In all cases there is fever, varying from 101° to 104° F.; sometimes remittent, with chills, and sometimes quite protracted. Always there is a very bad taste in the mouth, coated tongue, nausea, severe headache, and muscular pains.

To relieve these symptoms, common to every beginning attack of influenza, we give an initial dose of calomel, followed by a saline purgative. Acetphenetidin, 0.20 gramme, and citrated caffeine, 0.06 gramme, with sufficient sodium bicarbonate to make a powder, are administered every two or three hours; followed by a little hot toddy and lemon. At this stage also a hot foot bath with mustard will be effective in reducing the temperature, allaying pain and restlessness, and making the patient more comfortable. With the fall of the temperature, and preferably given in the morning, a stiff dose of quinine (from 1 gramme to 1.50 gramme) will often abort the attack.

Following the coryza and laryngeal cough, the inflammation may extend to the large bronchial tubes, and even reach the finer tubes, with resultant cyanosis and even asphyxiation; or, as the result possibly of mixed infection, we may have the complication of influenza, so dreaded both in the young and old, the "influenza pneumonia."

To these different manifestations of a morbid process, different remedies apply. Here is a prescription, useful in bronchitis when expectoration is scanty.

℞	Ammonium chloride,	4 grammes;
	Tincture of hyoscyamus,	2 c. c.;
	Compound syrup of squill,	16 c. c.;
	Syrup of ipecac,	8 c. c.;
	Syrup of wild cherry, Syrup of seneca,	āā 20 c. c.;
	Water, sufficient to make	180 c. c.

M. Sig.: Tablespoonful every two or three hours.

In cases resembling capillary bronchitis counter-irritation is promptly applied all around the chest, sides, and back by means of a large, but thin, flaxseed meal poultice, sprinkled over with a teaspoonful or two of powdered mustard, and applied as hot as can be borne. The poultice is covered with oiled silk and is kept in place until the skin is thoroughly reddened; to be repeated *pro re nata*. But for the taste, this is a most valuable prescription:

℞	Potassium iodide,	0.12 gramme;
	Ammonium carbonate,	0.18 gramme;
	Citrated caffeine,	0.05 gramme;
	Syrup of wild cherry, Syrup of tolu,	āā 2 c. c.

M. Sig.: Teaspoonful every two hours.

Oxygen may be tried in extreme cases, and has proved of some value.

Whenever influenza pneumonia supervenes the patient is put at once in an oiled silk jacket. At the beginning a mixture somewhat on this style is prescribed:

℞	Ammonium bromide,	0.20 gramme;
	Tincture of hyosyamus,	gtt. 3;
	Tincture of aconite,	gtt. 2;
	Compound syrup of squill,	1 c. c.;
	Spirit of nitrous ether,	0.50 c. c.;
	Syrup of wild cherry,	4 c. c.;
	Water, sufficient to make	15 c. c.

M. Sig.: Tablespoonful every two hours.

When there is any evidence of asthenia good results are obtained from small and often repeated doses of champagne, to be supplemented if necessary with strychnine sulphate in doses of one or two milligrammes every four hours. Digitalis is brought into play with caution, and overstimulation carefully guarded against. Toward the end, with the appearance of râles and the fall of the fever the following prescription is substituted for the one given above:

℞ Ammonium chloride, ...0.30 gramme;
Compound syrup of squill, ...1 c. c.;
Sodium benzoate, ...0.30 gramme;
Syrup of wild cherry, ...4 grammes;
Water, q. s. ad........................15 grammes.
M. Sig.: Tablespoonful every four hours.

Disturbances of the digestive tract, in addition to the initial dose of calomel, are treated with intestinal antiseptics. We have found the aromatic sulphuric acid, so much employed in former years, to be superior to salol or sulphocarbolate of zinc, and to make an almost ideal combination in the following mixture, when we are confronted with frequent, foul smelling, and watery stools:

℞ Bismuth subnitrate, ...16 grammes;
Bismuth subgallate, ...4 grammes;
Deodorized tincture of opium, ...4 grammes;
Aromatic sulphuric acid, ...6 grammes;
Simple syrup, ... 45 c. c.;
Water, sufficient to make ....180 c. c.
M.

When we are not facing a typhoid condition which would call for every sort of stimulation resorted to under similar circumstances, the patients in which nervous troubles predominate (where there is restlessness, insomnia, delirium, even), are very generally benefited by giving jointly one gramme of potassium bromide and fifty centigrammes of antipyrine every three hours, or oftener.

A few words now as to the sequelæ of influenza from the viewpoint of the treatment just outlined. Patients, whether seemingly suffering from a slight or a severe attack, should be rigidly confined to bed, where they must remain, when you can persuade them to do so, until there is good reason to believe that there is no further danger of complication or of relapse. They are given at frequent intervals small quantities of easily digested but nutritive food. I insist especially on milk, boiled, peptonized, or malted; or in the form of milk punch, with a little good brandy or whiskey. Nothing is done which may lower the vitality of the patient, who is already debilitated out of proportion to the intensity of the fever. And let me say here that I have never seen, either in children or adults, any untoward effects from the careful administration of acetphenetidin or antipyrine when pure, but rather the most beneficial results in the way of restfulness, well being, and the production of a sleep which is peaceful and strengthens rather than weakens the patient. As a reconstructive tonic, given both during the acute stage and during convalescence, in addition to the symptomatic treatment, we cannot praise too highly this formula:

℞ Fluid extract of cinchona,
Fluid extract of kola, ... } ....āā 12 c. c.;
Fluid extract of coca, ... 10 c. c.;
Tincture of nux vomica, ... 24 c. c.;
Tincture of cinnamon, ... 15 c. c.;
Syrup of orange peel, ... 45 c. c.;
Aromatic elixir, sufficient to make.........240 c. c.
M.

It is a powerful tonic preparation and will best prepare the invalid or convalescent for further tonics of iron iodide, codliver oil, and creosote, or whatever will be best adapted to restore the patient to complete health.

Therapeutic Notes.

Treatment of Hemorrhoids.—Kemp, in the recently issued second edition of his textbook on *Diseases of the Stomach, Intestines, and Pancreas*, recommends the following sedative ointment for prolapsed internal hemorrhoids:

℞ Extracti opii, ...ʒss (2 grammes);
Cocainæ hydrochloridi, ...gr. x (0.65 gramme);
Mentholis, ...gr. xx (1.3 grammes);
Unguenti zinci oxidi, ...℥i (30 grammes).
M.

Where there is bleeding from external piles, styptics can be applied in ointment form; where it is from internal hemorrhoids, an ointment can be introduced with the finger or applicator, or a suppository used. The following combinations are useful:

℞ Unguenti acidi tannici, ...ʒiv (15 grammes);
Unguenti stramonii,
Unguenti belladonnæ, } ....āā ℥i (30 grammes).
M.
℞ Glandularum suprarenalium siccarum,
gr. v (0.3 gramme);
Olei theobromatis, ...ʒss (2 grammes).
Fiat suppositorium No. i.

An ointment or suppository containing chrysarobin has also been advised for the treatment of hemorrhage from piles:

℞ Chrysarobini, ...gr. xv (1 gramme);
Extracti belladonnæ foliorum,..gr. v (0.3 gramme);
Iodoformi, ...gr. x (0.6 gramme);
Petrolati, ...℥ss (15 grammes).
Fiat unguentum.

Recent fissures complicating hemorrhoids may at times be cured without operation. The fissure can be touched with a silver nitrate solution varying in strength from ten to thirty grains (0.6 to two grammes) to the ounce (thirty grammes) of water every two or three days; on the alternate days a five per cent. cocaine solution can be carefully applied (a few drops only); or, the following ointment can be alternated with the silver application, or substituted for a time:

℞ Hydrargyri chloridi mitis, ...gr. xv (1 gramme);
Opii pulveris, ...
Extracti belladonnæ foliorum, ... } ......āā gr. v (0.3 gramme);
Petrolati, ...℥ss (15 grammes).
Fiat unguentum.

Calcium and Gelatin Injections.—Müller and Saxl, in *Therapeutische Monatshefte* for November, 1912, state that although the giving of calcium salts by the mouth is attended by a diminution in their therapeutic activity, subcutaneous administration has not as yet been practicable owing to the untoward local effects frequently resulting. To avoid these a solution of the following composition has been recently used by the authors:

℞ Calcii chloridi, ...gr. xv (1 gramme);
Gelatini, ...gr. xxx (2 grammes);
Aquæ destillatæ et sterilisatæ,..ʒiiss (10 grammes).
M. ft. solutio.

From five to seven cubic centimetres of this preparation are heated upon a water bath, then cooled—but not to the point of solidifying—and injected in the gluteal region. Slight local pain is experienced for ten or twelve hours and the skin may become red, but no abscess or tissue necrosis ever results.

This procedure is indicated in all cases where the administration of calcium chloride by mouth proves ineffectual. In cases of severe hemorrhage into the skin, hemophilia, and duodenal ulcer treated by the authors, a single injection was sufficient to arrest the bleeding. Three cases of exophthalmic goitre and one of bronchial asthma were also greatly benefited. The mixture was introduced into the pleural cavity after paracentesis had been performed the second time in a case of tuberculous pleurisy; the fluid did not reform.

Treatment of Chronic Urticaria and of Senile Pruritus.—E. Bäumer, in *New Yorker medizinische Monatsschrift* for August, 1912, is credited with the statement that lasting benefit may often be obtained in chronic urticaria by giving a five per cent. solution of calcium chloride, flavored with licorice or mint, in doses of one tablespoonful three times daily. Menthol taken internally in pill form is also not infrequently of value.

In senile pruritus, Bäumer advises the following mixture:

R Acidi sulphurici diluti, ...♏lxxv (5 grammes);
Syrupi rubi ideæ (N. F.), ...℥i (30 grammes);
Aquæ destillatæ, q. s. ad........℥vi (200 grammes).
Fiat mistura.
Sig.: One tablespoonful every two hours.

Treatment of Parasitic Skin Affections.—J. W. Van der Valk, in *Semaine médicale* for January 29, 1913, is credited with the statement that although effectual measures are at present available for the treatment of tinea favosa, tinea circinata, and tinea versicolor, we are less well equipped in the case of pityriasis versicolor, erythrasma, and eczema marginale, for recurrence takes place as soon as the usual rubbing with green soap, application of sulphur and salicylic ointment, and painting with tincture of iodine are discontinued. In these conditions the local use of formaldehyde seems indicated, both because of its marked destructive influence on the causative organisms and its property of arresting excessive perspiration. In an obstinate case of erythrasma, washing the lesions twice daily with a ten per cent. formaldehyde solution resulted in their disappearance within four days, and there has been no return of the trouble in two years. Similarly, in a case of extensive pityriasis versicolor of ten years' standing, in a young woman, cure was obtained in a week. The solution should be applied in the morning rather than at night, in order to avoid irritation of the ocular and nasal mucous membranes through its evaporation during the latter period.

Treatment of Postanesthetic Intoxication.—Chauvin and Œconomos, at a meeting of the Société de Thérapeutique of Paris (*Presse médicale*, December 18, 1912), made the assertion that during anesthesia the reserve of glycogen in the system is rapidly consumed, and that if this supply were replenished by the administration of glucose to the patient, the possible harmful consequences of anesthesia could be in a large measure avoided. The liver deprived of glycogen is placed at a disadvantage in the performance of all its functions, and since it is the province of this organ to overcome intoxication, carbohydrate material should be supplied in order that inefficiency in this direction may be avoided.

The authors administer glucose as prophylactic in the following form:

℞ Glucose, ...℥v (150 grammes);
Tincture of nux vomica, ...♏viii (0.5 gramme);
Tincture of cinnamon, ...♏xlv (3 grammes);
Water, enough to make ....℥x (300 c. c.).
M.

Vomiting is not only not increased by the ingestion of the mixture, but subdued.

Where postanesthetic intoxication is already established, glucose should be freely administered by mouth, rectum, and even intravenous injection. As in diabetic coma, alkalies should also be given.

Treatment of Trifacial Neuralgia.—H. Crenshaw, in the *Therapeutic Gazette* for December, 1912, reports a case of trifacial neuralgia of fourteen years' standing, which had resisted all the usual remedial means, including resection of the sensory root of the nerve and the injection of cocaine, in which subcutaneous injections of quinine and urea hydrochloride brought apparently permanent relief. Quinine, codeine, and coaltar analgesics had been tried by mouth without noteworthy benefit. A sterile hypodermic syringe with a long needle was filled with a sterilized one per cent. solution of the quinine and urea salt, the needle inserted near the ala of the nose, and slipped upward beneath the skin for about an inch. A series of small injections was then made, the needle being gradually withdrawn, and the needle then reinserted over the infraorbital foramen and slipped upward as before, after which another series of small injections was made. The infraorbital region was finally gently massaged. In forty minutes complete relief was experienced. Three more injections were later given, at intervals of two, four, and seven days, respectively. After the fourth injection there was no return of the neuralgia.

Relief of Tinnitus Aurium.—W. C. Braislin, in the *Transactions of the American Otological Society* for 1912, states that tinnitus due to inflammatory conditions of the Eustachian tube yields more rapidly and permanently when applications of silver nitrate are made in the tube than when other measures are alone used. He now resorts to this procedure systematically in cases of tubal catarrh, chronic otitis media, and combined middle and internal ear disease. After the ordinary catheter inflation, but before removing the catheter from its position, a small cotton pledget, twisted on a flexible wire applicator, is dipped in the silver solution:

℞ Argenti nitratis, ...gr. xxiv (1.5 gramme);
Aquæ destillatæ, ...℥i (30 grammes).
Fiat solutio.

and carried through the lumen of the catheter into the Eustachian tube for the distance of one quarter to one inch, the patient meanwhile swallowing, if necessary, to facilitate its passage. The application having been made, the wire is at once withdrawn. Where the tube is acutely inflamed, the silver causes a sharp sensation of pain, but this is only temporary. The procedure can be carried out daily, if desired.

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EDUCATION AND MEDICINE.

To the teacher of medical students and to earnest members of the profession who have at heart the welfare of medicine as the noblest of all the professions it has long been obvious that a large number of those who seek to enter our ranks are educationally either unfit or ill equipped. In a recent paper Professor J. George Adami, of Montreal, (*New York State Journal of Medicine*, May, 1913) arraigns mercilessly the defects of the modern methods of conducting and controlling elementary education. He brings his masterful analytical powers to bear on the question, selecting the laws and methods of New York State as an exemplification of such methods, and shows that through all of its ramifications the present system does not make for *education* in the true sense of the word, that of drawing out of the individual the best that is in him; but that, on the contrary, the system is one especially designed completely to stifle all ambition, initiative, or originality that may be latent in a youth. This it does by its slavish and deadly adherence to the dictum of absolute uniformity in requirements—to the hour and unit count system—compelling each candidate for medicine, either as a student or as a graduate seeking a license, to comply with each single requirement, wholly regardless of his mental capacity or of the excellence of his educational qualifications. The hour and unit system is inflexible and tends to the unification of instruction, to the production of "poll parrot" knowledge; it forbids thought and the exercise of the reasoning faculty; it is verily *instruction,* and in no sense education. And the worst of it all is that by its diabolical uniformity it forbids the advancement of the bright student, making him wait for the average, and thereby tending to suppress his initiative and ambitions. "It means that at the conclusion of the school course every individual has one common set of ideas. If there be individuality among the scholars, the State has done nothing to foster, but on the contrary everything to discourage it. It means that we are drifting to a Chinese civilization, with official arrest of all initiative."

As a remedy for this stifling of initiative Adami says:

> Demand, I would say, that every entrant to the university have a complete knowledge of a definite schedule of subjects; nay, I would say, demand a higher standard than that at present in vogue, but *do away with this deadening system of compulsory periods.* Encourage the rapid promotion of the intelligent boy: encourage him to rise rapidly through the secondary school: give him the time to spend two years in the arts department of a university. . . . It is a matter well worthy of debate whether, in place of a matriculation examination on the part of the universities, there should not be a "leaving" or "abiturient" school examination controlled by the State, an examination which youths should be invited to undertake, not when they reach a particular age, or when they have accomplished a given number of periods, but when they have gained the requisite knowledge. Such an examination would afford a standard test of the teaching afforded by the secondary schools throughout the State, a standard to which they should raise themselves, and certainly, as I have already noted, it should include some test of the candidate's intelligence as distinct from his memorizing ability. Let me sum up here, as regards school and university training, that it is contrary to common sense to appraise the tree by the amount of manure with which its roots have been dressed and the number of times it has been watered; it is rather more usual, as it is more sane, to estimate its value by the crop it produces.

With all of Adami's contentions we are perforce compelled to agree, for they are but statements of the painful truth. As to his suggestions for their remedy, though we are not quite ready, perhaps, to accept them as the only means by which the desired end may be accomplished, we feel that as the fruit of profound thought, based upon a clear understanding of the conditions, they deserve the serious attention of the entire profession—and more, of those who have primary and secondary educational matters in their hands.

SUMMER RESORT SANITATION.

An investigation conducted by the New York State Board of Health in 1911 disclosed the fact that of 377 summer resorts inspected by it, 257 had little or no sanitary provision for the accommodation of their guests. This is especially notable when it is considered that these places cater almost exclusively to individuals from the larger cities, where the most approved sanitary conveniences are prescribed by rules to which the local health laws allow few exceptions. That these individuals should be willing to spend, or have their families spend the summer months in such places, under the guise of a search for health—when the best privy accommodation, at least from the standpoint of comfort, is, perhaps, the open vault variety, and when the water supply, in cleanliness, at least, would compare unfavorably with the waste water of their city homes—is inexplicable. It seems that if a summer resort fulfills the gastronomic and social requirements of its guests nothing more is required of it. Yet when the physician is consulted, as he so frequently is, as to the best place to which to go, only the health and sanitary aspects should be considered by him. He should, therefore, have more than merely a vague idea of the physical conformation of the country to which he is advising his patients to go. He should be possessed of a definite knowledge of the climatic conditions, and especially the sanitary provisions made for the accommodaton of the summer population; else he should confess his inability to give any advice on the subject at all.

In a recent supplement to the reports of the United States Public Health Service, Dr. William C. Rucker, of that service, called attention to the danger of contracting typhoid fever in summer resorts, and even went so far as to formulate rules for the avoidance of typhoidal infections, for those who must make their yearly pilgrimage to these places. The yearly autumnal increase in the typhoid incidence in large cities having a protected water supply is largely due to importations by returning summer resort patrons. Part of the responsibility for the typhoid fevers thus contracted rests on the shoulders of the physicians who are ignorant and have not made it their duty to find out whether the resorts are sanitarily conducted, and to advise against those which are not. For after all, the practising physician is *the* modern sanitarian. He must impress the knowledge on his patients, and in this way on the community at large. Without the cooperation of the public, gained through the influences of the physician, the finest and most highly organized sanitary authorities can do nothing. On the other hand, the boards of health should lay a strict quarantine against places operating as summer resorts whose sanitary provisions are not adequate. It is a pleonasm to say that an establishment which caters to a large number of persons for profit should be compelled to protect them against disease. It should have a properly protected water supply, a proper and efficient means of sewage disposal, or else be closed as a public nuisance. The mere installation of modern plumbing fixtures in the house, without means of disposal of the sewage after it leaves it, is not adequate. It is, so to speak, only plumbing in a glass case. Nor is a lake resort which draws its water supply from the very water in which the people bathe, into which the kitchen and laundry waste is directly run, and into which the sewage has no difficulty in percolating through the soil, in the short distance from house to lake, a sanitary place.

It is quite within the "police power" of the State to license every summer resort so that it can carry on its business only on condition that it fulfills specified sanitary regulations laid down by the State health authorities, and confirmed by periodic inspection. The legality of these requirements under "police power" comes from the fact that they are necessary for the "health, welfare, safety, and even convenience" of the public in general, or even of a class of the public. A court has already decided that a municipality which is an "agent of the State" is liable for typhoid fever contracted by allowing the water supply to be contaminated.

FATIGUE AND EFFICIENCY.

The manufacturer of to-day when buying machinery or hiring assistants has but one thought that stands out preeminently, and that is efficiency; Can the machine or the man perform the allotted work at a speed that will make good the investment? If not, neither will be made use of. In whatever direction we turn, this matter of efficiency is the one question that seems to await an answer. But is that all that is to be considered? There is, undoubtedly, another side, one that can be understood fully only by the physician. This is the element of fatigue, that must enter into all considerations of the human machine. It is when the working person appears on the scene that the importance of the relation between fatigue and efficiency is apparent. Every physician knows from personal experience how close is that relationship, but the medical profession, unfortunately, has not realized that here is a field peculiarly adapted to its ministrations.

Can the worker be an efficient citizen when the labor is such that he or she is so fatigued as to fall a victim to disease or to degraded environment? The matter must not be looked at from the point of view of an eight or a ten hour day. That is not the domain of the physician; he cannot give an answer in dollars and cents as far as the employer is concerned, but he can take the broad point of view of the effect which all this has on the preservation of a normal standard for the human race. The great mass of the community are the workers, not of the hands alone, but of the brains as well; consequently what involves their health and sanity must have a widespread influence.

Therefore this is the question that is now before the people: Is efficiency affected by fatigue? An unequivocal answer of yes can be given, and this is substantiated by experiments in the physiological laboratories, by the records of accident insurance companies, and even by the books of numerous manufacturing concerns in many parts of the world. They all go to prove that it is economy to prevent the workers becoming overfatigued.

The laboratory has shown that a tired person is literally and actually a poisoned person, poisoned by his own waste products. Is it any wonder, therefore, that, as reported from Germany, the greatest proportion of accidents occurs from 10 to 12 a. m., when the morning fatigue has appeared? In France, Imbert has shown likewise that the greatest number of accidents takes place between 10 and 11 a. m., and again between 4 and 5 p. m. Also, when the output of work is considered, the figures are in accord with what this statement would suggest. To quote but one instance: Pieraccini experimented with six experienced typesetters. Their greatest efficiency was during the second hour of work, and from then it lessened till the noon hour. The errors, too, increased in number as the amount of work decreased.

From a purely economic point of view it is indeed evident that long hours, with the accompanying fatigue, are wasteful. When, however, fatigue is studied in relation to the health of the populace much of importance looms up, particularly when the women are considered. The preeminent effects from industrial overstrain in women are, a heightened infant mortality, a lowered birth rate, and an impaired second generation.

To enumerate all the various manifestations of this question would require a volume, such as that written by Miss Goldmark. But it becomes more and more evident, on close scrutiny, that there is much room for improvement in our views concerning the regulation of employment.

A DISTINCTIVE FORM FOR BICHLORIDE TABLETS.

The widespread publicity recently given to the death of a prominent banker from poisoning by a corrosive sublimate tablet taken by mistake directs attention to a not infrequent source of poisoning. In fact, since the attention of the public has been directed to this particular case, the newspapers have reported a number of similar instances in various sections of the country, though not all have had a fatal issue.

While we can never hope to do away entirely with death by misadventure, cases of accidental poisoning from this particular source could practically be abolished by the adoption of the German regulation, which requires that all tablets of corrosive sublimate be made in a cylindrical form wrapped separately in colored paper, and labeled poison. As an additional safeguard the tablets should have a distinctive color. In many hospitals it is customary to impart a blue color to corrosive sublimate solutions, and some manufacturers also put out blue tablets. The advantage of blue as a color for the tablets and the solution is that, so far as we can recall, there is no other tablet or solution of a similar color with which this poisonous drug is likely to be confounded.

The color alone, however, or even the printing of the word "poison" on each tablet, as is done by several manufacturers, would not have served as a warning in most of the cases which have been recently reported, for the patients have taken the medicine under circumstances which made it unlikely that they would have observed either the printing on the tablet or its color. The adoption of some specific form, and, above all, the wrapping of each individual tablet in a colored paper, would serve notice, even to the most hurried and careless user of the tablet, that it was not the ordinary innocuous tablet which he thought it was.

At least one manufacturer has for a long time made his corrosive sublimate tablets in a distinctive form and printed the word "poison" on them, but we do not know of any manufacturer who has taken the trouble to wrap each tablet separately. If any distinctive form is adopted it should be one which is not easily confounded with the ordinary disc. Probably the most striking shape would be the triangle or the diamond, which is already used by one manufacturer.

It seems desirable that some legislative enactment in regard to this matter should be undertaken in the several States, but, unfortunately, it is quite difficult to insure uniformity of action by the different State legislatures, and there is a danger that the individual States might prescribe such a variety of specific forms as to lead to confusion. The dangerous character of corrosive sublimate has been recognized from an early period, and it is specifically mentioned in the earliest of the poison laws. It is mentioned by name in all the State laws that specifically mention poisons, leading all other poisonous substances in this respect, and being named in thirty-six or thirty-eight of the State laws.

While there is so much legislation on the statute books safeguarding the sale of corrosive sublimate, no attempt has been made to throw any safeguards about the drug after it has left the pharmacy. In the case of the banker above referred to, and in other cases since reported, the pharmacist has been blameless. The poisoning in each case was due to the carelessness of the purchaser. While it may be difficult to enforce a law requiring the purchasers of poisons to keep them under certain specified conditions as a safeguard against their use by inadvertence, or by children, it is possible that some such legislation might be enacted. It would undoubtedly diminish the dangers of accidental poisoning from this particular preparation.

A FEDERAL ANTINARCOTIC BILL.

At a conference held in Washington on June 9th and 10th between the representatives of the United States Treasury Department, the National Drug Trades' Conference, and Congressman Harrison, a measure was drawn up intended to regulate the traffic in opium, coca leaves, and their derivatives and preparations, which is to take the place of the Harrison bill. This bill requires the registration with the Bureau of Internal Revenue of all persons who deal in, administer, or dispense these drugs or their preparations. Under this bill every physician will be required to register with the bureau, paying an annual fee of one dollar. In order to purchase any of these drugs he will be required to make out an order on a special numbered blank, which can be purchased only from the bureau, and shall, whenever required to do so by the collector of Internal Revenue, render a statement of the quantity of these drugs purchased by him. Under this measure pharmacists will not be permitted to dispense these drugs except upon a written prescription, signed by a physician, a dentist, or a veterinary surgeon registered under the act. In view of the fact that both President Taft and President Wilson sent messages to Congress urging the enactment of some such bill, it seems probable that this bill will become a law in the near future. It is much less burdensome on the physician than some of the measures which have been proposed to accomplish the same purpose, as he is not required to state the disposition made of the drugs, but only the quantity purchased.

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Obituary.

FREDERICK FORCHHEIMER, M. D.,

of Cincinnati.

Doctor Forchheimer died at the Jewish Hospital of Cincinnati on June 1, 1913. Born in Cincinnati on September 25, 1853, he received his education at the Woodward High School of his native city and at the universities of Strassburg, Würzburg, and the College of Physicians and Surgeons (Columbia), from which institution he graduated. He settled in Cincinnati, where he had practised ever since. In 1895 he was appointed professor of theory and practice of medicine of the Medical College of the University of Cincinnati. In 1910 and 1911 he was president of the Association of American Physicians. In his death the medical profession has lost one of its distinguished members, who not only was a well known practitioner but also a writer of experience, especially in the field of pediatrics.

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News Items.

Change of Address.—Dr. E. C. Bailey, to the Flanders Building, Fifteenth and Walnut Streets, Philadelphia.

Dr. Fenton B. Turck, from Chicago, to 14 East Fifty-third Street, New York.

Meetings of Medical Societies to Be Held in Philadelphia During the Coming Week.—Monday, June 16th, Medical Society of the Woman's Hospital; Tuesday, June 17th, West and North Branches of the County Society; Wednesday, June 18th, business meeting of the County Society; Thursday, June 19th, Northeast Branch of the County Society; Friday, June 20th, Jefferson Hospital Clinical Society and the Southeast Branch of the County Society.

Officers on Inactive List of Medical Reserve Corps Ordered to Active Duty.—The following first lieutenants on the inactive list of the Medical Reserve Corps of the United States Army, have been ordered to active duty at the provisional field hospital, Gettysburg, Pa., June 28th to July 10th: Dr. H. Sheridan Baketel, Dr. Walter M. Brickner, Dr. Richard Slee, Dr. Harold Hays, and Dr. Howard Fox, all of New York. It is said that this is the first occasion since the organization of the Medical Reserve Corps that officers on the inactive list have been ordered by the War Department to assume the duties of regular medical officers.

Commencement Exercises at Jefferson Medical College.—One hundred and twenty-six graduates of Jefferson Medical College, Philadelphia, received the degree of doctor of medicine at the annual commencement exercises of the college on June 8th. The honorary degree of doctor of laws was conferred on Francis Preston Venable, Ph. D., D. Sc., LL. D., president of the University of North Carolina, the orator at the commencement, and Abraham Jacobi, M. D., LL. D., emeritus professor of children's diseases, College of Physicians and Surgeons, Columbia University. The degrees were conferred by Mr. William Potter, president of the board of trustees.

Alumni Association of the University Medical College, Kansas City.—More than ninety physicians and surgeons attended the thirty-third annual banquet of the University Medical College Alumni Association, held at the Kansas City Athletic Club on the evening of May 26th. On behalf of the association, Dr. B. J. Reynolds presented a handsome silver loving cup to Dr. David E. Broderick, dean of the school. Dr. B. A. Poorman presided as toastmaster, and addresses were made by Dr. S. Grover Burnett, the retiring president, and Dr. George Norberg. Officers for the ensuing year were elected as follows: President, Dr. B. A. Poorman; vice-president, Dr. George Norberg; secretary, Dr. Frank Postlewaite, and treasurer, Dr. J. Kimberlin.

The Journal of the American Medical Editors' Association.—The first issue of this publication, which is the official organ of the American Medical Editors' Association, appears this month. It is a monthly periodical, and the publication committee is composed of Dr. H. Edwin Lewis, of New York, chairman and editor; Dr. James P. Warbasse, of Brooklyn; Dr. Alfred S. Burdick, of Chicago; Dr. Charles Wood Fassett, of St. Joseph, Mo.; and Dr. Joseph MacDonald, Jr., of New York, secretary. The publication office is at 92 William Street, New York. The object of the journal is to present the transactions of the annual meetings of the association, to keep the members posted concerning matters of current interest, and to promote in every way the best interests of the medical publications of America.

Alumni Association of Jefferson Medical College.—Seventy-five alumni of Jefferson Medical College met in Philadelphia on June 6th for the forty-first annual business meeting of the association. Dr. Charles S. Mangum, professor of anatomy at the University of North Carolina, was elected to succeed Dr. S. MacCuen Smith, of Philadelphia, as president. Other newly elected officers are: Vice-presidents, Dr. Charles P. McBurney, of Altoona, Pa.; Dr. G. T. Matlack, of Wilkes-Barre, Pa.; Dr. J. Coles Brick and Dr. John W. West, of Philadelphia; recording secretary, Dr. Henry K. Gaskill; corresponding secretary, Dr. Elmer H. Funk; treasurer, Dr. George W. Pilling.

A Million Dollar Gift to Vanderbilt University.—Announcement is made by the chancellor of Vanderbilt University, Nashville, Tenn., that Andrew Carnegie has donated $1,000,000 to the medical department of the university. Of this sum $200,000 will be given to the institution at once for the erection and equipment of suitable laboratories, and the income from the remaining $800,000 will be paid annually for the support of the department through the Carnegie Foundation. A condition of the gift provides that the direction of the educational and scientific work of the department be given by the trustees into the hands of a board of seven members, three of whom shall be eminent in medical and scientific work. It is provided that the chancellor of the university shall be one of the seven members of this board.

Memorial to Doctor Bristow.—Be it known by all men, and especially to those nearest and dearest to him, that the New York Society of Anesthetists, in executive session assembled, draft this expression of respect, admiration, and deep regret at the recent loss of their supporter and advocate, Dr. Algernon Thomas Bristow. His editorial and practical hospital support of the advancement of the art of general anesthesia has time and again aroused the admiration and emulation of this body of anesthetists, and so active and influential has this work among his many followers been, that this society wishes itself placed on record as considering it monumentally constructive and its cessation as a great loss to the surgical world.

Respectfully submitted,
Committee: W. C. Woolsey, M. D.,
J. Tayloe Gwathmey, M. D.,
A. F. Erdmann, M. D.

Memorials to Doctor Forchheimer Planned.—A movement to establish a chair in the medical department of the University of Cincinnati, in memory of Dr. Frederick Forchheimer, who died on June 1st, was inaugurated at a joint meeting of the senate of the University of Cincinnati, the faculty of the Medical College and the staff of the City Hospital, on Monday, June 2d. It also was decided that an attempt be made to interest friends of the late physician in a movement to erect a monument on the grounds of the new City Hospital. While nothing definite was done to further the establishment of a permanent memorial, it is believed that the action of the board in endorsing a chair in the medical college and the erection of a monument, as a fitting manner in which to commemorate the work of Doctor Forchheimer, will cause his friends to unite in furthering the proposition.

Examination for Positions in the Medical Service of Philadelphia.—The Civil Service Commission of Philadelphia announces that competitive examinations for a number of positions in the Department of Public Health and Charities will be held in the City Hall on Wednesday morning, June 25th. The positions to be filled from the list of eligible persons obtained from these examinations are as follows: Head nurse, Philadelphia General Hospital, $300 to $600 a year, with room and board; head nurse, Philadelphia Hospital for Contagious Diseases, $300 to $600 a year, with room and board; medical inspector of schools, women only, $600 a year; assistant physician (resident), $600 to $1,000 a year, with room and board; assistant physician (resident), $600 to $1,000 a year, with room and board; assistant diagnostician and consultant, $2,000 a year. Applications must be executed and filed with the commission not later than the sixth day prior to and exclusive of the day of the examination. Detailed information as to the requirements for these examinations may be obtained upon verbal or written request to the Civil Service Commission, Room 875, City Hall, Philadelphia.

American Society for Physicians' Study Travels.—This organization, recently formed for the purpose of encouraging physicians to study the advancement of medical science abroad, was incorporated in Philadelphia on June 2d, with the following directors: Dr. E. E. Montgomery, Dr. W. E. Ashton, Dr. S. D. Risley, Dr. Swithin Chandler, Dr. S. Lewis Ziegler, Dr. A. D. Blackader, of Montreal, Dr. J. G. Adami, of Montreal, Dr. Samuel G. Dixon, Dr. Joseph S. Neff, Dr. George A. Knowles, Dr. McCluney Radcliffe, Dr. Thomas McCrea, and Dr. David Riesman. Prominent physicians active in the organization of the society are: Dr. James M. Anders, Dr. H. A. Hare, Dr. A. B. Hirsch, Dr. Thomas McCrea, Dr. William L. Rodman, Dr. Alfred Stengel, Dr. Joseph S. Neff, Dr. L. Webster Fox, Dr. Samuel G. Dixon, Dr. Judson Daland, Dr. Swithin Chandler, Dr. Albert Bernheim, and Dr. Francis X. Dercum.

Personal.—Dr. Raymond F. C. Kieb has been appointed superintendent of the Matteawan State Hospital for the Insane, succeeding Dr. Roy L. Leak, who has been acting superintendent of the institution since the resignation of Dr. John F. Russell. Doctor Kieb has been first assistant physician at the Dannemora State Hospital for the past three years. Doctor Leak will resume his duties as first assistant physician at Matteawan.

The honorary degree of LL. D. was conferred upon Dr. Edgar Fahs Smith, provost of the University of Pennsylvania, by Princeton University, at the 166th annual commencement exercises, on June 10th. The degree of doctor of science was conferred upon Dr. Simon Flexner, of the Rockefeller Institute, and Dr. David Linn Edsall, Jackson Professor of Clinical Medicine in the Harvard Medical School.

Dr. Frank D. Adams, dean of the faculty of applied science, McGill University, Montreal, has been appointed president of the Royal Society of Canada.

Dr. Harrison J. Hunt, of Island Falls, Me., has been appointed surgeon to the Crocker Land Expedition, which will sail on July 2d for the North Polar regions, under the auspices of the American Museum of Natural History, the American Geographical Society, and the University of Illinois.

Dr. Albert T. Weston, of New York, has been appointed an assistant surgeon in the Medical Reserve Corps of the United States Navy, to date from May 17th.

Dr. L. J. Hirschmann, of Detroit, was recently elected president of the Wayne County, Mich., Medical Society.

Dr. Percival J. Eaton, of Pittsburgh, has been elected president of the Associated Harvard Clubs.

The British Medical Association.—The eighty-first annual meeting of the British Medical Association will be held in Brighton on July 22d and the three following days. The president's address will be delivered on the first day of the meeting, and the scientific business will be conducted in sixteen sections. Several subjects of more than professional interest will come up for discussion, such as international aspects of British health resorts and sea bathing, in the Section in Climatology and Balneology. In the Section in Medical Sociology papers on different aspects of crime and punishment will be read by Sir B. Donkin, Dr. Charles Mercier, and Dr. James Scott as an introduction to a general discussion; Professor Bateson is expected to initiate a discussion on Eugenics; and Sir Henry Burdett and Dr. L. G. Gibbons will read papers on hospitals in relation to the stage, the public, and the medical profession, which, it is hoped, will prove valuable in helping to elucidate the problems involved in providing hospital accommodation for insured persons under the Insurance Act. In the Section in State Medicine Dr. Herbert Williams, medical officer for the Port of London, will open a discussion on port sanitary administration and the importation of disease, and other subjects suggested for discussion are the need for popular education in matters affecting the public health and maternity benefit and its connection with the Midwives Act. There will be a pathological museum in connection with the meeting, containing exhibits bearing on the various discussions and papers, specimens relating to recent research work, and instruments relating to clinical diagnosis and pathological investigation. Sir James Barr is the president and Dr. W. A. Hollis, consulting physician, Sussex County Hospital, Brighton, president elect of the association.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

April 3, 1913.

The Function of the Cerebellum.—L. Edinger presents the following: Irritation brought about at any point excites muscle tension, which may be increased to a degree that will cause severe cramps. On the other hand the author shows that any break in the system, whether in that part conveyed to the spinal cord, or in the cerebellar cortex, or in the medulla oblongata itself, results in markedly decreased muscle tension. Animals deprived of a cerebellum lie in a state of relaxation. They have scarcely power to stand; when lifted on their feet, they immediately fall; but should the red tegmental nucleus be removed in addition, the animals permanently lose all ability to stand. It is this well constituted muscle tension, which stimulates and varies muscle and joint movement, through the excitation of the labyrinth that makes standing and walking possible.

Trivalin.—Meehliss states that trivalin contains valeric acid, chemically combined with morphine, caffeine, and cocaine. Given subcutaneously: Dose, from 0.5 to 1.0 c. c.; medium dose, 0.01935 gramme. Morphine valerate, 0.0037 gramme; caffeine valerate, 0.00506 gramme; cocaine valerate=trivalin. It has been used as a substitute for morphine with good results on the surgical side of the City Hospital for one year. There is no tendency to heart depression, respiratory paralysis, or vomiting; although two isolated cases of nausea have been noted. Pain is decreased in from ten to fifteen minutes. Long usage does not impair its analgesic power, which is more intense than that of morphine. The mental state or sensorium is not affected by the remedy.

A Method for Testing the Vestibular Apparatus.—R. Bárány observes that the caloric method for the purpose of diagnosticating vestibular affections is harmless and painless. He syringes the right ear with water below body temperature (75° F.) with the head upright. Normally a horizontal, rotary nystagmus, toward the side not treated, is brought about and continues one half minute after the syringing is completed. By using water warmer than body temperature a nystagmus toward the side treated is produced. By exact measurement, from the beginning, of the length of time and the force of the reaction, he is enabled to detect any diminution of excitation of the vestibular apparatus, in partial paralyses of the nervus vestibularis.

Treatment of Gonorrhea with Tanargentan Bougies.—R. Polland says that tanargentan bougies give good results in stubborn cases of gonorrhea, where local contact of a germicidal astringent is desired. The solvent property and suitable consistency, as well as the absence of any appreciable quantity of fat, makes this remedy especially valuable.

Wet Compresses in Acute Inflammations.—P. Hertz says that a wet compress should be applied at body temperature with a waterproof covering. The waterproof covering is to be omitted only in suppurative or discharging processes, and antiseptics are to be used only for discharging wounds. The anodyne action of the compress is enhanced by using some rubefacient on the skin. The rubefacient also acts as a solvent and resorbent and is in a sense germicidal; which action should not be interfered with by unnecessary changing of the compress.

April 10, 1913.

Treatment of Infectious Diseases.—Grober advocates a semisolid diet; liquids to be given between meals to replace loss of body fluids by fever. The appetite is often impaired by neglect to care for the mouth. Food should be palatably seasoned and temptingly served. The author advocates lemon as a good flavoring agent. A patient well fed makes a more rapid and uncomplicated recovery. Baths for reducing temperature should be used in preference to antipyretics, and are especially sedative in cases of delirium. Packs are less beneficial, but may be used in cases of bedsore or weak heart. Morphine is useful in acute onset of excitement; as also hydrated chloral, veronal, or luminol (one sixth to one half a grain). During convalescence, energy should be conserved. All the organs are weakened by prolonged fever; they should not be too suddenly taxed. He prescribes a rest of at least two months after uncomplicated pneumonia; three months after a mild attack of typhoid fever.

The Sugar Contents of the Blood. — H. Tachan states the following: Examination of the blood as a whole, while the stomach is empty, as compared with the examination of the plasma alone, would show about equal proportions of sugar. After a meal of carbohydrates there is first an increase of sugar in the plasma; but this increase is slower in the blood corpuscles. Following this, there is a decrease of sugar in the plasma; then comes a period when blood corpuscles and plasma contain equal proportions of sugar; again followed by a decrease in the plasma to even less than that of the corpuscles. It is understood that during fasting a certain proportion of sugar is distributed from the centre to the periphery, and this possibly explains the higher proportion of sugar in the blood plasma during fasting. Frank and Sherokaner found such an increase of sugar in the blood plasma that the examination of the plasma became even more important than that of the blood as a whole.

The Efficacy of Camphor Water.—H. Leo states, on the authority of Professor Ehrlich, that Bölncke, of his institute, has for some time successfully cured mice of pneumococcus infection by subcutaneous injections of camphor.

April 17, 1913.

Serums and Toxines Used per Rectum.—Shibayama asserts that rectal injections of goats' blood into rabbits result in hemolysis and precipitates. Rectal injections of dogs' blood into rabbits result in agglutinins, but not in precipitates. By rectal injections of dogs' blood antigens may be developed. Diphtheria toxine and tuberculin, even when used in large doses, do not produce toxemia in animals, though they may not act as antigens. Diphtheria, typhoid, and cholera horse serums used rectally, even in large doses, give animals no passive immunity. This fact proves the impossibility of resorption of antitoxine, as well as of bacteriolysin per rectum.

Repeated Serum Injections and Idiosyncrasy.—According to Nemmser, the danger of anaphylaxis after repeated serum injections is less than that from omitting to use this specific therapy in urgently indicated cases. This does not imply that the necessity of great precaution should be ignored. Until the question of anaphylaxis in man is made clear, it would be well not to use the serum unnecessarily in the dying; so that the value of this remedy may not suffer depreciation in the estimation of the public and of physicians. For repeated injections other kinds of antitoxic serums must be used. In the preparation of the serums all methods known to diminish their anaphylactic action should be employed. It would be well to observe the action of the two preventive anaphylactic methods of Besredka in man. To arrive at a final decision on anaphylaxis in man it would be well to register all cases of repeated serum injections in the larger hospitals.

The Medical Treatment of Feeble Labor Pains.—H. Reinhard has tried the English pituitrin and the German pituglandol. In the action of pituitrin (injections of 1 c. cm.) light pains were observed, only to subside in an hour. Labor had to be induced on account of small pelves and on account of severe pyelonephritis. Secale, in ampules of 0.5 grammes, repeated, if necessary, in an hour or two, will not lead to uterine tetanus, but will often cause vigorous pains, even if not of long duration. The engagement of the head may, at least, be accomplished so as to make possible an easy forceps delivery. Pituglandol is also a good remedy for inducing labor pains; but in the usual dose of one c. c. it may lead to tetanus of the uterus.

The Medical Treatment of Nervous Vomiting in Young Children.—H. Rosenhaubt has for some years had good results from the use of an insoluble, nonpoisonous anesthetic, the pethylester paramidobenzoin acid called anesthesin. It is practically nonpoisonous. He has employed it in nervous dyspepsia of adults, giving it in two to three per cent. strength in gum mixture—teaspoonful doses—ten minutes before meals. He has also used it in children. The remedy has afforded benefit in nervous vomiting and in reflex difficulty of swallowing. No benefit was derived from it in spasm of the pylorus of the Hirschsprung type, characterized by the appearance before the eighth week of scant stool, emaciation, and marked contraction of the epigastrium in a tumorlike protuberance, and, above all, by special aversion to drink. Since the differential diagnosis between the foregoing and simple spasm of the pylorus is very difficult, the use of the anesthesin may, to a certain extent, serve as a method for diagnosis. The author has, also, of late, found it useful in central, as well as in local, vomiting.

The Effect of Thorium X on Blood Cells.—Arneth says that thorium x has a harmful inhibitory action on the cell production of the central organs. The remaining leucocytes in the body will also be used up. The longer life of the body leucocytes is ascribed to the higher grade of chromozone segmentation. The production of leucocytes by inflammatory processes of organs would support this assumption, as viewed under the influence of thorium x. Should the doses of thorium x be too strong the production of leucocytes in the bone marrow would be wholly aborted. The pseudo eosinophils still in the circulation will also be used up.

April 24, 1913.

The Effect of Thorium X on Blood Cells.—Arneth, in a second paper, states that in the use of thorium x we deal with an intensity of action, and with varying results, on the leucocytes and erythrocytes. The blood count under normal conditions will give the value of the thorium x action on further examination of the blood, after its use. Still more extended examination of thorium x under pathological conditions will be necessary. This may lead to greater precision of dose of the dangerous remedy, and thus further its use.

Cymarin, a New Heart Remedy.—E. Ellard has found the chemically pure crystalline glycoside of *Apocynum cannibinum,* named cymarin, a quick and energetic heart remedy, which may also be used with success in many cases where digitalis is contraindicated. It possesses an intense diuretic action which renders unnecessary the employment of other diuretics in cardiac stasis. It may be given by the mouth, but by the intravenous method its action is apparent in a few minutes. That the therapeutic and toxic doses are so far widely different is of special advantage; so that its use, within given limits, is not dangerous to the patient.

MEDIZINISCHE KLINIK.

April 6, 1913.

Benzol Treatment of Myeloid Leucemia.—H. Reibmayr reports three cases of myeloid leucemia treated with benzol. One of the patients improved markedly, but the condition of the other two remained unchanged. As a symptomatic treatment benzol is to be placed side by side with Röntgen rays and thorium. It is advisable to combine the benzol treatment with energetic doses of arsenic.

Diagnosis of Duodenal Ulcer.—E. Allard, in reviewing the symptoms of duodenal ulcer, says that, all in all, they do not furnish a doubtful basis for diagnosis. He agrees with American and English authorities that the attacks of pain are paramount, but does not disregard the importance of all other symptoms as they do. Bier believes that the main reason for the disproportion of the number of duodenal ulcers in Germany and America and England lies in the manner of diagnosis. The author does not approve of laparotomy when the symptoms do not warrant it.

Salvarsan and the Nervous System.—E. Mattauschek says that since the greater number of side actions of salvarsan are known and can be avoided, in the field of neurology in selected cases, and with careful technic, the drug is an excellent remedy, which, alone or in combination with mercury, in syphilitic diseases of the nervous system is not only given with advantage, but is actually indicated.

Cholocele.—E. Levin reports two cases of this condition, namely, gall hernia, a noninfected bilious encapsulated fluid lying in the peritoneal sac. The causes and outcome are discussed. He summarizes thus: By the escape of gall from the gallbladder and the extra and intrahepatic gall passages in inflammatory perforation of the wall, or in ruptures due to congestions, a general bilious peritonitis or a circumscribed bilious abscess, sometimes in multiple form, results. The more recent investigations show that a microscopical perforation is not essential; a general bilious or circumscribed peritonitis may arise from simple gall diffusion.

Acute Addison's Disease.—A. Lippmann reports an unusual case of this affection in a young man, twenty-one years old, who, always enjoying good health, was suddenly stricken and died in eighteen days. The symptoms appeared in the following sequence: Progressively diminishing blood pressure, asthenia, intoxication, and finally pigmentation. Adrenalin in large subcutaneous doses probably aided in the prolongation of life. The autopsy showed slight pulmonary tuberculous involvement, complete caseation of both adrenals, intact ganglion solare, and a marked hypertrophy of one accessory adrenal.

April 13, 1913.

A Study of the Tuberculin Percutaneous Reaction.—F. Wegerer advises the making of this test with the old tuberculin and covering the abraded surface with ordinary plaster, in anticipation of the occurrence of reactionary sensitiveness. These precautions prevent the appearance of the "distant reaction" of Moro. The latter the author considers artefact, and the hypothesis of "nervous allergy," therefore, loses its force. The percutaneous reaction is particularly fitted for use outside the hospital, and makes possible (by the taking of curves of tuberculin sensitiveness) numerous and detailed experiments on the inception and course of the tuberculous infection. Another advantage is that the reaction does not seem to be influenced by intercurrent infections, as typhoid fever or pneumonia.

Calcium Therapy.—P. Saxl gives a short résumé of the significance of calcium in living organisms in so far as it bears relation to therapeutic measures. The efficacy of calcium when given by mouth, a much mooted matter, is believed by the author to be of some value in the long run. Its hypodermic use, however, gives much more satisfactory results. A large number of hemorrhagic diatheses of various kinds have been treated in this manner with good results. Severe hemorrhages from the stomach and lungs have ceased for a long period after one, two, or three injections. The coagulation time determined by the Wright-Neu method was, except in a few instances, markedly decreased. Two cases of edema fugax were improved by the internal administration of calcium lactate, and showed no swelling for half a year. The effects upon exudates were varied. Cases of asthma without complicating chronic bronchitis were favorably influenced after one or two calcium gelatin injections. A severe chorea was brought to a standstill after calcium injections. It was possible to influence only a few cases of Basedow's disease in this manner. Indications for calcium therapy are numerous, but as yet not definitely known. This must be determined by more extensive experimentation.

April 20, 1913.

Diet in Diabetes Gravis.—Carl von Noorden asserts that the dietetic treatment of diabetes is a gratifying problem. He regrets the circumstance that in general practice the energetic dietetic treatment of diabetes is considered necessary only when the disease has progressed to a severe stage. The most opportune time for producing real and lasting results and to break the hold of a progressing process is then passed. Years are wasted in seeking drinking cures and in taking so called antidiabetic specifics, when the most potent therapeutic factor is to be found in strictly individualized dietetic measures. He insists that from the very incipiency of the disease an appropriate diet should be strictly adhered to. At this time everything can be gained or lost. If this method is followed out it will be found that the prognosis in diabetes is much more favorable than in any other chronic disease.

Remarks on the Urobilinogen Reaction in the Urine of Scarlet Fever Patients.—C. Schelenz says that the value of the amidobenzaldehyde reaction in the urine is of particular importance, because it is reliable, early appearing reaction in true scarlet fever. It should be made only on freshly voided urine of patients who have not received urotropin.

Occurrence of Oxyuris Vermicularis in Diseased Extirpated Appendices of Adults.—Rheindorf found that in adults who complained for a long time of dragging, boring, or lancinating pains in the region of the appendix increased by motion, the possibility of oxyures must be thought of. Even though the stools should be free of worms an anthelmintic is indicated. Should such patients suffer an acute attack of appendicitis the administration is to be immediately discontinued, since it may cause a great deal of damage. An appendectomy or internal treatment are then in order. In case of the former, a minute microscopical examination for the presence of the oxyures should be made in the excised appendix.

April 27, 1913.

Nature and Treatment of Dysmenorrhea.—A. Blau holds that, without regard to the "inflammatory dysmenorrheas," the classification of this condition according to the individual parts of the genitourinary system still hold good at the present time. Besides the uterine dysmenorrheas, a number of authorities believe in ovarian dysmenorrheas and find their contentions substantiated by microscopical findings. The mechanical genesis of uterine dysmenorrhea is still adhered to, since the proper therapeutic procedures for this cause give relief. The primary cause of the pains does not lie in the mechanical process, but in the condition of the nervous system. Accordingly, there is a dysmenorrhea with a nervous basis, for example after psychic trauma, without organic changes in the genitals. In the majority of the simple uncomplicated dysmenorrheas the pain is due to the weakness of the nervous system which accompanies the hypoplastic condition of the genitals of these individuals, which is a partial manifestation of a constitutional anomaly, asthenia infantum.

ZENTRALBLATT FÜR CHIRURGIE.

April 26, 1913.

The Formation of a Useful Stump in Supramalleolar Amputation of the Leg by Means of the Osteoplastic Use of the Malleolus.—William Levy details a plan by means of which a useful stump may be secured when a leg must be amputated just above the malleoli, and nothing of the foot can be saved, if one or other of the malleoli is preserved with its covering of skin. The operation is simplest when the inner malleolus can be used. An incision is made half way around the leg on its outer side one centimetre from the plane of the amputation; from the ends of this incision another is carried downward so as to include the inner malleolus in a flap. The margins of this flap are retracted, the ankle joint is opened by an incision below the malleolus, the foot is forced to the side, and the inner malleolus is cut from the bone. The amputation is then performed, the vessels and nerves are properly cared for, and then the flap is coaptated to the ends of the bones, so that the cut bone surfaces lie in apposition. The wound is then closed with sutures. The same principles apply when the external malleolus is used, but the details of the operation are naturally different, and are more complicated. The internal malleolus is the one to be used by preference.

The Use of the Faradic Current in Intermittent Limping.—Wilhelm Kuehn reports the case of a man suffering from intermittent limping, in whom the femoral artery could no longer be felt, treated with the faradic current. Each leg was placed in a deep vessel filled with water of the temperature of 35° C., into which the faradic current was conducted. After 12 sittings the femoral could be felt again. Much pain was caused only in one place near the tibia, but this was cured by the direct application of the electrode. The patient is now able to take long walks.

May 17, 1913.

Setting of Fractures under Local Anesthesia.—Béla Dollinger uses a solution of novocaine and suprarenin as an anesthetic. Injection between the fragments has several disadvantages: The site of the fracture is usually very sensitive, and even when the injection causes no great pain the patient is made quite uncomfortable; the solution is apt to be injected into a blood clot in and about the fracture, so that the anesthetic does not come in contact with the nerves, or it may enter ruptured vessels and produce toxic symptoms; and anesthesia is complete only when the fluid is injected exactly between the fractured ends of the bones, a feat difficult to accomplish when the patient is very fat or in the presence of a large hematoma. A preferable method is to make the injections in a circle about the limb, a few centimetres above the site of the fracture, anesthetizing first the superficial and then the deep structures. The fracture can then be reduced without pain.

Nerve Injuries in Plexus Anesthesia.—Max Hirschler relates the following case: A man, fifty-two years old, had his right humerus luxated into the axilla. Plexus anesthesia was induced by the injection of twenty c. c. of a novocaine suprarenin solution; the luxation was then easily reduced, and the arm was fixed in position for a week. Soon after that the patient complained of numbness of the outer side of the right hand, together with an inability to bend the thumb and forefinger. Examination showed loss of sensation over the urea supplied by the cutaneous antebrachii mediales, marked hyperesthesia in the region of the cutaneous branches of the median nerve, hyperesthesia of the superficial branch of the radial nerve, absolute paralysis of the flexor of the forefinger, and a less degree of paralysis of the flexors of the thumb and middle finger. Electric tests showed a complete reaction of degeneration of the flexor of the forefinger. Four months later voluntary movement had returned to the forefinger, but it was still weak, and there was still some hyperesthesia in the region supplied by the median nerve and the superficial branch of the radial. These troubles could be explained only by a lesion in the plexus at the point of union of the last cervical with the first thoracic root, which is situated close to the subclavian artery below the best place to make the injection. This case shows the possibility of an injury of the plexus by the needle in making the injection, and, in the opinion of the writer, contraindicates the use of this form of anesthesia in patients who depend for their living on fine finger work, such as violinists, pianists, and workmen in the fine mechanical arts.

LYON MÉDICAL.

April 27, 1913.

Intoxication by Nitrogenous Compounds in Diabetes Mellitus. — Hugouneng, Morel, and Froment, studying the urine, blood, and cerebrospinal fluid in a comatose case of diabetes which terminated in death soon after, found an abnormally low azoturic coefficient (ratio of urea nitrogen to the nitrogen in compounds other than urea) in each of the fluids examined. The change was especially pronounced in the cerebrospinal fluid. The case tends to show that coma in diabetes may be due as well to accumulation of toxic nitrogenous compounds in the system as to that of compounds arising from the imperfect metabolism of fats.

May 4, 1913.

Porencephaly.—L. Babonnex and H. Darré give a detailed report, with illustrations, of a case of porencephaly which afforded strong support to the theory that most cases of this condition are of inflammatory origin and that the cerebral aphasia is secondary to a process of encephalitis or meningoencephalitis.

Thyroiditis as a Sequel to Pneumonia.—C. Roubier and A. Goyet report the case of a man with a large unilateral goitre of long standing, in whom, about a week after the temperature had reached normal in recovery from pneumonia, slight fever reappeared and pallor and cachexia began to be manifest. By exclusion the disturbance was finally ascribed to the thyroid gland, and although there was no local edema, redness, or abnormal heat, but merely a sensation of deep fluctuation and slight tenderness, it was decided to operate. Upon introduction of a trocar there was evacuated about two tablespoonfuls of pus, which yielded a pure culture of pneumococcus. After this the patient's condition improved, and complete recovery followed. A special feature of the case was the slow course of the suppurative process in the thyroid.

May 11, 1913.

Painful Adiposis in Sciatica.—M. Favre and A. Tournade point out that the local adipose overgrowth accompanying certain obstinate and long standing cases of sciatica is of the painful variety; seizing a fold of skin between the fingers often causes a sharp reaction. Certain points are especially sensitive, and at these points palpation often reveals indurated but not clearly defined nodules, enclosed in the more diffuse adiposis. The sciatic neuritis appears to cause a trophic disturbance resulting in thickening of the cellular tissues, which in turn irritates the terminal nerve filaments and keeps up a local neuralgic state. Massage was found by the authors to yield excellent results after various other measures had failed. It should be practised in a progressive manner and directed more particularly to the nodular formations.

Wound of Chest Involving Internal Mammary Artery.—L. Desgouttes and L. Lambert report a case of this nature in which death took place unexpectedly during the night from secondary hemorrhage. This patient had had no bloody expectoration, the general condition had rapidly improved, and the wound was at the limit of the course of the mammary artery; operative intervention had therefore not been undertaken. Furthermore, a similar case had recovered without any difficulty. The fatal result in the first case seemed to show that where there is doubt as to whether the primary hemorrhage is parietal or pulmonary, the wound should be explored, though perhaps not immediately.

PARIS MÉDICAL

May 10, 1913.

Hepatic Insufficiency in Appendicitis.—J. Duvergey points out that in appendicitis the liver is the organ that most directly suffers from the toxines elaborated, since the venous blood from the appendix passes at once to the liver through the superior mesenteric and portal veins. The resulting disturbance of hepatic function manifests itself in variations in the excretion of urea—more particularly a diminution—and in alimentary glycosuria and urobilinuria. Severe cases of appendicitis show a very marked decrease in urea excretion, which is replaced in convalescence or soon after successful operative intervention by a marked rise. In mild subacute cases, there is a slight rise of urea excretion during the attack. Low urea excretion, with alimentary glycosuria and urobilinuria, with associated clinical signs, imply a grave prognosis, suggesting the advisability of and sometimes compelling surgical measures. The study of urea curves permits of making a diagnosis between lesions of the appendix and the uterine annexa. It even allows one to suspect that the appendix and tube are involved in the same infective process.

PRESSE MÉDICALE.

May 14, 1913.

Chronic Amebic Dysentery.—A. Chauffard advises that the possibility of the presence of cases of amebic dysentery, even in cities in temperate climates, be constantly borne in mind, lest the occasional cases of this nature that do occur should be wrongly treated. He reports the case of a patient who had had amebic dysentery during his boyhood in Turkey and eighteen years later, in France, had a recurrence of his old trouble, apparently brought on by an ordinary attack of benign acute diarrhea. After a long period of ineffectual treatment, the amebic origin of the disease was recognized and emetin given to the amount of 0.32 gramme in a week. The temperature promptly fell, the number of stools decreased until, on the fifth day, there was no movement at all, pain disappeared, and the patient promptly gained in weight.

Thermogenesis and Glycemia.—H. Bierry refers to the assertion of Chauveau that glucose is the sole substance undergoing combustion directly in the tissues and shows that a close relationship exists between the amount of glucose circulating in the blood and heat production. This relationship is indicated, for example, by the facts that in warm blooded animals, the greater the glycemia the higher the normal temperature in the species; that in cold blooded animals glycemia is low; that upon section of the cord or removal of the adrenals, which lowers the temperature, hypoglycemia also appears, and that in starved animals, before death, an abrupt drop in temperature takes place at the moment when sugar disappears from the blood.

REVUE DE MÉDECINE.

May, 1913.

Origin of Hepatic Cirrhoses with Pigmentation.—G. Roque, J. Chalier, and L. Nové-Josserand refer to those cases of cirrhosis of the liver in which there is diffuse skin pigmentation and rapid cachexia, and the autopsy shows a hypertrophic liver loaded with iron pigment, the latter being found also in less amount in the peritoneum, abdominal lymphatics, spleen, and other organs. In the etiology of these cases, diabetes mellitus, alcoholism, and malaria have all been held as factors. The more intimate mechanism of the deposition of iron has been variously described, Castaigne, among others, contending that the liver is itself responsible for the abnormal deposition of iron. The authors report two cases peculiar in that the liver showed atrophic instead of hypertrophic cirrhosis and present arguments to the effect that the group of pigmented cirrhoses shows no essential difference from nonhepatic conditions with iron pigmentation of organs, but is the result of an hemolysis, similar to that of pernicious anemia. The recent finding of diminished resistance of the red corpuscles in "pigmentary cirrhoses" supports this view. Where the hemolysis is very intense, both iron and bile pigments are set free, and the resulting condition, sometimes met with in hepatic cirrhosis, is a hemolytic jaundice.

Bilateral Tuberculous Pneumothorax. — C. Roubier gives histories of thirteen cases collected in literature and reports a personal case. Discussing the condition in general, he states that it may occur early in the course of phthisis, though oftener late. The cause is usually the rupture of subpleural tuberculous focus or small cavity on either side of the chest, though in rare instances a pathological interpleural communication or the rupture of an emphysematous vesicle on one side have been responsible. Simultaneous bilateral rupture is rare—one certain and three doubtful cases; in the other cases the interval between the two perforations varied from ten hours to over six months. The interval before death after the second perforation was from a few minutes to six days. Sometimes rapid progress of the disease on the side opposite the first pneumothorax can be made out before the second perforation. The diagnosis of the second pneumothorax is seldom made during life. Effectual treatment could only exceptionally be carried out.

BRITISH MEDICAL JOURNAL.

May 24, 1913.

The Incidence of Ophthalmia Neonatorum in London.—N. Bishop Harman bases his statistics upon the official report of the Health Officer of the London County Council, which covers only nine and a half months, the first period during which the reporting of the disease was compulsory. The corrected figures for the year would be 850 cases, an incidence of 0.843 per cent. of all the reported births, excluding stillbirths. This is in close accord with an analysis of the frequency of the disease based upon the records of 12,680 live births in private practice, the incidence in this series being 0.867 per cent. Of the entire number of cases mentioned in the official report 231 were followed to their ultimate issue. Of these, 218 were reported to have recovered completely, leaving thirteen cases in which there was some permanent impairment of sight. The incidence of permanent injury is 5.6 per cent. in this series. In the series from private practice the incidence was found to be 5.4 per cent. In every case but one the eyes were cleansed immediately or shortly after birth. In 125 of these, however, the only antiseptic used was boracic lotion, and in twenty-two others sterile water only. In fifty of the cases there was an interval between the birth of the child and the use of the solution in the eyes. It is of interest to note that by far the largest number of the cases occurred on the third or fourth day of the puerperium. In forty per cent. of the cases there was a history of vaginal discharge in the mother. In his conclusions based upon these findings Harman states that the very small incidence of the disease, and the extremely slight likelihood of the permanent injury of the eyes, seem to render the prophylactic use of potent disinfectants unwarranted. He believes that the proper way to approach the prevention of the disease is to treat the mother prior to her delivery, so as to cure the vaginal condition which is usually present. He feels that the danger of injuring the infant's eyes by the antiseptic solutions is such as to render their use almost as dangerous as the disease which they are intended to prevent.

A Preliminary Note upon an Experimental Investigation of Concussion of the Spinal Cord and Allied Conditions.—Alan Newton, using cats, dogs, and monkeys, caused varying grades of direct concussion of the cord, several degrees of compression, and interference with the circulation for differing periods of time, and comes to the conclusions that: 1. The spinal cord is extremely sensitive to slight degrees of compression and concussion. 2. In spite of the slight anatomical changes demonstrable after lesser degrees of injury, the disturbance of function which results is considerable. 3. After concussion which has abolished motor efferent conduction, sensory conduction can still be demonstrated. 4. Arrest of the spinal cord circulation by aortic compression abolishes spinal cord function in from fifteen to thirty seconds. 5. These experiments support the view that there is an organic basis for the signs and symptoms of "railway spine" and allied conditions of traumatic neurasthenia. The injury in compression and concussion does not seem to be due to damage to the bloodvessels of the part, but to direct injury to the nerve cells and fibres in the cord.

Pseudofractures of Transverse Processes.—Owen L. Rhys reports five cases in which x ray photographs showed what appeared to be fractures of the ends of the transverse processes of one or more of the lumbar vertebræ. In no case was there, however, any evidence of fracture, and in most there was neither history of injury nor complaint of pain or other symptoms referable to the side showing the apparent fracture. Rhys believes the condition to be due to developmental failure of ossification, the process being arrested before it is complete.

LANCET.

May 24, 1913.

The Electrical Action of the Human Heart.—A. D. Waller (Lecture 1) has employed five different leads in his studies of the electrical reactions of the human heart. They are the right and left superior, taken from the mouth to the right and left hands respectively; the right and left lateral, taken from the right and left hands respectively to either of the feet; and the transverse, taken from one hand to the other. These leads may be divided further into strong and weak leads; the strong are the transverse, the left superior, and the right lateral; the other two are weak. Leaving the two superior leads out of account, the remaining three correspond closely to Einthoven's three. Waller believes that his own leads, the transverse and both lateral, afford simpler material for picturing the balance of potentials and the direction of currents on the two sides of the body, and lead naturally to a simple formula for the determination of the direction of the current axis through the heart and body. The angle of the current axis is determined by a consideration of the difference between the potentials of the several leads. A mesial point of the body is used for the determination of the several potentials. When the mouth, M, is used, the potential difference between this and the right side, R, is small; between M and L, the left side, the difference is large. In analogy to the mechanical idea of a balance, M is the fulcrum or zero point of a beam carrying a heavier weight on the left arm than on the right. If we take the angle of the beam at M as 90° when the two arms are equally loaded, the angle of inclination would be expressed by the formula: $\tan a = \frac{L - R}{L + R}$. In the case of an electrocardiogram of the two superior leads, if the right superior equals 0.0001 volt and the left 0.001 volt, the calculation of the angle would be as follows: $\tan a = \frac{10 - 1}{10 + 1} = \frac{9}{11} = 0.82 \therefore a = 39^\circ$. It would be concluded, therefore, in this case that the current axis of the heart formed an angle of 39° with the vertical. Similar deductions as to the current axis can be made from the lateral leads, but the formula in this case is different. The importance of these observations lies in the fact that the small angles come from "broad" hearts, or ones with flabby musculature, and which lie upon the diaphragm. Where the angle is large the heart is usually "long" or firm and of good muscular tissue. The differences between these two types of hearts do not seem to depend upon sex or age, or upon gross valvular disease. It is to be mentioned that gaseous distension of the stomach may give rise to readings indicative of a "broad" heart through upward pressure and displacement.

The Dangers and Complications of Salvarsan Treatment.—Hugh W. Bayly says that probably over a million injections of salvarsan have been given and that there are only about 150 recorded deaths. Majors T. W. Gibbard and W. S. Harrison saw no deaths in over 2,000 cases, and the author none in 500 cases, while in a large number of cases treated in the London Lock Hospital there have been but two deaths. Therefore Bayly feels justified in concluding that the danger to life is extremely small. The recorded deaths can be grouped under four headings: 1. With symptoms of meningitis; 2, with symptoms of nephritis and uremia; 3, with toxic symptoms associated with degenerative processes in the liver; 4, with symptoms of pulmonary embolism. Short of death, the gravest complications of the treatment are those associated with the toxic action of the drug on the body in general, and those due to thrombosis and phlebitis. The supposed danger to the optic nerve seems to be absolutely without foundation.

A Case of Phthisis with Complete Cavitation of the Left Lung.—D. W. Carmalt Jones and E. S. Worrall report the case of a young woman of twenty-one who died from pulmonary tuberculosis and whose lungs showed complete cavitation of the entire left lung, which is described as a "bag, communicating with the trachea through a bronchus, adherent to the chest wall, and about half full of fetid pus." The right lung had a large cavity in the upper lobe and the remainder was involved in "universal chronic tuberculosis."

A Method of Counting Bacteria in Water.—R. Donald describes his method of preparing glass pipettes so that they will deliver drops of a uniform weight, for a given fluid and a given temperature. By using such pipettes and placing a drop of known size on a clean but faintly greasy slide, he obtains, with water, a uniform dried film. The deposited bacteria can be fixed to the slide by mixing a trace of twelve per cent. gelatin medium, hydrocele fluid, or of diluted and filtered egg white solution with the water to be tested before dropping it on the slide. Such films must be dried cold under the air pump to avoid having too thick a margin. The drops, fully dried, are then fixed with a solution of phenol (ten per cent.), or of mercuric chloride (five per cent.), in absolute alcohol. They are then stained for one minute with carbol fuchsin which has been made with bacteria free water. A cover glass is placed over the films and held by a minimum of petrolatum. Under the oil immension direct counts can be made, using a low compensating ocular fitted with a square aperture which is divided into strips by fine hairs. By this method of direct enumeration Donald has found that ordinary laboratory distilled water contains over a million of bacteria to the cubic centimetre. Counts made by culture methods fail to show any large number of bacteria in similar water, and therefore the interpretation of the so called "salt fever" as being due to bacteria has not been generally supported by bacteriological findings.

PRACTITIONER.

May, 1913.

Ocular Diseases Occurring in Association with Diabetes Mellitus.—D. Matheson Mackay enumerates the following ocular conditions that seem to be dependent on an associated diabetes: 1. Abnormal refraction and accommodation. Sometimes there is a sudden development of hypermetropia, the patient can see clearly neither at a distance nor near without glasses, but regains normal vision with a suitable convex lens. Occasionally myopia develops instead. Abnormal accommodation is shown when a patient finds that he is unable to read, or needs a stronger convex lens for presbyopia than his age warrants, because the ciliary muscle becomes wholly or partially paralyzed. Usually the refraction errors are temporary and clear up in a couple of months or less. 2. Changes in the lens, either cataract, or "second sight" due to myopia produced by the lens. Diabetic cataracts have been known to disappear after a successful treatment of the diabetes; this is the only form of nontraumatic cataract that is likely to clear up spontaneously. 3. Changes in the retina, diabetic retinitis. 4. Toxic amblyopia, in which the papillomacular bundle of fibres in the optic nerve, is injuriously affected by toxic substances, the result of anomalies of metabolism. This condition is very similar to the toxic amblyopia caused by alcohol and tobacco. 5. Visual faults due to cerebral lesions. 6. Paralysis of the extrinsic ocular muscles.

INDIAN MEDICAL GAZETTE.

May, 1913.

Can Cholelithiasis be Successfully Treated without Operation?—T. H. Delany says that most patients in the part of India where he is located refuse operation when suffering from cholelithiasis; so he was led to look for some form of treatment that would effect more than temporary relief of pain. This he thinks he has found in large doses of ipecac, and gives the histories of several successful cases.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 29, 1913.

On the Frequency of the Transition of Ulcer of the Stomach into Cancer.—Julius Friedenwald believes from a study of 1,000 cases of cancer that while gastric ulcers are at times transformed into malignant growths, such a change does not take place in more than twenty-three per cent. of the cases, and probably in not even so large a proportion.

Tuberculous Osteomyelitis of the Digits.—Robert M. Green maintains that tuberculous osteomyelitis of the digits is essentially a disease of infancy and childhood, presenting a definite clinical picture and tending strongly to spontaneous recovery. It is characterized pathologically by bone destruction and rarefaction and by chronic inflammatory reaction in the surrounding soft tissues. It may heal by resolution and absorption, or by sequestration, suppuration, and sinus formation. Its differential diagnosis from pyogenic osteomyelitis, sarcoma, and syphilitic dactylitis may be made by clinical signs and x ray examination. Its prognosis for anatomical and functional recovery is good, and is proportionate to the amount of bone destruction and scar formation. Therapeutically, primary emphasis is to be laid on general hygiene and local fixation. Incision should rarely be resorted to, since it complicates the dressing, protracts convalescence, and increases subsequent deformity and disability. Amputation is almost never indicated. Probably treatment with the x rays, or other forms of irradiation is a valuable adjunct to the conservative therapeutic measures, since it expedites recovery by stimulating natural reparative processes.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 31, 1913.

Basic Fuchsin in Chronic Leg Ulcer.—Eugene S. May and M. L. Heidingsfeld make a preliminary report of the use of basic fuchsin in the treatment of chronic leg ulcers in the dermatological wards of the Cincinnati Hospital. Their investigations showed that basic fuchsin (Grüblers Fuchsin für Bakterien) is not only a nontoxic, very diffusible germicide, but also that it has a strong, stimulative influence on epithelial and granulation tissues. The ulcers are dressed with gauze soaked in fuchsin solution (one to 1,000) either alone or combined with an ointment of fuchsin (one per cent.). The formula for the ointment is one part of fuchsin to five parts of petrolatum, and 100 parts of anhydrous wool fat. The writers are impressed with the satisfactory therapeutic efficacy of this remedy and commend it as a routine measure in this class of cases. Its use, however, should not exclude other indicated measures such as antisyphilitic treatment, corrective appliances, etc.

Acute Posterior Ganglionitis (Herpes zoster) Simulating Surgical Conditions in the Abdomen.—Lawrence Litchfield, in discussing this affection, cautions us to be on our guard against mistaking an acute posterior ganglionitis, in the preeruptive stage, for a condition demanding surgical interference in all patients with diseases which are especially prone to be complicated by herpes zoster, such as tabes, general paralysis, tuberculosis, psoriasis, and possibly patients under arsenical treatment.

Treatment of Superficial New Growths by Pure Radium Bromide.—Francis H. Williams and Samuel W. Ellsworth give the results of the use of radium in superficial new growths at the Boston City Hospital, adding to the statistics of 181 cases of skin cancer of various forms the detailed history of thirteen cases illustrative of the various classes of these new growths. The writers conclude that the application of pure radium bromide in sufficient amount, properly used, is a harmless, painless, and efficient method of treating early superficial new growths, well adapted to cancers of the face by reason of the excellent cosmetic effects, and particularly to the eyelids where operation may be attended by special difficulties and disadvantages. With proper care there is no danger to the eye. While operation is the method of choice in early skin cancer, radium should be used first in early cases, and operation reserved for such as are not amenable to it. More success follows the use of radium when it is the first treatment used than when it is used after operation, x rays, etc., although it does well even under these circumstances. Improvement is usually observed after the second or third application, and the number of applications needed is from two to ten, in some cases more than twenty. As radium is free from dread and its action is painless, advice will be earlier sought by patients fearing surgical interference and the chances of recovery will thereby be enhanced. The analgesic action of radium is worthy of consideration. Radium is the best treatment for keloids, unless they are extensive. When skin lesions of small area do not heal readily under simple applications, radium should be used, if obtainable. Although, like all powerful remedies, the use of radium is not unattended with danger if care be not taken, no untoward results have occurred during the ten years in which radium has been used by the writers.

Method of Bone Plating.—Carl E. Black has substituted for the heavy Lane plates untempered clock spring steel of various thicknesses and widths which may be adapted to accurately fit any contour at the operating table, and may be made as long or as thick as may be desired. The narrowest and thinnest plates placed on both sides of the bone in a direction to meet and resist the greatest strain which will be applied by muscular action will usually meet every indication. In the use of these thin steel ribbons the space for the accumulation of blood and serum is reduced to a minimum, and infection is less likely. The periosteum can be more nearly coapted. The remaining foreign body is from three to ten times less, which permits a more careful approximation of the fascia and skin.

An Operation for Ventrosuspension by the Round Ligaments.—Harold Neuhof has devised a simple operation for ventrosuspension which has apparent advantage over the Olshausen operation.

By a median incision the abdomen is opened, the uterus is grasped and held at the desired level. The region in which one round ligament leaves the abdominal cavity is exposed by retracting upward on that side of the wound. At the internal abdominal ring a catgut suture is begun by passing the needle through the ligament and the adjoining parietal peritoneum. The suture is continued by alternately transfixing the round ligament and the parietal peritoneum, with the overlying transversalis fascia, to within a short distance of the uterine horn and is here ended. (To avoid atrophy the suture must pass through and not around the broad ligament.) The same treatment of the ligament on the other side follows and the abdominal wound is closed in the usual way, the parietal peritoneum being preferably sutured by the everting stitch, suggested by the writer, in order to avoid omental adhesions.

MEDICAL RECORD.

May 31, 1913.

The Clinical Evidence of Lymphuria.—Heinrich Stern, in noting the fact that there are many forms of albuminuria in which a renal lesion may be positively excluded, questions whether the albumin in these conditions is really derived from the serum. Among these forms of albuminuria he mentions the postural, cyclic, adolescent, and compensatory. While examining a number of specimens of chylous urine he was convinced that in a certain proportion of instances of these forms of albuminuria the proteid body had reached some part of the urinary tract through the numerous lymph channels communicating with it, and that it is lymph albumin and not serum albumin with which we are dealing, and that notwithstanding their identical chemical structure, the proteid in lymphuria has never entered the blood stream. Lymphuria is always marked by the presence of well constituted lymphocytes, or of "pus corpuscles," as they are wrongly called. Genuine pus corpuscles are old or deteriorated leucocytes, and are never found in the urine except in conjunction with a sufficient number of form elements indicative of destructive changes in some portion of the genitourinary system. Roughly speaking, the number of lymphocytes in a urine corresponds with its content of lymph albumin. Recent investigations have demonstrated the large number of the renal lymph channels and their intimate connection with the uriniferous tubules. Moreover, the lymph vessels in the mucosa of the ureters and bladder communicate with the outer epithelial layers of these organs, and may readily transmit their contents to the urine. Overfilled intestinal lymphatics with high internal tension predisposes to lymphuria. The writer concludes that serum albuminuria concurs with its inevitable globinuria, while in lymphuria there is little or no globulinuria and no evidence of renal damage. An intermittent juvenile albuminuria without inflammatory product, but with more or less numerous, well constituted lymphocytes, points to the presence of lymph in the urine. When in addition to these findings in the urine the patient has intestinal disease or habitual constipation; when there are evidences of a lymph stasis, enlarged tonsils, much adenoid tissue, and palpable lymph nodules; when the patient is anemic, easily exhausted, and averse to bodily exercise, a diagnosis of lymphuria is justified.

Colon Bacillus Infection of the Kidney.—Winfield Ayres leans strongly to the theory that colon bacillus infection of the kidney is of hematogenous origin, and not due to contiguity, since the kidney has, besides its true capsule, its fatty capsule as a wall against infection by contiguity with the colon. As predisposing causes he names injury, renal congestion, and preexisting inflammation. The symptoms are those of a low grade septic infection, with or without pain in the region of the kidney, and in most cases great irritability of the bladder. Diagnosis must be made by culture, as the colon bacillus is not easily recognized by the microscope. The kidney should be the first organ suspected when we have the subjective symptoms of cystitis, pus in the urine, and a septic temperature curve. If Gram negative bacilli are found on microscopical examination a culture should be made. Palpation will often reveal an enlargement of the kidney, and often the slight swelling will be unrecognizable by touch. In the former case a radiograph may be of value; in the latter the plate will show nothing. Rest in bed and hot applications over the affected side are indicated on the first suspicion that one or both kidneys are inflamed. As a urinary antiseptic hexamethylenamine is our sheet anchor, and it must be pushed until free formaldehyde is detected in the urine, or until 100 or 120 grains are given in twenty-four hours. To detect the formaldehyde and to distinguish it from hexamethylenamin Burnam's test may be used. When formaldehyde is present in a solution of one to 20,000 or stronger, there follows an intense blue color, which gradually changes to green and then after a few minutes to brown. The test aids in determining the dosage of hexamethylenamine, and also advises us of the utility of continuing the drug. The initial dose is 7.5 grains three times a day, each day testing for formaldehyde, and until it is found, increasing the dose rapidly up to 100 or 120 grains *per diem*. If formladehyde is not detected in the urine when the maximum dose is reached, the drug should be stopped and some other urinary antiseptic (sodium benzoate or salol) tried. Colon bacillus vaccines have been used successfully by others, but the writer has never seen a case where he thought they were indicated. After two weeks, if the palliative methods have failed, the ureters should be catheterized to determine the condition of the kidneys and to allow of gentle flushings with hot boric acid solution. If residual urine is found in the renal pelvis, the kidney must be removed, unless a plastic operation can be done on the upper extremity of the ureter.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

May, 1913.

Pharmacology of Respiratory Centre.—A. R. Cushny presents a study of the effects of morphine, hydrated chloral, urethane, caffeine, and strychnine on the respiration, conducted with improved experimental methods. All these drugs were found to affect the frequency of respiration more constantly than the depth. The first three tended to slow and deepen the breathing, while caffeine and strychnine rendered it quicker and shallower. The experiments showed that the changes in the respiration occurring under the influence of poisons cannot be attributed exclusively to altered susceptibility of the respiratory centre either to its normal activating hormon—carbon dioxide—or to nervous impulses, but are due rather to a more fundamental action on the process of rhythmic discharge which is the essential function of the centre.

Tolerance of Glucosides of Digitalis Series.—A. J. Clark found the intact common grass snake to be thirty times more tolerant than the frog to strophanthin injected hypodermically; its isolated heart, moreover, was found to be more than one thousand times as tolerant as the isolated frog's heart. He believes this tolerance to be due to tissue immunity, as he found no evidence that the tissues of the snake, any more than those of the frog, rabbit, and rat, have any power to destroy strophanthin; neither could it be shown that the heart muscle in these animals specifically absorbed the drug. Clark thinks it probable that the action of strophanthin on the heart is of a physical nature, viz., that it modifies the surface potential existing upon the membranes of the heart.

Vascular Conditions and Pituitrin Diuresis.—R. G. Hoskins and J. W. Means found that there is no constant relationship between pituitrin diuresis and either systolic blood pressure or pulse pressure, or the ratio between them. The diuresis is due primarily to direct stimulation of the renal cells, usually aided, probably, by a concomitant vasodilation in the kidneys.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, March 17, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

The Clinical Evidence of Lymphuria.—This paper, by Dr. Heinrich Stern, was read by Dr. A. E. Gallant, Dr. Stern being ill. The purport of this preliminary sketch, the author stated, was to put lymphuria on a clinically demonstrable basis, maintaining, 1, that serum albuminuria concurred with its proportionate globulinuria; 2, that there was no, or but a neglible, globulinuria associated with lymphuria; 3, that lymphuria occurred without any evidence of renal damage; and, 4, that an intermittent juvenile albuminuria without demonstrable inflammatory products, but exhibiting more or less numerous well constituted lymphocytes, pointed to the presence of lymph in the urine. When, in addition to the chemico microscopical findings, the young or adolescent patient was affected with intestinal disease or habitual constipation, showed evidence of a lymph stasis, enlarged tonsils, much adenoid tissue, and palpable lymph nodules, and was anemic, easily exhausted, and averse to bodily exercises, a diagnosis of lymphuria was justified. While noninfectious chyluria or even lipuria in the narrower sense, was a rare condition, simple lymphuria appeared to be comparatively frequent. None of the theories thus far advanced to explain the cause and mechanism of the juvenile albuminurias was really satisfactory. They all assumed that the albumin must of necessity be derived from the blood, though they were all in agreement as to the points that the kidneys were not affected, that the phenomenon was intermittent, and that the prognosis was favorable. Recent investigations concerning the real lymph channels had demonstrated their large number and intimate connection with the uriniferous tubules. Besides, the lymph vessels in the mucosa of the ureters and bladder communicated with their outer epithelial layers. The reason why not every individual presented a lymphuria was because the functional activity of the intestinal lymphatic system was not interfered with. Overfilled intestinal lymphatics exhibiting high tension within were undoubtedly the forerunners of lymphuria. The lymph which could not flow through the larger vessels slowly forced its way through narrow and tortuous collateral channels, and thus a portion of it would eventually be excreted into the urinary tract. A patent communicating channel admitting demonstrable amounts of lymph once established, the lymphuria might become a more or less regular phenomenon, even when its original causative factors had ceased to exist. The excretion of the lymph into and with the urine formed only a portion of the juvenile albuminurias, although it occurred much more frequently than might be supposed.

Colon Bacillus Infection of the Kidney.—This paper was by Dr. Winfield Ayres. Recent research, he said, had demonstrated that very many pathological conditions of the abdominal viscera are directly due to infection by colon bacilli. Were we to consider these infections only, one might be led to believe that they were due to continuity, but colon bacillus infections occurred in other parts of the body also, and were unquestionably of hematogenous origin, and we would have to conclude that the colon bacillus was like other germs we had to deal with and that infection by this organism was through the blood in nearly all instances. Predisposing causes of colon bacillus infection of the kidney were, injury, congestion of the kidney, and preexisting inflammation. Under the first were direct and indirect trauma, and under the second were to be classed those cases which followed confinement, operations on the pelvic organs, and renal calculus. Third, colon bacillus was sometimes engrafted in some other infection of the kidney. Two illustrative cases were cited in one of which the preceding infection was tuberculous, and in the other, gonococcic. Fourth, some cases were met with in which no predisposing cause could be found. Primary colon bacillus infection of the kidney was usually ushered in with a slight chill There might or might not be pain in the region of the kidney; commonly the only symptom complained of was great irritability of the bladder. Slight chills occurred at irregular intervals, and the temperature ranged from 99° to 102° F.; indicating a low grade of septic infection. Exceptionally, in the more severe form the fever rose as high as 106° F., and might be accompanied by delirium. Spontaneous recovery occurred very rarely; the affection, if unrecognized, tending to persist indefinitely, with partial or complete destruction of the kidney. In certain instances a calculus would be found partly blocking the ureter at the pelvis, occasioning an enormous collection of pus. It was only very rarely that the characteristic odor was perceptible in the voided urine, though when the kidney was opened this was often met with. The diagnosis had to be made by culture, as the former idea that the colon bacillus can be readily recognized by the microscope had been proved erroneous. In any suspicious case the patient's urine should be examined microscopically, and if Gram negative bacilli were found, a culture should be made. There might or might not be some enlargement of the kidney. A radiograph was sometimes of value, but usually a kidney so little enlarged as to be undetected by palpation would show nothing on the plate. As soon as inflammation of one or both kidneys was suspected the patient should be kept in bed, and hot local applications made. Hexamethylenamine was our main reliance as a urinary antiseptic, and it should be pushed until free formaldehyde could be detected in the urine, or until 100 or 120 grains were given in the twenty-four hours. If under these doses no formaldehyde could be thus detected, the drug should be stopped, as it then had no germicidal action whatever, and some other urinary antiseptic, such as sodium benzoate or salol, tried. In some instances formaldehyde could be detected when only 7.5 grains of it had been taken by the patient. Burnam's test for formaldehyde[1] guided us in determining the amount of hexamethylenamine to give, and also told us whether there was any use in continuing the drug. Burnam had shown that when this was not broken up it could be given in enormous doses without the slightest irritation or benefit either. He had also found that it was broken up almost as well in an alkaline as is an acid medium. In a small number of cases it had been noted that though there had resulted no appreciable benefit from the administration of full doses, notwithstanding the fact that the urinary examination had shown a fairly large percentage of formaldehyde, yet when the drug was stopped all symptoms at once subsided. Colon bacillus vaccines had been successfully used by a number of observers, but Doctor Ayres had never seen a case in which he thought they were indicated. Colon bacillus infection of the kidney was rarely of an acute type, and therefore early operation was not often demanded. Two weeks, or more, of such treatment as had been described should be allowed to pass before any surgical interference was to be considered. When palliative measures had failed, the ureters were to be catheterized, to determine the condition of both kidneys, and careful examination should be made to find if there was residual urine in the diseased kidney. After sufficient urine had been collected for observation the pelvis of the affected kidney should be gently flushed with hot boric acid solution until the return flow was fairly clear. If there were no abscess in the parenchyma this simple wash would usually reduce the size of the kidney markedly, the fever and subjective symptoms would subside, and, provided there were good drainage, the patient would entirely recover under this pelvic lavage. In the speaker's opinion, it mattered very little what antiseptic was used. He had employed boric acid in a routine way and, if it was determined to continue lavage, silver nitrate in mild solution at later sittings. Koll, of Chicago, had claimed specific anticolon bacillus action from a two per cent. solution of liquor plumbi acetatis. On the other hand, if we found residual urine in the renal pelvis, the patient would never be free from pyuria until the kidney had been removed. If the onset of infection were severe, or should the tentative lavage fail to benefit, the kidney should be exposed; when the surgeon would have to decide whether nephrectomy or nephrotomy were to be done. In all cases where the pelvis did not drain properly nephrectomy was indicated, unless a plastic operation could be done on the upper extremity of the ureter. If in the latter class of cases nephrectomy were for any reason contraindicated, pelvic lavage once or twice a week would clean the pelvis sufficiently to keep the patient comfortable.

Hydronephrosis.—Dr. A. Ernest Gallant, in this paper, said that displaced kidney was by far the most frequent cause of hydronephrosis or, more properly, uronephrosis, by which was understood retention of urine within the renal pelvis, or the renal pelvis and the ureter, in consequence of some obstruction to the outflow of the urine into the bladder. The range of the mobility varied very greatly, though the severity of the resulting suffering bore no relation to the degree of mobility or the distance to which the kidney had prolapsed. A case well illustrating what a prolapsed kidney might lead to was related Among 411 cases of movable kidney Doctor Gallant had recognized obstructive hydronephrosis symptomatically in 126, or 30+ per cent. In one case there was sigmoid distortion of the ureter at its pelvic junction; in one, stricture of the pelvic portion of the ureter four years after hysterectomy; and in two cases a descending ureteral calculus was the source of typical ureteral colic; but such conditions were far outnumbered by the remittent attacks of hydronephrosis caused by movable kidney and which were relieved by loosening the clothing and lying down. By this means the kinking was corrected. Hence the pain, nausea, and vomiting (Dietl's crises) ceased, the swelling in the lumbar region subsided, and the woman passed large quantities of urine. Then there would be freedom from symptoms until the kidney had again dropped down low enough to cause ureteral kinking and urinary obstruction. During twenty years' observation of this class of cases it had always been his practice to place the patient in bed with the foot of the bed elevated some ten or twelve inches, and by this means had secured prompt relief, provided that the kidney could be wholly or in part replaced. Whenever this postural treatment failed he had found some complication present, such as gallstones, stricture, calculi, blood, etc. By thus elevating the pelvis we, 1, relieved the symptoms; 2, established the differential diagnosis; and, 3, ascertained the correct treatment required, whether medicinal, mechanical, or operative. As to the prognosis, temporary obstruction of the ureter might cause but little if any damage to the kidney tissues, but frequently repeated intermittent obstruction gave rise to dilatation and distortion of the ureter and renal pelvis, resulting in an interstitial nephritis. The research work of Edwin Beer and others had shown that continuous obstruction beyond twenty-one days caused irreparable damage to the kidney. The treatment advised by the speaker consisted in, 1, postural, diagnostic replacement; 2, mechanical support by a corset constructed on proper principles, in order to keep in position all the prolapsed organs; 3, appropriate operative measures for the removal of pelvic disease when present; 4, such rest cure methods and medicinal means as will restore the normal health balance. In cases of replaceable prolapsed kidney nothing was to be gained by suturing the kidney (nephropexy) because, as had been pointed out by Glenard, we very seldom met with movable kidney causing obstruction in which there was not an associated dilatation or prolapse of the stomach and colon; a condition far more detrimental to health, though the symptoms were not so acute. The paper was concluded with the report of an illustrative case in which there was a prolapsed right kidney, with remittent hydronephrosis, and ptosis and dilatation of the stomach. For these conditions the patient had worn the special corset advised by Doctor Gallant, and he said that she had learned by painful experience that the attacks would recur if she were careless in putting the corset on or did not keep it in good repair.

Bilateral Nephrolithiasis.—This paper, by Dr. Oliver C. Smith, of Hartford, Conn., will be published in the Journal.

At the conclusion of the paper a number of lantern slides of illustrative radiographs were exhibited by Doctor Smith's associate, Dr. Arthur C. Heublein.

Dr. Louis Heitzmann said he doubted the propriety of discussing Doctor Stern's paper, which was purely a theoretical one, in Doctor Stern's absence. The claim in it was more a theory of his own than a proved fact, and under the circumstances, therefore, he preferred to say nothing more about it. The subject of Doctor Ayres' paper was, unfortunately, one about which too little was known. Yet the cases of colon bacillus infection of the kidney were not rare. Doctor Ayres was of the opinion that all cases of this character were of hematogenous origin; but while he himself was sure that in the great majority of instances this was the case, he believed that we did have some cases of ascending infection. It was not always easy to prove that a case was of the ascending variety; yet when the bladder symptoms preceded those of the kidney, and when inflammation in the bladder had lasted for some time before there was any trouble in the kidney, as could be determined by microscopical urine examination, some evidence was afforded of such an ascending infection. This did not necessarily start in the bladder, but might arise in the vagina or elsewhere. Doctor Smith's paper was certainly one of great interest. If all skiagraphs of the kidneys were as plain as those which had been shown this evening, there would never be any difficulty in diagnosticating renal calculi. Unfortunately, however, the x ray in many instances proved entirely unreliable. When there were hematuria and pyuria, and we could exclude other causes, there was strong grounds for supposing that calculi was present. Wherever a ureteral catheterism could be made, as in hospital cases, this would aid in the diagnosis. The functional tests, in his opinion, were of little value, and the phenolsulphonephthalein test was decidedly unreliable. The examination of the specimen of urine sent him by Doctor Gallant indicated the presence of a mild interstitial nephritis, a condition proved by the kidney the doctor had presented. While by many it was not admitted, it was easy to diagnosticate the existence of such a nephritis by microscopical uranalysis, without the presence of casts in the urine.

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[1] Add to the suspected fluid 3 drops of a 5/10 per cent. aqueous solution of phenolhydrazine hydrochloride and then 3 drops of a five per cent. aqueous solution of sodium nitroprusside; then an excess of a saturated aqueous solution of sodium hydroxide. When formaldehyde is present in solution of one to 20,000, or stronger, there follows an intense blue color, which gradually changes to green and then after a few minutes to brown.

Dr. Robert T. Morris said it made very little difference whether the colon bacillus infection came by means of the blood, the lymphatics, or by ascending infection. Usually, however, it originated from the blood. The thing to do was to relieve the patient, since the presence of the wandering colon bacillus in the body generally meant sepsis. Still, it was a fact that in many instances its presence in the kidney was a matter of little or no moment. Fortunately, we had at our command a good resource for this infection, provided it was used in the right way. The correct method of giving employing urotropin depended on one or two little refinements, and one of these was to give it in conjunction with sodium benzoate. We had a still better remedy in the new methylene citrate, which was an improved preparation of urotropin. In regard to kidney stone, there were some instances in which the calculi were nearly pure uric acid, giving no shadow. Now, whether the x ray showed the presence of stone or not, when we found blood and pus coming from a kidney, there was something there which called for operation. If not stone, it might be tuberculosis, or even fatty degeneration, as in one case he had seen. As a rule, patients operated upon made a good recovery, but occasionally even what seemed to be the most favorable cases terminated fatally. This it had been his melancholy experience to see only last week, when a lady who presented every appearance of perfect condition died suddenly from embolism three hours after the operation.

Dr. Joseph Friedmann said that one of the reasons why renal calculus was not more often diagnosticated by means of the x ray was because of faulty technic. The intestinal tract of the patient should first be thoroughly cleared out. It was his practice to give a full dose of castor oil in the evening, and repeat it the next day. The patient should be placed on a liquid diet, though milk should be excluded, as this substance caused a shadow to appear in the colon. Then, about two hours before the radiograph was taken an enema should be administered. A good picture ought to give the outline of the kidney, but often this was not obtained. It was always best to confirm the diagnosis of kidney stone, and therefore a second radiograph should be taken three or four days later. If the shadows at first observed were then in the same position, we could feel that the diagnosis was assured.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held at the New York Academy of Medicine, January 7, 1913.

The President, Dr. L. Pierce Clark, in the Chair.

A Case of Cholesteatoma of the Brain.—Dr. I. Strauss reported this case and showed the specimen. The patient was a woman, thirty-two years old at the time of her death, who was admitted to the Mt. Sinai Hospital October 5, 1909. The patient was one of twins; the other was healthy. One brother was mentally deficient. The patient's past history was unimportant. Her present illness dated back to the birth of her second child, when she began to have menstrual disturbances, having periods every two or three months. During this time she became obese. She complained of headache, and about five months after the birth of her last child she first showed signs of mental derangement. She lost her memory and talked garrulously and incoherently, and was committed to an asylum in Central Islip, where she remained about nine months. Since her return home her headaches had increased in severity and recurred more frequently. She often vomited small quantities of food; vomiting not projectile in character. For the past six months she had gnashed her teeth almost continually. Her eyesight had been gradually growing poorer. Her memory was fair, but she forgot recent happenings and took very little interest in current events; complained of pain in the jaws and of some difficulty in chewing and swallowing; was also subject to earache. She had great thirst, drank considerably and voided copiously; perspiration profuse; bowels constipated. She had not menstruated in four months. She continued to gain weight, although not as rapidly as formerly. The patient's facial appearance, at time of admission, was suggestive of acromegaly. The lips were thick, the upper jaw seemed wider than normal, and her nose was thick and broad. The teeth were regularly placed, and ground down from the constant gnashing. The hair was coarse and sparse; a considerable growth on upper lip; axillary and public hair likewise sparse. Her mentality was dull and sluggish; memory was very deficient. The blood pressure was 90, and the temperature average about 98.3° F. There was some atrophy and weakness of the right leg, with diminished reflexes, suggestive of an old anterior poliomyelitis. Glycosuria was present. The fundi were negative, although, on account of the restlessness of the patient, neither a satisfactory examination of the visual fields nor an x ray could be made. The diagnosis of pituitary tumor was made, based on the early appearance of Froelich's syndrome, the character of the facies, and the symptoms of increased intracranial pressure. The unusual feature was the development of a true diabetes. In April, 1910, the patient was transferred to the Montefiore Home, where it was ascertained that she had a positive Wassermann reaction in the blood (negative in the cerebrospinal fluid), and that there was not much doubt that her husband had been luetic. At this time the right eye showed atrophy of the disk; the left a commencing atrophy, and there appeared to be a bilateral temporal hemianopsia. She remained in a stationary state for some time, when she suddenly became somnolent and a marked edema of the face and lips developed. She came out of this state after a few days and was given an intramuscular injection of salvarsan. The improvement in her mental condition produced by this was very remarkable: She took cognizance of her surroundings, her memory improved, she thanked the physicians for what they had done for her and felt sure that she could return home in a short time. The glycosuria gradually disappeared, and she was maintained on an antidiabetic diet. Six months later there again suddenly appeared an extensive edema of both upper eyelids. There were subconjunctival hemorrhages, the pupils were moderately contracted, and she became comatose, with stertorous breathing, loss of all reflexes, and incontinence; no sugar. A phlebotomy was performed, sodium bicarbonate and duretin were administered, and in two days the edema had disappeared. The patient came out of her coma and was mentally clearer then she had been in six months. During the succeeding three months she was given several injections of salvarsan, together with mercury in different forms. She remained fairly clear mentally and her general condition was good. Sugar was absent for considerable periods of time, and if present, it was only in small amounts. There was very little headache or dizziness. Early in December, 1911, she became semistuporous and slept a good deal. The stuporous condition became more marked, and death occurred on December 21st. At the autopsy, which was confined to the head, a tumor was found on the under surface of the brain, a cystic and gelatinous mass, extending from the medulla at the inferior level of the olivary bodies forward as far as the optic chiasma. The main prominence of the tumor presented itself on the left side of the pons, in the interpeduncular space. The tumor compressed the pons, especially on the left side, also some of the right half of the pons had been destroyed. The tumor extended forward into the frontal lobe almost to the frontal pole on a level with the second frontal convolution; it measured about five cm. in its longest diameter, from above downward; its greatest width was four cm. The hypophysis seemed to be of about normal size, but somewhat flattened. Microscopically, the growth proved to be a cholesteatoma, possibly of embryonal origin.

A Case for Diagnosis.—Dr. Foster Kennedy presented a married woman, thirty-five years old, who had enjoyed good health up to about one year ago, when she began to suffer from severe headaches; six months later there were intense attacks of vertigo, with frequent vomiting. Three weeks ago she first noticed that her left eyelid drooped, and that there was weakness of the left face, which became twisted when she laughed. She now complained of severe headaches, intense dizziness, frequent vomiting, and incomplete paralysis of the left third nerve. Reflexes normal; no ataxia; speech normal; Wassermann reaction gave negative results in blood and cerebrospinal fluid; slight inequality of the pupils, the left being smaller and more sluggish than the right; no nystagmus. Doctor Kennedy said this patient had been under his observation for only a short time, and he had made a very tentative diagnosis of pontine tumor.

Dr. I. ABRAHAMSON said this case recalled to his mind that of a child that was brought to the clinic with a paralysis of the sixth and seventh nerves on the right side, followed, in the course of two weeks, by headaches of increasing severity. The symptoms were first regarded of peripheral origin. Subsequently, the child had a convulsion, with hyperesthesia and rightsided paralysis, the symptoms pointing to a pontine tumor. The patient was growing progressively weaker, and a fatal outcome was expected. In another case, which he had presented at a previous meeting of the society, the patient was a woman with a progressive bilateral ophthalmoplegia externa. She gave a history of severe headaches, followed by ptosis and weakness of one side of the face. After temporary improvement a similar condition on the opposite side of the face developed. The headaches were of an intermittent character. In Doctor Kennedy's case he was inclined to believe there was a neoplasm involving the pons.

Dr. WILLIAM M. LESZYNSKY suggested that the symptoms were due probably to a syphilitic basal meningitis.

A Case of Extracerebellar Tumor; Operation; Recovery.—Dr. FOSTER KENNEDY reported the case of a boy, nineteen years old, who was admitted to the New York Neurological Institute June 12, 1912. The history obtained was that he had always been bright, but not overstudious. He was fond of music, and quite an accomplished violinist. His general health had been good. Four years ago he received a severe blow on the head, and at that time it was noticed that his right upper eyelid drooped. When a small boy he told his father that he could not see through a pair of opera glasses with both eyes, and at a subsequent examination, made by an oculist, it was said that the sight of his right eye was practically gone. There was no history of headaches nor convulsions during infancy or childhood. The boy's present illness dated back to March 18, 1912. when he attended a party and ate a good deal. On the following day he complained of persistent headache, at first in left temporofrontal region; the pain extended later to left side of face and neck. The headache had persisted more or less constantly, and he had vomited once. Early in May it was noticed that he could not play the violin well, owing to inability to grasp with the left hand. A few days later he wobbled in walking; this symptom became more pronounced, and the father stated that the patient fell to the left. About two weeks later he had a severe vomiting spell, with much pain in the head; since then he had vomited four times, always late at night. When Doctor Kennedy first saw the patient, June 10, 1912, an examination of the eyes showed a chorioiditis, with heaping of retinal pigment in the right eye, and the pupil was more sluggish than that of the left. There was occasional slight nystagmus, always to the left; slight infranuclear weakness of left face, with deviation of jaw to same side; ataxia of left arm and leg, with a tendency to fall to left side; no sensory changes found. On June 14th patient complained of severe headache, more frontal than occipital, and there was marked projectile vomiting. The eyes now showed definite blurring of the disks, with small striate hemorrhages; pulse was slow; left knee jerk slightly more active than right. On June 5, 1912, patient was operated upon by Dr. Charles A. Elsberg, the idea being to relieve intracranial pressure. Upon making an opening over the left occipital region there was enormous pressure, and the left cerebellar lobe immediately protruded to such an extent that it was almost strangulated before the dura could be incised. The left cerebellar lobe was then seen to be apparently the seat of an infiltrating tumor, apparently a glioma, extending from before backward. Some of this tissue was removed, and the wound closed. Patient made an uneventful recovery from the operation, with the exception of a slight rise in temperature, with occasional vomiting, on the fourth day. On July 2d the ataxia was less marked and there was general improvement; no pain nor vomiting; patient able to sit up voluntarily without effort or dizziness. He left the hospital July 6th. His present condition was entirely satisfactory, and he had resumed his violin practice. Microscopical report: No gliomatous tissue was found in the specimen, so that the good result in this case was entirely produced by a simple decompression, the growth being still in front of the exposed cerebellar lobe.

The president, Doctor CLARK, said that in dealing with slow growing tumors of the cerebellum, especially in early life, it was difficult to say just what was going on either in the tumor or cerebellum itself by the symptoms presenting, as the frontal lobes of both sides were closely connected with both cerebellar lobes and had reciprocating functions. Though the cerebellum made little recovery after tumor removal, it was quite possible for the frontal brain to take up cerebellar functions of equilibration and defective muscle tonus and regulate the same through the cerebrocerebellar pontine tracts.

A Case of Acoustic Neuroma.—Dr. I. ABRAHAMSON presented a girl, nineteen years old, who had suffered from headaches and tinnitus for over two years. Subsequently she complained of vomiting, vertigo, and increased noises in the left ear, with diminution of hearing, and, for four months past, of visual disturbances, with gradual loss of sight. Gait unsteady, with staggering toward left; vision of left eye less than that of the right; for the past two months, amenorrhea. Examination of eyes showed double choked disk, with consecutive atrophy, most marked on the left side; coarse nystagmus to extreme left, less marked to the right; pupils large, some reaction to light present. Smell impaired; taste normal; corneal hyperesthesia; right face was flattened; spasm of left face; hearing very defective on left side; on the right side, somewhat diminished. The head was held in the left cerebellar attitude; there was a cerebellar gait, with a tendency to fall mainly to the left. No hypotonus; no ataxia; some weakness on right side; sensation intact; sphincters normal; deep reflexes slightly increased; no Babinski sign; Wassermann reaction negative. The symptoms in this case, he said, were typical of an acoustic neuroma. Because of the advanced optic neuritis, the advisability of an operation was doubtful.

The following officers were elected for the ensuing year: President, Dr. Smith Ely Jelliffe; vice-president, Dr. E. W. Scripture; corresponding secretary, Dr. J. Ramsay Hunt; recording secretary and treasurer, Dr. C. E. Atwood.

Letters to the Editor.

ON MEMBERSHIP IN THE COLLEGE OF SURGEONS.

CHICAGO, *June 10, 1913.*

To the Editor:

Since the organization meeting of the College of Surgeons of America many inquiries have been received as to the method of procedure required to attain fellowship in this organization.

To the fifteen surgeons comprising the Board of Regents, representing territorially all sections of the North American continent, has been intrusted the delicate task of formulating a membership plan, to include the reception of applications for membership and the final election to fellowship in the college of those fulfilling the standard of requirements. The founders of the college conferred upon the Board of Regents almost unlimited freedom of action in carrying out this preliminary work.

While it is true that three classes of surgeons were declared eligible to election to fellowship in the college immediately, the resolutions dealing with each of these classes provided that each individual thus named shall be confirmed by the regents before he can be formally declared a Fellow of the college.

These three groups include the surgeons and men practising surgical specialties who have been in the practice of their specialty for a considerable length of time and who are recognized as surgeons of established reputation. They are divided for convenience into three classes: Class A, men who were chosen to organize the college by the Committee on Foundation; Class B, surgeons who are members of one of the fifteen national organizations of surgeons and surgical specialties which are designated as constituent societies; Class C, surgeons of prominence not included in Class A and not affiliated with any of the societies represented in Class B.

For Class D, which will include all other candidates, namely, young men recently graduated in medicine who wish to practise surgery as a specialty, and men who have been in the practice of medicine for a longer period and are desirous of developing a surgical specialty, a special committee of the Board of Regents is carefully preparing a standard of requirements for admission, and this plan will be presented for the approval of the governors at the November meeting.

Of the A, B, C, and D classes of members, the first three classes will be subject to consideration during the next six months, and while the men in these classes have been declared eligible to immediate membership, the Board of Regents has taken measures to subject these names to the same careful scrutiny that will be employed in the selection of members from Class D.

No man will come before the Board of Regents for final election to fellowship until the applicant has made a formal statement in writing that he is desirous of becoming a member, such application to be accompanied by the membership fee.

Surgeons representing Classes A, B, and C will receive notice that they are eligible under the by-laws, and on request will be sent blanks upon which they can make their applications.

Surgeons who come under Class D, and in this class is included all legalized practitioners who are desirous of becoming members, will be furnished blanks by the secretary upon which they may make their applications, which in due time will be carefully considered by the Board of Regents.

It is the desire of the present Board of Regents to establish the precedent that any applicant for fellowship in the college will receive the fullest consideration.

Finally, when a surgeon's original application has been passed upon favorably by the Committee on Credentials, he will be sent a fellowship blank upon which he may make his declaration of acceptance of the principles of the college, together with such other data and information as the regents may require as a matter of record. The applicant will then be duly elected by the Board of Regents a fellow of the College of Surgeons of America.

Franklin H. Martin, M. D.,
General Secretary.

CONTROL OF POSITIVE WASSERMANN RESULTS.

The Neurological Institute, New York City.

June 8, 1913.

To the Editor:

In my article "Control of Positive Wassermann Results," appearing in your issue of June 7th, the following mistake appears. The wording under the photographic illustration of apparatus used reading "Apparatus used in Doctor Van Slyke's method of controlling Wassermann results" should read "Doctor Van Slyke's apparatus for estimation of N used by author in control of Wassermann results." This error is an omission on my part, due to my failure to correct proof. If you will kindly make note of the error, it will be much appreciated.

D. M. Kaplan.

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Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences. Second Edition, Edited and Revised. By Milton K. Meyers, M. D., Neurologist to the Jewish Hospital Dispensary and to St. Agnes's Hospital Dispensary, Philadelphia, etc. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. vii-564. (Price, $5.)

We doubt whether it will be ever possible to compile a perfect medical dictionary of English and foreign languages. The present edition of Lang's German-English Dictionary shows the usual incompleteness and incorrectness which are not so much the fault of the author as of the object itself. The literature of the German medical journals is very large, as these journals appear not only in Germany but also in Austria, Switzerland, Sweden, Finland, Hungary, Russia, our own country, etc. Thus, new words are permanently coined and the German medical terminology thus formed is very often to the detriment of the language and offers a poor testimony of the philological sense and education of the author. The present edition contains, indeed, a great number of words, but we are convinced that the book could easily have been reduced, with advantage, to at least one third its present size. Repetitions are found in great numbers, and combinations of words have been carried to an absolutely unnecessary accumulation. Some minor misprints also occur, for example: "glottis-erwiderer," etc. The print is clear and precise, and the makeup is good.

Etudes d'endocrinologie. Par Docteur Naame. Paris: A. Maloine, 1913. Pp. 74.

Organotherapy is classed by the author as a branch of antibactericidal therapy. Basing his views upon the views of Gilbert, Hutinel, Sergent, Starling, Sajous, Paulesco, and other modern investigators, he presents a summary of the application of the method and clinical examples of its practical value. Many features of this monograph are suggestive.

Le Gout et l'odorat. Par L. Larguier des Bancels. Questions biologiques actuelles. Collection de monographies publiées sous la direction de M. A. Dastre, membre de l'Institut, professeur à la Sorbonne. Paris: Librairie scientifique A. Hermann & Fils, 1912. Pp. 94.

In this monograph an effort is made to coordinate the numerous and varied researches upon the physiology of the senses of taste and smell. The sensations awakened, the nature of the excitants which through the olfactory and gustatory areas evoke sensory impressions, etc., are reviewed in an exceedingly instructive manner, with modern investigations as groundwork.

General Chemistry of the Enzymes. By Hans Euler, Professor of Chemistry in the University of Stockholm. Translated from the Revised and Enlarged German Edition by Thomas H. Pope. First Edition. First Thousand. New York: John Wiley & Sons, 1912. Pp. ix-323. (Price, $3.)

This work is an excellent translation of the author's studies of the enzymes published at various times in technical journals. Being intended particularly as an aid to scientific research in enzymology, the book is necessarily technical; yet when we recall the importance of the action of pepsin in the gastric juice, of trypsin in the intestinal canal, of cytase in the phagocytes, and other active agents in biological activities which the physician meets at all times and on all sides, it becomes evident that a close study of this work by so competent a biological chemist will prove of great value.

Thérapeutique des maladies infectieuses. Par les docteurs M. Garnier, médecin des hôpitaux de Paris, Nobécourt, professeur agrégé á la Faculté de médecine de Paris, Noc, médecin major du service de santé des troupes coloniales, et P. Lereboullet, médecin des hôpitaux de Paris. Avec 19 figures dans le texte. Bibliothèque de thérapeutique publiée sous la direction de A. Gilbert et P. Carnot. Paris: J. B. Baillière et fils, 1913. Pp. lv-639.

The older conceptions of the infectious diseases have undergone considerable transformation in recent years; bacteriotherapy, resotherapy, the initiators of active immunization, have ranged themselves besides antisepsis. The present work is an admirable review of these truly scientific advances. The exanthemata and also pertussis, parotiditis, diphtheria, tetanus, typhoid fever, acute articular rheumatism, influenza, erysipelas, cerebrospinal meningitis, bacillary dysentery tuberculosis, and infantile syphilis being considered from the standpoint of therapeutics, and the tropical diseases are admirably studied through the light newer methods have shed upon them. On the whole, the work is a credit to its authors, and, being well bound (an exception in foreign books) likewise to its publishers.

The Carrier Problem in Infectious Diseases. By J. C. G. LEDINGHAM, M. B., D. Sc.; Chief Bacteriologist, Lister Institute of Preventive Medicine, London, and J. A. ARKWRIGHT, M. D., Assistant Bacteriologist, Lister Institute of Preventive Medicine, London. (International Medical Monographs. General Editors, Leonard Hill, M. B., F. R. S., and William Bulloch, M. D.) London: Edward Arnold; New York: Longmans, Green & Co., 1912. Pp. vii-319. (Price, $3.50.)

That this is a timely book hardly needs to be emphasized. It treats of one of the promising lines of epidemiology which cannot but serve to extend materially the prophylaxis of infectious diseases. In selecting but six diseases as the objects of their investigation, typhoid and paratyphoid, diphtheria, epidemic cerebrospinal meningitis, dysentery, and cholera, the authors not only showed considerable discernment, but were able to produce a very satisfactory work; the subjects treated being those upon which sufficient exact knowledge is available to afford appreciable elucidation. The amount of material collected by the authors and their own contributions to the subject give the book exceptional value.

Le Problème physiologique du sommeil. Par HENRI PIÉRON, directeur du Laboratoire de psychologie physiologique de la Sorbonne. Paris: Masson et Cie, 1913. Pp. xv-520.

The study of sleep, so rich in physiological researches and yet so poor in results, has received twelve years of the author's attention. Owing to the many contradictions with which the subject is studded, he undertook an analysis of its foundations through comparative physiology, hibernation, and other forms of seasonal peculiarities of this function. The multitude of theories as to the physiology of sleep or hypnosis are carefully analyzed, and shown experimentally to be wanting. The biology of sleep; its circulatory and respiratory phenomena; its relationships with digestion and secretion, thermogenesis; its sensory motor phenomena; states analogous to sleep; narcolepsy, lethargy, somnolences, narcosis, hypnosis; morbid sleep; insomnia; fatigue; the relations of sleep to intoxications, are studied in turn. The author reaches no fixed conclusion, though the trend of his labors suggest that sleep is due to the presence of a toxic hypnotoxine capable of inhibiting functional activity. On the whole, this work is, without question, one of the most satisfactory on the subject that literature affords.

Meetings of Local Medical Societies.

MONDAY, *June 16th.*—Medical Society of the County of Erie, N. Y.; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, *June 17th.*—Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Medical Society of the County of Kings, N. Y.; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, *June 18th.*—Medicolegal Society; Buffalo Medical Club; Northwestern Medical and Surgical Society of New York; New Haven, Conn., Medical Association; New Jersey Academy of Medicine (Jersey City).

THURSDAY, *June 19th.*—German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, *June 20th.*—Brooklyn Medical Society; clinical Society of the New York Postgraduate Medical School and Hospital.

Official News.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending June 7, 1913:

Baker, M. C., Passed Assistant Surgeon. Detached from the *Colorado* and ordered to the *Pittsburgh.* **French,** G. W. R., Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y. **Halsey,** W. H., Assistant Surgeon. Ordered to the *Montgomery.* **Kerr,** W. M., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Station, Honolulu, H. T. **Ledbetter,** P. B., Assistant Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered to the *Pompey.* **Rider,** C. E., Passed Assistant Surgeon. Detached from the *Pompey* and ordered to the Naval Hospital, Olongapo, P. I. **Smith,** G. T., Surgeon. Detached from the Naval Station, Honolulu, H. T., and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

Diament—Harwood.—In Bridgeton, N. J., on Monday, June 2d, Dr. Edward L. Diament and Mrs. Anna Harwod. **McCall—Spencer.**—In Naugatuck, Conn., on Saturday. June 7th, Mr. William E. McCall, Jr., of Philadelphia, and Dr. Elizabeth C. Spencer, of Norristown, Pa. **Reynolds—Nixon.**—In Baltimore, on Sunday, June 1st, Dr. Calvin Louis Reynolds and Miss Amelia G. Nixon. **Schilling—Lever.**—In Philadelphia, on Wednesday, June 4th, Dr. Francis Marion Schilling and Miss Lydia Lever. **Scott—Van Zile.**—In New York, on Tuesday, June 3d, Dr. Walter F. Scott, of Birmingham, Ala., and Miss Sally Van Zile. **Yarbrough—Ramsey.**—In Charlottesville, Va., on Saturday, May 31st, Dr. Henry C. Yarbrough and Miss Blanche Ramsey.

Died.

Baker.—In Pittsburgh, Pa., on Wednesday, May 28th, Dr. Hugh Baker, of Connellsville, aged forty-six years. **Beach.**—In Milford, Conn., on Monday, June 2d, Dr. Edward Beach, aged forty-seven years. **Crane.**—In Lowville, N. Y., on Monday, June 2d, Dr. Frederick A. Crane, aged seventy-two years. **Ellaby.**—In South Park, Ky., on Tuesday, June 3d, Dr. Ernest M. Ellaby, aged thirty-seven years. **Forchheimer.**—In Cincinnati, Ohio, on Sunday, June 1st, Dr. Frederick Forchheimer, aged sixty years. **Gilday.**—In New York, on Saturday, May 31st, Dr. Walter C. Gilday, aged forty-three years. **Green.**—In Holt, Mich., on Saturday, May 24th, Dr. George D. Green, aged sixty-five years. **Harrison.**—In San Antonio, Texas, on Sunday, May 25th, Dr. John Tyler Harrison, aged forty-seven years. **Holman.**—In San Saba, Texas, on Sunday, May 25th, Dr. George P. Holman, aged sixty-five years. **Holt.**—In Grand Rapids, Mich., on Monday, June 2d, Dr. Charles H. Holt. **Jones.**—In Boston, on Thursday, June 5th, Dr. George W. Jones, of Cambridge, aged sixty-four years. **Lauder.**—In Bridgeport, Conn., on Saturday, May 31st, Dr. Robert Lauder, aged seventy-two years. **McCauley.**—In Yellow Springs, Ohio, on Sunday, June 1st, Dr. John McCauley, aged eighty-seven years. **McEvoy.**—In Stamford, Conn., on Monday, June 9th, Dr. James P. McEvoy. **Pitman.**—In Kirkwood, Mo., on Thursday, May 29th, Dr. John Pitman, aged seventy-six years. **Relihan.**—In Chicago, on Saturday, May 31st, Dr. Harry J. Relihan. **Reppert.**—In Rockford, Ill., on Thursday, May 29st, Dr. Lyell Reppert, of Muscatine, Iowa, aged thirty-seven years. **Ring.**—In Arlington Heights, Mass., on Tuesday, June 3d, Dr. Allen Mott Ring, aged sixty-eight years. **Risk.**—In Summit, N. J., on Saturday, May 31st, Dr. James Boyd Risk, aged fifty years. **Shockey.**—In Columbus, Ohio, on Monday, May 26th, Dr. John W. Shockey, aged sixty-eight years. **Spear.**—In Wilmington, Del., on Monday, June 2d, Dr. Owen C. Spear, aged forty-nine years. **Stone.**—In Bay City, Mich., on Friday, May 16th, Dr. David E. Stone, aged seventy years. **Turner.**—In Richmond, Va., on Monday, June 2d, Dr. John Daniel Turner, aged eighty years. **Wickman.**—In San Rafael, Cal., on Thursday, May 29th, Dr. William J. Wickman, aged fifty-eight years. **Winslow.**—In London, England, on Sunday, June 8th. Dr. L. Forbes Winslow, aged sixty-nine years.

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Original Communications.

THE CANCER RESEARCH INSTITUTE.*

BY J. G. ADAMI, M. D., Sc. D., LL. D., F.R.S.,
Montreal,
Professor of Pathology, McGill University.

I have been asked to speak upon the subject of the Cancer Research Laboratory or Institute, and find myself in the uncomfortable position, despite the best of intentions, of being able only to utter mere commonplaces. For, the more I have thought over the matter, the more it has impressed itself upon me that the recommendations that I can make are such as are already being carried out at the present moment in this city of New York; my conclusions must therefore be familiar to all here present who are interested in the subject.

The primary, as it is the ultimate, object of cancer research, is, let me emphasize, the discovery, not of the cause of malignant new growth, but of the means whereby humanity may be protected against this, its most awful scourge. Keeping this in mind, it will be seen that there are two methods of attack, both logical, both scientific, and it is for us to determine which promises the better results, the fuller and richer fruit. These I may term the direct and the indirect methods. Of the value of the former Ehrlich has recently afforded us a unique and triumphant demonstration. It is the method of experimental chemotherapy, and consists in this, that having first selected some drug or substance of known chemical composition, seen to possess a definite although imperfect influence upon the course of a particular disease, the investigator, with his corps of chemical assistants, proceeds to elaborate a succession of compounds of this primary substance with various radicals, and with his pathological assistants tests the relative value of these new compounds *seriatim* upon animals of the laboratory inoculated with the disease in question.

The research may be most laborious; hundreds of compounds may have to be devised, tested, and rejected, but it is a reasonable expectation that gradually in the course of all these trials certain groupings or radicals will be encountered presenting definite and specific action upon one or other phase of the particular morbid process, and that eventually some permutation or combination of such substance or substances will be discovered which will effectively destroy the causative agent within the tissues, or arrest the morbid process without coincident grave injury to the tissues of the individual. As all know, this is the method which is being followed by Wassermann and his coadjutors at the present moment at the Berlin Gesundheitsamt, and that with a certain measure of reported success in regard to cancer of the animals of the laboratory. It is a method which does not wait for preliminary studies upon the etiology and life history of cancerous and other new growths; it is a purely therapeutic method, even if at the same time purely experimental.

But it is by means of the other or indirect method that scientific medicine in our generation has scored its most notable triumphs. It is the method based upon the old Baconian aphorism, "Vere scire est per causas scire"; it is the etiological method. It may be laid down with a confidence so absolute that it becomes a truism that the extraordinary advances that have been made in the treatment and control of tuberculosis, diphtheria, and other infections during the last thirty years date from the moment at which the causative agents of these diseases became determined, or, failing that (as in the case of yellow fever), date from the time when, employing rigid analogy, the nature of the disease became realized; that is to say, the detection of the cause of one disease threw light upon the mode of prevention of an allied disease. Nay, more, without any depreciation of Ehrlich's most notable achievement, and without minimizing our admiration for the prodigious labor that led up to the discovery of "606," we must, I think, admit that even in Ehrlich's hands the direct method could not have succeeded but for the previous discovery of the causative agent of syphilis. It was the discovery of trypanosomes and treponemes, the fact that they can be detected in the blood or in the tissues, that made it possible to determine surely the influence of one after the other of the long series of compounds that was elaborated and tested. It is noteworthy that our knowledge of the therapeutic action of Jesuit's bark, or quinine, in relationship to malaria, dates back to the seventeenth century, but, notwithstanding this knowledge, it has only been in our own generation, only since Laveran's discovery of the malarial parasite, and Ross's elucidation of its life history, that we have been able to make the Isthmus of Panama and the New Jersey coast decently habitable.

Thus, while admitting that what may be termed the "Ehrlich method" pure and simple may give good results, I have grave doubts whether, applied to cancer, of which admittedly the causation is still

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*An address delivered at a stated meeting of the New York Academy of Medicine, May 15, 1913.

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undetermined, it can promise us anything in the nature of a full control of the situation. The bulk of scientific workers must, I imagine, be with me when I lay down that the indirect method of attack is that which should be selected, and that the ideal institute for cancer research must approach the solution of the problem by investigation into the nature of the process, into the nature of normal cell growth, into the life history of malignant growths, and so into the cause or causes of neoplasia. It is this course of action that promises most for the benefit of humanity.

Admit, then, that an institute along the latter lines is the better. Admit also that, despite the labors of a generation of multitudinous investigators, the cause of cancer is still undetermined. How are we to proceed? This, I think, will be accepted by all sensible men that the frontal attack offers little promise of success. It has been attempted too often with constant repulse. In other words, the energies of the institute and its staff must not be devoted to immediate endeavors to determine the cause. It is evident that the position has to be invested from all sides and thoroughly undermined; this course alone would seem to favor eventual success. And, to continue the metaphor, the question for us to determine is whether the ideal institute should regard itself as a single corps of the investing army, and as such devote itself to carrying forward the siege works against one particular aspect of the position; or on the contrary, whether it should be of the nature of headquarters for the staff, from which qualified men can be sent out to direct operations against the besieged, some on this side, others on that. There is much to be said in favor of each mode of procedure. The ultimate decision must depend upon the size of the war chest, as also I should add, upon the officer chosen for command. A man may be a superb regimental officer, but as a general in command may be a notable failure. Nevertheless, however brilliant the abilities of the commander, if the amount of money for the campaign placed at his disposal is so small that he can have but few men under him, it stands, I think, to reason that he is likely to accomplish more by concentrating their work and their efforts upon one particular line of attack than by frittering their energies in several directions. And here the director of the institute is exposed to a dangerous temptation. Those who have provided the war chest desire to see results; it requires no little strength of mind to concentrate upon one particular line of attack with the full knowledge that it may very possibly turn out to be futile; there is a distinct temptation in the circumstances to indulge in warfare of a more guerrilla type, knowing that if there are frequent repulses, there may from time to time be brilliant inroads upon the enemy's position. Now cancer research, to be well conducted, necessitates heavy expenditure, expenditure extending over long years; so heavy that, in general, I would lay down that the institute is most likely to be of service if it takes up one or at most two lines of work. The Imperial Institute for Cancer Research in London, for instance, may not have discovered the cause or mode of arrest of cancer, but it has done most valuable work by its accumulation of statistics of cancer incidence in different parts of the world, and among the lower animals. Thereby it has undoubtedly cleared the path and prepared the way for a more accurate understanding of the problem before us. Ehrlich's laboratory, devoting itself as it did for so many years, to a study of transplantation of tumors in the lower animals, has not, it is true, discovered the source of those tumors, but undoubtedly has added most valuable knowledge of the life history of malignant growths; confirmed and extended as it has been by the concentrated work accomplished by the British Imperial Institute. At St. Louis good work is being accomplished by studies upon the biology of the cell and its reactions to various stimuli. Nor has the frontal attack directed from the Gratwick Laboratory been other than most valuable. If Doctor Gaylord and his associates have failed to discover the causative agent of cancer, they have done yeoman service by the method of exclusion; they, too, have cleared the path. The same may be said with regard to the work of the institute under Professor Czerny at Heidelberg; if it has not discovered a cure for cancer it has done work of the highest value in testing and excluding reputed remedial methods. All must admit that through the work of these institutes, which tend to concentrate their energies upon the elucidation of particular problems, and, let me add with full appreciation, through the work of those other institutes and agencies like the Middlesex Hospital Cancer Research Laboratory, and the Harvard Cancer Commission, which have indulged in a more guerrilla warfare, we to-day have a much fuller knowledge of very many aspects of the problem than we possessed ten years ago; we are in a position to direct our endeavors far more methodically and more serviceably than at any previous period.

If, however, there be abundant funds, the ideal institute in a centre such as this, a centre possessing also abundant expert research workers in various branches of biology, may profitably, and indeed preferably, embrace the wider scheme, and may gather to it experts of all orders to make a combined attack from many sides. In such a great centre as New York, what I believe to be the plan outlined by Columbia University, under the Crocker bequest, and arrived at independently, I believe, by the Cornell authorities, appears to me to be admirable. I am only conversant with the bald outlines of the scheme; it is possible, therefore, that what I am about to say may not in its details fully conform to what is here being carried out. But briefly, my ideal for a cancer research institute in a great and wealthy city is a combination of an institute and what at Harvard they term a "commission," such as shall utilize to the fullest all possible means of attack. There must, I would lay down, be a central institute or administration building. This need not, it is true, be of great size, but should contain a library where should be collected all modern literature bearing upon cancer research, a director's office, and a suite of laboratories and animal rooms for the use of those making investigations in association with, or under, the immediate direction of the head of the institute. And, whether in the library or elsewhere, there should be a conference chamber for the periodical gathering together of workers to report upon and discuss the researches of members of the staff and the work being accomplished elsewhere. I have very decided views regarding the value of informal conferences of this nature; it is by combined effort that success is most likely to be obtained, not by isolated and secretive studies of individuals working for their own glory and their own advancement rather than for the reputation of the institute of which they are members, and the greater good of humanity. This may appear to some altruistic, but it is my experience that the success of a scientific institute is in direct ratio with the *camaraderie* therein manifested; and undoubtedly such free discussion of particular problems, by men who are working along very different lines, time and again results in valuable suggestions being offered and side lights thrown upon the subject by those whose work is of a wholly different order. It is at the *Grenzgebiete,* or perhaps more accurately at regions where work circles intersect, that the richest scientific results are obtainable. Time and again, for example, the physicist and the chemist, by their expert knowledge, can help the biologist, the histologist, and the microchemist, and can elucidate the results or note conditions in the tissues which strengthen the conclusions of the physiological chemist, or direct him along a fruitful line of enquiry. I need not say that the development of this *esprit de corps* depends essentially upon the influence of the head of the institute.

A desideratum of equal value is either a separate hospital or, what is often simpler, certain wards in a hospital already existing, in which beds are given over to cancer cases. Failing this, there is an undoubted danger that the work undertaken by the institute may become too academic, too remote from practical needs. As I laid down in my opening sentence, it must ever be kept in mind that the primary object of cancer research is, not the discovery of the cause, but of the prevention and cure of cancer. The hospital, as an integral part of the institute, serves ever to keep this in mind, besides affording material for exact observation. If we have decided against the advisability of limiting the work of the institute to experimental therapeutics, this is far from suggesting that therapeutics, experimental and otherwise, are to be excluded from its activities. On the contrary, this should form an important section of the work. There should, for example, be ample opportunities to employ and observe the action of radium and x rays. But here, as I believe is the case at the Memorial Hospital in this city, it must be laid down that if the hospital on its part affords beds for the treatment of patients, with the conscientious endeavor to ameliorate, if not to cure, their condition, so, in return, provided these endeavors are unsuccessful, the patient and his family must freely consent to a full post mortem examination. This, I may add, should obtain in all hospitals with free, or partly free beds.

But now beyond these two central sections of the institute there is, I hold, no need to duplicate special laboratories in physics, chemistry, physiology, pathology, cytology, and general biology, pharmacology, and experimental therapeutics; where these are already present in the city it appears to me both economical and most practical to utilize them to the fullest. Make the heads of such laboratories members of the executive of the institute, and by the development of the same spirit of cooperation, to which I have already referred, let the director of the institute freely consult with the members of that executive; let them together determine what promise to be profitable lines of investigation in each particular branch of science; let these other laboratories be thrown open to those willing and anxious to conduct investigations along any particular line under the direction of the heads of each laboratory, the maintenance of the investigators, and the cost of the investigation being paid by the institute; let the work so done be brought together and focused at the periodical conferences that I have described—and I may add, let the completed articles by all coadjutors be published in the annual report, or, it might be, in the transactions or journal of the institute.

It is, I would emphasize, by cooperation, by such combined efforts, that the most can be accomplished. All this depends upon the spirit in which the work is entered into, and above all things upon the spirit and enthusiasm of the director. But it can be accomplished, and this with promise of untold benefit to our kind.

INFLUENZAL OTITIS.*

By S. MacCuen Smith, M. D.,
Philadelphia,
Professor of Otology, Jefferson Medical College.

The subject of aural disease complicating influenza, more especially the various manifestations, or rather, the lack of manifestations during an influenzal attack, seems to be of sufficient importance to warrant a few observations on this very common disease.

Were it not for the small calibre of the Eustachian tube and the direction of the movements of the ciliated epithelium lining the same, we would have a very much larger percentage of ear diseases complicating the various abnormalities of the nasopharynx. This functional activity of the tubal epithelium, the direction of which is from the tympanic cavity to the nasopharynx, can be likened somewhat to that of the downward peristaltic action of the bowels. The fact that the tube is relatively much larger in infancy and early childhood, however, accounts for the ease with which the various microorganisms can overcome the resistance of the expulsive action of the ciliated epithelium during violent coughing, vomiting, sneezing, and blowing the nose, and the consequent greater prevalence of aural suppurations in early life. Then, again, in debilitating diseases, such as tuberculosis, pneumonia, typhoid fever, and certain types of influenza, the calibre of the tube is considerably increased by shrinkage or atrophy of its mucosa. This no doubt accounts for the fact that the majority of aural suppurations occur during the latter part of, or convalescence from, various diseases, the bacteria the more readily entering the tympanic cavity because of the impaired resistance of the tubal epithelium. Furthermore, bacteria enter the tympanic or mastoid cavity through the bloodvessels and lymph channels. This would seem to be the logical explanation for the development of so called primary tympanic and mastoid inflammation, more especially the latter. Indeed, we have no other means of explaining such conditions complicating general infections, particularly in the absence of any trace of nasopharyngeal disease.

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*Read at the Forty-sixth Annual Meeting of the American Otological Society, held in Washington, D. C., May 6 and 7, 1913.

Although the statement may be justified that it is virtually impossible to get a pure monobacterial culture from an acute suppurative otitis media at the time of incision of the membrana tympani, nevertheless, from a clinical viewpoint, the results of such a microscopical examination can be accepted as definitely defining the character of bacterial invasion. If, therefore, under such circumstances we find the influenza bacillus, I am inclined to accept the infection as being of this particular type, though the patient may not present marked general symptoms of influenza. In a goodly number of cases, more especially encountered during this past winter, we have found extensive aural complications in influenza, although the patients were not sufficiently ill to be confined to their beds. Then, again, in another type of the disease, our patients have been systemically seriously ill, whereas the aural symptoms have been decidedly mild in character.

I am well aware of the tendency of the medical profession, in the present day, to call almost any ailment influenza, in cases where no other disease definitely manifests itself, and this unscientific designation of an illness is analogous to a former period when all doubtful diseases were supposed to be malaria; yet I feel, as stated above, that a culture taken directly from the tympanic cavity does enable us to state definitely whether the otitic involvement is influenzal or otherwise, keeping in mind, of course, that the discharge becomes mixed, or polybacterial, in character very shortly after exposure to the air. We must give due consideration to, and recognize the formidable importance of the influenza bacillus, when this particular microorganism invades the human economy. For example, I quote the published findings of Lord, who, "in a series of 186 specimens of sputum from patients, unselected except to exclude those with tubercle bacilli, found organisms resembling influenza bacilli in fifty-nine per cent. and in almost pure culture in twenty-five per cent. In eight patients their constant presence in the sputum was demonstrated for two and one half years, and the suspicion is strong that they had been present for a much longer time." This observation was made during an interepidemic period, and illustrates the endurance and vitality of the influenza bacilli and their consequent power for almost indefinite destruction. Furthermore, the results of this scientific investigation furnish in detail a conspicuous example of the insidious nature of this organism, in some instances, in striking contrast to its virulence in others.

The aural destruction in some of my influenzal cases has been so rapid that we would naturally suspect that the streptococcus must have been an important factor. However, we were unable to find any microorganism other than that of the influenza bacillus in at least three cases, in each of which the bony destruction was very marked, causing exposure of the sinus and dura all in the space of about twenty-four hours; and this without any suffering from pain or other general manifestations on the part of the patient. In one of these cases a large sequestrum, involving the greater part of the tip, was removed, this patient giving the early symptoms of Bezold's mastoiditis during the preparation for the operation.

I may be permitted to digress for a moment from the subject of influenzal infection in order to state that, in my experience, pneumococcic otitis is very similar to the influenzal form in showing the extreme degree of destruction peculiar to the latter, as well as the tendency toward metastasis.

While the usual case of influenzal invasion is characterized by severe pain, decided rise in temperature, depression, and exhaustion, I wish to emphasize that type of case mentioned above, in which the destruction occurs very rapidly and the complications develop almost simultaneously, without the symptoms enumerated. This leads us again to lay stress upon the importance of the well recognized procedure of early incision of the membrane for the evacuation of tympanic secretion, as well as immediate major surgical intervention if this more simple measure does not give prompt relief.

So long as influenzal invasion attacks the young or those with a thin and more or less porous cortex, the direction of the inflammatory process is usually external, as is commonly manifested by the characteristic pain and swelling over the mastoid. In those cases, however, where the mastoid is small and the cortex comparatively thick and dense, the course of erosion will naturally follow the path of least resistance and invade the sinus or interior of the skull. As it is clearly impossible for us to definitely determine this point in many of these rapidly developing infectious diseases, the safety of our patient, I wish to repeat, lies in early operative intervention.

The first case that I wish to report is that of H. C., male, seven years of age. The parents assert that, prior to the present attack, this child never suffered from any form of ear disease whatsoever. Three days before his admission to the hospital the boy complained of a slight pain in the right ear, not sufficient, however, to interfere with his rest that night. The following day the pain recurred and the attending physician ordered a hot water bag applied to the ear. The patient also slept well this second night. On the afternoon of the following day, through a spontaneous rupture of the drumhead, a slight discharge appeared. Coincident with this, or forty-eight hours after the initial pain, the parents noticed a swelling over the mastoid process, extending below the tip into the neck. The next day, or three days after the onset of the disease, the boy was brought to the Jefferson Hospital and operated upon at noon. On examination we found the external auditory canal well filled with a creamy yellow pus, without odor. There was considerable edema and swelling throughout the entire osseous canal. The opening in the drumhead occupied the greater part of the posterior half. On operation, we found the edema over the mastoid process to be about three fourths of an inch thick. There were two small carious openings through the cortex, which bled freely as the periosteum was separated.

The entire cortex was thin, and upon its removal we found the sinus very far forward, superficial, and exposed through carious erosion in the superior half. The removal of some additional bone over the sinus provided for the escape of a considerable quantity of pus, and we therefore uncovered the vessel from the knee to the bulb. The sinus was bathed in such a large quantity of free pus (which escaped on the removal of the remaining bone covering the same) that we suspected a possible thrombus, which might have become disintegrated, the pus escaping from the bulb. As we approached the neck, however, we discovered that the pus had burrowed through the tip and we were evacuating the same from a Bezold's variety of mastoiditis. We therefore concluded not to interfere with the sinus for at least twenty-four hours, or a sufficient length of time to enable us to determine whether the child was actually suffering from a sinus thrombosis, inasmuch as there was no evidence, by palpation or systemic manifestations, that a clot had formed within the vessel. The antrum was also well filled with a quantity of pus and some granulation tissue. The patient made a slow but uninterrupted recovery, returning home at the end of the fourth week following operation.

This case well illustrates the rapid destruction that frequently accompanies an influenzal otitic inflammation, and also *forcibly* illustrates the almost total absence of suffering by the patient. It may be well, also, in this connection, to call attention to the fact that even though an early myringotomy had been done, in this particular instance it is doubtful whether the rapid destruction could have been prevented or even modified, for it would seem, in accordance with the findings, as stated above, that the mastoid process must have been involved simultaneously with the tympanic cavity.

Not long since I operated on a patient showing no general symptoms, but presenting equally destructive changes, in which the middle ear gave no evidence of inflammation other than a mild degree of myringitis. In this latter case we probably would be justified in claiming a primary mastoiditis, and yet, as stated on former occasions, I believe that the infection originated in the tympanic cavity and that the mastoid was secondarily involved, the former, on account of the patulous Eustachian tube, being able to drain and recover itself.

The second case is that of H. J. K., male, aged fifty-four years, apparently in robust health. Three days prior to admittance to the Jefferson Hospital this patient suffered from an attack of influenza, more especially involving the bronchi, at the end of which time he complained of pain in the right ear. The membrana tympani was decidedly red, though not bulging, but on the following day was markedly bulging and the serosanguineous fluid was evacuated by a prompt incision. The aural pain was relieved for about thirty-six hours, the ear in the meantime discharging freely. At the end of this period the patient complained of discomfort in the occipital region, as well as a return of the aural pain; all of which continued during the succeeding six or seven days. In the interval he also complained of pain over the mastoid process, which was increased on pressure. During the following twenty-four hours the ear discharged profusely, and the pain in the back of the head and over the mastoid process also markedly increased, although the patient's temperature and pulse remained practically normal. On this day, or eight days from the time of his initial pain, there was, in addition to the profuse aural discharge, a marked drooping of the superior and posterior wall. In addition, he became more or less erratic and irritable, the tenderness over the mastoid process was more pronounced, and we performed a simple mastoid operation. When the soft parts were divided the cortex bled freely, and there was found a small carious erosion through which free pus escaped, apparently under pressure. On removing the cortex, we found the cavity to be well filled with pus and granulation tissue. There was a perisinus abscess formation exposing the greater part of the vessel, and also carious erosion exposing the dura, through the tegmen antri. Although the patient's temperature and pulse remained virtually normal, his mental state and general head discomfort continued to grow progressively worse. Three days after the mastoid operation the temperature suddenly jumped to 102.3° F. and the pulse to 112, and the polymorphonuclear percentage, which was eighty-nine, with a leucocytosis of 19,800, suddenly rose to ninety-four, with a leucocytosis of 20,200. Accordingly, we promptly opened the wound, incised the exposed dura, and evacuated a temporosphenoidal abscess formation. This immediately relieved the breathing, which had been very labored, the patient requiring an additional amount of ether for the completion of the operation. During the first part of the following day his general improvement, including the mental state, was very marked, though he died at the end of about twenty-one hours, from acute pulmonary edema. As usual, we were unable to secure an autopsy, and therefore I regret my inability to report on the exact pathological findings.

Five years previously, this same patient had suffered from a suppurative influenzal otitis of the opposite ear, which progressed so rapidly and caused so much necrotic erosion that it was necessary to do a radical operation within the short space of about one week. This case well illustrates not only the rapid osseous destruction of an influenzal otitis, but also shows the rapidity with which a brain abscess formation can develop under the destructive influence of this particular type of infection.

MENSURATION AND PROJECTION OF THE POSTERIOR URETHRA AND VESICAL FLOOR.

By Means of Posterior Urethral Calipers and Radiography.[*]

A Preliminary Study and Report.

By Victor C. Pedersen, M. D.,

and

Lewis Gregory Cole, M. D.,

New York.

This contribution was suggested by the following circumstance. A case of suspected prostatic calculi was submitted to radiography by an expert with negative results, and with the statement that in the absence of a cystoscopy the radiograph would not locate the stones definitely as within the prostate or as within the bladder low down, because there was no known guide to distinguish the prostatic urethra and prostate as one zone from the fundus of the bladder as another zone in the photograph. It was hoped that the solution of this problem would be easy to accomplish in the three months previous to

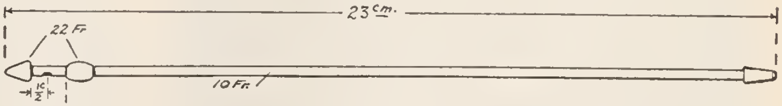

Fig. 1.—Catheter cystoprostatic calipers.

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[*] Read before the American Urological Association at the Annual Meeting, held in Boston, Mass., April 15, 16, and 17, 1913.

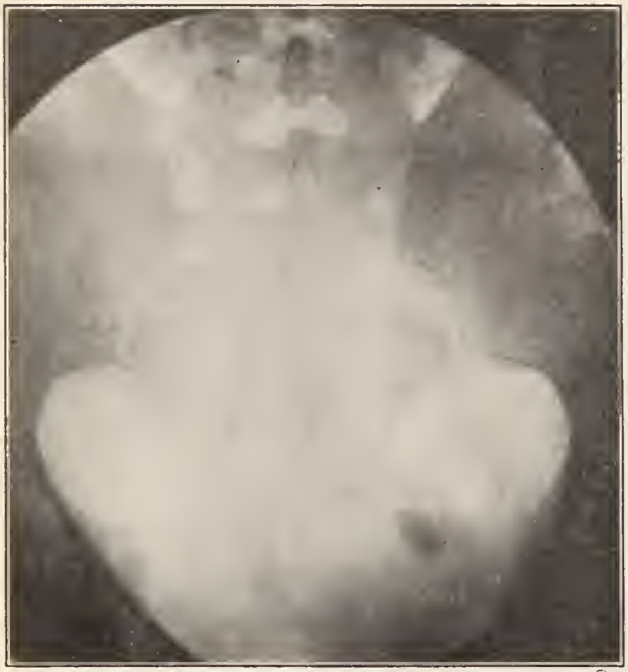

FIG. 2.—Radiograph of two silent stones with moderately enlarged prostate.

the meeting, when it was begun. But a number of unexpected peculiarities in the bladder fundus, neck, and posterior urethra became virtual obstacles to interpretation and conclusion of the findings in the radiographs. The number of illustrations in this contribution is therefore about half the number made, as the remainder were held out for study later and publication as part of the final report at the next annual meeting of the association.

The first element of doubt concerns the exact position of the outlet of the bladder. For this a new instrument of the catheter type has been devised and will be used in the final study, so that the bladder may be filled to moderate distention and then withdrawn until the flow ceases; thereby occupying the exact outlet with the conical head and avoiding the uncertainties incident to the solid or noncatheterizing instruments as explained later in this report. Figure 1 below shows this instrument, having a head 1 cm. long mounted on a 10 F. flexible copper catheter. whose vesical outlet is 0.5 cm. back from the base of the head at the midpoint of a space 1 cm. long, which is followed by a smaller oliveform head, also 1 cm. long. Thus when the conical head is in the bladder cavity at the neck, the outlet of the catheter will be closed by the sphincter muscle and the oliveform head will be a short distance, viz., about 1 cm., distal to the sphincter.

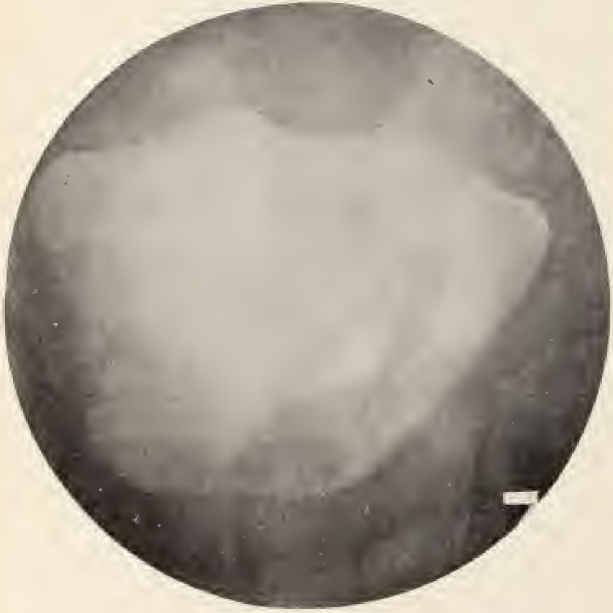

FIG. 3.—Radiograph representing two stones in the bladder and one in the right ureter.

The second point of uncertainty rests on variations in the geometrical form of the bladder shadow, and its relation with the upper margin of the symphysis pubis. Certain bladders give a spheroid or an ovoid form, while others add to either a projection downward, and thus prevent a pyriform appearance. Without the slightest effort to interfere with or anticipate the study of others, it is to be noted that Barringer and McKee are working up this particular detail. Suggested explanations are the following: Overdistention may in certain bladders cause a slight relaxation of the fundus and internal sphincter, with moderate prolapse into this downward projection. In order to avoid this circumstance the amount of fluid injected into the bladders

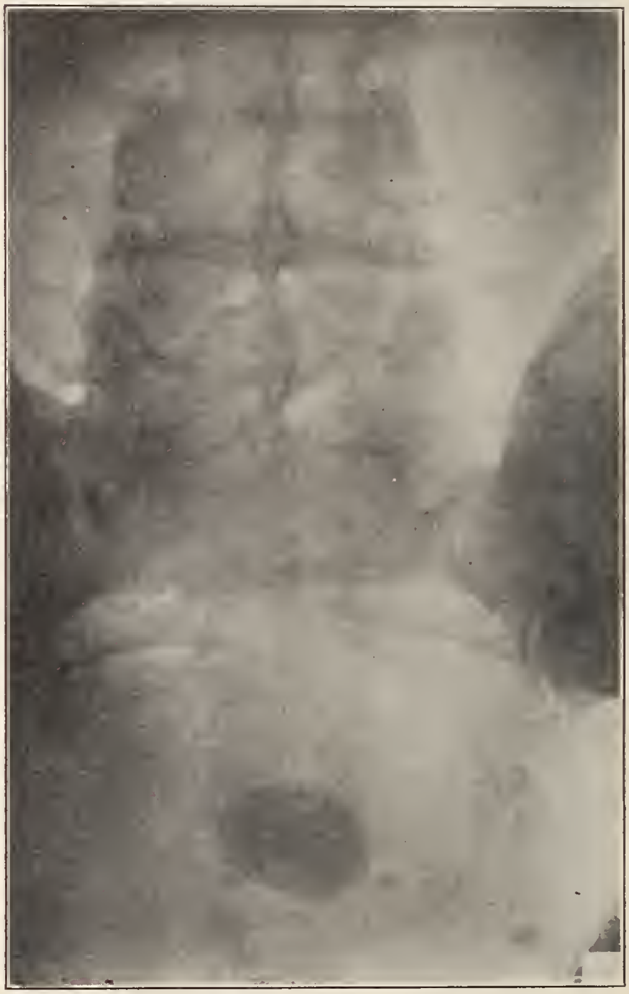

FIG. 4—Radiograph showing a vesical calculus.

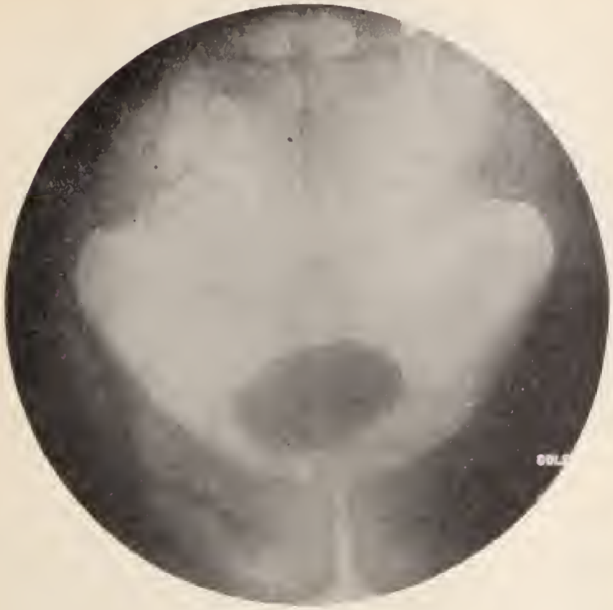

FIG. 5.—Radiograph showing a vesical calculus situated fairly high in the bladder.

was never more than 250 c. c., and in one or two of the pathological bladders was necessarily less, as hereinafter noted. Anatomical formation may well be a final explanation of the peculiarity, but for decision would require a very large number of observations. It must therefore be dismissed here with mere mention. The position of the x ray tube may well alter the form of the shadow of the bladder and its relation with the upper margin of the pubic symphysis. This was as far as possible avoided in our study by having the cone of the tube carrier at right angles to the table and its edge tangent either to the base of the penis in males, and clitoris in females, or to the upper limit of the symphysis as indicated by palpation. The latter was much the more common and seemingly appropriate position. Nevertheless, the aforesaid variations of the form and position of the bladder occurred. The separation between the bladder shadow and the symphysis may be due to the opening up of the prevesical space through the weight of the distending fluid in the recumbent position. In a recent operation for prostatectomy, with distention of the bladder with urine above the umbilicus, the writer found the prevesical space stretched open, so as to form almost a real rather than a potential cavity. This condition at once occurred to him as important in dealing with x ray work on the bladder. As already pointed out, the position of the sphincter is one essential point, as in the male it carries with it the position of the upper surface or base of the prostate, and the location of the apex of the prostate is the second important point for determination, for the reasons that the gland surrounds the posterior urethra, and that calculi and other conditions somewhat discernible by the x ray are in the gland and its portion of the urethra with nearly equal frequency.

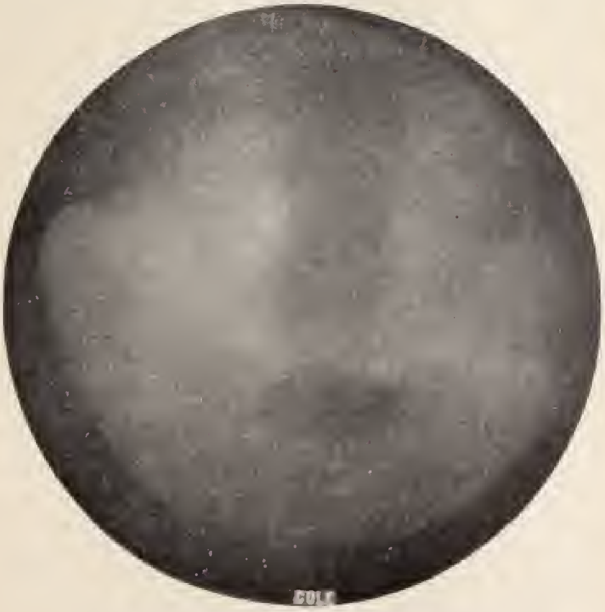

FIG. 6.—Radiograph showing a vesical calculus.

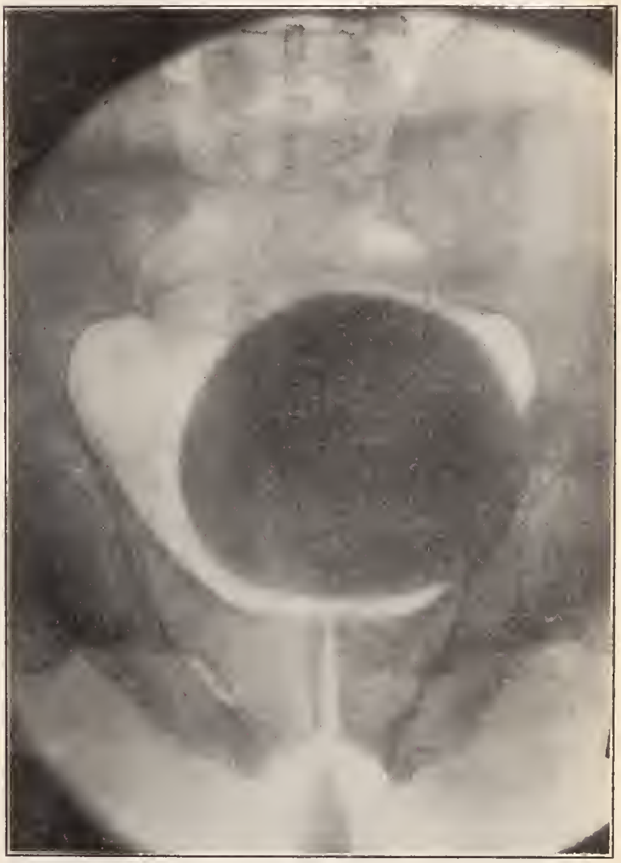

FIG. 7.—Radiograph of same patient as that of FIG 2, showing bladder filled with twenty-five per cent. argyrol.

The original posterior urethral calipers were discarded, but may be briefly described as having consisted in a 22 F. conical head, a flat flexible copper shaft with centimetre marks on the distal end, and a sleeve sliding easily over this shaft and bearing an olivehead 22 F. The instrument was not flexible enough, and the variations in position of the olive-pointed vesical portion made it impossible to seat the sleeve or urethral portion against the apex of the prostate with sufficient gentleness.

Historically it may be interesting to make note of preceding prostatic and urethral calipers, of which there seem to have been but three, none embodying the same principle as this. One was devised by G. Walker (*American Journal of Urology*, 1907, v. III, page 377). One part of the instrument traversed the other, but this, of course, is a universal principle of exploring and other instruments. The x ray does not figure in Walker's work. The device is described as a new instrument to measure the thickness of the prostate. Mansell-Moullin described a prostatometer in 1892 (*British Medical Journal*, 1892, p. 1344, second half). The principle embodied was that of a urethrometer. Cathelin, in 1908, described a prostatic "mensurateur" which sought to measure the thickness of the prostate from within the bladder. The principle was that of the old lithotrite. As a matter of fact, it was soon modified so as to fulfill both these purposes.

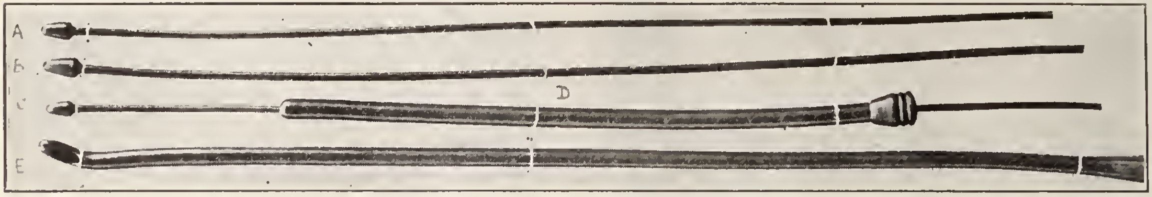

Fig. 8.—Instruments rendered impervious to x rays by impregnating their surfaces with lead.

No previous instrument appears to have been presented embodying that of the new one which will be applied to the balance of this study, viz., of a catheter, permitting the bladder to be filled and the exact position of its outlet shown by withdrawal of the instrument. This idea resulted from an endeavor to make a woven silk catheter impregnated with lead, so as to be impervious to the x ray. This permitted the foregoing manipulation as to the bladder and its neck. The position of the apex of the prostate was located by passing a small flexible bougie-à-boule alongside the catheter; not always with full success, however, as the head was so small, and frequently not between the finger and the catheter, that it escaped detection in the bulb of the urethra and was therefore advanced too far. The most successful of our studies was made with an ordinary bougie-à-boule, 24 F., curved to agree with the standard sound inserted into the bladder and withdrawn until its head seemed to lock on the sphincter. Over its shaft was passed a blunt uterine curette with its point bent at right angles to its shaft, which was likewise slightly curved on the same radius. This large loop was easily advanced along the urethra and readily and unmistakably felt in the bulb at the apex of the prostate. The transverse diameter of the true pelvis passes approximately through the spines of the ischia at their bases; this for the purposes of radiography of the pelvis is sufficiently accurate. This imaginary line is slightly posterior to the position of the ureters, which is also an advantage, inasmuch as many lesions of the bladder begin on the floor near the ureters, and that present in deformation of the bladder floor by tumors and enlargements of the prostate occurs above the ureters first and foremost. There is normally a slight pouching of the bladder beyond this line, so that one would therefore expect the shadow of the stones in the bladder to be in this line, if the bladder is reasonably normal; above it, if there is much pouching, and below, if the bladder floor has been altered by operation. It is hoped that our final study will tend to settle these points and that this preliminary study is at least suggestive in showing the probable facts.

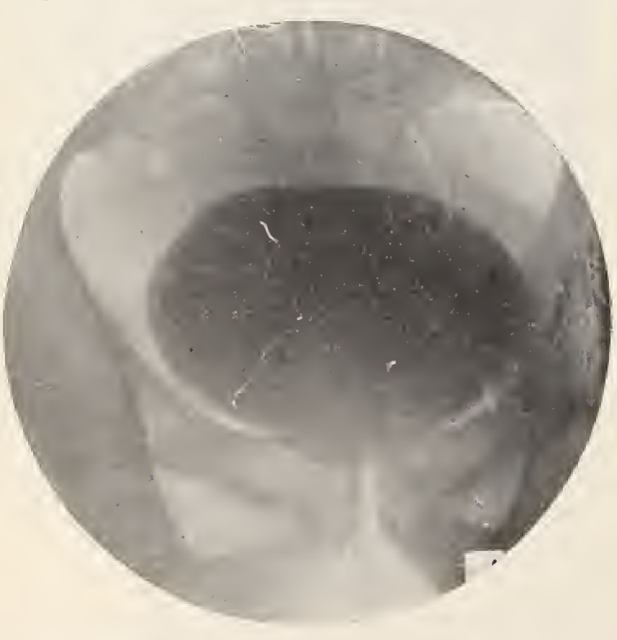

Fig. 9.—Radiograph of a normal bladder in a young man almost fully recovered from gonorrhea.

Fig. 2 is a radiograph of two silent stones with moderately enlarged prostate. The patient had had but one attack of very insignificant hematuria. The diagnosis was made with the cystoscope, which showed the stone just beyond the prostate in the usual depression. It will be noted that the stones lie in or slightly above the transverse diameter of the true pelvis, fairly well represented by an imaginary line connecting the two spines of the ischium. This particular photograph was taken by Dr. Byron C. Darling.

Fig. 3 represents two stones in the bladder and one in the right ureter.[1] The patient had undergone perineal prostatectomy about a year previous to the discovery of these stones and a double seminal vesiculotomy about three months before. It will be noted that the two vesical calculi are very low, but that their shadows do not merge with the shadow of the symphysis. No doubt the absence of the prostate gland accounts for this, at least in some degree. The shadow of the ureteral calculus is elongated to almost double the size of the stone, owing to the natural obliquity of its position in the ureter. Nevertheless, the imaginary line connecting the two spines of the ischia passes through the shadow, and therefore in a certain degree indicates

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[1] This case was reported in full in the *Medical Record*, December 28, 1912, Adenomatous Hyperplasia of the Prostate Gland, etc.

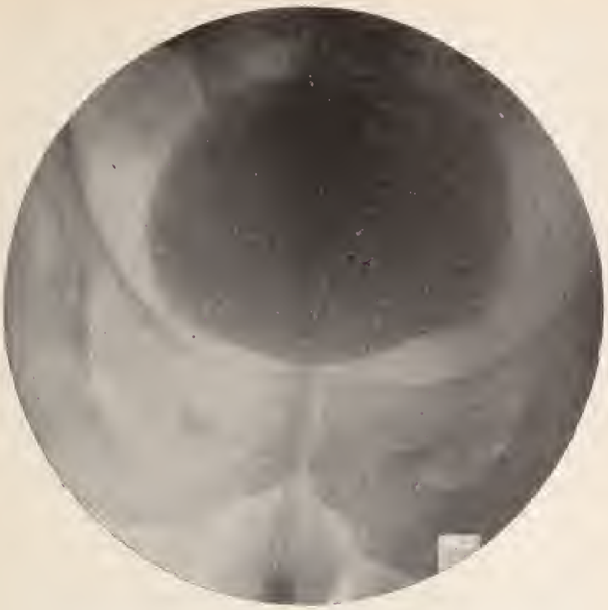

FIG. 10.—Radiograph of a postoperative case of traumatic stricture of urethra, cystitis, and moderate involvement of prostate.

the position of the ureters and centre of the floor of the bladder in the x ray picture.

The succeeding three figures, Nos. 4, 5, and 6, are all vesical calculi, situated fairly high in the bladder, so that the transverse diameter previously described, either cuts the stone, as in Figs. 4 and 6, or is tangent to the lower border, as in Fig. 5. The exact histories of these cases are lacking, so that one can hardly explain the variation of the position of the stones in Figs. 5 and 6.

Fig. 7 is the same patient as that of Fig. 2, but it shows the bladder filled with twenty-five per cent. argyrol, through a soft rubber catheter, up to 250 c. c. and the catheter slowly withdrawn, while a flow of the argyrol was continued so as to fill and distend the urethra behind a rubber band closing it at the sulcus of the glans. It will be noted that the bladder shadow fills the true pelvis as a whole, but nevertheless leaves a space almost one cm. wide between itself and the symphysis pubis. It will also be observed that no argyrol whatever remained in the posterior urethra, but that the shadow of this passage begins only at the bulb. These conditions showed that it would not be possible to demonstrate the position of the deep urethra in this way. It was therefore determined to adopt the expedient of impregnating the surface of ordinary woven bougie-à-boule, straight bougies, and catheters with lead, thus rendering them impervious to the x ray. A small number of these instruments was prepared in order to establish their fitness. The set is shown in Fig. 8.

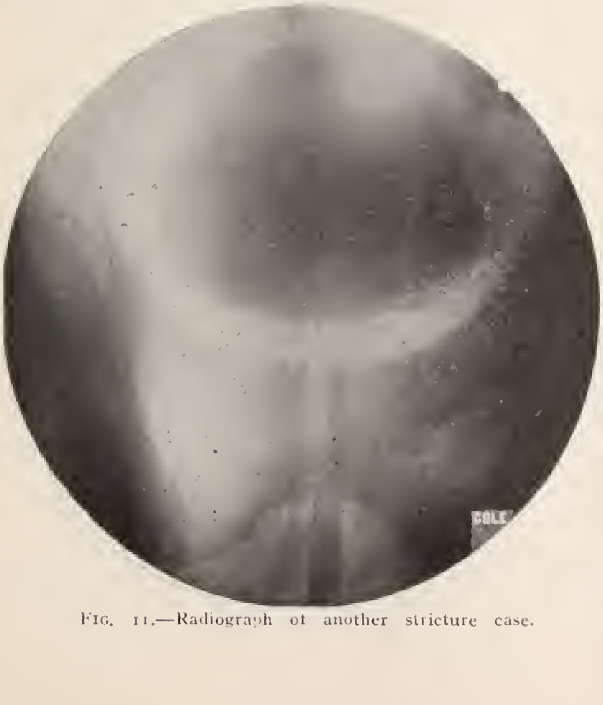

FIG. 11.—Radiograph of another stricture case.

The three bougies-à-boule are shown in *A, B,* and *C* of the figure, while *D* represents the straight bougie with its end drilled to pass over the shaft of the former three instruments. It lies in this relation with bougie-à-boule *C*. The purpose of this arrangement was to pass the ball sound into the bladder and seat its head at the neck, and then to pass the straight bougie along the shaft to the apex of the prostate. The impregnation of these instruments with lead was not particularly successful, which militated against entire satisfaction with the various plates. It happens that the majority of them are in the series withheld for the final study during the coming year.

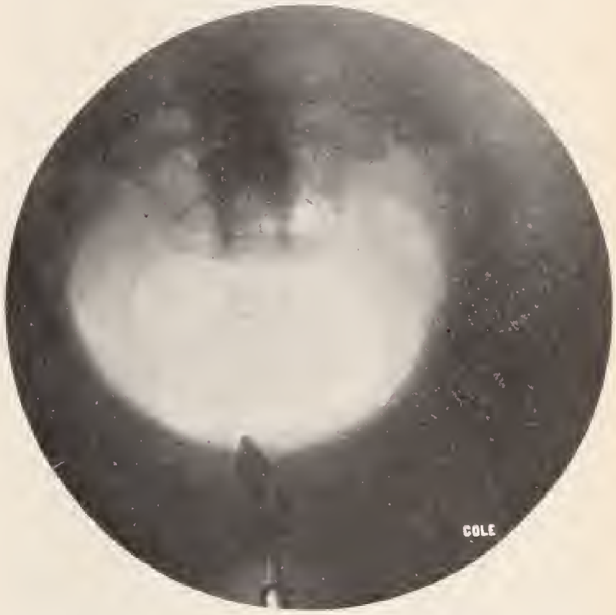

FIG. 12.—Radiograph of a case of chronic urethritis and moderate stricture.

Fig 9 is a normal bladder in a young man, almost fully recovered from acute gonorrhea. The distending fluid is twenty-five per cent. argyrol up to 250 c. c. total, through the lead covered coudé catheter shown in Fig. 8. This was then withdrawn until outflow ceased, and the photograph taken. It will be seen that the shadow of the bladder fills a large portion of the true pelvis; that there is no separation of complete type of it and the symphysis; that there is prolongation downward of the neck, producing the pyriform shadow, and that this cannot be distinguished from the tip of the catheter. There was no attempt made to designate the tip of the prostate in this observation.

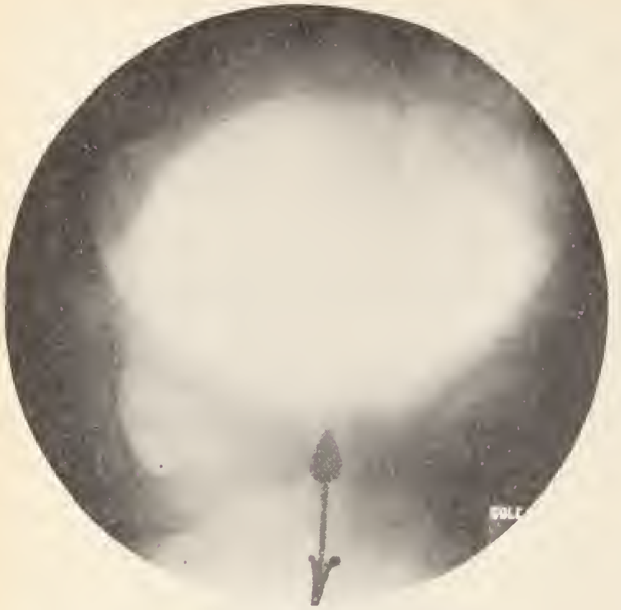

Fig. 13.—Radiograph of a woman, showing the ovoid form of bladder.

Fig. 10 is a postoperative case of traumatic stricture of the urethra, cystitis, and moderate involvement of the prostate. About 150 c. c. of argyrol twenty-five per cent. solution were run into the bladder, whose capacity was diminished to this degree. The lead covered coudé catheter was used again in the same manner as in the preceding case. One easily perceives that the shadow rests high in the true pelvis, fully one centimetre away from the symphysis, and that there is a very slight tendency to the pyriform type. In the region of the bulb a dense shadow is seen, concerning which there is uncertainty. No instrument was passed along the side of the catheter, or, in fact, could be if desired, inasmuch as the urethra of this patient is very small. The shadow may be the stricture mass, which was very dense and nodular.

Fig. 11 illustrates another case of stricture, the patient having been subjected to numerous operations, but none at the hands of a urologist. The photograph shows the same conditions as those illustrated in Fig. 10 except that the bladder is more contracted and the seat of chronic suppurative cystitis. For this reason distention could not be carried beyond 150 c. c.

The failure of the lead covered catheter to give definite results especially when argyrol is the distending medium led us to change to air. There seems, however, to be a certain amount of danger connected with this, as brought out by Marks in connection with his air dilating urethroscope. We shall, therefore, now discontinue to use air.

Fig. 12 shows a case of chronic urethritis and moderate stricture; 250 c. c. of air were run into the bladder, and the resulting picture shows these details. There is a bladder shadow which extends below the line of that of the symphysis, but in the spheroid type and not the pyriform. It likewise crosses the head of the metal bougie-à-boule seated in the neck. The loop shadow at the bottom of the picture is the curette bent on itself and passed over the shaft of the bougie-à-boule to the apex of the prostate. Here again the position of the instruments is suggestive of the proper location and dimension of the prostatic urethra, and rather proves that this combination is the best for establishing the place of this anatomical part in a radiograph.

Fig. 13 is that of a woman and has the advantage of permitting one to be very sure of the position of the two instruments in the urethra, which in the human female corresponds with the membranous and prostatic portion of the male. Air was again used, 250 c. c. and the bougie-à-boule was passed into the bladder and gently withdrawn, and its position examined with the finger in the vagina. The curette was then passed to the meatus and vestibule. examined there with the finger, and the photograph taken. The latter shows the following curious facts: The ovoid instead of spheroid form of bladder of the female, as compared with that of the male. It is separated a considerable distance from the tip of the bougie-à-boule. Although not at all pyriform, it passes almost 1.5 cm. below the shadow of the symphysis. The two instruments, although they show about the same length of the urethra as in the male, are also fully 1 cm. or more lower down, so that the head of the ball sound is at the pubic arch, instead of at or just below the upper border of the symphysis.

Fig. 14 shows a postoperative prostatectomy. The bladder was distended with 250 c. c. of air and a metal bougie-à-boule was passed into it and seated at the neck as carefully as possible. Then with the finger in the rectum the smallest lead covered bougie-à-boule was passed down to the apex of the prostate. A number of peculiar features are worthy of comment. The shadow of the bladder is well above the line of the symphysis, although its floor is gone or greatly altered through the removal of the prostate. One would expect a very decided pyriform shadow here, but sees only that the shadow passes down to the apex of the ball sound in an interesting but rather inexplicable way. The lead covered bougie-à-boule is distinct enough, and the

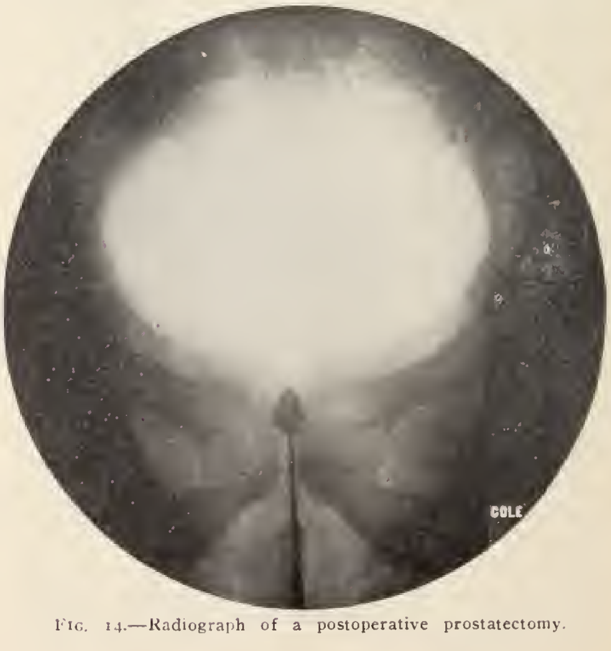

Fig. 14.—Radiograph of a postoperative prostatectomy.

distance between it and the metal instrument is a fair representation of the normal length of the prostatic urethra and its position.

We feel that there is a real value in this study and that when possible the combination of a curette and a metal bougie-à-boule on a catheter shaft will set at rest the various points of doubt frankly confessed in the opening paragraphs of this contribution. The work will be continued through this year, and if possible enlarged so that at the next annual meeting final results will be in hand.

45 West Ninth Street.

THE PHILOSOPHICAL ANATOMY OF THE LUNGS.

By Edmond Souchon, M. D.,
New Orleans.
Professor Emeritus of Anatomy, Tulane University.

We must first note that the lungs are considered by some as the most important or vital of all the organs of the body. The great Bichat, in his immortal *Recherches sur la Vie et la Mort,* states that the lungs, the heart, and the brain are the *tripod of life,* with a leaning toward the greater importance of the lungs. Those who have visited the Orfila Museum of Anatomy in Paris must have been impressed by the grand lifesize statue of Bichat at the foot of the stairs leading to the museum. It symbolizes the *Recherches sur la Vie et la Mort.* It represents Bichat bending slightly over a youth that is standing. His lofty brow and fine features are set as if listening to the whisperings of his inspiring genius, ready to write them down with the pencil he holds in his right hand. There is a shade of the irony of fate in the fact that the sublime extoller of the lungs was afflicted with tuberculosis of the lungs. He died at the age of thirty-three, leaving the scientific world filled with his glorious name. It is equally worthy of notice that the illustrious Laënnec, who carried the auscultation of the lungs to such a marvelous perfection, died of tuberculosis, contracted, it is said, in the autopsy room.

We must remember that the lungs are the only organs that contain air. It is noteworthy that they are never entirely empty of air, nor is the heart of blood. It is notable that the lungs are the most frequently diseased of all the organs. The dictionary says that *lung* means *light,* not heavy. I am told that butchers and the common people call the lungs the *lights.* We should remember that the lungs belong to the group of organs that have lobes like the brain, thyroid, thymus, liver. We should also take notice that they belong to the class of double organs. like the salivary glands, suprarenal capsules, kidneys, ureters, seminal vesicles, testicles, Cowper's glands, ovaries, Fallopian tubes. It is a fact to be noted that they are asymmetrical organs, the only double organs to present this peculiarity.

We should remark that the two lungs almost fill the whole chest, i. e., occupying one good third of the trunk cavity. The two occupy more space in the body than any other organ or organs. We should lay some stress upon the difference in size of the two lungs. The right is somewhat larger than the left, although it is shorter, owing to the encroachment of the liver into the right chest; yet the left lung is narrower because of the encroachment of the heart upon it. It is worthy of notice that the axes of the lungs are directed vertically, like the suprarenal capsules and the kidneys. It is to be noted that the lungs are free all over their surface except at the very small point of the hilum. The spleen and the kidneys are the only other organs presenting this feature. A special note should be made of the mobility of the lungs. They expand and contract rhythmically. The heart is the only other organ presenting the peculiarity of expansion. A notable point is that the lungs impart passive motion to the chest walls, but they receive no extrinsic movement. It should be remarked that they follow the chest walls during respiration, and are constantly in contact with them. It is worthy of more than passing notice that from the first breath of life at birth to the last parting gasp, the lungs never rest. Neither does the heart. Both are the only two organs that never sleep.

We must call attention to the shape of the lungs. They are irregularly conical, the irregularity consisting in the concavity of their inner surface to accommodate the heart and in the excavation of their base to fit the convexity of the diaphragm. It is remarkable how extensive is the external or convex surface of each lung. This is unique, the liver being the next organ presenting an extensive surface. Another characteristic feature is also presented by that surface in the interlobar fissures. This is for the purpose of facilitating the expansion movements of the lungs. We must observe that the left lung has only two fissures, whereas the right has three. The reason for this is that the right lung is more compact, is broader than the left, which is longer and more slender. These fissures are found in no other organ. The brain presents the Sylvian fissure, but there is no motion between the surfaces of the fissure and the arachnoid bridges over it, whereas in the case of the interlobar fissures the pleura dips in between the lobes so as to facilitate the gliding movement between the lobes.

We must note especially the peculiar gray color of the surface of the lungs in the adult, together with the black pigment strewn all over it. Their color and pigment are unique, being seen in no other organ. We will also call attention to the faint lines marking the base of the superficial lobules, lines so much better marked in the fetus and child. The surgeon is interested in remembering that the whole of that surface is accessible through the intercostal spaces.

It is to be particularly mentioned that the internal surface of the lungs is much more complex than the outer one. First, we should note that it is much more limited; next, that it is concave. Then the hilum is the most typical of all the hilums. It is peculiar that it is the only point where the lungs are bound, being free all over. It is a feature that that part of the lung in front of the hilum corresponds to the pericardium and heart, and that part which is behind it to the posterior mediastinum; finally, that the part above it limits the superior mediastinum. Special attention should be called to the under surface of the lung, commonly called its base. It is the only organ presenting such an excavated or concave surface. The base of the suprarenal capsules is also concave, but it is very insignificant compared to this one. The concavity is to accommodate the convexity of the diaphragm. It is to be borne in mind that it is more marked in the right lung, because of the greater bulging of the liver into the chest. A point of interest is that very relation of the liver with the lung, explaining how abscesses of the liver may discharge into the lungs and bronchi. We must insist particularly on the bulging of the apex of the lung into the supraclavicular region, beyond the border of the first rib, which makes an indentation in it. This presence of the lung in the space mentioned above, is a fact that surgeons must not forget in operating there. There is no organ, except the liver, that presents such a broad and extensive posterior border. It is truly a surface. Together with the external surface it presents a remarkably extensive area for stethoscopic examination.

There is quite a contrast between the anterior and the posterior borders. The former is short, thin, slightly sinuous, and festooned; recalling somewhat the anterior border of the liver. There is no parallel anywhere to the inferior border, the one which circumscribes the base. We must lay stress on its thinness and sharpness, which fits it to come down into the inferior or diaphragmatic cul-de-sac, during inspiration, especially a deep one. The descent and ascent of that sharp edge during respiration explains how there may be a penetrating wound of the chest and pleura without penetration of the lung if the injury is inflicted there during expiration, when the lung has receded from the cul-de-sac.

The color of the lungs is *sui generis;* its pigmented appearance is without an equal anywhere. It is worth noticing that the pigment does not exist in infancy and that it comes on and extends as the subjects advance in life. It is interesting to remember that it is said to be due to particles of dust and coal absorbed from the atmosphere and incorporated into the lung tissue.

Again, the consistency of the lungs is unlike that of any other organ. Its soft and downy sensation is unique and characteristic. It is due to the presence of air in the vesicles. Another unique and characteristic trait is that upon pressing the lung tissue between the fingers there will be felt a sensation of fine crepitation. It is said to be due to the passage of fine bubbles through the liquid contained in the vesicles, or the rupture of the walls of the vesicles by the air under the pressure. It is extraordinary how small is the density of the lungs. It excels all the other organs in that respect. It will float almost entirely when put in water, whereas all the other organs will sink below the surface when thrown into a bucket of water. Of course, that is due to the air in the vesicles which cannot be entirely expelled in spite of all efforts, whereas the gas in the stomach and intestines can be removed entirely, and the organs made to sink. We should lay some emphasis on the little friability of the lungs. The thumb nail penetrates them with difficulty; they are the toughest of all organs; they do not tear easily. All this is due to the character and nature of the tissues entering into their composition. That toughness, which cooking will not overcome, is the reason the lungs are not used for human food. They are the only solid organs that are not eaten by man. However, they are fed to cats, very likely because they are cheap, not being eaten by human beings, and may be cats eat them because they can get no other food. We must take special notice of the elasticity of the lungs. It is without an equal. No other structure will stretch like them. It is also wonderful how retractile they are, coming down immediately after having been inflated. That is due to the large amount of elastic tissue entering into their composition. That retractility was also necessary for the proper function of the lungs.

A notable exception from the structure of other internal organs is the absence of a regular, distinct, fibrous envelope under the endothelial layer. We find there no membrane, ever so thin, that can be peeled off like the one enveloping the kidney and the liver. This may be due to the excessive amount of fibrous tissue entering into the structure of the lungs; it is densely packed and flattened on the surface, and renders a separate envelope unnecessary. We must admire the simplicity of the formation of the pulmonary lobules by the dilatation of the terminal inner surface of the hollow lobules of the depressions or alveoles called the air vesicles, to increase the surface of action. The whole recalls the lobule of the racemose glands, the air vesicles representing the acini and lobule, and the capillary bronchi the initial excretory duct. It deserves noting that a whole frog's lung represents a whole lobule of a human lung. The greatest characteristic of the structure of the lungs is the immense amount of fibrous and elastic tissue that enters into their formation. There is so little of all the other highly organized tissues that they may be ignored. However, we cannot let pass the smooth, muscular fibres found in the capillary bronchi, where they seem to play the same rôle they do in the vascular capillaries. Two facts worthy of more than passing notice are the presence of a ciliated epithelium in the bronchi, and the fact that the epithelial cells, constituting the lining of the air vesicles, are deprived of nuclei. For this reason they are by some called epithelial plates. The absence of the nucleus is to leave as little as possible of substance between the air in the vesicles and the blood in the capillaries.

The circulation of the lungs is most interesting in that it presents two separate circuits or circulations, the pulmonary and the bronchial. The liver presents a dual arterial circulation, represented by the hepatic artery and the arterial or intrahepatic portion of the portal system, but there is only one set of veins, the hepatic veins; whereas in the lungs we have a pulmonary artery with the pulmonary veins and the bronchial arteries with their satellite veins. We should be impressed by the large size of the pulmonary artery, larger in its initial portion than the aorta itself, as it has more blood to transmit at any one time than the aorta has at any one time. Its origin from the heart is without example; it comes from the infundibulum of the right ventricle and seems truly a prolongation of it, quite different from the abrupt origin of the aorta from the left ventricle. Let us note that the presence of this infundibulum or funnel of the right ventricle is to facilitate the flow of the blood into the artery, thus requiring less force from the ventricle. This because the right ventricle has weaker walls and driving power than the left, and has to drive a larger amount of blood at a given time than the left ventricle. We must make special mention of the presence of the semilunar valves at the orifice of the pulmonary artery. These valves have no duplicates anywhere except in the aorta. Why are they pocket shaped? We must remember that the valves of the pulmonary artery are not as thick as the aortic valves, because they have not to resist such a long column of pressure. It is a most striking fact that there are no valves at the orifices of the two cava veins and the four pulmonary veins. This is because the pulmonary artery, the aorta, and the great coronary vein are connected with the base of the ventricles, which are almost entirely fibrous, presenting no muscular, sphincterlike fibres around their orifices, as we find in the case of the two cava veins and the four pulmonary veins. These fibres close these orifices as soon as the auricles start to contract; therefore no valves were needed there.

The course of the pulmonary artery is special and unique in that it is at first anterior to the aorta, then winds around it, and finally is under it. The two vessels twist or interlock like the two bent index fingers placed one under the other, the right over the left. There is no other such vessel winding around another in such manner. It is not to be forgotten that the remnants of the arterial duct of Arantius are almost always found in the adult. We should make the special point that the right branch of the pulmonary artery divides into three divisions, whereas the left divides only into two, because the right lung has three lobes, against the left's two. But it is the terminal capillaries of the pulmonary artery that call for admiration of the wisdom of the Maker. We should remember that they form three capillary plexuses, one around each lobule, a second one in the partition between the air vesicles, and a third one beneath the epithelium. All this for the purpose of breaking the force of the heart's impulse and preventing the rupture of the capillaries, whose walls are reduced to the very minimum of thinness so as to have as little intervening tissue between the blood in the capillaries and the air in the air vesicles.

We must take note that although there is but one pulmonary artery there are four pulmonary veins; but we must see the point that each vein is much smaller and that the four are not as large as the artery, since the blood in passing through the lungs has lost some of its bulk. We must also remark that there are only two right pulmonary veins, whereas the artery has three divisions in the right lung. It is very remarkable that the orifices of the pulmonary veins have no valves to prevent the reflux of the blood when the auricle contracts. The cause for this is that when the auricles contract they contract from the periphery to the centre, and their first action is to close the sphincterlike fibres placed at the orifice of the pulmonary veins. Last, but not least, we must not lose sight of the fact that the pulmonary veins carry a purer blood than the artery because of the depurative action undergone by the blood in passing through the lungs. With regard to the bronchial arteries we must be struck by their very small size as compared to the large organs to which they are distributed. The explanation for this is that they are simply the nutrient arteries of the lungs and that the lungs are composed of tissues which require very little nutrition. Besides, it is most remarkable that the amount of solid tissue in the lung is quite small. When a lung has been compressed against the mediastinum by thoracic effusion continued long enough to expel all the air, the large lung is often reduced to the dimensions of the hand, in thickness, length, and breadth. It is to be noticed that the bronchial artery, being only a nutrient artery, the capillaries of this reaching the lobules and the air vesicles, do not share the provision of nature in the thinning down of their walls and reaching the subepithelial spaces, so that they do not participate in the process of osmosis. We must make a note that the bronchial veins do not discharge into the auricles, but into the innominate veins or one of the afferent branches.

Let us remember that the lymphatic glands, into which the lymphatic vessels of the lungs discharge, are located at the bifurcation of the trachea, so that when they are much enlarged they contribute to the distress of the breathing by compressing the bronchi. It is thoroughly out of the ordinary that these glands should be of a black color, due to the transmission through the lymphatics of the coloring matter found in the lungs. It is quite a remarkable fact that the lungs receive no single special nerve. The nerve supply is abundant, but comes from a plexus, the bronchopulmonary. This arrangement is the same as for all the organs of vegetable life. None receive a large nerve dirctly, but get their supply through plexuses. The liver, receiving the right pneumogastric nerve, is the only exception. We must note especially that the lungs present in their chemical composition less of the highly nitrogenous compounds than any of the other organs, except perhaps the cartilages.

It is to be remembered that during fetal life the lungs are solid organs, and as such they will sink in water. This is a capital sign in medical jurisprudence, because it is positive proof that in case of infanticide the child was killed before it breathed, whereas when the lungs float it is a sure sign that death occurred after the child had breathed. We should make a note that this test is called the pulmonary docimasia. We must recall here that another remarkable feature during fetal life is that through the arterial duct of Arantius, the bulk of the blood from the right ventricle evades the lungs and goes directly into the aorta. The reason of this is that the lungs are passive and inactive in fetal life. Only enough blood is allowed to get through them to keep, as it were, the machinery in working order, ready for the big work that is coming. With the first breath the lungs fill with air, and from that moment they never cease to act until death. We must bear in mind that after birth the arterial duct becomes obliterated because all the blood goes to the lungs and ceases to pass through the duct. We must lay special stress on the fact that during fetal life and infancy the lungs have a pink color and the outlines of the base of the superficial lobules are well marked, owing to the greater quantity of connective tissue. But after adolescence the lungs begin to become gray, then pigmented, while the outlines of the lobules become less distinct from the absorption of the greater abundance of connective tissue observed in the fetus. All these things increase with age. It is to be noted especially that in men working in the coal mines the lungs often become very black, even presenting coal dust calculi or deposits. It is the anthracosis of miners.

BILATERAL NEPHROLITHIASIS.*

By OLIVER C. SMITH, M. D.,
Hartford, Conn.

Operations for vesical calculi were among the earliest successful procedures, and for many years before the aseptic era a number of surgeons became expert in the operation of vesical lithotomy. Operations for calculi of the kidney and ureter, however, are of comparatively recent date. Watson and Cunningham (1) state that the operation of Dr. William Ingalls, performed at the Boston City Hospital, October 8, 1872, was one of the earliest, if not the first; the operation was reported in the *Boston Medical and Surgical Journal* in 1882 (2).

Operations upon the kidney, prior to the use of the cystoscope, ureteral catheterization, urinary separation, and skiagraphy, were undertakings of great risk, from lack of accurate diagnosis and lack of knowledge of the condition of the opposite kidney. We of the present day and generation are wonderfully blessed in the advancement of this science, which, by the cooperative efforts of men devoting their energies to different lines of scientific investigation and diagnostic technic, have placed the surgery of the renal tract upon a scientific basis and reduced the hazards to a minimum.

The frequency of simultaneous occurrence of stones in both kidneys is variously estimated from fifty per cent. (Lagneu) (3), quoted by Hugh H. Young, to a much smaller proportion. The invariable possibility of this condition should, however, be in our minds when planning operation for renal stone. The fact that a stone may cause few or no subjective symptoms for long periods of time must be remembered when diagnosticating unilateral calculi. The importance of skiagraphing both kidneys and the entire renal tract, and of determining the patency of each ureter and the renal function of each kidney is paramount. The skiagraph taken and interpreted by an expert is the most accurate and important factor in the present day diagnosis of urinary calculi. Authorities differ as to the possibility of securing radiographs of certain types of renal calculi, noticeably those composed of uric acid and cystine. In order to determine the comparative density and resulting radiographic shadow, my associate, Dr. Arthur C. Heublein, has made radiographs of a number of renal calculi of various composition, which will later be presented. It will be seen that even the uric acid and cystine calculi furnish definite shadows, and while it is true that these radiographs were made of the stones after they were removed, in a favorable subject with a modern apparatus it is possible in a certain percentage of cases to secure shadows of even the uric acid and cystine deposits.

In this series of calculi we have not depended upon the appearance and physical characteristics of the stones, but have subjected them to chemical analysis. When we consider that primary renal calculi are the result of inherent conditions, rendering both kidneys equally liable, such as hereditary tendency, uric acid or crystalline diathesis, the drinking of water believed to be productive of stones, and faulty catabolism, all of which are general conditions, it is strange and fortunate that bilateral calculi are so comparatively infrequent. In our zeal to apply the latest and most satisfying aids to diagnosis, we may at times be inclined to neglect the older and still valuable methods of rigid physical examination and accurate painstaking microscopical search for urinary sediment, so skilfully taught and practised by our friend, Dr. Louis Heitzmann.

In a communication made to the International Urological Association in Paris in 1908, Dr. F. S. Watson reported twelve cases of bilateral calculus in which both ureters were simultaneously blocked by calculi, and in which both kidneys contained secreting substance which was functionally capable to a useful degree. In three of these cases no operation was performed, and the three patients died; in seven cases a unilateral operation was done, and all the patients died. In two cases a simultaneous operation was done upon both kidneys, and both patients recovered. The dangers of bilateral are more than double those of unilateral calculi. Structural damage and infection may go on simultaneously in both kidneys, finally rendering operation upon either or both far more serious than the operation for unilateral affection. Anuria is, unfortunately, prone to follow these operations, even though the unoperated kidney has fairly good function before operation; and the phenomenon is supposed to be due to a renal reflex which inhibits excretion.

Two problems confront us in bilateral renal calculi; first, shall we operate at all, and, if so, on one or both kidneys, in the absence of moderate or urgent symptoms; second, shall we operate upon both kidneys at one time? The greater number of operations in bilateral calculi have been performed on one kidney, the other kidney being attacked later or not at all. in accordance with the developments following the first operation. Kümmel (4), Watson (1). and some others advocate operating on both kidneys at one time. A frequent contraindication to this procedure is the serious condition at the time of operation; the added time, increased amount of anesthetic, the additional shock and hemorrhage have to be reckoned with. In two of the speaker's cases the primary operations were performed in severe emergency; in one instance the operation upon the second kidney was performed later when the patient was in better condition. Unlike the cases reported by Kümmel, these patients improved markedly between the first and second operations. In the first case the second operation called for some weeks later by an acute infection occurring in the unoperated kidney, and in the second case an elective operation was performed for a large stone with infection some weeks following nephrostomy and nephrolithotomy for pyonephrosis and nephrolithiasis.

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*Read before the Medical Association of the Greater City of New York, March 17, 1913.

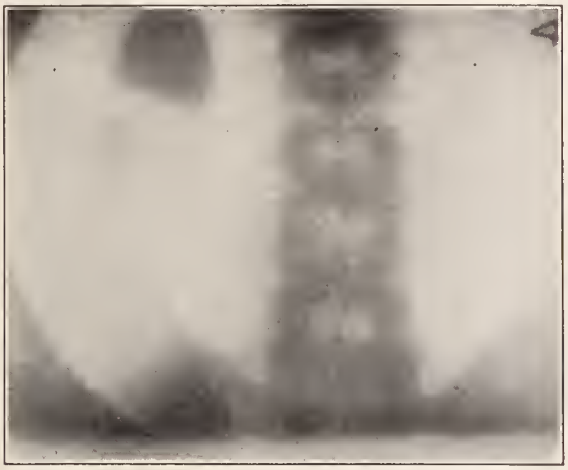

FIG. 1.—Case I. One large and a few smaller stones in left kidney; indistinct shadow of stone in right kidney.

The speaker begs the privilege of reporting three cases of bilateral renal and ureteral calculi with operations.

CASE I. Bilateral nephrolithiasis; pyelitis; nephrolithotomy. W. W.; male; age twenty-four years; single; English; milk peddler; Westfield, Conn.; referred by Dr. J. F. Calef, Middletown, Conn.

Family History: Irrelevant. No tuberculosis or cancer, and no history of calculi.

Personal History: Patient had never been seriously ill. Habits, good; denied venereal disease. Present illness: Eighteen months ago urinary frequency developed, accompanied by dysuria and occasional hematuria, with pain in the left kidney region. Weight reduced from 151 to 145 pounds. Felt weak and exhausted after his work; was not conscious of having had rise of temperature; had neither cough, hemoptysis, nor night sweats.

Condition at Time of Examination: Medium height, slightly built, nervous and apprehensive. Pulse 90. Temperature 99° F. Pupils reacted to light and accommodation; reflexes normal. Throat, heart, and lungs negative. No palpably enlarged glands. Abdomen negative; no urethral discharge. Rectal examination revealed prostate slightly enlarged; tenderness at vesical neck. The urine was cloudy, acid reaction, contained pus and blood, but no crystals nor tubercle bacilli were found. Skiagraph by Dr. A. C. Heublein revealed one unusually large stone and a few smaller ones, occupying the pelvis of the left kidney; a filbert-sized stone occupying the pelvis of the right kidney. The phenolsulphonephthalein renal function test (Dr. M. N. Hepburn) gave twenty per cent. of elimination. By reason of stricture at the vesical neck, cystoscopy was unsuccessful. Ten days later the patient was found to have a rise in temperature, frequent pulse, and tenderness over the left kidney, whereupon left nephrolithotomy was decided upon.

Operation: The operation was performed at the Hartford Hospital, June 29th, under nitrous oxide-oxygen anesthesia. A left oblique lumbar incision was made, kidney exposed and delivered; found enlarged and fluctuating; large stone was readily palpated in the pelvis. Incision was made over the convex border of the kidney, and a huge oxalate of lime stone weighing thirty-three grammes and measuring 7 x 8 x 5 c. m. was removed from the pelvis of the kidney through the cortical incision. Two stones of marble size, and a number of sandlike stones were removed. Hemorrhage was controlled by hot, moist, gauze packs; drainage of the kidney by rubber tubing carrying gauze. The patient suffered hardly any shock from this operation, and at the end of forty-eight hours was in excellent condition, the kidney draining freely, 700 to 1,000 c. c. of urine being voided per urethram. The patient returned to his home at the end of four weeks after a comfortable convalescence, and at the end of six weeks was apparently well. He was without pain, his temperature was normal, and he returned to his work. On September 8th he was seized with pain in the right renal region (over the unoperated kidney), accompanied by chill and followed by high temperature. The urine became scanty, contained a quantity of pus, and was voided frequently. This condition persisted for four days, when the patient was removed to the Middlesex County Hospital. Examination at this time found the patient with temperature 104.8° F.; pulse, 120. Cheeks flushed, perspiring freely, tongue heavily coated, and marked tenderness over the right kidney, which was enlarged. The urine contained a quantity of pus. Patient was given warm baths, quantities of water, and on the following morning the temperature had receded to 101.5° F. Right nephrostomy under nitrous oxide-oxygen anesthesia was performed. Through a right lumbar incision, the much swollen kidney was exposed, incised over the cortex, and 15 to 20 c. c. of pus liberated from the pelvis. Three stones were extracted; two of marble size, and one the size of a kernel of corn. The kidney was drained with rubber tubing and gauze. Patient bore the operation well with but slight shock, the acute symptoms of the infection at once abating. Patient left the hospital at the end of four weeks, going on to complete recovery; he regained his weight and resumed his work.

CASE II. Bilateral nephrolithiasis; pyelonephritis; nephrostomy. E. S. M.; male; aged forty-five years; white; married; native of United States; manufacturer; Middletown, Conn.; referred by Dr. J. E. Loveland, Middletown, Conn.

Family History: Good.

Personal History: Aside from the usual diseases of childhood, patient was not seriously ill until thirty-five years old, when he had symptoms of renal lithiasis. Two years later he was carefully examined by a distinguished Boston physician. Skiagraphs were taken, and a diagnosis of bilateral nephrolithasis established. No operation advised. May, 1912, patient was brought to us for diagnosis and advice, having suffered pain in the lower right abdominal quadrant, Doctor Loveland suspecting appendicitis. Skiagraph showed large stones in right and small shadows in left kidney. Phenolsulphonephthalein function test gave no urine coming from left ureteral orifice at the end of forty minutes; right kidney secreting fairly well. Doctor Hepburn's diagnosis: Bilateral nephrolithiasis, with left kidney not secreting. Respirations were embarrassed, particularly with patient on left side. There was no cough or expectoration; urinary output continued about the same in amount, always containing large quantities of pus. Patient improved during the early part of September; at the end of a week relapsed; elevated temperature, rapid pulse, and hurried respiration developed, with marked tenderness, pain, and swelling in region of right kidney.

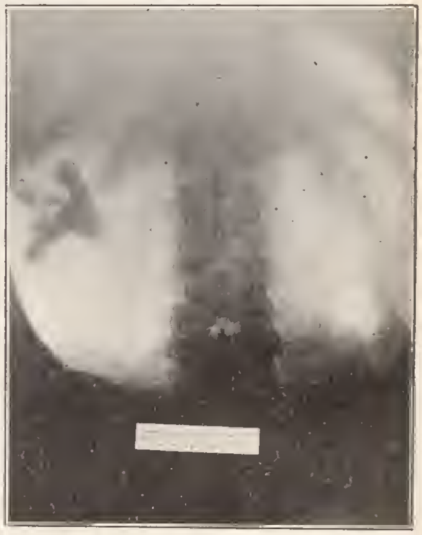

FIG. 2.—Case II. Large stone in right, and three small stones in left kidney.

Condition at Time of Examination (Middlesex County Hospital, September 15): Tall, well nourished, very ill looking man; skin, lemon color, rapid pulse, temperature ranging from 101 to 102° F.; diminished breath sounds in right lower lung; presence of fluid not determined; no pleuritic friction rubs. Heart sounds weak. Distinct tenderness and swelling in right renal region posteriorly, urine becoming more scanty and containing more pus. Diagnosis, right pyonephrosis and bilateral nephrolithiasis.

Operation: Middlesex County Hospital, September 15th. Nitrous oxide-oxygen-ether anesthesia (Dr. O. R. Witter). On placing patient upon table on left side, respiration became much embarrassed; operation proceeded with under difficulties. Rapid left lumbar incision, exposure of enlarged kidney, and incision of kidney through cortex; 500 c. c. of urine and pus evacuated; stones not palpated. Kidney hurriedly drained with tubular drain and iodoform gauze.

Considerable shock followed the operation, but after the first day the patient was at no time in immediate danger. There was free urinary drainage from the incised kidney, and from 500 to 700 c. c. of purulent urine were discharged per urethram; three rough, irregular, small stones were recovered. The patient steadily improved.

Examination on December 5th: For the past two weeks there had been no elevation of temperature. Patient had gained in weight, strength, and especially in color. The urine still contained a large amount of pus, and a second skiagraph confirmed the earlier findings, revealing large stones in *right* kidney.

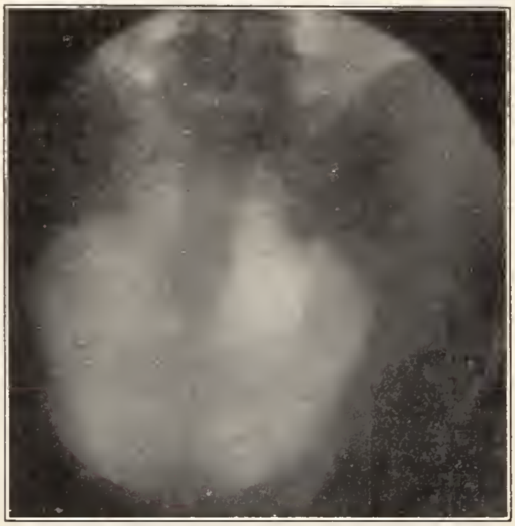

Fig. 3.—Case III. Impacted calculus in right ureter.

Operation: Believing it was wise to attack this kidney before patient again became septic, operation of nephrolithotomy was performed at Middlesex County Hospital December 5th under nitrous oxide-oxygen anesthesia (Doctor Witter). An oblique, curved incision in the right lumbar region with exposure of the kidney which was fixed by adhesions. Incision into kidney and extraction of several stones, the largest of which measured 4½ x 4 x 3 cm. This stone occupied the pelvis of the kidney extending into the calices. The pelvis and cortex of the kidney were drained with rubber tubes and gauze, the wound closed about the drainage tubes. There was a moderate amount of temporary shock following the operation. Patient reacted well.

Patient's convalescence was most gratifying. He left the hospital at the end of four weeks, had regained his weight, and resumed his work. A small sinus persisted on the right side.

Case III. Calculus anuria following nephrectomy for calculus pyonephrosis. Nephrolithiasis; calculus in ureter; impacted; ureterolithotomy. E. W.; female; aged thirty-five years; white; married; Jewish; housewife; Hartford, Conn.; referred by Dr. William Leichner.

Family History: Irrelevant.

Personal History: Was never seriously ill until ten years ago when she had peritonitis. Five years later, after suffering pain in the left kidney region for several months, patient had a left nephrectomy performed by an excellent surgeon at St. Francis Hospital for calculus pyonephrosis. Patient recovered and remained well for three and one half years when she had severe renal colic on the right side. This occurred at varying intervals until four days ago, when following an attack complete anuria developed. She became drowsy, had dull pain in the right renal region and occasional cramplike pains in the right iliac fossa.

Condition at Time of Examination: Medium sized, fleshy, well poised woman, rather pale and of heavy facial expression. Her physical examination was practically negative, except some tenderness in the right renal region. Satisfactory palpation was difficult on account of fat. Some tenderness existed over the course of the right ureter; pelvic examination was negative. Skiagraph showed fusiform stone 1½ to 2 cm. in length in the right ureter, 3 to 6 cm. from bladder. Patient's general condition was surprisingly good, in view of the fact of four days' anuria. Blood pressure, 130 mm. No headache; no vomiting; moderate drowsiness. Cystoscopic examination (Doctor Hepburn) revealed normal bladder, no urine appearing at either ureteral orifice. Ureteral catheter entered right ureter a distance of 5 cm. where it met soft obstruction, due to sacculation and folding of ureter from obstructing calculus. Diagnosis, right ureterolithiasis, causing hydronephrosis and anuria; left kidney absent.

Operation: Hartford Hospital, December 12th. Nitrous oxide-oxygen anesthesia with perfect relaxation. Patient was placed in recumbent position; incision from anterior, superior spine along the course of Poupart's ligament and forward to the median line. Incision was carried through the external oblique fascia; retraction of fascia and abdominal wall inward, exposing extra peritoneally the right iliac vessels and ureter. Ureter was incised, and stone corresponding to x ray picture removed therefrom. As urine failed to escape from incised ureter, a second incision 5 cm. higher was made in the ureter, giving vent to a quantity of urine under tension. Fish tailed rubber tubing was placed at the upper ureteral incision, cigarette drain to the lower angle of wound.

Free urinary drainage through incision occurred for the first few days, the function then gradually being taken up by the bladder. At the end of one week the single kidney function equalled nearly the normal amount for both. The patient's convalescence was particularly free from infection, pain, or temperature, although a slight sinus persists, entirely free, however, from urinary drainage. Patient attends to her household duties and is practically well.

Case IV. Simulating bilateral renal or ureteral calculi R. F., male; aged twenty-one years; native of United States; college student.

Family History: Father died of diphtheria; mother subject to attacks of arthritis; of marked, nervous temperament. Two other boys at present well; one suffered severe streptococcus arthritis followed by chronic arthritis of many months' duration: one operated upon at fifteen for tuberculous peritonitis, with recovery.

Personal History: Aside from the ordinary diseases of childhood, the young man had no serious illness other than that to be described. At fifteen years he suffered for weeks from conjunctival inflammation, requiring special eye treatment for a long period. Following this affliction he suffered from subacute pharyngitis, likewise requiring treatment by a throat specialist for a number of weeks. Following this, while apparently in perfect health, he was seized with abdominal pain; was brought home from school where upon examination he was found to be tender over the right iliac fossa; slight rise of temperature with increased leucocytosis. Enemata and morphine failed to relieve the condition; his physical examination was otherwise negative. Urine free from blood or crystals.

Condition at Time of Examination: Well nourished, muscular, of excellent habits, had had no venereal infection.

Diagnosis of appendicitis was made and appendix was removed. Aside from retention, requiring catheterization on two occasions, his recovery was uneventful. Three months later he was seized with similar severe pains on the *left* side, radiating from the kidney down the ureter to the testicle. Hypodermics of morphine supplemented with ether at the acme of the pains were required at frequent intervals for three days, when the attack suddenly ceased. For three years following similar attacks occurred at irregular intervals, and at the most inopportune times;

at school, at the theatre, in the dead of night, and while skating. Usually it was necessary to bundle him into a carriage or ambulance and drive him to his home. Doctor and nurse were called and remained with him practically throughout the paroxysms which lasted from one to four days. The attacks of pain were at times violent, the patient writhing, holding his breath, clutching at the nurse or doctor, becoming blue in the face, and giving the appearance of a woman in the third stages of labor. He would apparently follow the progress of something down the ureters, speaking of a slipping sensation; finally, after a prolonged exacerbation, he would say: "There, it has passed," and the attack would usually end, quite likely to be resumed on the other side within a few hours. The urine was usually examined a number of times at each attack; on one occasion a number of blood corpulscles were discovered, but never any crystals. The reaction was acid, the specific gravity usually high at the beginning of the attack, and the color darker than normal amber. It was never the pale color of hysteria. On two occasions ureteral catheters were passed to the pelves of the kidneys, and twice a series of radiographs were made which were all negative. The patient had a voracious appetite and ate rapidly. During the intervals his physicians regulated his diet, attended to his excretions, insisted on his drinking large quantities of boiled water. He consulted distinguished specialists in New York and Boston, each one in turn at first believing that the passage of bilateral gravel was the undoubted diagnosis, but in turn, each one finally agreeing that the condition must be a neurosis. During the three years that these attacks occurred most frequently and were most severe, the young man was attending the high school. About the time of his graduation they became less frequent. He entered Yale, passing through the four years with but three attacks. There had been but two attacks during the past two years. He was in other respects well, but still lived in fear of a repetition of these severe paroxysms of pain over the kidneys and ureters.

I recite this case in connection with others, as one of most unusual history, and one in which at first examination the obvious diagnosis is bilateral.

In the speaker's series of seventeen operations for renal and ureteral calculi, eighteen per cent. have been bilateral. Pain at some time and in some form has been present in all of the bilateral cases. Hematuria and pyuria have been found in the urine of all. Renal epithelium and crystals have been less constant; enlargement of the kidney has only been detected at the time of partial or complete obstruction in the ureter or pelvis of kidney.

In reference to the technic of the operations, the anesthesia has been nitrous oxide-oxygen-ether, either in sequence or the three merged to meet the immediate conditions. In the four operations upon the patients in Cases I and II, the kidney had been incised rather than the pelvis. The presence of pyonephrosis, as well as pyelitis, demanded this incision in two instances, and the necessity of exploring and draining the kidney, as well as the removal of stones from the calices, made it the operation of choice. The speaker believes that it is often desirable to incise the kidney pelvis when the radiograph shows stone in the pelvis only, and the kidney is not otherwise diseased. No urinary fistulæ have persisted in patients when the kidney has been incised and drained. The incisions have all been in the lumbar region. Laterally we have placed the patients nearly prone on the table, and elevated the kidney area by a Cunningham attachment. The renal vessels have been held by the fingers during incision and subsequent manipulation; drainage of the kidney has been employed in all cases. In coaptating the hemispheres after complete incision, three catgut ligatures have been carried around the kidney and tied, leaving no suture material in the kidney substance, following the advice of Moore (5), of Minneapolis.

Directly following operation, the patients are given decinormal salt solution by proctoclysis. After a few hours the head and shoulders are elevated, and the patients are given an abundance of water by mouth with urinary antiseptics. If anuria threatens, the drains are temporarily removed; hot packs to the entire body are employed, and hot fomentations over the kidneys are applied, and theobromine sodium salicylate (diuretin) is given hypodermatically.

Conclusions: First. The presence of a renal calculus is always a menace to health and life. When the disease is bilateral the dangers are at least double. In the absence of prohibitive contraindications, the calculus, if too large to pass the ureter, should be removed surgically before serious infection, calculus anuria, and damage of renal tissue have occurred.

Second. Calculi are probably bilateral in from twenty to fifty per cent. of cases, which fact should be constantly borne in mind when diagnosticating or operating for supposedly unilateral calculus.

Third. If both kidneys harbor calculi it is probably better to operate on both at one time, if the patient's condition will warrant the additional operation. This must be determined during the course of operation, as no previously fixed rule can be followed.

Fourth. The more seriously impaired kidney, or the one causing most severe and recent symptoms, should be operated on first.

Fifth. Lithotomy should only follow thorough and exhaustive efforts to establish a correct diagnosis of the condition of each kidney; that such operations should be largely confined to hospitals, attended by men competent and equipped to make such examinations, including cystoscopy, ureteral catheterization, renal function tests, chemical and microscopical examinations of urine, in addition to series of skiagraphs.

Sixth. The methods stated above call for generous cooperation on the part of a number of men, that without such scientific preliminary work these operations are likely to result in disappointment and disaster, while with it, the operative mortality is encouragingly low, and the ultimate results, measured in life and function, are in the great majority of cases most satisfactory.

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IS THE RAPID CURE OF SYPHILIS POSSIBLE?

A Report of Five Cases.

By William F. Bernart, M. D.,
Chicago.

When salvarsan was first given to the general profession in this country (January, 1911), it occurred to me that a treatment of such maximum intensity could advantageously be combined with intravenous injections of mercury, and curative results possibly obtained in a comparatively short period. My accepted belief at that time was that one or two injections of salvarsan were not curative, although reports upon its rapid and beneficial action were numerous and authentic. By comparison it could readily be seen, in many instances, that the results obtained from fifteen to twenty intravenous injections of mercuric chloride, carried to the highest point of toleration, equaled those of one injection of salvarsan. In view of this I selected a limited number of patients for experimental purposes, and placed them under the treatment to be described.

Of the five patients chosen, the treatment of the first was started in February, 1911, and of the last, in May of the same year, thus making a lapse of time of over two years for the first and nearly the same period for the others. These patients were all in the late secondary period, it being impossible for me to get one with a primary lesion or one in the early secondary stage. They all had had a desultory sort of treatment from the beginning of their disease, and practically none to amount to anything for six months preceding these experiments. Two had papulosquamous lesions of the palms, one had circinate lesions on the arms and abdomen, another had large discrete papular lesions on the body, and the fifth showed no external evidence of his disease. The Wassermann reaction in all was decidedly positive. Preexamination of the heart, eyes, urine, etc., showed these patients to be acceptable subjects for the salvarsan injections.

The plan of treatment outlined was the same for the five patients, the only deviation made being in the amounts of mercuric chloride injected, a matter which was controlled by the tolerance of the individual. The schedule was as follows:

1st to 3rd days—Potassium iodide, 6 grammes (90 grains) daily. This was given for its solvent action and with the intention of increasing the circulation surrounding any isolated foci of the *Spirochæta pallida.*
4th day—Free catharsis and Turkish bath, to thoroughly flush system.
5th day—Salvarsan, 0.6 gramme intravenously.
6th to 7th days—Rest.
8th to 22nd days—Intravenous injections of mercuric chloride daily, beginning with 0.013 gramme (1/5 grain) and rapidly increasing the dose to a point of maximum intensity.
23rd to 26th days—Potassium iodide, 6 grammes (90 grains) daily.
27th day—Cathartic (castor oil) and Turkish bath.
28th day—Salvarsan, 0.600 gramme intravenously.
29th and 30th days—Rest.
31st to 48th days—Mercuric chloride intravenously.

Beyond this no treatment has been given these patients. Wassermann tests, made six, twelve, and eighteen months after, were negative. Wassermann test in Case I, made twenty-four months after, was negative, and the same tests in Cases II and III, made twenty-two months after, were also negative. In Cases IV and V further tests will be made within the next three months. The loss of weight due to the treatment was slight, and more than regained in a few weeks after the cessation of the course. The patients experienced no decided inconvenience from the treatments except from the salvarsan injections. There was no irritation of the kidneys, and the temporary lowering in the hemoglobin scale soon returned to normal. At the present writing all are apparently well and healthy.

Since the introduction of neosalvarsan I have been using this preparation exclusively, as it is practically lacking in severe aftereffects, and in many cases can be given as an office treatment. In view of the less wearing effects of neosalvarsan I have tried this drug in a few selected cases, giving the patients a maximum injection every week for from four to six weeks and filling the intervals with a daily injection of mercuric chloride. Reports on these later cases, however, will be of no value for at least a year to come. Whether the use of the potassium iodide and the preparatory flushing treatment were of any particular value, it is difficult to state. Comparison with the patients who were not given these treatments will show this in the future.

It is true, there are only five cases cited, and it might be argued that these were coincidentally favorable ones, or that the previous treatment of the patients, or the time elapsed since their infection, might have weakened the resisting power of the disease against treatment, and also that a sufficient period had not elapsed to demonstrate a cure, nevertheless, they show what can be done by the judicious combination of two intensive treatments for syphilis. A vast experience with the intravenous use of mercuric chloride, and a moderate experience with the use of salvarsan and neosalvarsan, again prompt me to state that, conditions being equal, approximately fifteen daily injections of the former drug equal in their antiluetic action the results of an average dose of either of the latter salts of arsenic, and that the nonantagonistic action of the two, when alternated, might produce a cure for syphilis in a comparatively short period when properly administered. These experiments refer exclusively to the intravenous form of medication, as it is the only method by which we can overcome the uncertainty of absorption and by which we can obtain a so called intense action.

29 EAST MADISON STREET.

HEALTHY SICK CHILDREN.*

By LeGrand Kerr, M. D.,
Brooklyn, N. Y.

Health is a relative term. Common usage is such that we speak of one who is healthy as one free from disease. The *Standard Dictionary* includes this as its definition. To be sick brings forth visions of disease or injury, but not necessarily so, because there are innumerable instances in which one feels sick or incapacitated and still remains free from disease. Only recently we have been apprised of instances in which dissolution took place and a careful autopsy failed to reveal disease of any organ, and the cause of death was unassignable. It is possible to be sick and remain free from disease, or, in other words, there are healthy sick persons. This is peculiarly true of childhood, during which functionating is so susceptible to influences from within and from without.

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*Read before the Medical Association of the Greater City of New York, Queens Borough meeting, April 7, 1913.

Admitting such a condition to exist, has it a practical value to the physician? We all appreciate to some extent the desirability of full efficiency in all individuals, but we are not always alive to the importance of efficiency as a remote asset, because we are so keen about its immediate value to the individual and to society. But efficiency maintained at the highest point for prolonged needs is a splendid sort of life insurance. I say "maintained at the highest point for prolonged needs" because there is a common practice of bringing efficiency beyond the point of need, and thereby serious physical and mental damage may result. Boys in their efforts to excel in athletics frequently accomplish such results. But are we fully alive to the influence of a maintained efficiency upon the prognosis of disease as it attacks children? We all can recite instances in which serious disease has attacked those who were efficient and had good resisting powers, and this has not caused very much alarm as regards the ultimate outcome, because the disease was self limited and the victim equipped to combat it. Upon the other hand, as many instances could be recited in which the disease was mild or of a less serious character, and yet an unfavorable outcome was predicted, because of the inefficiency of the patient. In my work among children I am constantly surprising my colleagues with my prognoses; on the one hand expressing doubt as to the ultimate outcome in the case of apparently mild disease, and on the other encouraging them in the face of most serious disease, and in each instance it is because I have learned the value of maintained efficiency in childhood and its effect upon disease. Therefore it is wise and necessary often to spend as much effort in elucidating the previous condition of the child as it is to bring out all the details of the immediate illness. When the child is attacked by disease it is not always possible to estimate its previous condition and often it is only by the most skillful questioning and observation that any valued information can be obtained. The detection of healthy sick children is in most instances only possible by observation of the child suffering from some very slight indisposition. If at this time the physician is observant of all conditions other than the one that immeditaely demands his attention, and takes the time to go thoroughly into the antecedent history of the child, inefficiency will be more often and clearly detected and the healthy sick child will receive the attention that it needs. In taking a history too much importance should not be placed upon the influence of heredity. Too often it has been so magnified that many factors are accepted as being due to hereditary influences which are in no way connected with it. Fortunately the somatic organization of the child is not complete at birth, and while we admit the proper importance of heredity upon development, we must see that environment is a far more potent factor in the production of persons with a lowered resistance and also in their continuance as such. Heredity is more often an "excuse" than a "reason." As a matter of clinical experience with healthy sick children it is a remarkable fact that, when the proper and adequate energy is expended upon the betterment of prevailing economic and social conditions, and physical and mental processes are unhampered and properly guided, what was usually laid to the influence of heredity disappears and we are forced to the conclusion that its influence was small.

By far the larger number of cases are detected through the statements of the mother. It is a common enough experience to have the statement made by her that "the child is not well." Pressed for details or an explanation of her statement, she is not always ready to give it, but is satisfied with the remark that she does not know just what ails the little one, but that there seems to be something wrong; she cannot say what it is. This is as commonly met by an assurance that the child is all right; it looks well, its cheeks are red, and the little one seems lively enough; and that probably it is imagination upon the part of the mother, who is more than likely overanxious about the child. This is an easy and usual way to dismiss the matter, but it is not right. Most mothers know instinctively that their child is not well, even though they be incapable of giving the details. The mere fact that an anxious mother states that she is worried or deeply concerned about her child should excite in the physician the deepest sympathy and arouse all of his diagnostic energies. If this unusual attitude is assumed, in place of the usual one of quick dismissal, most of these instances of healthy sick children will be detected, and the physician will have the consciousness of having restored the child to normal efficiency if the proper methods are pursued. Do not assume that because the mother is unlearned in things medical that she knows nothing about sickness; in most instances, because she knows her child as no one else can know it, she is acute both in the early detection of disease and a departure from the normal.

This is a decade in which more than in any other efficiency is being made a prominent part of all activity; along all lines efficiency is emphasized. The time places a responsibility upon the physician which he cannot afford to shirk either from a social or an economic standpoint. In childhood especially we should be concerned, not with disease alone, but with the maintenance of every organ in perfect condition. Even this is not sufficient; it is good as far as it goes, but it does not go far enough. Perfect condition of every organ goes a long way toward the continuance of efficiency and the successful resistance of disease. But perfect organs are not absolutely essential to the continuance of good health, or even to the maintenance of the normal resistance of disease. A child may have one or more organs diseased, and yet remain in better condition than the child who has every organ perfect. And why? Because perfect functionating of an organ is far more important and necessary to life than mere perfection of structure. There must be coordination and cooperation between the several parts if efficiency is to be maintained, and the failure of one or more organs to act in harmony with the others is sufficient to make the child feel sick, although there be no disease present. Shall we disregard perfection of structure? By no means, but we have the habit of emphasizing it beyond its importance and it is time that we gave the proper value to perfect functionating also.

For the child of these times physiological living is exceedingly important, and from a large experience with children the writer is convinced that normal efficiency is maintained and strengthened by physiological living. Physiological living will mean something different for each child, and in the same child may differ with the different periods of childhood. This is independent of the effect of the varying activities and influences which modify each period. To the infant it means mostly eating and sleeping; to the older child, play and unrestrained activities of mind and body; to the young person, the acquisition of knowledge and the pursuit of pleasure. This life must be lived in harmony with personal and individual peculiarities, whether they refer to sleep, to diet, to mental effort, or to physical accomplishment. No two children are exactly alike, and what will help one may harm another. It is therefore impossible to lay down more than the most general rules. But one general rule must be observed, and that is that the life be lived in a manner to conduce to the harmonious action of all of the several organs, and to have this a *consistent* action and not by spells; to promote a continuance of perfect functionating of each organ and to have this accomplished *as the result of habit,* rather than of mental effort upon the part of the child. One thing is certain, that any scheme that aims to improve the efficiency of children is doomed to early and certain failure unless it is based upon the physiological fact that the pursuit of pleasure is a perfectly normal and commendable attribute of this period of life. And pleasure is not a matter of minutes or hours; it must be adapted to individual needs. The writer trusts that he has made it clear that the healthy sick child is not the victim of disease, or even of conditions that are associated with disease, although the latter may some time be the case, but is a subnormal individual who usually gets scant attention because his need is not emphasized by pathological changes.

In the treatment of these children there is demanded considerable patience to determine the exact fault and considerable judgment as to how that fault may be corrected, because it is always and essentially an individual problem for the physician. There is always a need for the parent's intelligent cooperation, and this can be secured only by an explanation of just what we are aiming to accomplish. In addition, it may be necessary to adjust the child's diet to individual needs and administer such stimulants or tonics as are clearly indicated. In the great majority of cases the dietetic fault is either a deficiency of fat or the ingestion of food that undergoes putrefactive changes readily, or there may be a combination of the two. In giving a tonic the writer has found that it is nearly always desirable, if not absolutely necessary, to combine with it very small doses of tincture of digitalis, for this seems better than anything else to influence a sluggish or disturbed circulation and enhance the value of the selected tonic. This experience has extended now over several years. Despite all that we may do, some of these children do not respond to any treatment until they are placed in bed, and kept there for at least a week or ten days, and this fact is an important one to remember when we are not meeting with immediate success.

It is not the large things in medicine for which we are commended or condemned, but the little things, the details. The public expects us to do the larger things, but our knowledge of disease has often made us unmindful of the things that lead up to it, and familiarity with the complaints of the adult has perhaps led some to a contempt for their statements in regard to their children. If, however, the hint thrown out by the writer this evening is persistently heeded, the army of healthy sick children will be reduced materially and some physicians will in time gain a reputation for accomplishing what the public will term as "marvelous improvement" in children whom their colleagues disregarded because they did not present definite disease for treatment.

42 Gates Avenue.

AN ADDITIONAL CASE OF FRACTURE OF THE FLOOR OF THE ACETABULUM.

Coincident Fracture of Head of Femur.

By Penn G. Skillern, Jr., M. D.,

and

Henry K. Pancoast, M. D.,

Philadelphia.

In *Annals of Surgery* (1912, lv, 1, p. 93) we reported and commented upon seven cases of fracture of the floor of the acetabulum.[1] Since then several cases have appeared in the literature (Vaughan, *Surgery, Gynecology, and Obstetrics,* xv, p. 249, 1912, and Ohnesorg). The following case sheds additional light upon this subject and is unique with respect to the coincident fracture of the femoral neck and head.

J. M., male, aged forty-five years, driver, white, was admitted to the University Hospital, service of Dr. Edward Martin, January 24, 1913, suffering from an injury to left hip. While carrying a stove upstairs he fell in such a manner that the stove struck him upon the left hip, over the greater trochanter. Upon arising he found that he could not move his left lower extremity, at least to very slight degree, and then with much pain shooting down thigh to knee.

Upon examination, injury to pelvic structures was first excluded. Then the tape was employed and revealed shortening of the distance from the symphysis pubis to the greater trochanter (Morris's line) by three quarters of an inch on the left side, when compared to the right. The lower extremities were of equal length, however, between the internal malleoli and the anterior superior iliac spines, and there was no relaxation of the left iliotibial band. On manipulating the extremity, movement in all directions was painful. Pain was elicited by pressing directly upon the left trochanter, but none on jarring the foot. The arc of rotation of the left greater trochanter was not materially changed. Examination *per rectum* was very painful, and was not persisted in. There was some tenderness in the right iliac fossa, above Poupart's ligament. Skiagram (Fig. 1) revealed (a) a vertical line of fracture involving the iliac constituent of the acetabulum; (b) an incomplete line appearing upon the middle of the greater sacrosciatic notch; and (c) a comminuted fracture of the head and neck of the femur, probably with impaction. The approximation of the tip of the greater trochanter to the rim of the acetabulum is plainly shown. While the skiagram does not include both pubic bones, yet from the magnitude of the vulnerating force it is safe to assume that these bones, which form the tie arch of the femorosacral arch, were exposed to a severe strain, and another skiagram might reveal a fracture of the horizontal ramus of the pubis, right side, from "contre coup," as occurred in our Case II of the series.

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[1] Three of these cases, too late for publication in the *Annals of Surgery*, were published in the authors' reprints.

Treatment consisted in rest in bed, manipulations aiming at reduction, and extension in the axis of the limb with lateral traction upon the femoral neck. On the fourth day a gypsum case was applied from the roots of the toes to the costal margin.

The interesting feature of this case is the condition of the femoral head and neck. The head, as is well shown, is apparently broadened from comminution, while the neck is seemingly impacted into it. This inclusion of the femur in the fracture of the innominate bone is surely a manifestation of the severity of the vulnerating force. Ordinarily this force expends itself upon one or other bone, rarely upon both. But from the history of the injury it would seem that the head of the femur was wedged in between two forces—the impact upon it through the neck of the blow received upon the trochanter and the unyielding pelvis. That is, a man carrying a heavy weight upstairs has every muscle tense and the skeleton fixed, so that the pelvis could not recoil from the blow and thus minimize the violence. Furthermore, it is probable that the stove, falling from above, struck the superior rather than the external surface of the trochanter, thus bringing a cross strain upon the femoral neck. In the skiagram the head of the femur resembles the very much flattened head of an ancient hammer.

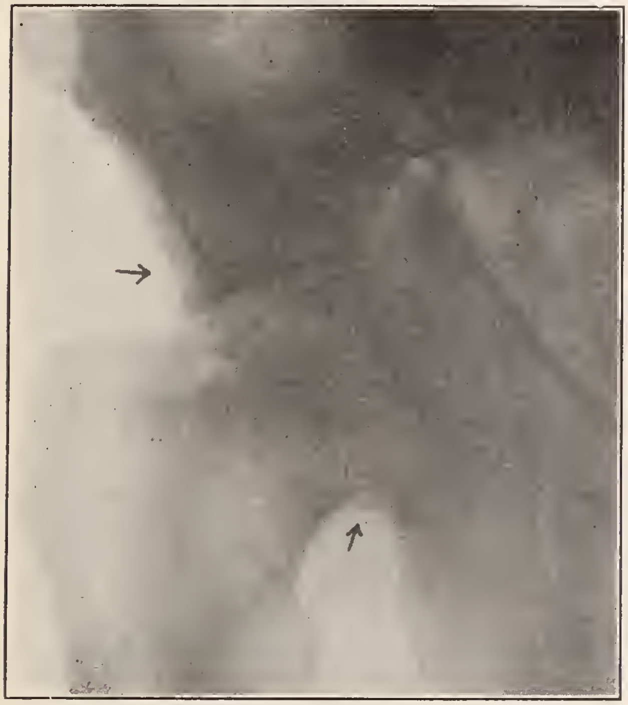
Fig.—Fracture of floor of acetabulum and of head of femur. Note broadening and flattening of head, showing that acetabulum has been sprung. Arrows indicate sites of fractures.

In our paper we discussed the question: When, given a certain vulnerating force, does the acetabulum yield to fracture and when the neck of the femur? We cite the theory advanced because this case seems to prove it beyond doubt. "The cancellous tissue in the head and neck of the femur is arranged as pressure and tension lamellæ, which spring from the inner and outer walls so as to form Gothic arches. It seems plausible, therefore, that these arches would yield least to force applied in the direction of the long axis of the head and neck, so that the force would expend itself upon the pelvis. If the force strikes the neck of the femur aslant these Gothic arches, however, fracture of the neck may sooner ensue. From this we might conclude that when the neck of the femur is healthy and squarely set, so to speak, it withstands this particular force (i. e., upon the external surface of the trochanter) more stoutly than the floor of the acetabulum." In this case the degree of the violence was sufficient to fracture both bones.

Examined four months after the injury, patient had good motion in all directions, except abduction, which was somewhat restricted. He walked without support, though timidly on account of a prolonged crutch life. He was free from pain.

We are indebted to Dr. Edward Martin for the privilege of reporting this case.

241 South Thirteenth Street.

EXERCISE IN THE SCIENCE OF KEEPING WELL.

By J. Rudis-Jicinsky, M. D.,
Cedar Rapids, Ia.,
Editor of the Official Paper of the United Bohemian Gymnastic Association in the United States.

The fact that numerous works on preventive medicine, hygiene, exercise, physical culture, gymnastics, athletics, etc., are already in existence proves the importance of these and similar subjects, and the proper development of the body and the mind seems to be universally recognized as the main necessity for the building up of better and healthier human beings, so that with better and stronger individuals a stronger society and nation may be formed. The busy practitioner has often neglected the consideration of exercise in its relation to life, and as a subject belonging to preventive medicine, because in the medical school he was never taught the real value of systematic work in this direction, and, from the physiological standpoint, never could adequately study the utility of exercise, because almost all the reliable works treating of it were based either on military needs or the requirements of special organizations having in view special methods and systems of instruction.

For thirty years I have been engaged regularly in gymnastics and athletics, and have studied the features of the different systems as thoroughly as possible, both theoretically and also in the open field or in the actual work in the gymnasium, while since 1896 I have tried by the Röntgen method to obtain information in regard to the action and possible results of systematic muscular movements upon the tissues. Our knowledge of both the normal and pathological anatomy of human beings has heretofore depended almost entirely on post mortem findings, and these were certainly not completely satisfactory, since the different stages of development and the functional activity of the organs, as well as the primary causes of disease and the pathology of the various lesions resulting, should be studied step by step during life. The Röntgen method assisted us in pediatrics especially in this respect, and this being the case, we will at once understand why, for instance, a skiagraph of the chest of a little boy, ten years of age and of delicate organization, showed some deformity and depression, near the apices of the lungs, in the vertebræ, clavicles, and ribs on both sides. The lessons in deep breathing and the proper course of movements (free exercise) prescribed gave us the most satisfactory results in about a year, and the skiagraph taken at that time showed the conditions nearly normal. This was a study of a case from the medical standpoint, where the course pursued perhaps removed the field of possible infection, but the opportunities for constant study of children in health and in their development presented in a modern gymnasium, are of still greater importance, viewed from the standpoint of the future, as regards the physical welfare of the nation.

This is especially true if we take into consideration the real effects and direct influences of certain prescribed movements of certain muscles or groups of muscles employed in accordance with impulses received through the nerves from certain centres in the brain. On x ray examination of contracted muscles one will not only observe the changes in shape and development, but the shadow given will be much darker on account of the greater accumulation of blood and the different chemical changes which take place in an active muscle. The fibres of the muscle are shorter and its structure thicker as the result of the exercise and the whole becomes of better quality. This condensation of the tissue causes a temporary deflection of the needle of the galvanometer in opposition to the original current, and we may study the beneficial influence of systematic exercise performed for longer or shorter specified periods with the current of action or the negative variations of the muscle current and the x ray shadows in comparison. The different tissues of the body being made up of different elements, we can anticipate what the radiability of a given tissue, such as fat, muscle, or bone, should be normally, according as we know of what elements it is composed, in proportion to the development, age, and individual characteristics of the subject examined.

These examinations, made regularly for years with all the usual examinations, measurements, and weighing, with a study of the personal history of each pupil, have proved the advantage derivable from systematic gymnastics in accordance with the law of Nature which provides that, within certain limits, parts of the human frame increase in strength, aptitude, and size in proportion to the use made of them. In gymnastics this law is brought to bear successively on every part, including the nerves and the brain tissue where the controlling centres are located, and finally on the whole system in combined action. If the exertion be not carried so far as to induce excessive fatigue, says Schmidt, all other parts of the body—even the internal organs—sympathize with the improving condition of that which is mainly exerted. The circulation, excited from time to time by the exercise, acquires fresh vigor, and the blood being driven with unwonted force into all parts of the system, every function is carried on with increased activity; an improvement in the general health becomes soon manifest, and the mind, if simultaneously cultivated with judgment, increases in power of coordination and reasoning ability. We do not consider here medical gymnastics alone, but would like to promote the interests of all the people and especially the children in educating not only their minds but bodies also, for it must be remembered that in young children even the bony structure yields to the pressure exercised from within. Thus, with the aid of proper gymnastics, the child can develop into a strong, healthy, broad chested man or good woman.

Gymnastic games are so old as to be prehistoric; they are alluded to in the second and twenty-third books of the *Iliad*. Before the time of Hippocrates gymnastic exercises had been adopted in Greece as part of the course of treatment intended to counteract increasing indolence. You find them with the Lacedæmonians and see the best proofs of the harmonious results upon the body in the many beautiful statues of Athens. The Romans also adopted the system, and in subsequent ages of knightly prowess we may observe many deeds of gallantry and fortitude due to good training. Later, from the fifteenth to the seventeenth century, the science of gymnastics, according to Rabelais, Montaigne, and Locke, was forgotten in the education of the children of Europe, being replaced by military drill and speedily neglected in merely civil life. It is only in the year 1770 that gymnasiums for systematic training and the preservation of health were opened by Rousseau, and in 1806 by Basedow and Salzmann in Germany. In accordance with the rules for the promotion of the "usefulness of the movements of the body for health and proper development, especially on the playground," as laid down by the celebrated pedagogue Commenius (1592-1671), Guts Muths worked in 1793, and he had many medical advisers and friends. Jahn followed in 1811 in the same line, and rendered the science so popular that it speedily attracted the attention of the youth in Germany. Sweden soon imitated Germany, or rather Prussia, and since then gymnastics have formed a prominent feature in the educational curriculum in nearly all parts of Europe. Phillips worked in France, Aldershot in England, and Veith, Pestalozzi, Simon, Du Toit, Lenz, Jaeger, Spiesz, and others proved to medical men what physical training might do in health and in certain diseases. Tyrs, the great esthetic and student of the history of nations, with the help of the physiologist Purkynje, gave the world a new system of training of national character, but with the warning that gymnastic exercises must be practised systematically and with many precautions, without onesidedness and always with moderation and due regard to the strength of the individual. The whole medical or other benefit in muscular development may be counteracted by excess; the muscles may be overtrained. The dangers of such evils from athletics especially, have perhaps been exaggerated, but no doubt the heart in some cases has suffered when the athlete has overdone his "specialty," not having previously had a well regulated course of systematic gymnastics.

Tyrs said: "Not every one for himself, as an individual, not even in the different organizations, but with the common support and endeavor we intend to undertake the task of cultivation and training, and not only for our own benefit, but for the health, happiness and success of our nation and all our people." This national idea, once introduced, has done wonders with Jahn's disciples in his "Turnerkunst" in Prussia, and the gymnasiums of the German turners at home and in this country are in some respects good illustrations of it. Likewise the excellent achievements of American athletes in our public schools, colleges, and universities, where systematic gymnastics are taught. But the many contests, public exhibitions, and expositions of the actual results of exercise in the science of keeping well by gymnastic associations of international character held lately in Europe (Paris, London, Turin, etc.), and the two great olympic game events, gave the Bohemian gymnasts ("Sokols-Falcons") the first place, and their system with voluntary subordination to the cause, and also on account of its physiological foundation and its development of nerve power, which the French call *entrainement*, was praised more than any other. Their active work is divided according to the value of the different exercises and the execution of these as regards general strength, localized strength, agility, elegance, swiftness, endurance, and readiness together, with the effects upon the lungs, heart, circulation of the blood, secretion, excretion, and nutrition, nervous system, and finally, the muscles of the individual. Strict observation of personal hygiene and hygiene in general are also insisted upon. The Slavic brethren of the "Sokols" of the Balkan peninsula furnished the best proofs of their ability and fortitude during the recent war with Turkey, showing the results of proper and systematic training of all the youth, all the people.

"All the history of all creation and especially of mankind represents an eternal struggle for the being and continuance of existence and in this struggle anything not fit to live and objectionable to the whole has to succumb and perish, leaving only the trails and prints of fossils in the individual strata of rocks, or in the letters of books, known to us as history." We know that this is the case, we know what are the preventive measures in tuberculosis and other infectious diseases, we know that a stronger constitution of a patient can fight better any disease, and that there is reason for ever increasing emphasis to be placed upon the importance of attacking any disease, deformity, or infection in the early years of life. Give us, therefore, better and more sensible education for our children; let them have more opportunity for play, recreation in general, games in the open air, and also open air instruction, and remember what good may be accomplished with systematic exercise and gymnastics in all our schools. It is not within the province of this paper to speak of prophylactic measures and regulations in the training of our children in detail, but I should like to say to the profession at large what I believe may be done for the weak child in addition to all the other measures for its proper development, especially the child of predisposition, inherited or acquired. Systematic training, gymnastics, calisthenics, including steps and dances for little girls, and some athletics in the open air may strengthen the physique and mentality of the children in schools, when these are well regulated and graded according to the age, intelligence, and strength of the pupil, and conducted under adequate medical supervision. The people's strength is the greatest asset of a nation, and Westbrook has well said, "In America we are optimistically inclined to believe that the time has come when demand will be made for trained specialists, who shall devote their whole time and energy to the various phases of public health protection." And proper exercise will be among the first subjects considered, educators believing that this subject has a rational and vital place in the educational system.

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MALARIAL HEMATURIA.

By Leland Boogher, M. D.,
St. Louis, Mo.

The subject of this paper, malarial hematuria, malarial hemoglobinuria, or blackwater fever, under which several names investigators have designated it, is a condition of great interest to the profession in general and to the urologist in particular. Because of its development being dependent on locations where malarial infections are prevalent, it is little known outside of these regions: Southern States, Cuba, Central South America, West Indies, Africa, Southern Europe, Asia, and India. Observers are influenced in their deductions relative to the cause of this condition by three distinct premises, namely, that it is due to malarial infections; that it is due to the action of certain drugs, such as quinine, methylene blue, and antipyrine; and that it is a specific infection of the kidneys. In the few cases observed and studied by the writer in past years, it seemed that to the first of these, malarial infection, the causation could be properly assigned. The three cases which will be reported in this paper were treated about the same time. Some peculiar symptoms were observed in each, and the urinary complications which were met with constitute the reason for their being grouped together. The almost simultaneous occurrence of three such cases, when no other instances of the affection had been encountered for some time, seemed remarkable.

An accepted definition of this condition is, "An acute febrile malaria occurring in tropical and subtropical regions, and characterized by fever, bilious vomiting, jaundice, and hemoglobinuria." The disease is most often observed in the middle aged of both sexes, although males seem more susceptible than females, and negroes are almost entirely exempt. A previous attack of malaria generally has been regarded as necessary for the development of hemoglobinuria; but some have noted hemoglobinuria fever with no previous history of malaria, and this appears to be true in one of the cases here recorded. The objections to the theory that drugs having to do with the causation of this condition are given by Deaderick, Breur, Manson, and Craig, and may be stated as follows: 1. That it is restricted in its area of incidence and is absent in some highly malarial localities, where quinine is extensively used. 2. That drugs do not produce it when administered for affections other than malaria. 3. In a number of these cases quinine or other drugs supposed to produce it had never been administered. 4. That when it has followed the administration of certain drugs, these same drugs may be later given with no such result. 5. That where quinine has been given the severity of the attack is in no way related to the amount of the drug taken. 6. That one dose of quinine cannot cause intermittent hemoglobinuria. 7. That the great majority of these patients recover under the continued use of large doses of quinine. However this may be, there are many drugs which, when taken in large amounts, convert oxyhemoglobin into methemoglobin.

Among those investigators who favor the drug causation may be mentioned Koch, Luxis, McCay, Ketchen, and Vincent. According to Murrell and Hake, hemoglobinuria indicates the occurrence in the urine of hemoglobin or methemoglobin, resulting from the destruction of the red blood corpuscles in the general circulation, which should be distinguished from hematuria in which blood, as such, is found in more or less intimate admixture with the urine. In hematuria the urine is smoky, or even opaque, and under the microscope blood cells are found in numbers in the sediment. In hemoglobinuria the urine is clear when passed, but becomes turbid on standing, and the color varies from pink to scarlet or brownish black. It is strongly acid, deposits lithates on standing, and contains but few blood cells. The following theory, propounded by George Richter, may explain the origin of malarial hemoglobinuria: The material from aged erythrocytes (probably destroyed in the spleen) is utilized in the liver by the forming of bile pigments from hemoglobin. Bile pigments are converted in the intestines by bacterial action into urobilin (stercobilin), which is in part reabsorbed through portal circulation, enters the liver, and is again transformed into bile pigments. The source of bile pigments is therefore hemoglobin from circulating blood, and of urobilin, from the portal circulation. When either source supplies an excess of material, too much for the liver cells to take care of, or when the liver cells are impaired somehow and do not functionate properly, then urobilin will pass through the capillaries of the liver unchanged, enter the general circulation, and be excreted by the kidneys (urobilinuria). Such conditions will obtain in internal hemorrhages (absorption of blood), in acute infectious fever (destruction of blood), in intense intestinal putrefaction (increased absorption of stercobilin), and in parenchymatous liver disease (cirrhosis, etc., even in the initial stage). Parenchymatous liver disease may easily remain occult until increased work is thrown on the liver. In malaria erythrocytes are destroyed by the plasmodia, and as long as they are present we find always a urobilinuria, even when plasmodia cannot be demonstrated in the peripheral blood. A coincidence of insufficiency of the liver, of malarial blood, and eventually of a toxic action of quinine on the liver, by its inhibitory action on enzymes (bile forming), will have the effect that not only portal urobilin is not converted into bile pigments, but that the free hemoglobin in the plasma (derived from destroyed erythrocytes) is not converted in the liver, but arrives in the kidneys, giving rise to hemoglobinuria (blackwater fever). A study of these blood cells is interesting. Since the malarial parasite was first described, in 1880, views regarding its action on blood cells have changed. The morphology of the ring form parasite has been extensively described by Doctor Lawson in *Experimental Medicine* for March, 1913, and she with Laveran, Richard, Mannaberg, and others find that it is extracellular and adheres to the periphery. These parasites attach themselves to the corpuscles by slender threadlike pseudopodia which arise from the cytoplasm of the parasite near its nucleus, and by absorption of the hemoglobin destroy its lifegiving properties. Ziemann mentions the fact that while normal blood cells do not dissolve in salt solution, there is in the condition thus produced a rapid solution of the cells and a decided diminution of the blood volume.

Case I. In November, 1912, there appeared the first case of hematuria I had seen in two or three years. The patient was a male, aged fifty-one years; height, six feet, three inches; weight, 235 pounds; married, and a father; family history negative. Had always lived in a malarial district and enjoyed good health until one year previous, when he was seized with marked pain, swelling, and tenderness in the right hypochondrium, which later was followed by difficulty in urination. When seen his appetite was good, and he did not appreciate the fact that he had fever. Mental depression was plainly apparent, and he was yellow in color. Urination was retarded, and there were seven ounces of residual urine. The urine was thick and turbid on standing, and gradually changed to a brownish tinge. On inspection there was found a large, tumorlike protuberance on the right side of the abdomen, and percussion revealed an enormous liver, extending four inches below the lower border of the ribs. The spleen was also enormously enlarged, and a portion of the intestine was seen outlined as the result of chronic enteritis. The pulse was sixty and strong; showing the effect against a retarded venal circulation of a highly toxic condition. Prostate only slightly enlarged. Urine: Specific gravity, 1.010; neutral in reaction; contained much albumin and some sugar; microscopical examination showed depleted red blood cells (eight per cent.) and the plasmodium of malaria. The diagnosis of malarial hemoglobinuria was made, and this was afterward confirmed by microscopical examination of the blood.

Case II. Male; white; sixty-two years of age; complained of inability to urinate without great effort, and of a constant pain and heavy feeling in the perineum, and stated that his urine was black in color. Had had malaria off and on for years and had used more or less quinine, but had not taken any for some weeks, as he had not suffered from chills and fever since his urine appeared black. The urinary discoloration had been intermittent for some weeks, and it was this, together with the desire for frequent micturition and his dysuria, which were the cause of his consulting me. Skin, grayish leathery appearance; temperature, 100.5° F.; pulse, 82, weak and thready; tongue thickly coated, dry, and parched; liver enlarged and hard; spleen prominent; prostate only slightly enlarged. An almost solid intestine was noted, showing long continued constipation, and the amount of fecal material gradually removed later from the bowels was almost beyond belief. Residual urine, sixteen ounces; reddish black; specific gravity, 1.026; alkaline; albumin in quantity; contained thirty-five per cent. of blood—red and white corpuscles; malarial plasmodia, streptococci, and staphylococci.

CASE III. This patient, like the other two, came from a southern malarial district, and his case was unique in some particulars. He was brought by Doctor Johnson, of Hayti, Mo., and was so exhausted that it was hardly expected that he would survive the journey. Forty-eight years old; single; very weak and emaciated; pulse 80, and thready; color saffron yellow; kidneys palpable; liver and spleen much enlarged; chronic constipation of long duration. Had had great difficulty in urination, passing only a few drops at a time for some days; bladder much distended. After some difficulty a catheter was passed and seventy-two ounces of urine were drawn, while it was estimated that at least two ounces were lost in the catheterism. A permanent catheter was maintained for some days, and the total urine was 155 ounces in the first twenty-four hours, sixty-one ounces in the second, and sixty-one and one half ounces in the third. The urine was of the true blackwater type and contained fifty per cent. of blood, which was in such admixture as to make it a true malarial hematuria. It was alkaline, with a specific gravity of 1.030, and contained albumin. Microscopical examination showed red blood corpuscles, white blood corpuscles, malarial plasmodia, streptococci, and staphylococci. He had had repeated attacks of malarial infection, and in past years had occasionally taken quinine. He had had quinine for some weeks prior to his present attack. Doctor Johnson, who had had a number of these cases, stated that when they were truly characteristic in type, as in this instance, there was little chance of recovery.

Etiologically, drug action did not seem to be a factor in any of these cases, and in only one of them could there be considered the slightest probability of renal causation exclusively. I have observed that when, in infection, elimination of the toxic products in a large measure ceases, from an inactivity of some of the glands of the body, and the kidneys are required to eliminate greatly increased excrementitious material and become overtaxed, the effect is to produce pathological renal conditions, which, if not ameliorated by the promotion of elimination through other channels, quickly increases the gravity of the prognosis. If the portal circulation can be immediately relieved, the prognosis improves. I have further noted that when elimination of the blood occurs with the urine, the fever seems to be of no consequence and its periodicity seems to cease; that the gravity of this condition might not be appreciated but for the examination of the urine; that quinine, antipyrine, methylene blue, and kindred drugs do not seem to produce any appreciable effect on this condition, while the presence of the malarial plasmodium appears to inhibit the free elimination of the urine; that anemia very rapidly progresses, so that the promotion of activity in the liver, spleen, and bowels is the desideratum; that efforts directed toward stimulation of the kidneys by the action of drugs are contraindicated, as these organs are already doing more than their share. The more I study pathological conditions in the kidneys, the less faith I place in the use of medicinal treatment for their relief.

CENTRAL NATIONAL BANK BUILDING.

EXOPHTHALMIC GOITRE; HYPERTHYROIDISM.*

With a Report of Five Cases.

By WALTER BAER WEIDLER, M. D.,
New York.

This disease is one that presents points of interest to the internist, surgeon, and ophthalmologist. It is often spoken of as Graves's (1835) or Basedow's (1840) disease, because these writers were the first to describe and classify the symptoms of the condition. The name exophthalmic goitre is a poor one because it suggests only two of the symptoms of this complex disease. Hyperthyroidism is the most recent addition to its nomenclature, and even this is not satisfactory, as it infers a pathological process, which we are not sure exists. Hyperthyroidism implies increased activity of the thyroid gland, with increased glandular production. In exophthalmic goitre we usually find an increase of the heart's action, with corresponding increased frequency of the pulse, nervous irritability, enlargement of the thyroid gland, and various eye symptoms. Of these characteristics the tachycardia and the nervous irritability are perhaps the most dependable, and some writers say that they are present in every case. The enlargement of the thyroid gland may or may not be present, and the eye symptoms usually appear only after the condition is fairly well advanced.

The rapidity of the pulse is often the first symptom to be noted, running from 110 to as high as 190 beats a minute. Usually no cardiac murmur is to be heard until late in the disease. Pulsation of the carotids is often seen, and tremors of the hand, due to a spasm of the extensor and flexor muscles of the wrist, are usually present (Marie). These patients are very nervous, having great fear and being peevish at times, and the fear and peevishness may be followed by profound mental depression, despondency, and, in some instances, insanity. The enlargement of the thyroid gland, as mentioned, is not one of the constant symptoms of this condition, and sometimes only one of its lobes is involved. It is quite possible to have the other symptoms of hyperthyroidism without any appreciable swelling of the gland being demonstrable. There is never as great hypertrophy of the thyroid as is seen in the true parenchymatous form of goitre. Generally with the advent of the hypertrophy the ocular symptoms make their appearance, and it is very often in consequence of the eye symptoms that this disease is first suspected and diagnosticated.

The exophthalmos in itself is always apparent to the eye of the beholder, whereas the glandular enlargement, the tachycardia, and the nervous symptoms may exist without our being cognizant of the fact. Exophthalmic goitre has been most carefully studied by the ophthalmologist, and the ocular symptoms, as classified, are definite, but cannot be considered as diagnostic unless accompanied by some one of the other general symptoms. The exophthalmos is not always pronounced, varying in degree from that of a slight staring of the eyes to inability to close the lids. It is reducible by pressure on the globe, the eye receding into the orbit, and this would not be the case if there was a tumor of the orbit. Graefe's sign is the failure of the eyelids to follow the movements of the eyeballs when they are rotated downward. Dalrymple was the first to call attention to the apparent staring of the eyes. This is due to the widening of the palpebral fissures and also to the retraction of the eyelids. Stellwag observed that in these patients there was infrequency and incompleteness of winking. Möbius's sign refers to the difficulty in converging, and Gifford's sign is difficulty in everting the upper lids. Some of the rarer ocular manifestations are palsies of the ocular muscles, affections of the cornea and of the lacrymal gland, edema of the lids, tremors of the orbicular muscles, nystagmus, and partial or complete loss of convergence.

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*Read before the Society of Specialists of New York City, March 12, 1913.

It has been generally believed that in Graves's disease we have an increased secretion of the thyroid gland, as hyperthryoidism implies. The results of all of the research and study of the action of the thyroid have raised the question whether we have a hyperthyroidization or a dysthyroidization. Klose made a series of experiments on animals, using the juices of the thyroid taken from cases of exophthalmic and simple goitre. When he employed the juice from a patient having exophthalmic goitre he was able to produce the same symptoms in the animal, including the circulatory changes. He believes that these symptoms are due to an autointoxication from inorganic iodine, and that the thyroid gland takes iodine out of the body and stores it in the form of iodothyrin. Considered from the pathologist's standpoint, the hyperplasia of the gland has led to a great diversity of opinion. The fact is that in many of the cases a hyperplasia cannot be demonstrated, and in some there is a degeneration of the secretory portion of the gland. There may be in some instances of exophthalmic goitre a correlative action of all of the ductless glands.

CASE I. Mrs. B. L., aged fifty years; Hebrew; family history negative. Patient had usual diseases of childhood; for the past twenty-five years health had been excellent until recently. Had had three living children and one miscarriage. Five years ago consulted a physician, who asked if she was an opium eater; which was denied. Daughter noticed the staring expression of her mother, and that the left eye seemed more widely open than the right. Patient had noticed that she perspired on the left side of face and body. For the past year, following the death of her daughter, her general health had not been so good. Extremely nervous and had great dread of something happening; very sensitive to noises; vague shooting pains throughout the body; attacks of cardiac palpitation after a fright or any slight exertion; difficulty in breathing, increased at night; had lost thirty-eight pounds in the last six months. Frequent urination—total quantity of urine voided in twenty-four hours, forty ounces; Wassermann reaction negative; marked tachycardia, pulse 104, bounding, fairly full; no heart murmurs heard, but a decided pulsation seen in the carotids; slight fibrillary tremors of the hands. Measurement of the thyroid showed some enlargement of the gland. The right eye did not present any of the signs of exophthalmic goitre. The lids of the left eye were wide open; upper lid higher than the right, showing about five mm. of the sclera above; winking infrequent, and when patient did wink there was incomplete closure of the lids; Graefe's sign was well marked; slight paresis of the left superior rectus muscle. Station good; gait steady; coordination good; reflexes active. Treatment: Patient was given thyroid extract, beginning with five grain doses three times a day, and this was continued for over three weeks. There was some reduction in the rapidity of the pulse (from 110 to 72). The exophthalmos seemed to be less. Refraction of the eyes for glasses elicited only a slight degree of myopia, and glasses were prescribed for presbyopia.

CASE II. Mrs. A. H., aged fifty-one years; married; family and personal history negative; two children living and well. Two years ago suffered a shock on hearing of her husband's losing his position, and shortly after this noticed some palpitation of the heart; was easily worried and unable to do her house work. When first seen her pulse was rapid (116) and full, and there was a slight pulsation of the carotids; respiration, 24. The measurements of the neck from above down, over the thyroid gland, were respectively twelve and one half, thirteen, and fourteen and one half inches. There was a visible and palpable enlargement of both lobes of the gland, but more apparent in the right. Frequent sweating of the face and body and frequent urination; urine voided in a day, twenty-four ounces. Wassermann reaction negative, as was also the examination of the urine. There was a rather marked degree of exophthalmos and the von Graefe sign was easy to demonstrate. Stellwag's sign and the infrequent winking were present; little or no loss of convergence and the extraocular movements of the eye normal. Station, gait, and coordination good, and the reflexes active. Treatment: Thyroid extract was given in five grain doses, but seemed to aggravate the symptoms. Tincture of iodine given in ascending doses, beginning with four drops three times a day and was continued for over a month, with some slight relief. Pulse rate dropped to 84. Refraction O. D. + 0.75sp. = + 0.24cyl. ax. 180°. O. S. + 0.75sp. Reading + 4.50sp.

CASE III. Miss A. C., aged fifty years; American; single; family and personal history negative; had been losing strength and weight and been very nervous for the past year; had the left breast removed about six months ago. Came for a change of glasses, when the peculiar staring expresion of Graves's disease was observed. The von Graefe, Stellwag, and Dalrymple signs all noted; pulse rate 112; at times great mental depression. There was only a slight enlargement of the left lobe of the thyroid gland, and only a moderate degree of exophthalmos; limited convergence, but no defect in the extraocular movements. Treatment: Thyroid extract was given, but seemed to make condition worse, according to the report of her physician. Iodine was recommended, but I cannot say what was the outcome, as the patient passed from my observation.

CASE IV. Mrs. L. R., aged thirty-nine years; Rumanian; white; married; dishwasher; had three children, who were living and well; one miscarriage. General health had always been good until about three years ago, when she noticed that her heart began to give her trouble, and she became nervous and readily excited about trifles. The condition appeared one week after a prolonged stay in the water at Coney Island. When dressing she had a severe chill. Had been under treatment at the Neurological Institute for the past three years. Came to the Manhattan Eye and Ear Hospital December 10, 1912, on account of her eyes. There were present the Graefe sign, the staring expression, the exophthalmos, the widening of the palpebral opening, and the infrequent winking of the lids of exophthalmic goitre. There were also present diplopia and paralysis of some of the external ocular muscles, which are rather rarely seen in this disease, and it was on account of these symptoms that she had been referred to the eye clinic. There was complete paralysis of the inferior rectus muscle of the left eye and partial paralysis of the superior rectus of the right eye. For these affected muscles operation had been performed to correct the very uncomfortable and confusing symptoms. When first seen by us she stated that the general symptoms of her disease were much better than they had been and that she was able to work as before its onset. One month after operative procedure the diplopia had almost completely disappeared. The operations consisted in an advancement of the left inferior rectus, and two weeks later a tenotomy of the left superior rectus . Examination of the eyes, vision O. D. 5/15, O. S. 5/12. Refraction O. D.—vision=5/12, O. S.—0.50sp.=5/9.

Case V. Miss C. R., aged thirty years; white; American; stenographer. Her trouble began about two years ago. Had a severe sore throat and this was followed by a free loss of hair and later a slight bulging of the eyes and rapid pulse. Had been under treatment for one year before I saw her. On examination I found rather marked exophthalmos, with Graefe, Dalrymple, and Stellwag signs present. Pulse 102, and fairly well marked enlargement of both lobes of the thyroid gland. Rather nervous and easily upset by noises and sudden fright or worry; slight pulsation of carotids; frequent urination. Patient was sent to me for refraction and I found the following: Vision O. D. 5/5, O. S. 5/4. Refraction O. D.+0.37 cyl. ax. 90=5/3, O. S.+0.25cyl. ax.90=5/3.

The treatment of exophthalmic goitre is rather discouraging, and this is more especially true in the cases where the condition is well advanced, with the graver symptoms of the syndrome present. Rest is a very important element in the treatment of these patients, and this should include removal of worry, the avoidance of emotional disturbances, and the relief of eyestrain or any other reflex irritation. Such drugs as scopolamine and strontium and quinine bromide have been used for controlling the nervous symptoms, while on the other hand, digitalis, strophanthus, caffeine, ergot, veratrum viride, aconite, and atropine were given for the cardiac irritations. Ergot and picrotoxine (B. P.) have been especially recommended for their action upon the vasomotor system. Many of the different preparations of the ductless glands have been useful in some cases, but they have not done as much as was expected of them. A freshly prepared extract is the best, and it should be given intramuscularly if possible. The dose should be very small to begin with and gradually increased. The action of the glandular products may be direct or indirect, physiological or antitoxic, stimulant or inhibitory, complementary, supplementary, or antagonistic to normal secretions (Cohen, *New York State Journal of Medicine*, 1912). Of all the glandular extracts or emulsions that have been tried the extract of the thymus gland has given the best and most uniform results, and its action is greatly enhanced by combining with it the extract of the adrenals. Where the muscular tremors are especially pronounced the use of the extract of the parathyroids has given good results. Thyroid extract has been of great service in the cases that show an atrophy of the thryoid gland, and in all cases having any myxedematous symptoms. Extracts from the ovary and the corpus luteum have been tried, but with no success. The use of all these extracts in the treatment of exophthalmic goitre must always be more or less tentative and cautious, because in some of the cases here reported their administration has aggravated the condition. Tincture of iodine in increasing doses has given excellent results in some instances, and in my own observation this is always better borne than any of the glandular extracts.

The efforts of the surgeon in dealing with this disease have been attended with much better results than those of the internist. In the past ten years great advances have been made in the surgery of the thyroid gland, and some have come to the conclusion that operation on this gland is a relatively safe procedure, because the mortality has been greatly reduced. It was originally as high as thirty per cent., and in the first sixteen cases operated in by the Mayos the mortality was twenty-five per cent. This may be partly explained by the fact that many of these patients only submitted to operation very late in the course of the disease. In their later work they report a great advance in their surgical work in this disease, and their latest statistics show a mortality ranging from one to four per cent. and a cure in seventy-five per cent. of their cases. This condition of affairs has been largely brought about by our added knowledge of the disease, great advances made in surgical technic, the recognition of "factors of safety," and the early, instead of the delayed, operation. As has been said, many of these patients with Graves's disease did not come to the surgeon until late in the progress of the disease, when there were serious degenerative changes in the liver and kidneys. Crile and the Mayos go so far as to say that the treatment of these cases should be primarily surgical.

The Mayos report a series of 278 cases operated in for exophthalmic goitre without a single death, which they say is a decided gain over their previous work. They have recognized what they call "factors of safety," which may be summarized as follows: 1. Avoidance of surgical interference during a period of exacerbation or excessive activity of the disease; 2, during gastric crisis or acute delirium; 3, when the dilatation of the heart exceeds one inch. The operation most generally selected is ligation, and this is not a new idea, but a return to an old method of treatment used over a century ago. Thyroidectomy has been accompanied by a much higher mortality than the ligation method in the hands of even the very best operators, and it should be resorted to only after ligation has failed to check the progress of the disease. In the 278 cases reported by the Mayos 105 were single ligations, thirteen were double, thirty were single ligations followed by thyroidectomy, and in seventy-eight thyroidectomy alone was performed. It has been their plan to treat the more serious cases with single ligation of the vessels at the upper left pole, and with this the reaction is only about one fourth as severe as when double ligation is done. If after the ligation the patient gains in weight a thyroidectomy is then done of from one half to one fourth of the gland. In the worst cases of Graves's disease ligation has been followed by a mortality about the same as that following thyroidectomy.

Crile, after operating in 121 cases of exophthalmic goitre, reports favorably, and in reference to the condition of hyperthyroidism that follows this operation he suggests six different causes that might be considered as factors. Resolving the operation into its principal component parts, we have the rôle played by 1, hemorrhage; 2, infection; 3, manipulating and cutting the thyroid; 4, the anesthetic; 5, the psychic disturbances; and, 6, the operative trauma to tissue other than that of the thyroid. The first two he dismisses as inadequate causes. The third he does not believe to be a serious enough factor, and cites cases of exophthalmic goitre that have had the gland massaged without any unpleasant symptoms, and other cases that have been treated by osteopaths with no symptoms following such manipulation. As regards the anesthetic, he concludes that a general anesthesia, *per se*, contributes a minor factor; and local anesthesia, *per se*, no factor in the production of the specific reaction. The psychic disturbance in Graves's disease he thinks is a factor of importance in the production of the hyperthyroidism after operations, whether the operation be for the goitre or for some other remote condition. He cites the report of Barton Cook Hirst, who states that, in a series of seventy-one cases where an operation had been performed on various parts of the body other than the thyroid gland in patients suffering from Graves's disease, many of them minor operations, on the whole the operative risk, had the patients not had Graves's disease, would not have been over one per cent.: whereas in his series the mortality was fifteen per cent. Crile's records show a remarkable reaction to trauma in these patients; even after a hypodermic injection of salt solution he has seen the pulse go up as high as 186, with all the other symptoms of severe cardiac irritation. He has adopted a very interesting routine of procedure in his operative work in exophthalmic goitre, but he asks: "Granted that we have mastered the operation, have we thereby mastered the disease itself?" The disease, he thinks, is cured in more than one way: 1. If the brain cells are sufficiently repaired by absolute rest; 2, if the nerve connection between the brain and the thyroid be interrupted in part by tying the upper thyroid pole, which includes half or more of the nerve supply; 3, if the secreting structure of the thyroid be diminished by partial excision or by cytolytic serum (Beebe's).

62 West Fifty-eighth Street.

REPORT OF A REMARKABLE CASE OF ASCITES DUE TO FAILING COMPENSATION IN MITRAL REGURGITATION.

By Frank A. Jones, M. D.,
and
Casa Collier, M. D.,
Memphis, Tenn.

The following case is reported, not with the idea of expounding any new theories concerning its pathology or advocating any new or original treatment of such a condition; but, believing that this is a very unusual and interesting case, we report it in detail:

Patient was referred to Doctor Jones by Dr. Battle Malone, February 3, 1912. Personal history: Male, forty-two years of age, single, real estate salesman by occupation. Had lobar pneumonia in 1907. As a boy he suffered from frequent attacks of acute tonsillitis followed by chorea in his early 'teens; since which time he has had several attacks of acute arthritis, which confined him to bed for several weeks at a time. Venereal history negative; Wassermann reaction negative. Had never been addicted to the use of alcoholic stimulants.

Physical examination revealed mitral regurgitation with failing compensation, passive congestion of the liver, and slight edema of lungs. No ascites or anasarca. Slight bronchovesicular breathing at apex of right lung. Urine was practically normal in amount and contained a trace of albumin, but no casts; and this condition persisted until death. Patient was advised to stay in bed and was put on sweet milk diet, nux vomica, and digitalis, with frequent saline purgation. On March 1st there appeared a right sided hydrothorax, and this came and went throughout the course of the disease, but was never aspirated. Ascites also gradually developed, and patient remained in this condition, being confined to bed for a large proportion of the time, until July 11th, when his abdomen was tapped and two and a half gallons of slightly cloudy straw colored fluid was withdrawn. Subsequent tappings are herewith given, with the amount withdrawn each time.

July 11th, 2½ gallons; August 1st, 2½ gallons; August 29th, 2 gallons; September 7th, 2 gallons; September 13th, 2 gallons; September 19th, 2 gallons; September 24th, 2 gallons; September 30th, 2½ gallons; October 14th, 2 gallons; October 17th, 2 gallons; October 18th, 2 gallons; October 20th, 2 gallons; October 21st, 1¾ gallons; October 23rd, 1 gallon; October 25th, 2 gallons; October 27th, 2 gallons; October 29th, 2 gallons; October 30th, 2 gallons; November 1st, 1¾ gallons; November 6th, 2 gallons; November 8th, 2 gallons; November 11th, 1 gallon; November 13th, 1 gallon; November 15th, 1 gallon; November 16th, 1 gallon; November 18th, ¾ gallon; November 19th, 1¾ gallons; November 21st, 1 gallon; November 22nd, ¾ gallon; November 24th, 1⅛ gallons; November 25th, ¾ gallon; November 27th, ½ gallon.

This gives us a total of thirty-two paracenteses, with 51⅞ gallons of fluid withdrawn. These figures are not estimated, but measured, and the amount given is independent of the amount which leaked out through the stab wounds after the paracenteses, which was not inconsiderable. On October 4th, the patient's feet and legs were so edematous that a slough had started on the outer side of the right leg just above the ankle; some ten or twelve punctures were made around this and on the dorsum of the foot with a scalpel. On October 7th, the left leg was given the same treatment. The swelling disappeared immediately and the beginning sloughs had their normal color restored. After these scarifications the patient was compelled to sit with his feet in a wash bowl. This bowl had to be emptied two or three times daily for the first few days, and then once or twice daily for about two weeks; and from then on to his death two or three of these wounds remained open and continued to drain. On October 10th, his scrotum was tapped and scarified.

We believe that a conservative estimate of the unmeasured fluid which was lost through these various channels would swell our total to at least sixty gallons. These sixty gallons of fluid, ranging from seven and a half to nine per cent. albumin, were withdrawn from an individual of about 160 pounds weight, between the dates of July 11th and November 27th. We made several and repeated efforts to establish a diagnosis of tuberculosis, both by examination of sputum and of the fluid withdrawn from the peritoneal cavity, all of which were negative. The patient's appetite remained good, as did his digestion, until the very last day of his life. He never, strange to say, suffered very much from thirst, and although the amount of fluid ingested was never measured, we feel safe in saying that it did not equal the amount lost in a given period of time, and consequently the emaciation was very great. The patient died suddenly on the night of November 30th.

Exchange Building.

USE OF THERMOSTABILE TOXINES IN URETHRAL AND BLADDER INFECTIONS,

*Using the Urine as a Vehicle.**

A Preliminary Report.

By Frank S. Crockett, M.D.,
Lafayette, Ind.

The treatment of purulent urinary infections, due to invasion of the urethra or bladder, in particular, may be divided into two general procedures—those measures calculated to decrease germ activity directly through mechanical removal, chemical destruction, and influence directly on the tissues involved, to render them less ideal as a culture medium; and those measures which seek to stimulate the bactericidal elements in the blood either to greater activity or to greater quantity. It is this latter object which is accomplished by a new process, a short cut to an autogenous toxine, about which I have to write.

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*Read before the Tippecanoe County, Ind., Medical Society.

Specific Toxines. McFarland asserts that the toxic metabolic products are contained within the bodies of the gonococci artificially grown and are disseminated but slightly throughout the culture medium, and that, therefore, vaccines are in reality solutions of toxines and derive their therapeutic value from their toxine content, and not as a mere emulsion of germs. This toxine element seems to be quite stable and is not destroyed by the temperatures usually found sufficient to kill the gonococcus. However, purulent urine or washings of urethral pus contain a specific toxic element after passing through a Berkfeld filter, a process which separates the germs from the solution, and this toxic element will produce a reaction similar to an autogenous vaccine. This would seem to show that the toxine, noted by McFarland as residing in the bodies of the gonococci grown outside the body, was similar to a soluble toxine existing in the pus from infected genitourinary tissues and which does not depend upon the presence of dead germs for its potency. I have devised an extremely simple method of using this specific toxine from urethral and bladder infections. I have used it empirically in order to gather sufficient clinical data to afford a working basis for the more technical experiments which Professor Hilliard, of Purdue University, has very kindly offered to work out with me.

The conclusions drawn in this paper are based on clinical observations in some twenty-five cases of urethral and bladder infections and are published now as a preliminary report, in the hope that others will use it with the same gratifying results that I have experienced. I have not had the time or opportunity to review the literature of present day bacterial products, and am not even prepared to enter into a discussion as to the identity of my therapeutic agent; but assume that it is a bacterial toxine either simple or complex, single or multiple. In a number of my earlier cases I washed the pus from the urethra with sterile water but found that it offered no advantage over the use of urine as a vehicle, and as many patients with gonorrhea will have, at certain stages of the disease, no pus or very little in the anterior urethra, the urine being loaded with pus from the posterior urethra or prostrate, the advantage of urine as a vehicle in cases like this, is apparent. My effort has been to keep the process so simple that anyone can use it; so that it will be attractive to the practitioner isolated from the city's laboratory, a help to him who needs it most.

Complications Causing Temporary Immunity. Several years ago I noticed the phenomenon of a gonorrheal infection extending into the testicle, accompanied by a rise in temperature of several degrees and a chill at times, with headache, malaise, etc. At other times I had observed that a patient would show a rise in temperature, together with the other symptoms described, without being able to locate an extension of the disease into new tissues, and in both instances I noted that the urine would become clear, the urethral soreness would disappear, and for a day or two days the patient, from a urine point of view, would seem to be well. The latter variety of febrile reaction led me to believe that the patient was truly suffering from a cold, and I concluded from this observation that any febrile reaction would check the activity of the gonococcus. Shortly afterward I read a short note in the New York Medical Journal, by Harold Neuhof, on The Effect of Artificially Induced Fever upon Some Chronic Inflammatory and Ulcerative Lesions. The author had used Coley's fluid as a means of inducing the artificial fever, and the efficacy of this agent as a means of inducing the artificial fever occurred to me; but before I had time to put my scheme into effect I had a patient in whom considerable fever existed from an intercurrent disease without in any way affecting the activity of the gonococcus. This observation destroyed my confidence in my earlier conclusions, and my idea has marked time until recently.

Stock Vaccines. Several years ago, shortly after Wright's announcement of his vaccine therapy in germ disease, I published my observations in a series of cases treated with stock vaccine and controlled clinically, instead of by the opsonic index. I found at that time that the stock vaccine, while an efficient aid, was not trustworthy in many cases; that the vaccine did not always seem to fully fit the case. My later use of stock vaccine has supported this general experience, and may be accounted for from a number of points of view, such as the probability that the "stock vaccine fails to carry with it all the twelve strains of gonococci known to exist," as put forward by McCowan, of Indianapolis, recently. This is because there is reason to believe that specific reaction may be restricted to a strain or various strains of the same germ; or we may accept the theory of Duncan that the reaction can be ideal only when the vaccine contains all the elements of germ activity existing at the moment, and that to-day's vaccine may not fit to-morrow's condition.

Soluble Toxines. Recently Duncan, of New York, writing on autotherapy, formulated the general rule that "when the pathological exudate or end product, or a dilution of the same, of any localized, loosely localized, and possibly nonlocalized infectious disease is filtered with a Berkfeld filter and the filtrate injected hypodermically, or placed in healthy tissues, antibodies specifically corresponding to the disease will tend to develop." After reading Duncan's report my earlier observations recurred to me, and I was able to explain the phenomena mentioned earlier in this paper. Using Duncan's theory as a working basis, I concluded that the placing of germs alive into tissues for which they had no special affinity, i. e., in which they did not readily grow, would not be followed by abscess or pus formation at the point of injection, and the general reaction following should be the same as Duncan observed, only more specific in that my solution would contain both soluble toxine and the bodies of germs with their toxine content. This I proceeded to do.

CASE I. The first patient treated with the new toxine solution had been under treatment for nine days, and received in that time twelve treatments (irrigations), with marked improvement in volume of pus discharge and in irritation incident to the gonorrheal infection, but without causing a reduction of the discharge below a small, thin, yellow flow in two hours' time. The first urine never failed to be at least very slightly cloudy, while the second urine, which was turbid when first seen, had varied between clearness and very slight cloudiness. The patient passed three and one half ounces of urine into a sterile container. This was filtered with ordinary filter paper to remove the gross elements, and then centrifuged at a high speed for five minutes. This centrifuging was done in the hope that all material and germs passing through the paper filter would be collected at the distal end of the tube, leaving a gonococci free solution at the top which could be injected hypodermically. (Later I found that this supernatant liquid contained some gonococci, mucus, and epithelial débris.) One tenth of one cubic centimetre of the supernatant liquor was injected hypodermically directly under the skin of the forearm. The irrigation was continued as usual throughout this history. The next day the patient reported that at six o'clock in the evening following the treatment he had a cold sweat lasting about an hour, was sick at the stomach, and had a pain in the back of his head, while his arm was slightly sore at the point of the injection. However, his discharge had disappeared, his first and second urine was clear, and the pains which he had been having in his legs for some days previous were gone. The reaction had spent its force, and he was for the moment apparently free from his disease, to his great delight. The following day he was still free from evidence of gonorrhea. The next day he failed to report, and the day following, or the fourth day after treatment, he returned with a thin yellow discharge from the meatus, similar to the one at the time of the first hypodermic injection. His first urine was slightly cloudy, but his second urine remained clear. Knees were a little stiff and bladder "felt heavy." One tenth c. c. of filtered and centrifuged urine was again injected. His first reaction was watched with considerable interest, as I felt that I was dealing empirically with an unknown agent. If nothing more up to the present time had been obtained, this one reaction, with its complete cessation of germ activity until the fourth day, together with the complete neutralization of absorbable toxines resulting in the patient's sense of well being, would be well worth recording. The following day he reported that no discharge had been noticeable since ten o'clock the night before; knee pains and bladder sensation gone, arm slightly sore, but no general reaction noticed. Next day, arm slightly swollen, but no discharge, although first urine showed slight evidence of pus. Next day later, or third day after hypodermic injection, a thin discharge had appeared and the first urine, amounting to one and one half ounces, was very slightly cloudy, and the rest clear. To this point I had waited for the reappearance of the discharge each time, in order to learn the duration of the period of germ inactivity. The subsequent record of this case is not given, as it was of no experimental value to this paper.

Stock Vaccine Followed by Autotoxine. In the following case stock vaccine was used for a short time, and then followed by the autotoxine.

CASE II. Acute specific urethritis; first day of discharge. Treatment, started December 6, 1912, consisted of irrigations twice daily for the first week. Usually this will stop discharge in a week or ten days. This case proved unmanageable, and the infection became gradually more severe until the tenth of December, when stock vaccine was given with an initial dose of eighty million. December 17th, infection has continued to increase in violence. Stock vaccine twenty million. December 21st, urine contains still more pus. I, cloudy; II, clear; vaccine, twenty million. December 23d, urine, I, cloudy, II, clear; stock vaccine, twenty million. December 28th, urine, I, cloudy; II, clear; stock vaccine, twenty million. December 31st, past two days no discharge; yellow to-day. Urine, I, cloudy; II, not obtained; no vaccine. January 1st to 5th, patient had vesical tenesmus; stock vaccine, 120 million. January 8th, tenesmus gone; stock vaccine, 120 million. January 14th, urine, I, cloudy; II, slightly cloudy; slight left epididymitis. First urine passed through Berkfeld filter; 0.1 c. c. injected hypodermically under skin of forearm. January 16th, after holding urine two hours only a slight excess of mucus. Urine, I very slightly cloudy; II, clear. Four or five hours after last treatment testicle more painful.

By the morning following testicle had decreased in size and was less painful. Morning after last treatment, slight headache. To-day pain in testicle practically all gone, though testicle still enlarged and hardened; headache and pain in legs gone. Patient declared he felt better than at any time since starting treatment. The first three and one half ounces of urine passed was diluted sixteen volumes and centrifuged for ten minutes; 0.1 c. c. of supernatant liquor was injected subcutaneously in right forearm; no irrigation. January 18th, patient free from discharge since last treatment, and at six p. m. to-day was unable to find a discharge. At 8:45 p. m., however, when he reported for treatment, he expressed a whitish yellow drop. Had retained urine practically three hours. Urine, I, very slightly cloudy; II, clear. Patient reported a general reaction the day following treatment that made him feel as if he were catching cold. The testicle had decreased over one half in size from two days before. First urine passed through Berkfeld filter; 0.2 c. c. injected. January 20th, reported no reaction; dose probably too small. No discharge; urine, I (15 c. c.), very slightly cloudy; II, very slightly cloudy. First urine centrifuged five minutes and 0.3 c. c. injected in right arm. Massaged prostate. January 22d, suffered heavy reaction; locally, a red swollen place about three by four inches. General reaction consisted of severe headache; fever but no chill; pains in all the muscles. After holding urine two hours no discharge; both urines clear. Pus could not be obtained, and no toxine could be given; massaged and irrigated in an effort to hold the gonococci in check. Patient was treated six times afterward by massage, with no reappearance of the infection.

Autotoxine in Cystitis. In the following case the autotoxine was used for cystitis due to enlarged prostate:

CASE III. Referred by Doctor Arnette. Retired farmer, aged seventy-seven years, in good flesh and apparent good health until attacked with an acute cystitis about three months before coming to me. During past month urine foul; was compelled to use catheter constantly; complained of a pretty bad rheumatism (?) in back and hips. Urine by catheter, specific gravity, 1.020; alkaline; odor, foul; cloudy, with a heavy tenacious mass of mucus that passed through the catheter slowly and gathered in the base of the urinal. Condition due to enlarged prostate. No microscopical examination made First seen on the twelfth day of January. Was irrigated with silver nitrate daily, with improvement in rheumatism and general discomfort, so that sleep could be indulged in without resorting to hypnotics. After about four treatments urine, however, was not improved in quality. Specimen of urine was diluted six volumes and centrifuged for five minutes; 0.1 c. c. of the supernatant liquor was injected in the left arm. Next day reported slight local reaction, but no general reaction. The urine, while still cloudy, failed to show any of the mass of tenacious mucus which had been so persistent heretofore. Patient might have had a slight exacerbation of his general and bladder symptoms, as he was compelled to resort to hypnotics to sleep. Bladder irrigation continued, and next day urine was only very slightly cloudy, with filaments in it. The undiluted urine was centrifuged ten minutes and 0.1 c. c. was injected. January 20th, patient reported reaction with headache and malaise the day before. He was now considerably worse, his urine being cloudy with masses of mucus floating in it. Urine was diluted to double its volume with sterile water, centrifuged, and 0.1 c. c. injected hypodermically. January 21st, no general reaction; urine cloudy, but containing no mucous masses. I determined to give no toxines for several days, and use silver irrigations only, in order to see if the urine would clear up promptly. January 22d, urine not so good. January 24th, urine greatly improved; note made that urine seemed to improve just as well on the irrigation alone. January 25th, urine considerably worse, with tenacious mucous mass passed. Decided now to use toxine in larger doses than before and compare results, using silver as routine treatment; 0.5 c. c. injected after being boiled. January 26th, patient reported reaction though not severe; urine cloudy; slightly improved. January 27th, urine almost clear; silver irrigation. January 29th, urine clear; phthalein test; no treatment. January 31st, urine still perfectly clear; irrigation. February 2d and 3d, urine clear; irrigation; February 8th, urine had become slightly cloudy during the five days since last treatment; irrigation. February 9th, urine almost clear; irrigation. February 12th, urine turbid, odor strong; right testicle swollen; 0.5 c. c. boiled urine injected. February 13th, general reaction; right testicle less swollen and sore; irrigation. February 14th, patient felt worse; urine very slightly cloudy, but improved; 0.75 c. c. injected. February 15th, urine cloudy; general reaction; testicle still swollen and now very sore. Patient put to bed, probably overloaded with toxine; repeated too soon. February 17th, urine clear; right testicle less swollen; left testicle slightly involved. The urine probably cleared up at this in consequence of the extension of the germs into the left testicle. This case was treated merely in preparation for surgical removal of the prostate, which was done on the twentieth of February.

This was the first case of this nature in which I used the toxine, and the first few treatments were given cautiously. The treatment was, however, followed by substantial and prolonged improvement.

Summary of Clinical Experience. The first use of my toxine was carried out with small doses of 0.1 c. c. of the raw urine, in conjunction with the usual routine treatment of gonorrhea. This produced an ideal reaction, finding expression in partial or complete cessation of germ activity, but prone to produce excessive irritation at the point of injection, and open to the objection that the infecting organism might be carried through the blood stream with the resultant localization of the disease at some other part of the body. The temporary increase of antitoxine makes such an accident less probable. After heating the toxine solution the local reaction disappeared or was so slight that the patient seldom mentioned it. The general reaction was not nearly so violent and the local improvement was not so pronounced. This led me to use larger doses, with the result that a few patients appeared to be overloaded with the toxine, so that they failed to improve or actually seemed worse. On discontinuing the toxine these cases would improve markedly in the succeeding few days; which seemed to point to an overwhelming of the patient's resistive powers. This has led me to use smaller doses, ranging from 0.1 c.c. to 0.5 c.c. as a routine dose for gonorrhea; 0.5 c. c. to 0.1 c. c. in cystitis of old men; and 1 c.c. to 2 c.c. in colon bacilli infections. Clinically I have had the least noticeable improvement in colon infections, and in these would recommend longer periods between treatments.

Relative Considerations. It is true that a reaction will follow the injection of either the bacterins of Wright or the so called toxine complex obtained by filtering with a Berkfeld filter a solution containing pus. Would it not be reasonable to suppose that since we get wholesome results from the use of either of these that the absence of either would leave incomplete that strict specificity of the autogenous product which is held to be necessary to be ideal? This, coupled as it is with the proportion of each which is natural to the disease at the moment (also any variations in quality of each that may occur from day to day), should make this, when fully understood, the ideal autogenous product. The process as used by me in this preliminary series is not complicated, needing no elaborate laboratory equipment nor technical training. It is ideal in its cheapness, as it costs nothing, while it places in the hands of the general practitioner a therapeutic means that will greatly facilitate his control of the acute and subacute stage of urinary pus infections. It is not maintained that one can dispense with routine treatment or the aftertreatment usually needed to restore such tissue changes as may occur incident to the local congestion; nor should one relax his vigilance in hunting out all the possible foci of infection, or rather reinfection, such as are prone to exist in the urethral glands, prostate, vesicles, etc. I have found no practical way so far of determining the exact dose to be given at any one time. The treatment must be practised empirically for the present, the physician basing his dose on experience. While it should be possible theoretically to cure any pus disease with this toxine alone, yet, at least until it is more thoroughly understood and controlled, the usual measures of routine treatment should not be dispensed with. The urine should be modified with copious quantities of water, together with such urinary antiseptics as are best suited to the condition presenting. The local cleansing with irrigation, using at least 500 c.c. of fluid, together with the observance of scrupulous cleanliness on the part of the patient, must be insisted upon. This "treatment complex," when shrewdly combined, produces unusually quick results in my hands.

I would value the opinion of physicians who will give this toxine solution a trial in their practices, and will be greatly pleased if they will favor me with reports of their results.

515 Columbia Street.

Therapeutic Notes.

Treatment of Vomiting in Uremia.—R. Oppenheim, in *Progrès médical* for January 11, 1913, states that although the view is prevalent that vomiting, tending toward elimination, should not be interfered with when of mild degree, in some cases this symptom must be combated because it is so persistent as seriously to hinder the feeding of the patient. Under these circumstances restriction to two litres of water daily, taken cold and in small mouthfuls, with complete avoidance of food, will sometimes bring about cessation of the vomiting in two or three days. If not, the stomach should be washed out once daily with an alkaline solution, such as artificial Vichy, and bowel irrigation with one and a half to two litres of boiled water be likewise practised once or twice each day. Where there has been no rise in blood pressure, the next measure to be resorted to is hypodermoclysis, from 200 to 300 grammes (six to ten ounces) of a thirty per cent. solution of glucose being introduced twice daily. To these procedures suitable eliminatory treatment should be added—stimulation of the skin by dry or alcohol rubbings, and of the kidneys by diuretic drinks; local or general blood letting; renal organotherapy, especially in the form of subcutaneous injections of serum from the renal vein, and, finally, removal in so far as is possible of all toxic influences, dietetic, or medicinal.

If these measures prove insufficient to arrest vomiting, symptomatic medication will have to be resorted to. After every enema given, nutrient or otherwise, one tablespoonful of each of the two following mixtures should be administered:

(A)

℞ Potassii bicarbonatis, ...ʒss (2 grammes);
Syrupi, ...℥i (30 grammes);
Aquæ, ...℥iii (100 grammes).
M.

and after the preceding:

(B)

℞ Acidi tartarici, ...ʒss (2 grammes);
Syrupi acidi citrici, ...℥i (30 grammes);
Aquæ, ...℥iii (100 grammes).
M.

Where these fail, sodium citrate should be tried:

℞ Sodii citratis, ...gr. lxxv (5 grammes);
Aquæ destillatæ, ...℥x (300 grammes).
M. Sig.: One tablespoonful at short intervals.

Or, one of the following combinations may be availed of:

I.

℞ Mentholis, ...gr. xv (1 gramme);
Alcoholis, ...ʒvi (20 grammes);
Syrupi, ...℥i (30 grammes);
Aquæ destillatæ, q. s. ad..........℥v (150 grammes).
M. Sig.: One teaspoonful every hour.

II.

℞ Tincturæ iodi, ...ʒiss (5 grammes);
Chloroformi, ...♏lv (5 grammes).
M. Sig.: Five drops two or three times a day.

III.

℞ Ætheris, ...♏xvi (0.8 gramme);
Alcoholis, ...♏xl (2 grammes);
Aquæ aurantii florum, ...ʒiiss (10 grammes);
Syrupi, ...℥i (30 grammes);
Aquæ, ...℥iii (100 grammes).
M. Sig.: One tablespoonful every two hours.

The use of cocaine, morphine, belladonna, or antipyrine should be avoided in these cases.

External measures which may prove of some use are: 1. Application of hot compresses to the epigastrium; 2, an ice bag; 3, a spray of ether or ethyl chloride; and, 4, counterirritants.

Salvarsan in the Treatment of Tabes Dorsalis.—Leredde, in *Bulletins et Mémoires de la Société de médecine de Paris*, February 7, 1913, reports good results from energetic treatment with salvarsan or neosalvarsan in these cases. He considers the new remedies, administered in the manner he describes, distinctly more beneficial than mercury. In thirty-nine cases of tabes, given altogether 2[illegible]8 injections of the arsenicals, a clinical cure was obtained in nearly all who had received three or more complete series of injections as advised by the author.

The feature on which greatest stress is laid is the use of full doses, viz., 0.01 gramme of salvarsan or 0.015 gramme of neosalvarsan to each kilogramme of body weight. The earlier doses, however, should be small; thus, in the first series of injections, the doses given should be: Salvarsan, 0.2, 0.3, 0.6, and 0.6; or, neosalvarsan, 0.3, 0.6, 0.9, and 0.9—unless recent bulbar or meningeal manifestations should require even smaller amounts at first. The subsequent series of injections should each be preceded by a resting period of one month. The second series should consist of three injections, 0.4, 0.6, and 0.6 of salvarsan, respectively, or corresponding doses of neosalvarsan, and subsequent series, of three injections of 0.6 each, 0.9, or even 1.2 of neosalvarsan.

In using neosalvarsan, which he prefers to the older remedy, the author injects at weekly intervals and not on alternate day, as has been advised.

The ultimate result of the treatment is a disappearance of recent symptoms and of many of the long standing symptoms—not the Argyll Robertson pupil or arthropathic deformities; the progress of the disease is arrested. The Wasserman reaction gradually weakens and becomes negative. The beneficial effects are most striking in respect of the pains, the motor disturbances, visceral paroxysms, bulbar phenomena, and general health. The treatment is unattended with danger if faulty technic and excessive initial doses are avoided and due attention paid to contraindications. No serious untoward effects were observed in any of the cases treated. The alleged aggravation of tabes by salvarsan treatment is simply an expression of Herxheimer's reaction, a normal result of the effect of the drug on syhpilitic lesions.

Leredde is so convinced of the value of the systematic treatment he employs that he states most of the measures hitherto used in tabes, including analgesics, can be wholly dispensed with, only a few physical methods, such as motor reeducation, remaining useful in certain cases to hasten the disappearance of motor difficulties.

Mouth Wash to be Employed in Scarlet Fever.—Sevestre, in *Nouveaux Remèdes* for February 22, 1913, is credited with the following mixture for purposes of oral antisepsis in scarlatina:

℞ Phenylis salicylatis, ...gr. xxx (2 grammes);
Acidi borici, ...ʒiiss (10 grammes);
Alcoholis, ...ʒx (40 grammes);
Aquæ bulliatæ, ...Oi (500 grammes).
M. Sig.: For washing out the mouth.

Treatment of General Septic Peritonitis.—S. M. Hay, in the *Canadian Journal of Medicine and Surgery* for February, 1913, reminds us that in this condition the patient should be placed in the Fowler position as soon as the diagnosis is made and again for two or three days after the operation. Large quantities of normal saline solution should be given by the bowel, either continuously or intermittently, after the intervention. A single dose of morphine may, if necessary, be given at this time.

From twelve to twenty-four hours later, the bowels should be caused to act by means of laxative enemata. The following combination has proved excellent for this purpose in the author's hands:

℞ Olei terebinthinæ, ... }
Glycerini, ... } ..āā ℥ii (60 c. c.);
Magnesii sulphatis (sat. sol.), }
Aquæ, q. s. ad..........℥xii (400 c. c.).
M. Sig.: Warm and administer high up.

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THE AMERICAN MEDICAL ASSOCIATION SESSION.

The sixty-fourth annual session of the American Medical Association, which closed in Minneapolis on Friday, was attended by a large number of members, as our report published in the present issue indicates. Although St. Paul and Minneapolis carried off the record of the United States as heat centres during the earlier part of the week especially, the local committees had labored so industriously to insure the comfort of their guests that the torrid temperature caused but little discomfort and failed to hamper the work of the sections. The cool assembly halls of the University of Minnesota, and particularly the new buildings of the medical department, proved veritable havens of relief in this connection.

In to-day's issue we present a telegraphic summary of the meeting of the House of Delegates and other matter of interest to our readers. The next two issues will contain what to them will prove of greatest value, a summary of the practical papers read before the sections. As will be seen, many were noteworthy and rich in new suggestions. The American Medical Association is to be congratulated on the splendid showing made.

RADIUM DEPOSITS IN THE UNITED STATES.

No group of men are more interested in radium, from a practical standpoint, than are physicians; for radium promises to give them very material assistance in the control of certain diseases in which they often have been almost helpless. Physicians who have followed the foreign medical literature recognize that radium is not used in this country to nearly the extent which would be justified by the results already obtained abroad, even after making full allowance for the undue optimism which usually accompanies any new form of treatment. It is also generally recognized that the investigation of the possibilities of radium and analogous substances in therapeutics has scarcely been begun and that the profession in America has had little part in what has already been accomplished. This has resulted largely from the almost prohibitive price of radium, which has restricted its use to a few of the wealthier hospitals and individuals.

All of the radium so far used in the United States has come from abroad, and the impression has been general that radium bearing ores do not occur in noteworthy quantities in this country. Physicians will doubtless be surprised, therefore, to learn on the highest authority (C. L. Parsons, in the *Journal of Industrial and Engineering Chemistry* for May) that the United States leads the world in the possession of radium bearing ores; in fact, ores were mined in this country last year which contained more than twice as much radium as that produced in all the rest of the world. Still more surprising is the fact that no radium was extracted from this ore in the United States; part of the ore (that of a low grade) was thrown on the dump, leading to the irretrievable loss of this most precious of substances, while the high grade ore was shipped abroad, to be there worked up and part of the radium returned to the United States to be sold at a very high price, while the remainder is being used in Europe for the treatment of disease and for further scientific study.

This is a condition of affairs which is humiliating to those who take pride in the scientific achievements of their country, but if any action is to be taken in regard to it, it should be taken promptly, for, as Parsons says, our supply of radium is rapidly being depleted. When radium was discovered in St. Joachimsthal in Austria, the Austrian government purchased the mines, and since then has carefully supervised their working, so that there is the minimum of waste, and has controlled the radium produced so that the maximum benefit may be derived by the Austrian people. If our federal government can spend large sums in conserving the natural beauties of the National Parks, it should be possible for it to make a liberal appropriation for the scientific study, by the Bureau of Mines and the Bureau of Public Health, of our radium deposits, which have such great possibilities of being of inestimable value both to science and in the relief of pain.

A somewhat similar condition of affairs obtains in regard to another radioactive substance which seems to have distinct therapeutic possibilities, viz., thorium. Although this element occurs in the United States, the little that has so far been used here seems to have been imported; recently a Berlin physician made a special trip to this country to treat a patient with thorium. Similarly there are reasons for believing that some of the springs of the United States have radioactive properties equal to those of some of the European springs to which so many Americans journey each year. Thus there are not only humanitarian but economic reasons why we should endeavor to develop our resources along these various lines; this can probably be done only by the cooperation of the federal government through its excellent Bureau of Mines and its Public Health Service.

DANGEROUS PRESCRIBING IN GERMANY.

The American physician has been taught for many years that the practice of medicine is carried on upon a much higher plane in Germany than in the United States, that the position of the physician in the community is a most enviable one; and he has heard physicians of German birth sigh longingly for the creation here of conditions *grad wie in Deutschland* The Prussian secretary of the Interior has recently issued a decree which throws an interesting light upon the practice of medicine as conducted in Germany, tends to dispel some of the glamour with which distance and imagination have invested the German doctor, and makes us a whit less envious.

It seems that the "lodge" doctors, those who minister to the ills of the various *Kranken-Kassen,* or sick benefit societies, at so much, or rather so little, annually per capita, have been compelled by the societies which employ them to prescribe as economically as possible. Instead of prescribing divided powders, the whole amount is prescribed in bulk and sent out with instructions to take "as much as will go on the point of a knife." Occasionally the patient himself is instructed to divide a powder into twenty-five parts and to take one of these or one half of one at certain times. In the decree above referred to the secretary of the Interior cites these facts and gives specific instances which came to his knowledge of the extremes to which this practice goes. In one case four tenths of a gramme of acetphenetidin was prescribed for a child with directions to take half. In another instance, ten grammes of compound antipyretic powder were prescribed with instructions to take as much as would go on the point of a knife as a dose, and in still another one, corrosive sublimate was ordered and the patient instructed to dissolve it in a beer bottle full of vinegar!

The secretary points out the serious objections which exist to this method of prescribing potent drugs. The absence of written directions, he shows, is a source of danger to the patient, since instructions given orally may be easily forgotten or misunderstood; the patient or his nurse is often not in position to properly carry out the task of dividing medicines or making up preparations, etc. The secretary therefore calls upon all the presidents of the Prussian provinces and the chief of police of the city of Berlin asking that they request the district medical officers to use their influence with the physicians in their respective districts to induce them to write out prescriptions free from the objectionable features cited above, and with the directions clearly and distinctly set forth in writing.

THE THERAPEUTICS OF MOUNTAIN CLIMBING.

Soon the open season in the Canadian Rockies, the Swiss Alps, the Jotunheim of Norway, the mountains of the Tyrol, and the Pyranees will begin again. For his patients and for the physician with sound heart and limbs, and a love of unspoiled nature implanted in his breast, no holiday can be more inspiring or more lasting in its beneficial effects than a few weeks of mountain climbing. The intense insolation of great altitudes and the pure, rarefied atmosphere are good for one's metabolism. Above eight thousand feet the freedom from bacteria is absolute. On the summit of Mont Blanc there are only 150 dust particles to each cubic centimetre, instead of the 150,000 or more present in the air of large cities. Amid such conditions the hemoglobin of the blood is increased, the heart's action is strengthened, one's respiratory quotient rises, the muscles are hardened and made more powerful, osmosis and activity of the body cells are augmented; superfluous fat and water disappear. The gouty toe, nervous instability, and the lugubrious blue devils of indigestion and insomnia are exorcised and banished. The impending shadow of arteriosclerosis is indefinitely postponed to a more distant day by the simple fare, the healthful physical exertion, the mental rest, the undefiled air, and the exhilaration of spirits experienced during a sojourn among the glaciers and the mountain tops.

The mountain climber must be of abstemious habits, must have a clear head, steady nerves, and an alert eye. Truly a club hut is superior to the must luxurious caravansary at the sea level, and a rucksack on your back and a sprig of edelweiss in your hat are better than a bag full of golf sticks or rooting from a grandstand at a game of baseball played by other men. Contact, too, with the mountain guides, who are a sturdy race, rids one of mental cobwebs and tends to a more expanded intellectual horizon. They are a new kind of men, from whom much may be learned by the town dweller. The eminent English physicist, Tyndall, knew the value of mountain climbing, and doubtless the well balanced activities of his long and useful life were due in no small measure to his holidays in the *belles alpes*. His charming essays and scientific observations on the movements of glaciers and the geology and meteorology of the Alps are good literature for summer reading.

It is an excellent thing to cultivate a hobby, and it would be hard to find a saner or more healthful one than mountain climbing. It also has the merit of being less expensive than automobiles, yachts, or collecting paintings and bric-à-brac. It was a wise physician who discovered after the age of forty-five that he could do a year's work in ten months, but not in twelve. The vacation habit is a good one. "In the mountains ye shall find rest."

THE INFLUENCE OF RACIAL INCEST ON MENTAL DEVELOPMENT.

In an ably written chapter of White and Jelliffe's recent work on the treatment of mental diseases, Dr. William T. Salmon calls attention to the fact that nearly one third of the immigrants certified as insane or mentally defective at Ellis Island by the United States Public Health Service officers are Jews, though Hebrews constituted only fourteen per cent. of the total immigration. Here, then, is a fact that has an important bearing on the eugenic problem—that at present all absorbing topic. How is it that a race of people who through all the centuries that their neighbors were engaged in barbarous pursuits were cultivating their minds, now at this time, with everything about them influencing mental development, give evidence of a breaking down in the very faculty in which they shone? The fact that they have been practically a racially pure people, and not subject to the baneful influences of promiscuous mixtures or crossings, makes this all the more peculiar in the light of eugenic teachings.

Friedmann, in an article in the *Journal of the American Medical Association* for March 9, 1912, ascribes this eugenic paradox to the close imbreeding of these people within their own race, or racial incest or consanguinity. While crossings between different species produces hybridism, a condition so familiar to breeders, the other extreme, breeding exclusively in one variety or line, is just as harmful. In humans this seems to produce the highly sensitized organisms so prone to mental disorder and defect.

Aside from discouraging and preventing, where possible, matings between the unfit, and encouraging them between the highly developed, the eugenists should include in their propaganda, not merely marriages within the races, but intermarriages between the different divisions of the same races. The probability of acquiring, by such matings, some distinctly dominant characteristics not possessed by either, and wiping out any recessive characteristics, is consistent with the Mendelian doctrine. Mating in the same branch of a race can bring no new determiner to that branch; there is no opportunity for the exercise of "selective evolution." Recessive characteristics are retained, to be emphasized at some future time in the form of a distinct defect, as is shown to be the case with the Jews. But intermarriages between Jew and Gentile have produced remarkable specimens both mentally and physically. Even marriages between Jews of different nationalities have been better, showing that environment influences the physical characteristics of even the same race. On this principle, crossings between Anglo-Saxons and Latins, or Anglo-Saxons and Slavs, is better than continuous mating in the same branches. On the other hand, crossings between the different races, as between the Caucasian and negro, between Mongolian and Caucasian, etc., has a tendency, in man as well as animals, to produce hybridism or mongrelism.

The perfect man can come, therefore, from matings of the fittest, but between the branches of a race; from the highly developed alloyed with the cruder—else disintegration may result. Hence immigration, if properly sifted of the defective, is an advantage rather than a disadvantage. The only problem is the admittedly difficult one of detecting and excluding the undesirable, because unfit. And even when the unfit have apparently been excluded, the normal may have within them, according to the Mendelian doctrine, recessive characteristics which are inactive or inert for them, but which they can transmit to their offspring in whom they become the dominant characteristics; on the same principle that hemophilia is transmitted through the female, in whom it is dormant, to become active in her male offspring.

SPHYGMOMANOMETRY AND THE NEW-BORN INFANT.

That apparent absence of the heart beats at birth does not constitute positive proof of death of the infant is shown by the number of cases in which life has been permanently restored in spite of such a condition. It is generally conceded that the sole criterion of death under these circumstances is afforded by the results of artificial respiration. Only where, notwithstanding passive respiration for at least half an hour, distinct heart action fails to appear, can death be considered to have taken place.

An arbitrary rule of this kind, however, is obviously not the best possible solution of the problem. Some more sensitive method of ascertaining the persistence of cardiac activity than palpation and auscultation is desirable. Both the advisability and practicability of such a refinement in procedure have recently been shown by Balard, of Bordeaux (*Presse médicale*, March 29, 1913), who uses a sensitive dial sphygmomanometer, with a small, narrow cuff (six centimetres wide) to this end. In apparently dead infants, in whom neither the radial pulse nor the apex beat could be felt, and auscultation was likewise negative, brachial pulsations at a slow rate—fifty in two of the cases—were plainly revealed by the instrument. In at least one case of the four reported, artificial respiration would have been abandoned after half an hour's seemingly unsuccessful trial had it not been for the instrument, which showed that the circulation, though feeble, was being kept up. At the expiration of one hour the heart beats became noticeable upon inspection, and after two hours and a quarter, spontaneous respiration was established. The child later died, evidently by reason of injury received during an unsuccessful attempt at forceps extraction. In both this and the other cases, however, the superiority of the sphygmomanometric method of determining the presence of feeble heart action over the procedures heretofore employed seemed to be clearly demonstrated.

SUSCEPTIBILITY OF COCKROACHES TO PLAGUE BACILLI.

Among the many parasites which come in direct or indirect contact with man, the cockroaches have lately been made the subject of interesting experimentations, and thus, Dr. M. A. Barber has made experiments with sixty-one cockroaches, which were inoculated with a virulent strain of plague, as reported in the *Philippine Journal of Tropical Medicine* for December, 1912. In the culture of the sixty-one cockroaches it was shown that six only died from an unmixed plague infection, of which only one could be identified by guineapig infections. Of the noninfected insects, at least one half were living from twelve to twenty-seven days after inoculation. Since all which died of plague died from the plague strain, either alone or mixed with some other bacteria, within two hours after inoculation, it seems probable that those surviving six days were not infected. At least twenty-eight survived two weeks or more after inoculation. It appears, therefore, to have been clearly shown that cockroaches may be infected by large doses of virulent plague bacilli.

News Items.

Meetings of Medical Societies to be Held in Philadelphia During the Coming Week.—Tuesday, June 24th, West Philadelphia Medical Association; Friday, June 27th, Northern Medical Association and the South Branch of the County Medical Society.

Medical Society of the Woman's Hospital, Philadelphia.—At the May meeting of this society the following officers were elected to serve for the ensuing year: President, Dr. Catherine Macfarlane; vice-president, Dr. Margaret Butler; treasurer, Dr. Elizabeth F. C. Clark; secretary, Dr. Margaret R. Large.

Rhode Island Medical Society.—At the one hundred and first annual meeting of this society, held in Providence on Thursday, June 5th, Dr. John W. Keefe was elected president, to serve for the ensuing year. Other officers were elected as follows: Vice-presidents, Dr. Stephen A. Welch and Dr. Frank L. Day; secretary, Dr. Jay Perkins; treasurer, Dr. Winthrop A. Risk; librarian, Dr. George D. Hersey.

Resolution on the Danger of Unproved Serums.—At a meeting of the board of directors of the Philadelphia County Medical Society, held on June 9th, the following resolution was adopted:

> *Resolved,* That it is the sense of the board of directors of the Philadelphia County Medical Society that it is prejudicial to the public health to inject into human beings living organisms before their harmlessness and therapeutic value have been ascertained by examination of the board of health.

Endowment Fund for a Chair of Pathology in the University of Cincinnati.—Mrs. Mary Emery has contributed $125,000 to the Ohio Miami Medical College of the University of Cincinnati for the endowment of a chair of pathology in the institution. A sum of about $80,000 from the estate of Dr. Francis Brunning has also been received by the university, the income of which is to be used for the endowment of a second chair.

Commencement Exercises of the Medico-Chirurgical College of Philadelphia.—Over one hundred graduates received degrees in the four departments of this college, at the thirty-third annual commencement, held on June 6th. Of this number, sixty-one were graduates in medicine. Dr. Edwin Earle Sparks, president of the Pennsylvania State College, delivered the address, and Dr. Seneca Egbert, dean of the medical department, presented the diplomas.

Alienists and Neurologists to Meet in Chicago.—A meeting of alienists and neurologists will be held in Chicago on June 23d, 24th, and 25th, under the auspices of the Chicago Medical Society, for the purpose of discussing mental diseases in their various phases. All who are interested are invited to attend. An excellent programme has been prepared, consisting of forty-four papers by men prominent in the field of neurology. Dr. Harold N. Moyer is chairman of the committee of arrangements, and Dr. W. T. Mefford is secretary.

The Clinical Society of Philadelphia Plans to Erect an Office Building.—On May 31st a charter was granted to the Clinical Society of Philadelphia, a new medical organization which is planning to erect a scientifically arranged office building for the exclusive use of physicians. The members of the society are: Dr. E. E. Montgomery, Dr. J. B. Deaver, Dr. Samuel G. Risley, Dr. G. Oram Ring, Dr. C. J. Decker, Dr. George W. Warren, Dr. George C. Stout, Dr. A. H. Maier, Dr. E. L. Klopp, Dr. H. R. Loux, Dr. W. C. Hollopeter, and Dr. Harvey A. Fenner.

New Officers of the Medical Society of New Jersey.—At the one hundred and forty-sixth annual meeting of this society, held in Spring Lake, on June 10th, 11th, and 12th, the following officers were elected: President, Dr. Enoch Hollingshead, of Pemberton; first vice-president, Dr. Frank D. Gray, of Jersey City; second vice-president, Dr. William J. Chandler, of South Orange; third vice-president, Dr. Philip Marvel, of Atlantic City; corresponding secretary, Dr. Harry A. Stout, of Wenonah, reelected; recording secretary, Dr. Thomas N. Gray, of East Orange, reelected; treasurer, Dr. Archibald Mercer, of Newark, reelected.

Changes in the Staff of Stanford University.—The following promotions and new appointments have been made in the medical department of Stanford University: Dr. Thomas Addis has been promoted to be associate professor of medicine; Dr. E. C. Dickson and Dr. W. W. Boardman have been made assistant professors of medicine; Dr. Leo Eloesser and Dr. F. E. Blaisdell have been made assistant professors of surgery. Dr. R. G. Brodrick, of the San Francisco Board of Health, has been appointed assistant clinical professor of hygiene and public health. In the division of medicine, Dr. W. F. Schaller has been made assistant clinical professor, assigned to neurology, and Dr. J. M. Wolfsohn, clinical instructor, assigned to neurology. Dr. A. A. O'Neill has been promoted to be a clinical instructor in medicine, and Dr. G. A. Rothganger has been appointed an instructor in surgery.

Massachusetts Medical Society. — The one hundred and thirty-second annual meeting of this society was held in Boston on June 10th and 11th. The attendance was unusually large and the meeting was in every respect very successful. The Shattuck Lecture, which is provided for by a special fund, was delivered by Dr. Harvey Cushing, of the Harvard Medical School, his subject being Diabetes Insipidus and the Polyurias of Hypophyseal Origin. The annual dinner of the society was held in the Copley-Plaza Hotel, on the evening of June 11th, and among the invited guests were: Dr. Walter F. Bowers, of Clinton; Professor Charles W. Eliot, Mr. Robert L. O'Brien, Dr. H. C. Ernst, Dr. H. D. Arnold, Dr. John J. Bottomley, Dr. E. H. Bradford, Dr. George B. Shattuck, Dr. F. C. Shattuck, Dr. F. W. Goss, Dr. E. H. Buckingham, Dr. J. C. White, Dr. Henry P. Walcott, Dr. George W. Gay, Dr. Charles F. Whittington, Dr. Welder Tileston, Doctor Burrage, Doctor Brigham and Doctor Calderwood, all of Boston; Dr. Charles G. Stockton, of Buffalo, N. Y.; Dr. John H. Gibbon, of Philadelphia; Dr. Homer Gage, of Worcester, and Doctor Cook, of Springfield. The council of the society at its annual meeting elected the following officers: President, Dr. Walter P. Bowers, of Clinton; vice-president, Dr. Lyman Asa Jones, of North Adams; secretary, Dr. Walter L. Burrage, of Boston; treasurer, Dr. Edward D. Buckingham, of Boston; librarian, Dr. Edward H. Brigham, of Boston; chairman of committee of arrangements, Dr. Arthur H. Broughton, of Jamaica Plain.

Venereal Diseases in New York City.—During the month of January, 1913, the Department of Health requested seven thousand physicians in Greater New York to furnish the department with information regarding the number of cases of syphilis, gonorrhea and chancroid that had been under their care in their private practice during the twelve months previous, in order that some idea of the number of cases of venereal disease treated during 1912 might be obtained. Only 2,215 physicians responded to this request, reporting 13,348 cases of syphilis, 24,980 cases of gonorrhea, and 4,431 cases of chancroid, making a total of 42,659 cases of venereal disease treated in the private practice of less than one-third of the physicians of this city within twelve months. The number of cases of syphilis is especially and alarmingly large. A complete census of the cases treated in institutions has been unobtainable up to the present time, but the institutional cases, without doubt, exceed in number many times those treated in private practice. The apparently extensive prevalence of venereal diseases in New York city certainly furnishes food for thought. During 1912 the serological laboratory of the Department of Health tested 4,585 specimens of blood for syphilis and 545 for gonorrhea, while from January 1, 1913, to June 1, 1913, 5,639 blood specimens were tested for syphilis and 846 for gonorrhoea. A diagnostic clinic for venereal diseases is held daily, between 9 and 10 a. m., at the central office of the Department of Health, Centre and Walker streets. Patients may be referred by physicians for the performance of the Wasserman reaction, and for examinations of fresh specimens or the presence of treponema. No patients are examined unless referred by physicians, and under no circumstances are the results of examinations reported to patients. A similar clinic is held at 307 West Thirty-third street, on Wednesday evenings between 8 and 9 p. m., for the benefit of applicants unable to attend during the day.

Personal.—Dr. J. Morris Slemons, associate professor of obstetrics of Johns Hopkins Hospital, has been appointed professor of gynecology in the University of California, and director of the new Women's Clinic at that institution. Dr. Slemons will assume his new duties on August 15th. Dr. Karl M. Wilson, of Montreal, will succeed Dr. Slemons at Johns Hopkins.

Dr. Guy L. Kiefer, who has held the position of health officer of Detroit since 1901, has tendered his resignation, to take effect July 1st. Dr. William H. Price, for twelve years head of the milk inspection department of the Detroit Board of Health, will succeed him.

Dr. P. J. H. Farrell, secretary of the Chicago Medical Society, has been endorsed by President Wilson for appointment as governor of the Philippine Islands.

Dr. Carlos F. MacDonald, of New York, was appointed president of the American Medicopsychological Association, at the sixty-ninth annual meeting of the association, held last week in Niagara Falls, Canada.

Gifts and Bequests to Hospitals.—By the will of Hannah M. Rockwell, who died in Brooklyn last year, the Methodist Episcopal Hospital will receive $5,000.

St. John's Hospital, Brooklyn, will receive $1,000, under the terms of the will of John E. Brone, who died in 1910.

By the will of Miss Maud D. Smith, the Syracuse Hospital for Women will receive $10,000, to endow a room in the hospital.

Included in the will of the late Hunter Brooke, of Philadelphia, the Episcopal Hospital will receive $5,000, and the Philadelphia Home for Incurables and the Kensington Hospital for Women will each receive $1,000.

By the will of Theodore Goetze, who died on May 9th, the German Hospital and Dispensary, New York, and the Seton Hospital for Consumptives will each receive $8,000, and St. Joseph's Hospital for Consumptives, $6,000.

The will of Henry B. Palethrop, late of Philadelphia, contained bequests of $5,000 each to the Presbyterian, the Jewish, Wills, and the Pennsylvania Hospitals.

By the will of W. Burling Cocks, late of Locust Valley, Long Island, the Nassau Hospital will receive $5,000.

Resolutions on the Death of Dr. James A. Egan.—At a special meeting of the Illinois State Board of Health, held in Chicago, June 7, 1913, the following resolutions relating to the death of Dr. James A. Egan were adopted:

WHEREAS, Dr. James A. Egan, who departed this life on March 30, 1913, was a member of the State Board of Health of Illinois and its secretary continuously for upward of sixteen years, the following resolutions are hereby adopted:

Resolved, That in the death of Doctor Egan the State has lost its foremost advocate of disease prevention, of sanitary education and legislation, of higher medical education, and of reciprocity between the States in medical practice;

Resolved, That the monthly bulletin inaugurated by Doctor Egan —a pioneer in its field—contained articles of unrivalled excellence upon the prevention of disease, the care of children, the care of the sick and other topics, which were almost wholly the product of his pen and were nation wide in their beneficial influence;

Resolved, That the vigilant zeal of Doctor Egan in his official capacity in eliminating epidemics by vaccination and the introduction of free antitoxine for the cure of diphtheria, in the instruction of undertakers and the regulation of the burial of the dead, in the instruction and regulation of the practice of midwives, and other means, has made human life in the State of Illinois more secure;

Resolved, That the labor of Doctor Egan in making life more secure has increased the population, increased human efficiency, has added to the value of the products of both farm and factory and has been an important factor in the education of the people;

Resolved, That the work of Doctor Egan in the strictness and broadening of the examinations for medical licensure and his relentless enforcement of the inadequate laws against fraudulent and incompetent practitioners of medicine, has placed medical education, medical science, and medical practice upon a more exalted plane than heretofore:

Resolved, That the incessant work of Doctor Egan, and the absence of relaxing vacations have contributed to his untimely demise;

Resolved, That the undersigned members of the board mourn the loss of an untiring fellow worker and a much loved comrade and friend;

Resolved, That these resolutions be spread upon the minutes of the board and that a copy be sent to each of the surviving children.

GEORGE W. WEBSTER, M. D., President.
C. J. BOSWELL, M. D.
RALPH E. NIEDRINGHAUS, M. D.
WALTER R. SCHUSSLER, M. D.
P. H. WESSEL, M. D.
HENRY RICHINGS, M. D.

Attest:
AMOS SAWYER,
Acting Secretary.

The University of Minnesota, Minneapolis, Minn.

The American Medical Association,

Sixty-fourth Annual Meeting,

MINNEAPOLIS, JUNE 16 TO JUNE 20, 1912.

Introduction.

Visitors to Minneapolis found a city in which business and beauty are well blended together. Sixty years ago Minneapolis was an Indian reservation. To-day it is a city of more than 325,000 inhabitants. With its twin city, St. Paul, it forms a community with a population exceeding half a million. Minneapolis, meaning "City of Water," is well named because there are eight large lakes, besides the Mississippi River, within the city limits. Naturally, in the summertime it is a city of beauty. The famous lakes—Lake of the Isles, Lake Calhoun, and Lake Harriett—with their wooded shores and fine boulevards have been so beautified by the Minneapolis Park Board as to confer upon them the rare distinction of having no peers in any other city in the world. These lakes are easily reached by trolley. Other points of natural beauty are Minnehaha Falls, made famous by Longfellow, and Lake Minnetonka, a picturesque lake, twenty-six miles long, which is reached by less than an hour's trolley ride from Minneapolis. Here many of the wealthy citizens have built luxurious summer homes. There is a magnificent boulevard winding from the lakes along Minnehaha Creek to the famous Minnehaha Falls, and thence along the gorge of the Mississippi to the grounds of the State University.

Minneapolis to-day presents to visitors a most prosperous and attractive appearance. Flower boxes embellish a large number of business buildings and ornamental light standards adorn the downtown streets. Collectively, these are known as the "Hanging Gardens of Minneapolis." The City Court House is the most notable public building. It occupies an entire block, is built of Minnesota granite, and cost $3,500,000. It is surmounted by a tower which offers a fine view of the city from a height of 345 feet. Within its front entrance is a heroic figure, the "River God" or "Father of Waters," said to have been carved from the largest piece of marble ever taken from the Carrara quarries. The new Art Museum now under construction was made possible by the donation of a block of land, valued at $250,000, by the late Clinton Morrison and by the generous subscription of half a million dollars in one hour's time at a dinner at the Minneapolis Club, at which 225 citizens subscribed. The Walker Art Gallery is a private collection of famous oil paintings, as well as valuable pottery, ivories, etc. It is located in the heart of the city and is free to the public. Of course, visitors to the city should not neglect to see the largest flour mills in the world, for Minneapolis ranks first in the output of flour, having a daily capacity of 84,000 barrels.

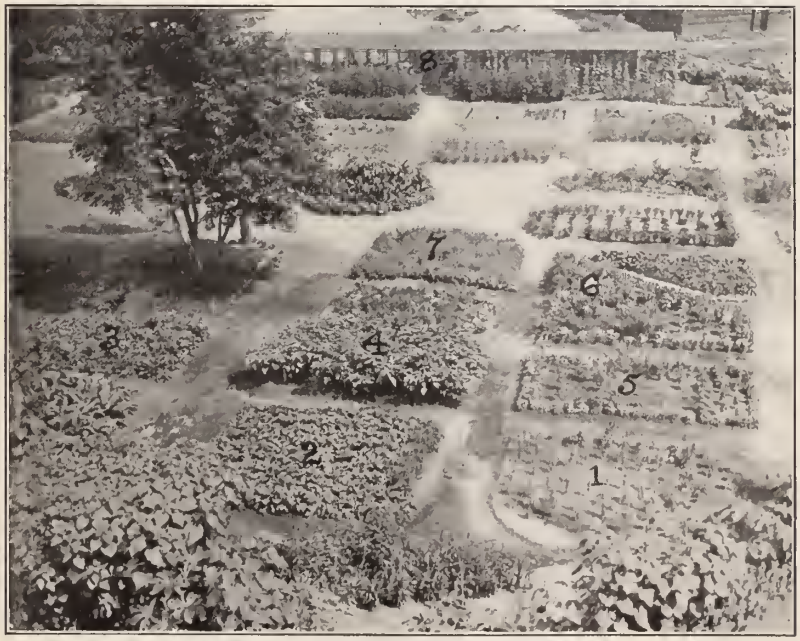
For years the subject of pure drinking water for Minneapolis was a great problem before its citizens. About two years ago the construction of a great filtration plant was begun, and since the first of this year the dream of generations has been realized. Minneapolis now has water that is pure and palatable. The cost of purifying a million gallons is $4. The capacity of the clear water basin is about 45,000,000 gallons, it being the largest enclosed basin in the country.

The American Medical Association met in the University of Minnesota campus. The business of the various sections was transacted in the new and modernly equipped medical building. The campus covers eighty-five acres bordering on the east bank of the Mississippi River. Of special interest to the medical profession, outside of their meetings, was the inspection of the Elliot Memorial Hospital, the

Free Dispensary, Institute of Pathology and Bacteriology, and the College of Pharmacy Drug Plant Laboratory and its Garden. The Elliot Memorial Hospital, which is under the direct supervision of the medical department of the university, was erected principally by the gifts of $120,000 from the estate of Dr. and Mrs. A. F. Elliot and of about $50,000 by local physicians. A new era in medical education was begun with the development of this teaching hospital, the practical laboratory of clinical medicine. The building is fireproof and consists of four stories and basement. It has a capacity of 120 beds. Sick poor residing in Minnesota are admitted free of charge. No paying patients are received. Dr. L. B. Baldwin is the superintendent. The Free Dispensary is the outpatient department of the hospital. The total number of patients treated at the dispensary in the year 1912 was 33,190; 13,513 prescriptions were dispensed by the pharmacy students. The dispensary extends its usefulness to the homes of the needy families. Valuable clinical practice is given to the medical students, both at the in and out patient departments of the hospital. The Pasteur Institute of Minnesota is located in the Pathology Building. It was opened August 1, 1907. During the last year 318 patients were treated with inoculations against rabies. The last legislature passed a law requiring all dogs in suspected localities to be muzzled for six months. This law, it is hoped, will reduce the large number of patients needing the Pasteur treatment.

Section of the Medicinal Plant Garden looking northward, showing hedge of *Rhamnus cathartica* and ricinus.

The Medicinal Plant Garden was authorized by the Regents in 1909, and since that time the garden has gained a national reputation. There is probably not another such extensive garden devoted exclusively to medicinal plants in this country. The garden was established to increase the facilities for and make more comprehensive the instruction of pharmacognosy and materia medica. It furnishes good material for expert and research work. The proper development of such a garden gives the student an excellent idea of the origin of vegetable drugs, and he is thereby impressed with the distinguishing characters of the various families. In the selection of the seeds for the garden many parts of the world were called upon. No doubt many physicians were greatly interested in visiting this garden and seeing for themselves the living plants of *Digitalis purpurea*, *Hyoscyamus niger*, *Atropa belladonna*, and various other drugs which are frequently prescribed.



Section of the Medicinal Plant Garden looking eastward, showing: 1. *Delphinium consolida*; 2, *Digitalis purpurea rosea*; 3, *Atropa belladonna*; 4, *Datura metelloides*; 5, *Aconitum speciale*; 6, *Gossypium herbaceum*; 7, *Calendula officinalis*; 8, Slat House within which are shade loving plants.

The Twin Cities (Minneapolis and St. Paul), with their fifty-seven hospitals, both private and public, and their large number of physicians of national reputation, afford the best clinics in the Northwest. Among the hospitals, the City and County Hospital of St. Paul is the largest, with a capacity of 600 beds. It is in charge of Dr. A. B. Auker. The next in size is the City Hospital of Minneapolis, in connection with which is the Hopewell Hospital for tuberculous patients. Together they have a capacity of 410 beds and are in charge of Dr. H. O. Collins. Other notable hospitals in the city of Minneapolis are:

Abbott's Hospital, both public and private, thirty beds.

Asbury Methodist Deaconess Hospital, 103 beds.

Bethany Home, public, for women and children, seventy-six beds.

Christian Tent Hospital, private, for tuberculous patients, fifteen beds.

Cody Hospital, private, maternity, twelve beds.

Florence Crittenden Home, private, fifteen beds.

Eitel Hospital, private, twenty-six beds.

Hill Crest Surgical Hospital, private (also obstetrical), forty beds.

Home for Children and Aged Women, private, 120 beds.

Home for the Aged, private, 130 beds; Little Sisters of the Poor in charge.

Maternity Hospital, public, fifty beds.

Minneapolis Roman Catholic Orphan Asylum, private, for boys, 150 beds.

Minneapolis Sanitarium, public, for noncontagious diseases, twenty beds.

Northwestern Hospital, public, 100 beds.

Norwegian Lutheran Deaconess Home, public, eighty-five beds.

Mahala Fisk Pillsbury Home, for girls, sixty-four beds.

Quarantine Hospital, 100 beds.

Rest Hospital, private, twenty-five beds.

Sheltering Arm Orphan Home, seventy beds.

South Side Sanatorium, private, twenty beds.

St. Barnabas Hospital, private and public, 150 beds.

St. Mary's Hospital, public, 100 beds.

Swedish Hospital, public, 150 beds.

Thomas Hospital, private, for tuberculous patients, fifty beds.

Washburn Memorial Orphan Asylum, private, 120 beds.

NOTABLE ST. PAUL HOSPITALS.

Bethesda Hospital, public, 130 beds.

City and County Hospital, 600 beds.

Cobb Hospital, private, eighteen beds.

Dale Street Infirmary, public, fifty beds.

House of the Good Shepherd, private, reformatory.

Jewish Home for the Aged, private, twenty beds.

Luther Hospital, private, fifty beds.

Mounds Pard Sanitarium, private, for nervous and mental cases, eighty beds.

Nugent Sanatorium, private, fifty beds.

Protestant Orphan Asylum, private, fifty beds.

Salvation Army Rescue Home, public, thirty-seven beds.

St. Joseph's Hospital, private, 130 beds.

St. Luke's Hospital, private, 100 beds.

St. Paul Roman Catholic Orphan Asylum, private, seventy-five beds.

St. Paul German Hospital, public, twenty-five beds.

St. Thomas Hospital.

Women's Christian Home, semipublic, maternity, twenty-five beds.

ABRAHAM JACOBI, M. D., LL. D.,
President of American Medical Association.

At Rochester, Minn., is St. Mary's Hospital, which is under the supervision of the famous Doctors Mayo. This hospital is for surgical cases only, and has a capacity of 250 beds.

There are about 560 physicians in Minneapolis and nearly all of them are members of the Hennepin County Medical Society. Meetings of this society are held on the first Monday of each month in the society's library rooms, located in the Donaldson Building. The programme usually consists of two or three papers and the presentation of clinical cases and reports of cases. The library is quite complete, containing about 4,700 volumes. The society subscribes for thirty-eight medical journals, domestic and foreign, and is receiving 100 journals by donation. There is also a special study course open to the members. The society at the present time is in a most flourishing condition and is the largest society of its kind in the Northwest. The St. Paul physicians, numbering in all 303, have a similar organization known as the Ramsey County Medical Society. This society publishes monthly the *St. Paul Medical Journal.*

The health of Minneapolis is exceptionally good. Its general death rate is about ten per one thousand population, the lowest of any city. The State Sanatorium for Tuberculosis was opened in 1907 at Walker, Minn. The last legislature made an appropriation of $200,000 for the purpose of enlarging the institution from a capacity of 100 to 150 beds, and increasing its equipment generally. Half a million dollars were also appropriated to aid counties in building and maintaining county sanatoriums. These splendid appropriations place Minnesota in line with such progressive States as New York, Massachusetts, Pennsylvania, and New Jersey. The county sanatoriums, because of their ease of access, will be used for the advanced cases, and the State sanatorium will care for the incipient cases. Altogether the outlook in Minnesota for the proper handling of tuberculosis is very hopeful.

We acknowledge thanks to the Albertype Company, of Brooklyn, for the use of some of the photographs.

The Headquarters and Meeting Places: The tracks of the Northern Pacific Railroad divide the Campus into two parts, the old and the new.

Old Campus.—Bureau of Registration, Bureau of Information, Post Office and Commercial Exhibit—Armory. Surgery—Library, Chapel. Ophthalmology—Law School, Room 106. Laryngology, Otology, and Rhinology—Shevlin Hall, Assembly Room. Disease of Children—Physics Building. Lecture Room. Stomatology—College of Dentistry, Room 308. Nervous and Mental Diseases—Folwell Hall, Room 311. Dermatology—Folwell Hall, Room 214. Genitourinary Diseases—Folwell Hall, Room 301. Hospitals—Chemistry Building, Amphitheatre.

New Campus.—House of Delegates—Engineering Building, Library. Practice of Medicine—Engineering Building, Auditorium, Room 305. Obstetrics, Gynecology, and Abdominal Surgery—Institute of Anatomy, Amphitheatre, Room 102. Pharmacology and Therapeutics—Millard Hall. Room 214. Pathology and Physiology—Institute of Anatomy, Room 104. Preventive Medicine and Public Health—Millard Hall, Room 128. Orthopedic Surgery—Engineering Building, Room 106. Scientific Exhibit—Institute of Anatomy.

JOHN A. WITHERSPOON, M. D.,
President of the American Medical Association, 1913-1914.

The House of Delegates.

MONDAY, JUNE 16TH.

About 800 members had registered when the House of Delegates was called to order by the president. Dr. Abraham Jacobi, of New York. Dr. Morgan Smith, of the Committee on Credentials, reported thirty-nine members present and asked to be permitted to submit a further report later. To dispense with the tedious roll call, as was the custom, papers were distributed, which were signed by the members, collected, and then returned to Doctor Smith. The members of the House of Delegates were the following:

STATE DELEGATES.

Alabama—3. W. H. Sanders, Montgomery. Seale Harris, Mobile. E. D. Bondurant, Mobile.

Arizona—1. John E. Bacon.

Arkansas—2. Morgan Smith, Little Rock.

California—3. George D. Kress, Los Angeles. George A. Hare, Fresno. V. G. Vecki, San Francisco.

Canal Zone—1. W. C. Gorgas, Ancon.

Colorado—2. Hubert Work, Pueblo. W. A. Jayne, Denver.

Connecticut—2. E. J. McKnight, Hartford. D. Chester Brown, Danbury.

Delaware—1. Henry J. Stubbs, Wilmington.

District of Columbia—1. G. Wythe Cook, Washington.

Florida—1. Joseph Y. Porter, Key West.

Georgia—3. T. J. Charlton, Savannah.

Hawaii—1.

Idaho—1. J. N. Alley, Fort Lapwai.

Illinois—9. A. L. Brittin, Athens. A. C. Cotton, Chicago. W. I. Noble, Chicago. J. T. Montgomery, Charleston. E. W. Fiegenbaum, Edwardsville. A. M. Harvey, Chicago. A. M. Corwin, Chicago. J. A. Kort, Chicago.

Indiana—4. J. Rilus Eastman, Indianapolis. Edwin Walker, Evansville. F. B. Wynn, Indianapolis. C. S. Bond, Richmond.

Iowa—3. L. W. Littig, Davenport. N. M. Voldeng, Cherokee. J. C. Rockafellow, Des Moines.

Kansas—2. J. T. Axtell, Newton. George M. Gray, Kansas City.

Kentucky—4. W. W. Richmond, Clinton. J. W. Ellis, Masonville. J. W. Kincaid, Catlettsburg. A. T. McCormack, Bowling Green.

Louisiana—2. Charles Chassaignar, New Orleans. Oscar Dowling, Shreveport.

Maine—1. E. H. Bennett, Lubec.

Maryland—2. G. Lane Taneyhill, Baltimore. R. B. Warfield, Baltimore.

Massachusetts—5. H. D. Arnold, Boston. H. G. Stetson, Greenfield. H. W. Van Allen, Springfield. Hugh Cabot, Boston. C. P. Hooker, Springfield.

Michigan—4. E. T. Abrams, Dollar Bay. F. C. Warnshuis, Grand Rapids. Louis J. Hirschman, Detroit. C. E. Boys, Kalamazoo.

Minnesota—2. R. C. Dugan, Eyota. Thomas McDavitt, St. Paul.

Mississippi—2. D. J. Williams, Gulfport. S. W. Glass, Lyon.

Missouri—5. C. R. Woodson, St. Joseph. A. W. McAlester, Jr., Kansas City. H. L. Reid, Charleston. R. M. Funkhoew, St. Louis. E. J. Goodwin, St. Louis.

Montana—1. Donald Campbell, Butte.

New York—11. William D. Johnson, Batavia. Grant C. Madill, Ogdensburg. Dwight H. Murray, Syracuse. Wendell C. Phillips, New York City. James P. Warbasse, Brooklyn. H. L. Elsner, Syracuse. F. M. Crandall, New York. E. A. Vander Veer, Albany. John C. Marertt, Brooklyn. S. W. S. Toms, Nyack. John O. Totak, Brooklyn.

North Carolina—2. J. Howell Way, Waynesville. H. A. Royster, Raleigh.

RIVER ROAD WEST

Nebraska—2. A. D. Nesbitt, Tekamah. A. R. Mitchell, Lincoln.

Nevada—1. Benjamin F. Cunningham, Reno.

New Hampshire—1. John Z. Shedd, North Conway.

New Jersey—3. William S. Lalor, Trenton. C. R. P. Fisher, Bound Brook. Luther M. Halsey, Williamstown.

New Mexico—1. S. D. Swope, Deming.

Ohio—6. C. L. Bonifield, Cincinnati. W. J. Means, Columbus. August Rhu, Marion. H. C. Haning, Dayton. B. R. McClellan, Xenia. J. H. J. Upham, Columbus.

Oklahoma—2. J. H. White, Muskogee. E. S. Lain, Oklahoma.

Oregon—1. K. A. J. MacKenzie, Portland.

Pennsylvania—9. George W. Guthrie, Wilkes-Barre. Theodore B. Appel, Lancaster. John B.

Spirit Knob, Lake Minnetonka.

Lowman, Johnstown. M. Howard Fussell, Philadelphia. Luther B. Kline, Catawissa. Thomas D. Davis, Pittsburgh. W. Rowland Davies, Scranton. William T. Hamilton, Philadelphia. John B. McAlister, Harrisburg.

Philippine Islands—1.

Rhode Island—1. John Champlin, Westerly.

South Carolina—1. E. A. Hines, Seneca.

South Dakota—1. W. R. Ball, Mitchell.

Tennessee—2. A. B. Cooke, Nashville. S. M. Miller, Knoxville.

Texas—5. W. D. Russ, San Antonio. H. Taylor, Fort Worth. C. A. Smith, Texarkana. C. Johnson, Fort Worth.

Utah—1. S. G. Kahn, Salt Lake City.

Vermont—1. J. N. Jenne, Burlington.

Virginia—3. William E. Anderson, Farmville. John S. Davis, University. J. S. Horsley, Richmond.

Washington—2. J. E. Else, Pullman. L. L. Love, Tacoma.

West Virginia—1. P. A. Haley, Charleston.

Wisconsin—3. J. J. McGovern, Milwaukee. J. F. Pember, Janesville. Rock Sleyster, Waupun.

Wyoming—1. M. A. Newell, Sheridan.

SECTION DELEGATES.

Practice of Medicine—Joseph A. Capp, Chicago.

Surgery—W. LeMoyne Willis, Los Angeles.

Obstetrics, Gynecology, and Abdominal Surgery—Thomas S. Cullen, Baltimore.

Ophthalmology — Thomas A. Woodruff, Chicago.

Laryngology, Otology, and Rhinology — Chevalier Jackson, Pittsburgh.

Diseases of Children — Charles Douglas, Detroit.

Pharmacology and Therapeutics —Torald Sollmann, Cleveland.

Pathology and Physiology—Yandell Henderson, New Haven, Conn.

Stomatology — G. V. I. Brown, Milwaukee, Wis.

Nervous and Mental Diseases—E. B. Angell, Rochester, N. Y.

Dermatology—Frank C. Knowles, Philadelphia.

Preventive Medicine and Public Health—M. P. Ravenel, Madison, Wis.

Hospitals — Fred A. Washburn, Boston.

DELEGATES FROM GOVERNMENT SERVICES.

United States Army—1. G. H. Torney.

United States Navy—1.

United States Public Health Service—1. John W. Kerr.

The reading of the minutes of last year was dispensed with, as copies of the minutes were to be found in the handbook.

President's Address. President Jacobi, in his address of welcome, remarked that as the president was not expected to speak on scientific subjects, he would confine his remarks to some ideas he wished to bring before the delegates. He therefore would suggest that in the section meetings the papers read should be more brief, so that more time might be allowed for discussion; furthermore, that the subjects should be announced more in advance, so that any one might prepare short papers on them. He feared that his influence with the association had been very insignificant, as the Constitution limited him to a very few duties only; thus, he had been obliged to ask for invitations to be present at several of the meetings of the Council. He would like to have an opportunity to come in closer contact with the members of the association and speak to them personally. There were upward of seventy thousand members of this association, and ninety per cent. of these were absent. He therefore felt like addressing the absentees in some such way as this: "Why are you absent from this opportunity to meet your brethren? Your indifference might tempt the delegates to think little of their office." Many letters had come to him expressing dissatis-

Wayzatta Drive, Lake Minnetonka.

Institute of Anatomy, University of Minnesota.

faction with the way the House of Delegates conducted its business. The writers seemed to forget that this meeting was principally a scientific one. He believed, however, that the House of Delegates should convene at least three days before the regular convention, so that the delegates would not be so rushed to finish their work and to be ready to attend the scientific meetings. Many declined to become members of the House of Delegates because they wanted to give their services to the work of the sections. But he had found that many of the writers who had complained were not members of the association, or even citizens of this country. If these men would pray less and watch more, if they would make their influence felt in their local societies, county and State, there would be less cause for complaint of the autocracy of the House of Delegates. Doctor Jacobi then read a letter from the American Institute of Homeopathy, asking that the American Medical Association appoint a committee of five to meet a committee of five from their own association for the purpose of selecting and studying a number of drugs in some laboratory, and later to apply these drugs for practical purposes in some hospital, with the idea of proving or disproving their theory of the action of similars.

Report of the Secretary. Dr. Alexander N. Craig reported on membership: "The membership of the American Medical Association on May 1, 1912, was 34,283. During the past year, 303 members have died, 1,179 have resigned, 405 have been dropped as not eligible, 521 have been dropped for nonpayment of dues, and 13 have been removed from the rolls on account of being reported "not found," making a total of 2,421 names to be deducted from the membership list. There have been added 6,051 names to the membership roll, of which 4,695 were transferred from the subscription list. The membership of the American Medical Association on May 1, 1913, was 37,913, a net increase for the year of 3,630. As is readily seen, this gain in members is due largely to circularizing subscribers to the *Journal of the American Medical Association* who were eligible, urging them to become members. While it is gratifying to report so large an addition at this meeting, it should be remembered that this increase under normal conditions would have been distributed throughout the years during which the questions of postage on journals mailed to members was unsettled."

Treasurer's Report. Dr. W. A. Pusey reported:

ASSOCIATION ACCOUNT

Receipts

December 30, 1911—Balance—		
Bonds per schedule...	$40,000.00	
Certificates of deposit..	60,000.00	
Checking account.....	1,536.57	
		$101,536.57
1912—		
February 8—Surplus transferred from current account		30,000.00
March 8—Interest on deposit certificate		902.50
April 1—Bond interest......		400.00
July 1—Bond interest.......		400.00
August 28—Interest on deposit certificate		935.00
October 1—Bond interest....		400.00
December 31—Interest on bank balances		51.37
December 31—Bond interest.		400.00
		$135,025.44
1913—		
January 2—Balance—		
Bonds per schedule...	$40,000.00	
Certificates of deposit..	90,000.00	
Checking account	5,025.44	
		$135,025.44

Davis Memorial Fund

1912—		
November 1—Cash in Northern Trust Co. Savings Bank received from former treasurer, Dr. Frank Billings...	$3,475.68	
December 31—Interest......	48.75	
		3,524.43
November 8—To Cash—Art Bronze Foundry		225.00
December 31—Balance......		$3,299.43

The meeting then adjourned temporarily out of respect for the memory of the late Dr. C. A. Dougherty.

After the reassembling of the members, Doctor

Institute of Pathology and Bacteriology, University of Minnesota.

Library, University of Minnesota.

Wynn reported excellent facilities regarding the scientific exhibit in the University Armory. Great credit, he said, was due to Dr. T. G. Lee. The anatomical and physiological departments were better represented than ever before by macroscopic and microscopic material. Special emphasis had been laid on cancer, infectious diseases, new methods of anesthesia, x ray work, especially of the gastrointestinal tract, and matters pertaining to pure milk and satisfactory water supplies; and formal demonstrations would be given at stated hours.

Meeting adjourned.

TUESDAY, JUNE 17TH.

Dr. John A. Witherspoon took the chair, and the roll was called.

Reports of Committees. Dr. J. B. Murphy, chairman of the Committee on National Department of Health, reported that the chief work accomplished by this committee had been the insertion of a health plank in the platform of each political party during the recent national election. But neither the establishment of a committee on public health in the House of Representatives, nor of a federal department of health, had as yet been accomplished. Congress had not taken any action, and thus the Owen bill had died. There was urgent need, however, that the scattered federal health services should be so coordinated that throughout the country the best results as to sanitation and the public health might be accomplished. The Board of Trustees had failed to make sufficient appropriations for promoting this desirable end. The committee recommended that a deputation should be appointed to put the facts before Congress on behalf of the association and all other health organizations of the country. The House of Delegates should also again strongly endorse the creation of a federal department of health, and instruct its officers to use their best endeavors to bring about the establishment of such a department. Doctor Murphy thought it would be a good idea for this association to send committees of its members to every important health conference in the United States, such as the annual meeting of the American Public Health Association (including the homeopathic national body), and the various State and interstate medical societies, and also such other organizations as the National Federation of Women's Clubs, to urge them all to unite in securing and supporting a federal department of health. The idea was prevalent throughout the country that such a department would be controlled by the American Medical Association, and it was therefore our duty to contradict such rumors in the strongest possible language. But to accomplish anything the House of Delegates should provide sufficient funds for the Committee on National Department of Health, and give it sufficient liberty to act on its own initiative. If this could not be done it would be better to discontinue the committee. "Let us," he said, "either withdraw our support or compel greater activity."

The chairman of the *Reference Committee on Amendments to the Constitution and By-laws* then made his report. A recommendation to add to section one of Chapter One of by-laws, "and officers of the army and navy" was lost. An amendment providing that a member of the American Medical Association having resigned from a local medical society should cease to be a member of the American Medical Association after one year and a half unless he had in the meantime joined another local society, was lost.

The Reference Committee on Reports of Officers recommended, in accordance with Doctor Jacobi's suggestion, that the secretaries of the first five scientific sections be elected for three years instead of one; those of the next five sections, for two years, and after that time, for three years; and those of the next five sections, for one year, and after that, for three years. It was proposed that next year the meetings of the main body should be held in the evening. This was amended so that the meetings of the main body should be held on Monday and Tuesday evenings of the convention week, while the scientific sections should postpone their meetings until Wednesday. The secretary was requested to invite the president to all meetings of the council.

Fee Splitting Condemned.—A resolution to the effect that all secret fee splitting among the mem-

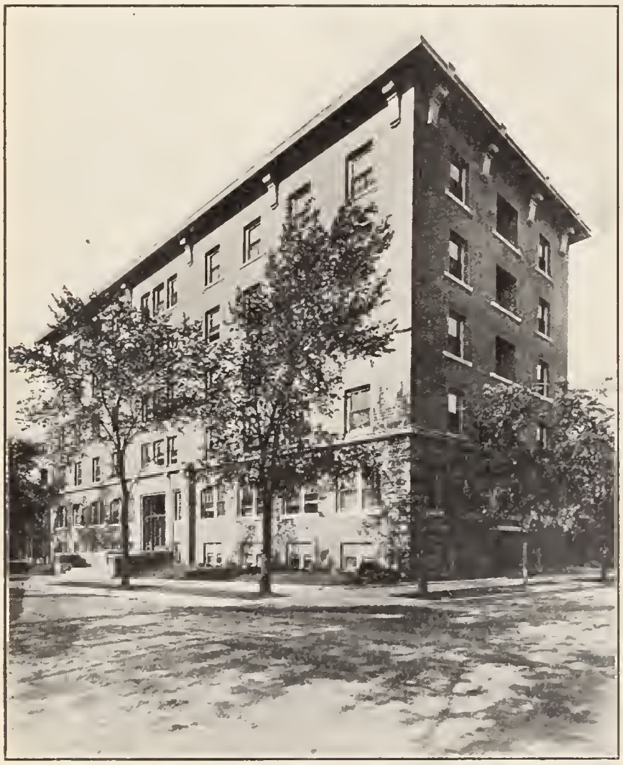
Laboratories, Department of Medicine, University of Minnesota.

bers of the association should be punished by expulsion was adopted.

The *Reference Committee on Sections and Section Work* recommended the establishment of a section in gastroenterology and proctology, and that the number of papers read in each section should not exceed fifteen.

The *Judicial Council* recommended that the secretary of the House of Delegates should acknowledge the receipt of the letter from the American Institute of Homeopathy, and in this reply state that the American Medical Association would consider any scientific proposition which the institute might submit over the signature of the committee in charge.

Doctor Cullen, of Baltimore, reported that good work had been done by the society for the Diagnosis, Treatment, and Prevention of Cancer, and requested the acceptance of his report, with the approval of the house.



Eitel Hospital, Minneapolis.

Doctor Dowling, of Louisiana, suggested the establishment of a hygienic car to be sent throughout the United States for the education of the public on questions of public health.

Meeting adjourned.

WEDNESDAY, JUNE 18TH.

Report of Committee on Credentials. The House of Delegates entered into a committee of the whole to consider a resolution that an amendment be made to Chapter Four, section five, of by-laws, providing for a presiding officer of the House of Delegates, as speaker, to be elected for a term of twelve months.

Histology Building, University of Minnesota.

In favor of this amendment, Dr. DWIGHT H. MURRAY, of Syracuse, New York, chairman of the committee, said that the president of the American Medical Association was not always a parliamentarian, as had been shown many times in the past. The president was elected for scientific attainments rather than his parliamentary knowledge. When the president was not a parliamentarian, and in touch with all the current maters before the House of Delegates, the situation became a very difficult one for him, and many mistakes were likely to occur. If we always had a president like the one in the chair to-day such an amendment would not become necessary. It would be an excellent thing if the House of Delegates could always elect from its members a presiding officer who would be in touch with its business concerns. Another cause for criticism was the fact that the president took his seat in the middle of the session, while it would be much better if he should enter upon his official functions at the opening of the House of Delegates. In view of this condition of affairs, a speaker should therefore be elected at its first meeting. At present the president had to find out what had been going on in the

St. Barnabas Hospital, Minneapolis.

City and County Hospital of St. Paul.

previous meetings. The House of Delegates had among its members many men who were able parliamentarians, fair and judicious. The activity of such a man would probably last more than one year unless he was found wanting in some particular. The British Medical Association had deemed it wise to have such a presiding officer.

Dr. A. M. Corwin, of Chicago, Ill., remarked that the chairman had made a very clean statement of the situation, and he felt confident that Doctor Murray's sole purpose was to promote the efficiency of the House of Delegates as a legislative body. Personally, he thought that matters as they stood at present could be improved, but he did not believe it was necessary to create the new office of speaker. The president was elected as a scientific man who had character, and such a gentleman was now in the chair. Doctor Corwin stated that he had been a member of the House of Delegates for years, and had never known a time when one of its members could complain of the parliamentary ignorance or unfairness of the president. In the Cook County Medical Society the president elect gave no time to scientific matters, devoting his attention to becoming acquainted with the business of the society; but after he had actually become president, gave himself up entirely to the promotion of its scientific interests. This plan had worked well, and he would therefore suggest that a similar arrangement be adopted in the House of Delegates.

Northwestern Hospital, Minneapolis.

Dr. H. D. Arnold, of Boston, Mass., said he could see that such an arrangement as spoken of by Doctor Corwin would work out very well in a county society, where several meetings were held during the year; but he did not think it would be practicable in an organization like this, with only one meeting a year.

Dr. C. R. Woodson, of St. Joseph, Mo., said that from his observation of political matters all over the United States, he was afraid that if we had a real parliamentary chairman matters would be delayed more than ever. He had complete confidence in all the men that this body would ever elect president.

Dr. Wendell C. Phillips, of New York city, observed that the members of the American Medical Association were busy men in their home towns. The question of time was therefore an important one in the work that had to be done at its annual meeting. He was convinced that men who were familiar with the workings and usages of this organization could greatly expedite its business.

Elliott Memorial Hospital, University of Minnesota.

Dr. J. R. Winslow, of Baltimore, Md., said that, from his observation of medical meetings, he believed that if the Constitution, and also most of the officers, could be gotten rid of, a great deal more work could be accomplished.

Dr. Hubert Work, of Pueblo, Colo., remarked that he had been a member of the House of Delegates for seven years and had noticed that practically the secretary was generally the presiding officer of the meetings.

Dr. George W. Guthrie, of Wilkesbarre, Pa., asked how we could know that our presiding officer was going to be a good parliamentarian until we have tried him. All that we could do was use the utmost discretion in electing the president, one of the few-prerogatives of whom was to preside over the meetings of the House of Delegates.

Dr. E. T. Abrams, of Dollar Bay, Mich., moved that the committee of the whole rise and the regular session be resumed; which motion was seconded and carried.

The minutes of the last meeting were read and were approved with the correction that the report of the Committee on National Department of

Health be entered as a minority report, as only four of the nine members had signed the report. These four were Dr. J. B. Murphy, of Chicago, chairman; Dr. W. C. Woodward, of Washington, D. C., secretary; Dr. J. N. Hurty, of Indianapolis, and Dr. W. A. Evans, of Chicago.

Reference Committee on Legislative and Political Action.—Dr. E. J. Goodwin, of St. Louis, Mo., gave a review of the history of the Special Committee on National Department of Health. He said that the committee's criticism in regard to lack of funds was unwarranted, as the committee had asked for an appropriation of $800, and had actually received $1,000, while all the bills that had been presented had been paid. The committee agreed that the fault lay in trying to establish a National Department of Health without the proper material for the purpose. The committee on such a department had always been timid and without the capacity and aggressiveness necessary to carry on the fight in which it was engaged. At this point it was moved and carried that the House of Delegates go into executive session, and all but members were requested to leave.

The report of the *Reference Committee on Legislative and Political Action* was finally adopted.

Dr. A. B. Cooke, of Nashville, Tenn., introduced a resolution to the effect that nothing in the section on the removal of members from one part of the country to another be construed as exempting any members of the American Medical Association from complying with the civil law of the State in which he resided.

Meeting adjourned.

(*To be continued.*)

American Medical Editors' Association. The annual meeting of this association was held at Minneapolis, Monday, June 16th, at Hotel Radisson, which was largely attended

On account of only a day session, the literary programme had been somewhat curtailed. A symposium upon Medical Journalism, Past, Present, and Future, was presented by the following editors:

Medical Journalism of the Past, by Dr. F. T. Haneman, *New York Medical Journal.*

Medical Journalism of the Present, by Dr. C. F. Taylor, *Medical World.*

Medical Journalism of the Future, by Dr. H. Edwin Lewis, *American Medicine.*

Upon the programme were:

President's Address, Dr. Thomas L. Stedman, *Medical Record.*

Suggestions as to the Preparation of Manuscript from the Readers as well as from the Journalistic Standpoint, by Dr. J. Madison Taylor, *Monthly Cyclopedia of Practical Medicine.*

Some Ways in Which this Society Can Exert Influence, by Dr. John L. Moffat, *Journal of Ophthalmology and Laryngology.*

The Best Way of Meeting the Demands of the Requirements of the Medical Reader, by Dr. Finley Ellingwood, *Ellingwood Therapeutics.*

Constructive Medical Journalism, by Dr. A. S. Burdick, *American Journal of Clinical Medicine.*

The Advisability of Newspapers and Magazines Having Medical Editors on their Staffs, by Dr. Edgar A. Van der Veer, Albany, N. Y.

On the evening of June 16th, at the Hotel Radisson at 7.30, the annual banquet of this society was held, which was a great success.

First Vice-President Dr. Edgar A. Van der Veer, of Albany, acted as toastmaster.

Election of Officers. The election resulted in the choice of Dr. Victor C. Vaughan, of Ann Arbor, Mich., as president-elect. The president-elect is dean of the University of Michigan. Born on October 27, 1851, in Mount Airy, Mo., he received the degree of Ph. D. in 1876 and of M. D. in 1878. From 1887 to 1909 he was professor of hygiene and physiological chemistry and director of the hygienic laboratory at the University of Ann Arbor, Michigan, where he holds now the office of dean of the university. During the Spanish-American war he served as major and surgeon in the Santiago campaign.

The next meeting will be held in Atlantic City, N. J.

The University of Minnesota as it is to be; view from opposite river bank.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

May 4, 1913.

Diet in Diabetes Gravis.—L. Blum says that the chief advance in the dietetic treatment of diabetes is our better acquaintance with the agents which influence the oxidation of sugar. The sugar contents of the blood and other tissues is of special importance in that it exercises a great influence over the oxidation of glucose. With the increase of blood sugar the oxidation decreases, and, on the other hand, by diminishing the blood sugar the oxidation increases; the tolerance for sugar rises. It is clearly a concern of organ function injury through excess of sugar. These facts have been variously analyzed and have been confirmed. The albuminous constituent of food is also of importance, especially that of meat. Here the character of the substance furnishing glucose plays a minor part, as compared with its power to oxidize grape sugar. In what single form this power appears has not yet been determined. This action is most apparent in meat albumin; its presence is much less appreciable in plant and egg albumin.

Istizin, a New Laxative.—E. Ebstein states that istizin, chemically, is dioxyanthiachinone. Its dose is 0.3 gramme and it is best taken at night, dissolved in a little water, as it is tasteless. It is particularly useful for bedridden patients who need artificial means to bring about daily evacuations, for the aged, and in obstinate constipation. It is a useful aid to oil enemata. Aside from being a laxative it has no pharmacological action. It shows no tendency to disorder the digestion. The amount absorbed is too small to irritate the kidneys. Occasionally slight cramps of short duration result from it.

Active Pneumotherapy for the Remnants of Pleuritis.—Sammler asserts the following: 1. Active pneumotherapy with a special pneumatic apparatus is an effectual aid in the aftertreatment of pleuritis. 2. The action obviates pleuritic induration and adhesions; prevents atelectasis of the lungs and bronchial catarrh. 3. This condition usually arises as the acute stage subsides, especially after the appearance of the exudate. 4. The chance of absorption of the pleuritic residue depends upon the length of time between the acute stage and the time of treatment with the pneumatic apparatus. 5. The indications for treatment by active pneumotherapy with this apparatus depend upon determination of the origin and cause of the disease, the individual characteristics of the patient, and a consideration of complications affecting other organs. 6. The active treatment by this method is not to be regarded as excluding other forms of active and passive air treatment. On the contrary, it may be used conjointly with other methods according to the circumstances present and the stage of the disease.

May 11, 1913.

The Influence of Radiant Heat on Body and Tissue Temperature.—A. Fürstenberg shows that by means of hot air, or damp as well as hot compresses, we may heat the deeper lying areas of the body to a higher degree than the general body temperature. Heat radiates from one tissue to others, underlying and deeper. In his experiments the author employed a carefully constructed apparatus which supplies heat from an electric current and at the same time registers the degree of temperature of any designated part of the body by means of a measuring device.

Menthospirin, a New Acetylsalicylic Acid Menthol Preparation.—J. Lowenheim states that menthospirin is an acetylsalicylic acid menthol ester of fluid consistency and a light yellow color. It is used in gelatin capsules of 0.25 gramme. During its action, which is long continued, there are exerted the anesthetic and analgesic influence of the menthol on the mucous membrane of the air passages and an accelerating and strengthening effect upon the heart. The calming and antifebrile action of the salicylic acid is also shown. The regular appearance in the urine of menthol and salicyluric acid, after ingestion, is proof of the splitting up of the esters in the organism. Two or three capsules daily may be given adults.

Contribution to the Action of Hypophysis Extract (Pituglandol).—M. Guggenheim has employed injections of 1 c. c. of pituglandol into the femoral vein of narcotized rabbits. Upon examination of a large number of normal animals there were constantly to be found those which presented various forms of immunity to pituglandol. It is possible that this immunity corresponds to the refractory instances observed in gynecological practice. The author questions whether any effect on the internal secretions may be brought about by pituglandol. According as the quantity of internal secretions of the affected organs is large or small, the various phases of action of pituglandol will appear, but should the mobilizing substances fail completely the pituglandol will prove ineffectual.

Hot Baths for Sprains.—Kantorowicz says that, within the last decade, the prolonged local hot bath has replaced the former lead water applications for sprains. In sprains we have to do with extravasation of blood as a result of torn ligaments, rather than with inflammatory processes. When the prolonged hot bath is employed the injured joint is placed in water as hot as can be borne immediately after the injury and the water is kept hot by adding more every five minutes, keeping up the hottest possible temperature for half an hour. It is astonishing how easily and painlessly the joint can be moved after this treatment. This result, however, is seen only in cases of simple sprain, as from a tearing of one or more ligaments. Should there be the slightest bone injury the patient's suffering would be increased by the hot water. The prolonged hot bath is accordingly an important remedy to differentiate between a fracture and a sprain. For the general practitioner it takes the place of the Röntgen apparatus.

May 18, 1913.

The Practical Use of Blood Examination in Lead Poisoning.—I. Schoenfeld, as a result of his observations, finds the following: 1. Hemological examinations permit the detection of lead poisoning in its first stage. 2. In addition to basophiles, rich supplies of metachromatic red cells also found in the blood of patients working in lead, and point to existing lead poisoning. 3. Therapeutic measures may at once be taken for those suffering with lead poisoning. 4. The condition of those poisoned by lead absorption may be continually determined by blood control tests.

Valamin, a New Sedative and Hypnotic.—Stein states that valamin is the valerianic acid ester of amyl hydrate. The preparation is used as a sedative and narcotic in doses of from 0.5 to 0.75 gramme. Neurasthenic patients suffering from insomnia and fear were treated with good results. In only one instance was slight excitement observed. In many cases several capsules containing 0.25 gramme were given an hour before minor operations, which, with later administration of relatively small doses of Billroth's narcotic mixture, produced deep narcosis.

May 25, 1913.

Demonstration of Bile Coloring Matter in the Urine and Blood by Means of Iodine Ether.—Packuscher and Gutmann present the following to prove the presence of bile coloring matter in the urine and blood. A solution of iodine and ether is used; the solution is shaken several times; the superfluous iodine being thus removed. In the presence of bile coloring matter the watery stratum turns green. For the urine 5 c. c. of urine and 1 c. c. of a one half per cent. solution of iodine are well shaken together. Two strata are formed, the upper one of ether iodine solution and the lower one a greenish, blue colored fluid. The superfluous iodine is now removed with ether until the upper stratum of ether is a very light brown or probably colorless. The green color of the watery layer then shows up more distinctly. In the demonstration of bile coloring matter in the blood there is mixed with 2 c. c. of blood serum, 3 c. c. of absolute alcohol. After shaking and filtering out the precipitated albumin the filtrate is acidulated with 0.3 to 0.5 c. c. m. of 25 per cent. hydrochloric acid. Two c. c. of distilled water and 0.5 c. c. of 0.5 per cent. ether, iodine solution added, and shaken together for several minutes. Then, again, the surplus iodine is removed with ether and, in the presence of bile coloring matter, the lower watery layer remains absolutely colorless. The blood serum used must contain neither hemolytic nor red blood corpuscles. The authors state that bile coloring matter was often found in the blood of patients who had had a catarrhal icterus, when there was no more bile coloring matter to be found in the urine.

ZENTRALBLATT FÜR CHIRURGIE.

May 24, 1913.

Phenol Camphor Treatment of Various Diseases of the Joints and Cold Abscesses, including Tuberculous.—Felix Pohl reports a number of cases in which he has obtained good results from the injection of two c. c. of the following mixture, Liquefied phenol, 30.0; triturated camphor, 60.0; alcohol, 10.0; into the inflamed joint, repeated at intervals of ten or more days. If the joint contained fluid or pus it was removed by aspiration before the injection.

PRESSE MÉDICALE

May 15, 1913.

Nonascitic Form of Tuberculous Peritonitis.—P. F. Armand-Delille reports ten cases of tuberculous peritonitis without ascites, most of which were operated on in the belief that either appendicitis, cholelithiasis, or annexal disorders existed. Recognition of such cases is especially important, owing to the possibilities of harm attendant upon dietary restrictions in a tuberculous affection. The disorder occurs oftenest in children and female adolescents, and becomes first manifest either in rather acute peritoneal symptoms, such as vomiting and colicky pains, with marked febrile reaction, or in more insidious phenomena. At all events, after the period of onset, there is nothing definitely to indicate peritoneal involvement. A febrile or subfebrile condition persists for weeks, there is anorexia and loss of weight, but the tongue remains clear and the general state appears but little impaired. It is only after several weeks, sometimes two or three months, that there may appear slight doughiness of the abdomen and, in exceptional instances, one or more masses imparting a sensation of "caking" in the omentum. The prognosis, even without treatment, is for the most part favorable. In one of the author's cases, which was not operated, recovery took place under heliotherapeutic treatment at an altitude. The early more or less acute symptoms, with the subsequent sluggish course of the disease, constitute its most characteristic features.

The Spinalis Muscle Sign.—F. Ramond thus designates a reflex contracture of the spinalis muscles occurring in pleurisy and tending to immobilize the thorax and involved pleural surfaces. With the patient either in the standing or sitting position and without inclination of the trunk to either side, there is noted in the lumbar region, below the twelfth rib and external to the spinal column, unusual prominence, hardness, and lateral width of the spinalis muscles. The sign may be present on one or both sides; generally it is very marked on the affected side and much less so on the other. It may occur normally in those accustomed to carrying heavy burdens and in women with pronounced lordosis, as well as in the presence of any painful morbid process involving the region—lumbar contusions; meningeal, chondral, or osseous inflammation at the lumbar spine; lumbago, sacroiliac rheumatism; dorsolumbar, sciatic, or inferior intercostal neuralgia; painful renal and hepatic disorders; diffuse peritonitis, etc. All these conditions, however, are such as can readily be recognized, and in their absence the sign indicates pleurisy. It occurs very early, sometimes two weeks before there is an appreciable effusion, and persists several weeks or months after the disappearance of the latter.

SEMAINE MÉDICALE.

May 21, 1913.

Curative Action of Leucocytolysis Induced by Passage of X Rays through the Spleen.—I. Manoukhine refers to former papers in which he showed that the chief factor in the defense of the organism against various poisons and infections was leucocytolysis, that is, the destruction of leucocytes with liberation of antibodies into the plasma, that the spleen is the organ which produces "leucocytolysins," and that their production may be greatly accelerated by exposing this organ to a certain dose of the x rays (about one per unit). He now reports therapeutic results obtained in three cases by thus artificially increasing the leucocytolysins. In a patient with influenzal pneumonia, two irradiations of the spleen, at an interval of two days, each caused a fall in temperature with rapid improvement in the physical signs; after the second treatment recovery promptly took place. In a case of chronic lung tuberculosis, repeated irradiations caused, along with an increase in the leucocytolysins, a gradual return of the temperature to normal, a prompt gain in weight and appetite, diminution of cough, and, later, improvement in the physical signs. In the third patient, suffering from purpura hæmorrhagica and pronounced anemia, similar treatment was followed by rapid return of the blood, including the coagulation time, to normal. Manoukhine believes the procedure he advocates to have a wide field of usefulness in the treatment of infections of all kinds and in certain blood disorders. Not only does the procedure set free leucocytic antibodies, but it tends to stimulate the formation of fresh leucocytes.

ROUSSKY VRATCH.

March 23, 1913.

The Clinical Significance of Increased Output in the Urine of the Products of Insufficient Splitting of Albuminous Substances.—P. I. Philosophow and K. W. Klutchnikowa established the fact that there is a greater output of incompletely oxidized proteids in the urine of patients with cancer, provided the determinations are made in the absence of fever. They elaborated a very accurate method of determining the relation of the amido acids to the total nitrogen.

March 30, 1913.

The Treatment of Pulmonary Tuberculosis with Tryparosan.—I. A. Valedinsky employed tryparosan (a derivative of fuchsin) in eight cases of pulmonary tuberculosis, all in the advanced stage, without the slightest benefit.

April 6, 1913.

Potassium Iodide as a Reactive in Cancerous Growths and as a Therapeutic Agent, Together with Subcutaneous Administration of Sodium Arsenate in a Solution of Phenol.—M. P. Michajloff finds in recent publications by Blumenthal and others, corroboration of his observations to the effect that, in suspected malignant growths, an elevation of temperature following a rectal injection of potassium iodide (4 grammes, with sodium bicarbonate 2 grammes, and water 90 c. c.) will differentiate malignant growths from syphilis. He compares this reaction to tuberculin and asserts that it is equally specific. He contends that the employment of these rectal injections, together with subcutaneous administration of sodium arsenate in 0.25 to 0.5 per cent. solution of phenol, will prevent recurrence and even bring about a cure of cancer and sarcoma.

April 13, 1913.

Pituitrin in Country Practice.—I. A. Erastoff reports three cases of labor in which he employed pituitrin with very favorable results. The first case was one of placenta prævia marginalis with left occipital anterior position. Three injections of pituitrin controlled the bleeding and terminated the labor satisfactorily. In the second case uterine inertia was overcome by a single injection of pituitrin, labor terminating thirty minutes after the injection. In the third case a prolonged labor was caused by a hydrocephalus. Two injections of pituitrin caused sufficient dilatation of the cervix to permit craniotomy and the successful termination of labor.

April 20, 1913.

The Effect of Caffeine on the Isolated Heart of Coldblooded Animals.—V. I. Berezin experimented with caffeine on the isolated hearts of frogs and fish. He found that the height and frequency of cardiac contractions are increased, the augmentation depending on the concentration.

Repeated Rupture of the Uterus during Labor.—S. M. Mironowa reports the case of a woman of forty who had rupture of the uterus with her fourth labor, a Cæsarean section with the fifth, premature artificial labor in the eight month with the sixth, and another spontaneous rupture of the uterus with the present, the seventh labor.

LA SEMANA MÉDICA

April 10, 1913.

Ambulatory Form of Typhoid Fever.—Abeberry Oneto says that typhoid fever has been known since the year 1500, but at first it was not distinguished from other febrile diseases. The great authorities of the twelfth century, Huxhan, Stoll, etc., recognized it. They first described it under the name of putrid, malign, or petechial fever. A great deal has been written lately on typhoid fever, but very little study has been made of the form known as ambulatory, which is very difficult to diagnosticate and also very interesting. The author says that Louis described this form of the disease in 1828 and called it latent typhoid affection. He told of two cases of intestinal perforations in which the patients had had hardly any fever. Many authors point out the differences between the symptoms and lesions that are found at autopsy. Griesinger, referring to the so called apyretic typhoid fever, denies its existence and says that there is no typhoid without fever; he adds that some patients may have a transitory state of apyrexia caused by hemorrhage, but the process of typhoid is always pyretic and the fever symptoms are in all cases the most important morbid elements by which to measure the intensity and the changes in each patient. According to Abeberry, the name apyretic expresses only the short period of the fever, so that, for Griesinger, abortive typhus would be a mild form of typhoid, while the ambulatory form, much more apyretic, would be a very severe and insidious typhoid.

Affective Indifference in Mental Disorders.—Coubon states that indifference is a condition that abolishes all desire and makes the patient incapable of sadness or happiness. A careful examination of the conduct of the insane makes one sure that there exists a mutilation of all the constitutional tendencies. If one of them is in a better condition it is at the expense of the others, but in reality they are all complicated. In fact, indifference, according to the author, is a main symptom of lunacy, and without it the diagnosis could not be confirmed. Moral indifference is the first symptom of dementia. Altruistic indifference shows itself by progressive relations and, later, by the dissolution of affection which binds the patient to other beings. The demented is the one who suffers less than any of those who have mental disorders. He is quickly reconciled to being sent to the asylum and is easily separated from all his affections. The exaggerated benevolence shown by some patients is not due to an exalted altruism, but to the delirium of grandeur and riches. He gives all the money he possesses, but does not give his food to another patient. The demented, according to the author, is rather more influenced by his spirit than by his heart. Want of curiosity is a constant sign of dementia. The patient dislikes what he used to like and does not pay attention to anything that goes on around him. Those who talk the least and who ask the less are the real demented, and when they complain it is because the disease is complicated with another psychosis. Personal indifference is less manifest than the other forms, although at first it appears that the patient thinks only of himself and is selfish. He is irritable and the indifference with which he receives insult, and the tolerance of humiliation, the want of indignation, and the complete shamelessness, are considered acts of cynicism until the physician gives his diagnosis of the disease.

April 17, 1913.

Treatment of Osteoarticular Tuberculosis.—Ymaz affirms that the precision and certainty of the treatment at present of osteoarticular tuberculosis are due to the greater knowledge we have of the development of the tuberculous process and to the rational use of hygienic factors, which modify the soil in which the Koch bacillus develops, and therefore act upon the development of the disease. The process used is not a new one, but it gives better results because it is applied with greater ability. Osteoarticular tuberculosis is not, as is erroneously supposed, a local infection, as in the great number of cases the osteoarticular focus is accompanied by another focus also tuberculous, and whose seat may be in the lungs, pleura, ganglions of the mediastinum, etc. Just as surgical tuberculosis was not accepted before, we must now reject local tuberculosis, because these may lead us to an error in therapeutical principle of fatal result to the patient. In these forms of the infection the practitioner must direct his work upon the part affected with the purpose of destroying the local tuberculous colonies. The main factors of the treatment advised by the author are: First, functional rest, that is, abolish the function of the affected member, because if the member is in a pathological condition we do not otherwise obtain anything but the exacerbation of the lesion and make irreparable those lesions which could probably be modified. The second factor is immobility; this completes the result obtained by the rest. The latter is more important in restless children, in which rest is always insufficient. According to the author, the treatment is long and good results depend upon the systematic application of the hygienic treatment: heliotherapy combined with rest and immobility of the affected part.

BRITISH MEDICAL JOURNAL.

May 31, 1913.

Further Experience of the Cardiac Sign in Cancer.—William Gordon describes this sign as a diminution in the area of cardiac dullness in the recumbent position, as determined by digital percussion. In the normal adult the dullness in that position begins about the third costal cartilage, reaches to the right as far as the mid line, and measures across three to three and a half inches at the level of the fifth costal cartilage. In the cancer patient who presents the sign the dullness begins above at about the fourth or fifth costal cartilage, its right margin is from one half to one inch to the left of the mid sternal line, and it measures less than two inches across at the level of the fifth costal cartilage. The percussion used should be moderately light. Gordon gives three possible explanations for the sign. The first is that in some cases of cancer the heart is small, but this does not hold for the majority of cases. The loss of elasticity so marked in the skin may involve the lung tissue, and it is conceivable that a sort of emphysema may be produced thus. Such a form of emphysema is known to occur in cancer, and this undoubtedly helps to produce the sign in many cases. Lastly the cardiac sign is often associated with a very soft and toneless pulse, and with very feeble heart sounds. These phenomena are attributable to a deficiency of blood and a condition of flabbiness of the heart muscle comparable to that of the skeletal muscle. The imperfectly filled soft heart may be supposed to fall back from the chest wall farther in the recumbent position than does the normal firm organ. The striking feature is the great disparity between the area of dullness in the standing and that in the recumbent positions. The sign has certain limitations, namely, in emphysema it is of no value; in conditions in which the organ can be supposed to be abnormally enlarged it is also not useful; the same is true in conditions which tend to increase the area of dullness through retraction of the lung; it is not trustworthy when abdominal distention displaces the heart upward, and it is absent in cases of large esophageal cancer. The sign was found to be positive in eighty-seven per cent. of ninety-three cancer cases, and in only fourteen per cent. of 117 noncancerous cases.

Lipodystrophia Progressiva.—F. Parkes Weber reports seven cases of this condition, which he defines as "A morbid condition, possibly confined to the female sex, and characterized by progressive disappearance of the subcutaneous fat from the face, upper extremities, and trunk, whereas the fat of the lower extremities remains unaffected or is increased in amount." Weber remarks that it is by no means certain that the condition is always a progressive one, but for the present the adjective had better be retained. The cases differ considerably—in some there is a wasting of the fat of the upper portions of the body and of the face, while in others the condition seems, rather, to be one of increased deposition of fat about the hips, buttocks, and lower extremities. It is an exaggeration of what constitutes almost a secondary female sex character. The symptoms may begin early—at ten to thirteen years—or later, up to between twenty and thirty years of life. It does not seem that the disease is connected with any obvious disorder of the thyroid gland or of the ovaries. In a sense it might be termed a trophic disease, but its origin is uncertain and its treatment is, as yet, unknown. Weber suggests that possibly certain cases of bilateral facial wasting encountered in men may belong in the same category.

Chronic Pneumococcal Infection of the Lungs in Children.—P. L. Sutherland and A. A. Jubb have made careful bacteriological studies of the sputum from 1,824 adults and 230 school children, finding tubercle bacilli in 33.7 per cent. of the adults' and in only 9.1 per cent. of the children's specimens. In guineapig tests with series of questionable sputa 11.9 per cent. were positive in the case of adults and only 2.9 per cent. in the case of children, giving the same relation of incidence—three to one—of tuberculosis of the lungs in adults and children. A large number of the guineapigs died early from acute peritonitis of pneumococcal origin. Both from adults and children about forty per cent. of the pigs died of this infection, showing the prevalence of this organism. The authors believe that many of the children examined, and suspected of having pulmonary tuberculosis, are suffering from a chronic pneumococcus infection. Such children present the following features: 1. The condition is often the sequel, immediate or remote, of measles or whooping cough; 2, cough, sputum, and emaciation are variable in amount and degree; 3, tubercle bacilli are not found in the sputum.

The Treatment of Adenoids and Enlarged Tonsils without Operation.—W. Stewart has employed x rays in a considerable series of cases and concludes that: 1. Röntgen rays have a stimulating effect on chronically inflamed adenoid tissue, and enable it to resume its healthy condition. 2. The tonsils do not entirely regain their normal size except in favorable cases, the diminution in size being dependent on the time the organ has been inflamed, or on the amount of fibrous tissue that has been formed. 3. The decrease in size is sufficient to remove all obstructive symptoms. 4. Conditions dependent on the septic state of the tonsils and adenoids are relieved. The radiological treatment takes longer than the surgical, but there is no shock and no convalescent period. Operation does not include all the affected area, whereas radiation does. It is better to restore structures which have a function to a state of health than to remove them.

The Cause of Enlarged Tonsils and Adenoids in Children and Their Treatment with Lymphatic Gland Extract.—Hugh T. Ashby makes this sweeping statement: "Many theories have been put foward as to the cause of enlarged tonsils and adenoids, but I think it is possible to rule all of them out conclusively. For this reason I am advancing a new theory, which may have some connection with their enlargement." His theory is based upon the fact that the age of greatest frequence of these affections is that at which the lymphocytes are normally beginning to fall from the high proportion found in infants to the adult standard, and in addition, the thymus is also decreasing in size. The children affected with these conditions (enlarged tonsils and adenoids) have a diminution of lymphocytes and an increase in the total number of leucocytes. Ashby, therefore, assumes that the tonsillar and adenoid enlargements are a compensatory attempt to augment the lymphoid tissue in the body and to supply the deficiency in the other lymphoid tissues. On this basis he has treated several cases with an extract of lymphatic glands, and has seen very satisfactory improvement in the conditions present.

LANCET.

May 31, 1913.

Electrical Action of the Human Heart.—A. D. Waller (Lecture II) continues his discussion of the measurement of the angle of the electrical current of the heart. In addition to giving an excellent discussion of auriculoventricular dissociation, he describes several cases of a condition which he terms *hemitachycardia*. In this condition the radial pulse is usually rather slow, and immediately following it there is a visible pulsation in the neck which has the same rate. On auscultation there is a comparatively loud, sharp first sound preceding the radial pulse, and followed by a weak second sound just after the pulse. Occasionally the heart sounds are of a cantering rhythm —UU/—UU, while at the same time the pulse is irregular and of a limping rhythm —U/—U. Electrocardiograms of this condition show that the heart is beating at twice the rate of the pulse, every second beat being a ventricular extrasystole which does not reach the radial, but which is seen in the jugular and which appears here *after* the radial pulse. Waller analyzes this condition with great detail and presents evidence to show that this is not a condition of hemisystole, as von Leyden has thought, but that it is a condition of regular extrasystole. The extrasystoles are of ventricular origin, and hence the conduction is reversed at this time. From this point on it is but a step to outline the mechanism and stages in the development of a cardiac irregularity. When extrasystole appears, the heart is in a state of increased irritability; when slight, leading to only an occasional extra beat; in extreme cases to a storm of extrasystoles producing an attack of tachycardia. We then have, in the intermediate state, a condition of hemitachycardia characterized by: 1. An infrequent radial pulse; 2, a double precordial impulse, half preceding and half following the radial; 3, a double jugular pulse corresponding with the precordial; 4, an electrocardiogram showing coupled beats. The successive stages are then: 1. An occasional extrasystole; 2, frequent extrasystole; 3, regular extrasystole; 4, hemitachycardia, pulsus bigeminus vel infrequens; 5, tachycardia; 6, Pulsus alternans vel irregularis perpetuus; 7, delirium cordis—asystole—exitus letalis. Throughout his paper Waller mentions the working time of the heart. This is calculated from the apex beat electrocardiograms by the fraction $\frac{\text{duration of systole}}{\text{duration of cycle}}$, and can be expressed as a fraction or in hours. Normally the fraction is $\frac{1}{3}$, or eight hours, varying with the frequency of the pulse, etc., between the limits of $\frac{1}{4}$ to $\frac{1}{2}$, or six to twelve hours. An eight hour heart obviously has more working capacity, under normal conditions of work, than a nine hour one; it has more than the average reserve power, and a large margin of safety.

The Analysis of Nystagmus.—Adolphe Abrahams describes a method of measuring and analyzing this condition by means of cinematography. One eye only is photographed at a time, and the pictures are taken at rates varying from twenty to twenty-five a second. A mercury vapor lamp or an enclosed arc light provides the illumination. The reel of films is driven mechanically, and across the eye aperture in the mask used to limit the photograph to one eye two fine threads were stretched at right angles to provide fixed points from which to take measurements. He finds that the velocity of the movements of the eye is irregular in the different nystagmic phases. Between the nystagmic and reactionary phases the relation of five to three exists if the velocity of the movement is considered, and of three to five if duration of the phase be taken. Abrahams compares his method with that of Buys, and admits that photography and subsequent analysis is much more time consuming and laborious than is the use of the nystagmograph. On the other hand, the instrumental errors of the latter are obviated by photography.

A Bacillus of an Unusual Kind Isolated from a Case of Septicemia.—J. A. Braxton Hicks isolated a bacillus of the proteus group in two instances of blood culture ante mortem, and from the blood and tissues post mortem, in the case of a woman who died of a septicemia arising apparently from a chronic vaginal infection.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

May, 1913.

The Surgical Treatment of Pendulous Abdomen.—James McKenty describes two cases of an extreme type of pendulous abdomen in which he operated successfully. In the first case he performed the operation most in favor among English and American surgeons, the double breasted coat operation, and added an overlapping of transverse flaps at each end of the median incision. A median incision, extending from the pubes to a point midway between the navel and the ensiform cartilage, was made through skin and fat down to the aponeurosis, which was then exposed by reflecting the skin and fat on each side as far as the semilunar lines. The umbilicus was excised, a hernia was cared for, a diseased appendix removed after the abdomen had been opened by a median incision, the two aponeurotic flaps thus formed were overlapped from side to side and secured by a series of mattress sutures along the margin of the right, passed from within outward, and coming out through the left semilunar line, while the margin of the left flap was sutured to the outer surface of the left semilunar line. A transverse incision, about four inches long, was then made across each end of the median incision, and closed by overlapping from above downward; thus shortening the linea alba about four inches, as well as preventing puckering. Superfluous skin and fat were then excised, and the wound closed. In his second case he made a transverse incision about nineteen inches long across the abdomen, reflected the skin and fat upward and downward, and opened the abdomen by a transverse incision carried across the middle of the exposed area from the inner border of one rectus to the inner border of the other, thus forming an upper and a lower aponeurotic flap. These flaps were then overlapped to the extent of eight inches and secured by wire mattress sutures. Both patients were completely relieved of their symptoms, but the improvement in figure was not as good in the second as in the first case. The conclusions he draws from his study of this subject are: 1. That there are two main indications, first to bring the rectus muscles together, second to correct the vertical elongation of the aponeurosis. 2. That the double breasted coat operation, supplemented by a transverse incision, with overlapping in the vertical direction, effectively meets those indications. 3. That the Webster operation, opening the sheaths of the recti and joining the muscles without opening the abdominal cavity, is suitable for mild degrees of relaxation only. Even in these the other method is preferable. 4. That the practice of some surgeons of mobilizing the rectus muscles, drawing them out of their sheaths, and suturing them together in the median line, does not seem to be well considered. Such disturbance must affect injuriously their nerve and vascular supply, and they are usually too much wasted to add much to the strength of the wall. 5. That in cases associated with much subcutaneous fat the transverse is preferable to the median incision, inasmuch as it permits of free excision of the fat in the flanks, where it is most abundant. 6. That the good results of operation in pendulous abdomen strongly support the view that a normal intraabdominal pressure is the most important factor in maintaining the viscera in position. 7. That the condition has not received the attention it deserves at the hands of the profession.

Salvarsan in the Treatment of Syphilitic Diseases of the Central Nervous System.—Robert G. Armour states that there has been a great deal of misunderstanding and unnecessary fear of danger to the special senses, especially sight, in salvarsan therapy. So far, he says, in many hundred cases treated, we have seen no injurious action to the special senses. It is now understood that one dose may be sufficient to bring about an exacerbation of symptoms in cases of syphilis. This can be readily seen in the pains of a tabetic, which almost invariably become worse after the administration of salvarsan. If then we stop at this point in the case where a patient's optic nerves are affected, it is obvious that the increased inflammatory reaction, lasting perhaps only a few hours, may be just sufficient to cause permanent impairment of vision. Rather than proceed cautiously, we must, having once started, push on rapidly until we have conquered the process.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 5, 1913.

The Relation of Bacterial Metabolism to Internal Medicine.—Arthur I. Kendall presents evidence illustrative of the nature and extent to which utilizable carbohydrate spares protein and protein derivatives from bacterial attack. The carbohydrate protects protein largely from bacterial breakdown. The sparing action is not complete, but it results in the practical elimination of nitrogenous products incidental to bacterial development, some of which may be toxic, and the substitution for them of substances which are nonnitrogenous, which may be irritative, but probably never truly toxic. This evidence is presented chiefly to indicate how the principle involved may be made use of therapeutically in the treatment of diseases of bacterial origin, where the anatomical features of the disease are such as to permit the utilization of carbohydrate by the invading microorganisms. The object of the diet rich in carbohydrate is twofold; physiologically to provide the patient with a readily assimilable food requiring a minimal amount of digestive energy to prepare it for the tissue needs, and bacteriologically to shift bacterial metabolism from the destruction of body tissue for their food requirements to the utilization of carbohydrate for at least the major part of their dietary needs. This does not directly result in annihilation of the invading bacteria, but it certainly approaches their metabolic reformation. The shifting of metabolism to sugars appears to deprive these microbes of one of their most potent weapons of offense, and forces them to act on the defensive; forcing the parasite to act on the defensive theoretically at least permits the host to rally and to strengthen its defensive and even its offensive powers earlier in the battle. The initial damage, brought about when the host is temporarily overwhelmed by the onslaught of the invaders, cannot be estimated at present, and perhaps cannot be undone. The final struggle between host and parasite can be influenced directly and favorably.

Common Colds and Vaccine Therapy.—Jessie Weston Fisher says very truly that "the best way to cure colds is not to catch them," but if we will catch cold she would have us remember that the affection is far from being trivial. Colds are unquestionably due to infection by microorganisms, they are contagious, and they can be largely prevented by reasonable isolation of every case and preventive inoculation. They can be aborted, or their course shortened, by vaccine treatment, which she maintains is specific for acute and chronic inflammations of the respiratory tract.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 7, 1913.

Meningitis of the Epidemic Type in Children below Two Years of Age.—Henry Koplik affirms that the diagnosis and treatment of cerebrospinal meningitis in children below two years of age has become an important problem. These patients often present symptoms which are misleading, and therefore in numerous cases an early diagnosis is not made. The diagnosis is often masked, the attendant not even thinking of meningitis. The fear of making a lumbar puncture and finding a clear fluid normal in every respect, with the consequent doubting attitude of those about the patient, deters many from using this necessary aid to an early diagnosis. We should never lose sight of the possibility of meningitis in the very young and that perfect and accurate early diagnoses are essential. A day's delay in older children is without danger, but the same delay in a baby means its death. The stress of diagnosis must rest on the persistence of cerebral symptoms, high fever, and, most important of all, Macewen's percussion note over the frontoparietal juncture as a sign of increasing fluid in the head. A tense fontanelle is of some value, but may be misleading. As to treatment, lumbar puncture and the injection of serum give the best results. In infants below two years of age, in whom meningitis is suspected, an early lumbar puncture should be made, so that treatment may be begun as soon as possible. The fluids should be withdrawn slowly and with the greatest caution, and the serum be introduced very slowly in order that the traumatism and extreme changes of pressure may be avoided. The temperature is a guide of value as to the necessity of repeated puncture and introduction of serum, as in older children, but in face of great restlessness and a normal temperature fluid should be withdrawn and examined for bacteria. If these persist and a cloudy fluid is obtained, it is safe to reintroduce serum rather than delay and wait for actual cultures to determine whether the fluid is sterile or not. Great caution is necessary before pronouncing such patients cured.

Prevention of Disease versus Cost of Living.—Thomas F. Harrington lays stress on the fact that the whole problem of the high cost of living is a social one. Increased cost of living will hardly be lessened or altered by laws or mode of life. Such remedies are almost entirely academic. Preventive medicine, however, does offer a solution of the question, in part at least if not in its entirety. It demonstrates how the enormous waste of health, energy, money, and life may be lessened and greatly prevented. An assurance of greater power, greater health, greater wage earning ability is guaranteed to those who will learn its lessons and apply even its simplest teachings. An efficient, healthy mode of life, physically, mentally, and morally, means a nearer approach to the normal living standard of each individual.

The Possible Relationship of Organic Diseases of the Nervous System to Riggs' Disease.—The experience of Joseph Collins has convinced him that Riggs's disease may be the causal factor of serious organic disease of the nervous system; while he can offer no other proof of this than the occurrence of such diseases in persons afflicted with pyorrhea alveolaris, the absence of other causes and the improvement or disappearance of the disorder after the pyorrhea has been treated locally and constitutionally by means of autogenous vaccine, he nevertheless presents the reports of three cases for consideration; two cases of myokymia (one simple and one complicated) and one case of multiple neuritis. The offending organism in these cases is the *Streptococcus viridans* which has been isolated from a tooth socket after the extraction of the tooth. The writer adds that the time has come when we must treat seriously what has heretofore been considered to be only an offensive disorder, and to institute early measures that will prevent a systemic infection which may become far reaching and extremely serious.

A Spirochete Associated with Infections of the Accessory Sinuses.—Ruth Tunnicliff, in examining smears from the noses of patients with acute rhinitis observed, in five cases, a spirochete, staining deeply with carbol gentian violet. In four of the cases it was found in connection with infections of the accessory sinuses. In the other case there was only a history of severe acute rhinitis. The spirochete has two or three curves, the ends being pointed and parallel to the long axis; it measures from two and a half to five microns in length and one half micron in width; it is anaerobic and was isolated in pure culture on alkaline goat blood agar. The growth appeared on the surface after seven days' incubation as a dull radiating growth; later it appeared also in the fluid of condensation. The significance of this spirochete has not been determined.

Incontinence of Feces (Nonorganic).—L. H. Zeuch states that in this disorder there is sphincteric relaxation but not a paralysis. The muscle fibres respond to stimuli and are controlled at will, but formed stools pass through without the knowledge of the individual, as often as five or six times a day. Moral suasion will not control the evacuations, nor are vegetable astringents, taken internally, of any use. Ergot, strychnine, and hematic tonics are occasionally successful, but only after several weeks' use. The writer reports a case under his care in which he suspected seat worms a possible etiological factor. He administered a high injection of a solution of mercuric chloride (1:10,000), with a pump syringe. After holding a pint of this solution for fully ten minutes, he had a copious evacuation of formed stools. Internally, ten minim doses of ergot were given every five hours. Since then (nine months ago) the patient has had control of his feces. The writer gives credit to the mercurial solution, as the evacuations ceased before the ergot and tonics had had time to act; although they may have prevented recurrence.

MEDICAL RECORD.

June 7, 1913.

The Acid Test in Therapeutics.—John Aulde, believing that the chemical problem in nutrition overshadows in importance all other questions, seeks to establish certain fundamental principles as a basis or foundation for clinical research. He emphasizes the significance of the acid test to determine the physiological equilibrium as well as the chemical status of the body fluids and tissues. The importance of the chemical problem in nutrition depends upon the absolute necessity of inorganic matter to promote function—without chemical stimulus we should have no physiology. The vital phenomena in animals and plants are regulated, modified, or governed by the chemical reactions of the nutritive pabulum—and the correlation is complete. Chemical deviations in the body fluids, therefore, may give rise to what might be termed a "habit," a self perpetuating disorder, such as hyperchlorhydria. A critical study of the chemical relations must convince the impartial student that Bright's disease is curable, in the sense that neuritis and neuralgia are curable. A diminished alkalinity of the blood passing through the kidney tissues has interfered with function and destroyed structure—that is, an excess of acid has produced organic disease. That obscure nervous phenomena may be due to acid excess may be proved, because the plan of treatment advocated causes them to disappear, and the results may be correctly calculated providing degeneration has not caused structural cell changes. With a single exception, the gastric fluid, all retrograde changes (catabolism) are characterized by acid reaction (urine, perspiration, mucus). The normal condition incident to anabolism (upbuilding process) is alkalescence, while acidity is normal in catabolism. The demonstrable effects of acid excess are found in a study of metabolism. The acid excess of intestinal indigestion depletes the lime content of the tissues, leading to various nervous symptoms, including anemia and lack of bone making material. Lime salts promote function and maintain structure and *vice versa,* and calcium depletion involves also the integrity of ferments. Hence the importance of the acid test.

The Relation of Syphilis to Progressive Muscular Dystrophy.—Williams B. Cadwalader and E. P. Corson-White suggest that while the actual cause of progressive muscular dystrophy has not yet been discovered, the evidence so far gathered seems to indicate that congenital influences are most potent in its development. It has never been explained, however, how it is transmitted from parents to children, or why it appears in the child without the same disease being present in the parents. The writers have studied a number of patients afflicted with this peculiar malady, and having found that the blood serums frequently reacted positively to the Wassermann and Noguchi tests, it appeared to them that syphilis might hold an important relationship, and they have recorded the notes of thirteen cases in which the original Wassermann technic was employed with all of its controls. To further control the result, each serum was tested out again, using four different antigens with all of the controls. In no case was a dystrophy considered positive unless the test with each different antigen gave a clear cut positive result, and the same care was used in the results with the families of these patients. Of twenty-seven cases investigated, seven gave positive serum reactions. In three instances one of the parents also had positive reactions, and one of these had facial paralysis which might have been due to syphilis. Unaffected brothers or sisters of patients gave positive reactions in three families. Miscarriages were said to have occurred in five families. The conclusions drawn from the above facts are that six of the patients with myopathy were infected with syphilis, and that it was hereditary, and was therefore present before any evidences of myopathy had developed. Whether the presence of syphilis is essential to the subsequent development of pseudomuscular hypertrophy, or whether in these cases it was a mere coincidence that two distinct and separate diseases were observed, is a question the writers do not attempt to answer.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

May, 1913.

Is Albuminuria Likely to Recur in Successive Pregnancies?—Slemons, drawing conclusions from his private practice and from the records of the Johns Hopkins Hospital of cases of toxemia in pregnancy, holds that one of every five or six women who have had a high grade albuminuria in the first pregnancy will suffer from autointoxication in the second. The author does not include cases of mild and temporary albuminuria; what he says relates to those in which the albumin is sufficiently abundant to be measured by the Esbach apparatus, in which there are numerous tube casts, and in which the symptoms are so outspoken as to leave no doubt of the existence of an autointoxication.

The Treatment of Uterine Hemorrhage by Means of the Röntgen Rays.—Pfahler reports twenty-one cases of uterine hemorrhage associated with fibromyomas, and two cases in which there was no palpable tumor. He concludes that röntgenotherapy is the method of choice for the control of hemorrhage in patients approaching the menopause. in whom carcinoma can be eliminated. It is not the method of choice in patients under forty years of age, but can be recommended in all cases of any age in which operation is contraindicated.

Abstraction of Calcium Salts from the Mother's Blood by the Fetus, the Cause of the Rapid Progress of Tuberculous Processes.—Inasmuch as pregnancy and lactation both deprive the mother of calcium salts, Drennen holds that there is consequently less calcium for the process of calcification of the tuberculous areas—Nature's method of cure in tuberculosis. This, therefore, accounts for the rapid course of tuberculosis after pregnancy, increasing after every succeeding pregnancy until the woman generally succumbs after the third.

The Operative Treatment of Puerperal Septicemia.—Darnall cautions against the dangers of the indiscriminate use of the curette, this being reserved for those cases only in which the retained products cannot be removed effectually by the finger or douche; the time for action being at the first rise in temperature after delivery. Whenever manipulation is adopted it should be done in the very beginning of the trouble. Local treatment by curetting after the infective organisms have penetrated the body of the uterus is useless and may produce great harm. If diffuse peritonitis results, an abdominal section is the operation of choice. Drainage should preferably be through the vaginal vault, though in some cases it may be through the incision of a stab wound. Irrigation should be by normal salt solution at a temperature of 100° F., avoiding as far as possible any handling of the tissues or disturbance of the adherent flakes of fibrin. Treatment by excision of the involved vessels in thrombophlebitis is not considered of great value. As the death rate where hysterectomy has been done in puerperal cases has reached seventy per cent., it can hardly be advised, as this is considerably higher than the mortality from puerperal infection of severe types treated without operation.

Reaction in Those Operated upon for Tuberculous Conditions.—Furniss found that when he operated upon tuberculous patients there was a distinct reaction. This was characterized by a rise of temperature of from two to four degrees after twelve hours, a rise in the pulse rate, general body ache. and a feeling of malaise; sometimes marked headache, often an exacerbation of other local tuberculous lesions, or of quiescent ones. He believes that this condition is due to the liberation during operation of a certain amount of tuberculous material into the circulation, with the production of a severe tuberculin reaction. Several illustrative cases are briefly reported.

AMERICAN MEDICINE

April, 1913.

A Study of Intestinal Stasis, with Remarks on the Uses and Application of Bismuth Meal.—A. J. Quimby states that the radiological study of the intestinal tract not only affords a convenient means of making out the size, outline, and position of the organs, but that by instantaneous exposures in rapid succession their movements can be recorded and by stereoscopic plates their relation can be determined. This method of examination enables us to mark the sites at which stasis occurs and to calculate the time required for each part to perform its function and in most cases point out the character and location of the lesion causing delay. The writer finds that the average time required for a meal to pass from the stomach through the small intestine to the cecum and transverse colon is about six hours; any delay beyond this is considered as stasis, and for convenience he would designate the amount of stasis under four or more general terms. If the bismuth meal remains in the ileum more than six and less than eight hours, he would call it stasis of the first degree, from eight to ten hours, the second degree, from ten to twelve hours, the third degree, and from twelve on, the fourth degree. As such important data may be safely and easily obtained, the writer suggests that it should be a routine practice to examine all chronic cases where the symptoms may be referred to disturbance of the gastrointestinal functions: and if generally used it will be found that ptosis is one of the most important primary factors causing stasis; that its action is largely mechanical, is automatically progressive when neglected, and is a causal factor in the development of serious complications.

Letters to the Editor.

THE VON RUCK TUBERCULOSIS VACCINE.

46 Reed Street, Asheville, N. C., *June 10, 1913.*

To the Editor:

It should hardly be necessary to say that the overdrawn and often absurd statements concerning the therapeutic possibilities of my vaccine, and concerning my hopes for the future, which have recently appeared in newspapers throughout the country, were printed without my authorization and, indeed, in opposition to my wishes.

Representatives of the press, who called on me, were always referred to my publications in medical literature, and were told that I could not, with propriety, make any statements whatever until the government investigations of the vaccine were completed and reported upon.

Since, however, the newspaper notoriety, which was thrust upon me, has evidently caused futile hopes in the minds of many consumptives, and was not always interpreted correctly by physicians, and since many consumptives come to Asheville, asking to be treated, for whom no treatment whatever can offer any chances of improvement, I have thought it proper to prepare a statement for publication in the *New York Herald*, in order to correct the mistaken ideas in the minds of people in regard to the possibilities of my vaccine. I hope that this statement will appear promptly in the *Herald*, and that it may have the desired effect. It would be useless for patients to come to Asheville for treatment without the approval of their physicians. The latter should, in all cases, communicate with me before sending patients to the Winyah Sanatorium, giving full details of their patients' conditions, and should make arrangements for their accommodation.

I should be very glad if you would publish this letter in the New York Medical Journal, or such portions of it as may suffice to inform the profession of my position in the matter.

Karl von Ruck, M. D.

ATTENDANCE AT MEDICAL SOCIETIES.

Akron, Ohio, *June 12, 1913.*

To the Editor:

The statement of S. St. J. Wright, A. B., M. D., that "every man should attend his medical society" is only too true. No man is above learning much of benefit from any reputable society. No man knows enough to consider himself too good or too learned to attend his medical society. The member who never attends sooner or later becomes an object of wonder, finally of greater or less suspicion, whether justly or unjustly, among the members, no matter how fair or broad minded they be. When the senior requires an anesthetist, he thinks of the junior whom he meets at the society meetings. When the junior requires a consultant he first thinks of the senior whom he sees or hears at the same meetings.

In my official capacity as secretary of the Summit County Medical Society I was recently requested to recommend two physicians for the position of medical examiners for an important insurance company. I at once named two whom I knew, as they attend, whenever possible, the meetings of our society.

One suggestion to other secretaries: This society was organized in 1842. We have a roster which contains the names in full, birthplace, date, degrees of all kinds, location, and, in the case of the dead, the date of the death, of every man that joined this society. It forms an invaluable and most interesting book, and any secretary who will complete his society records will be well repaid for the labor by the knowledge he will acquire of his fellow members past and present.

A. S. McCormick, M. D.

DIGITALIS IN MITRAL STENOSIS.

225 Henry Street, New York, *June 13, 1913.*

To the Editor:

Dr. Maximilian Schulman, in his article on mitral stenosis in the Journal for May 31st, has this to say on its treatment:

"In the early stages these patients rarely need digitalis. When it seems that they need digitalis, then they need rest even more urgently, and it hence follows that patients with mitral stenosis should not be given digitalis, even in small doses, unless they are bedridden."

To wait with the treatment of digitalis till the patient is urgently in need of rest or is already bedridden is not proper treatment. No physician doubts the value of rest in mitral stenosis. But the majority of patients coming to the physician with this disease and showing the beginning of cardiac insufficiency are either unable or unwilling to become bedridden. Mitral stenosis is an incurable disease, and the patient cannot be kept in bed indefinitely, not even at frequent intervals. Some patients do badly when confined to bed. The majority of them are too poor to afford a long rest.

It behooves the physician to do the best he can under the circumstances. After the patient is advised against overexertion, and given instructions as to proper diet, care of the bowels, etc., it is best to give him digitalis in doses of from five to ten drops of the tincture, or else five drops of the tincture of strophanthus and ten drops of tincture of nux vomica in water three times a day after meals.

This treatment has given me excellent results in cases of mitral stenosis, while the patients could attend to their ordinary affairs with little discomfort. When digitalis is indicated it is better to begin a little too early than a little too late.

J. Epstein, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Clinical System of Tuberculosis. Describing All Forms of the Disease. By Dr. B. Bandelier, Medical Director to the Sanatorium Schwarzwaldheim at Schömberg, near Wildbad, and Dr. O. Roepke, Medical Director to the Sanatorium for Railway Workers at Stadtwald in Melsungen, near Cassel. Translated from the Second German Edition by G. Bertram Hunt, M. D., B. S., Late Physician to the Scarborough Hospital. New York: William Wood & Co., 1913. Pp. xii-526. (Price, $6.)

In these days of ponderous medical volumes and voluminous compilations, mostly bibliographical in character, it is distinctly refreshing to see a compact volume of 526 pages, presenting in an authoritative manner all the essential facts about tuberculosis in its various forms. The authors, both medical directors of tuberculous sanatoriums, show an intimate knowledge of the subject from first hand, and, in addition, possess a style which excels in terseness and clearness the usual run of medical works on special subjects.

The arrangement of the various topics adds greatly to the value of the book, not only as a work of reference, but particularly as a text book for general practitioners and the medical student. Following the two chapters on the etiology, pathology, symptoms, diagnosis, prognosis, treatment, and prophylaxis, there is a very satisfactory and authoritative discussion of tuberculosis of the pleura, the upper air passages, the digestive organs, the urogenital organs, the vascular and lymphatic systems, the skin, the organs of locomotion, the nervous system, the eye, and the ear, miliary tuberculosis, scrofula, and tuberculosis in children. The chapter on diagnosis is particularly lucid and up to date. It is to be regretted, however, that, in the recording of signs graphically, the author adopted their individual scheme, unlike any other. In this particular instance originality is rather a drawback, since a variety of the recording schemes is confusing and impairs, if not nullifies, their usefulness. It is well nigh time that a uniform scheme of recording signs be adopted by all. We were sorry to see that no mention is made of American sanatoriums and the splendid results obtained in our larger institutions. Also, that while several of the European health resorts are discussed, none of the American resorts are even mentioned. This serious omission should be corrected in the next edition. The illustrations, many of which are in color, are admirable, and the general make up of the book leaves no room for criticism. We recommend this work to our readers.

The Surgery of the Skull and Brain. By L. Bathe Rawling, F. R. C. S., Surgeon with Charge of Out Patients, St. Bartholomew's Hospital, etc. London: Henry Frowde and Hodder & Stoughton; New York: Oxford University Press, 1912. Pp. xi-340. (Price, $6.)

This book gives in a most complete form the most modern facts and methods of procedure in craniocerebral surgery. It is a most difficult task to compress into such small space so large a subject as this has become in the past few years. There have been so many conflicting theories in regard to the mechanism of fractures of the skull, concussion, and compression, so many methods of operative interference, hemostasis, etc., and so much discussion as to indications for operation for intracranial injury and disease, that a large work would be necessary to even outline all that has been written. The writer has been very successful in eliminating all that is unessential to a clear description of the present aspects of the surgery of the skull and brain. The theories regarding cerebral injury are those now most generally accepted, the operative technic described is chosen from the work of the best clinicians in Europe and America, and the indications for operating in the various intracranial lesions represent the generally accepted ideas of the best conservative surgeons specializing in this field. The book is written in excellent English, the illustrations and diagrams are clear and satisfactorily descriptive, and the publisher has made an unusually attractive volume. It can be recommended not only to the specialist but also to the student and the general surgeon who wishes to familiarize himself with the most up to date practice in this most progressive realm of surgery.

Tuberculin in Diagnosis and Treatment. By FRANCIS MARION POTTENGER, A. M., M. D., LL. D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. With Thirty-five Illustrations, Including One Plate in Colors. St. Louis: C. V. Mosby Company, 1913. Pp. 243. (Price, $3.)

In this book Doctor Pottenger gives a very complete presentation of this much discussed subject. He feels that the testimony given by both clinical observation and laboratory technic afford ample justification for the belief that the theory of the action of tuberculin is supported by the practical results. The material is presented in a clear and interesting manner, and attention is called to various points that are not infrequently overlooked. In regard to the size of the dose, Pottenger condemns the giving of small doses which are increased slowly with long pauses between them, as this method favors oversensitiveness (serum sickness). He recommends beginning with small doses and, with short intervals, increasing the dose rapidly so as to prevent oversensitiveness. He also holds that cases of mixed infection can and should be given the tuberculin treatment. The various tuberculin tests are set forth in much detail and considerable space is devoted to the technic of administering tuberculin. In an appendix is given a translation of Koch's first paper, in which he reports his results from the use of this new substance. It is a model of modesty and reserve. This book is a very good one and can be recommended.

The City That Was. By STEPHEN SMITH, A. M., M. D., LL. D. New York: Frank Allaban, 1911. Pp. 211.

The author filled the position of commissioner of the Board of Health of New York for over eight years, and during this long period he gained an insight to conditions which seem to us to have been impossible to exist. There is hardly a department in the great city of New York that deserves as much credit as the Board of Health. It has been exempt from the degrading influence of graft and corruption, and its officers have, without exception, strictly adhered to the one aim to make New York a healthy city. Much is still to be done, but that is not the fault of the department. The book is very instructive and should find many readers, for it well deserves a wide circulation.

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Meetings of Local Medical Societies.

TUESDAY, *June 24th.*—New York Psychoanalytic Society; Alumni Association of Seney Hospital, Brooklyn; Valentine Mott Medical Society, New York (annual); Washington Heights Medical Society; Rome Medical Society; Buffalo Academy of Medicine.

WEDNESDAY, *June 25th.*—Medical Union, Buffalo.

THURSDAY, *June 26th.*—New York Physicians' Association; Bronx Medical Association; New York Celtic Medical Society.

FRIDAY, *June 27th.*—Audubon Medical Society; Italian Medical Society of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 11, 1913:

Francis, E., Surgeon. Directed to proceed to Texarkana, Tex., to investigate an outbreak of poliomyelitis prevailing there, and to advise with the State and municipal authorities as to measures for its control. **Hooper**, L. E., Assistant Surgeon. Directed to report to the commanding officer of the revenue cutter *Thesis* at San Francisco, Cal., not later than June 20th, for duty during the northern cruise of that vessel. **Kerr**, J. W., Assistant Surgeon General. Detailed to represent the service at the annual conference of State and Provincial Health Officers of North America, to be held in Minneapolis, Minn., June 14, 1913; and to make arrangements for holding the sessions of the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service, June 16, 1913, and act as secretary in the conference; also detailed to represent the service in the House of Delegates of the American Medical Association to be held in Minneapolis, Minn., June 17 to 20, 1913. **King**, W. W., Surgeon. Leave of absence for three months from March 15, 1913, amended to read "three months' leave of absence from April 16, 1913." **Kucera**, J. F., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from May 1, 1913. **McMullen**, John, Surgeon. Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city, June 17 to 20, 1913. **Markoe**, W. W., Acting Assistant Surgeon. Granted one month's leave of absence, without pay, from May 1, 1913. **Nute**, A. F., Acting Assistant Surgeon. Authorized to visit charitable institutions in Boston, Mass., and vicinity, for the examination of aliens who are liable to deportation. **Rucker**, W. C., Assistant Surgeon: Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city June 17 to 20, 1913; also en route to station at Washington, D. C., to attend the annual conference of State and local health authorities of Kansas at Lawrence, June 24 and 25, 1913. **Trask**, J. W., Assistant Surgeon General. Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service, to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city, June 17 to 20, 1913. **Weldon**, W. A., Acting Assistant Surgeon. Granted sixty days' leave of absence, without pay, from June 8, 1913.

Board convened.

Board of commissioned medical officers convened to meet at the bureau on the call of the chairman for the physical reexamination of a cadet of the Revenue Cutter Service. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Passed Assistant Surgeon H. J. Warner, member; Assistant Surgeon R. A. Kearney, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Department of the United States Army for the week ending June 14, 1913:

Banta, William P., Captain. Upon arrival in the United States and upon the expiration of the leave of absence heretofore granted him will proceed to Fort McPherson, Ga., and report in person to the commanding officer of that post for duty. **Browne**, Rhoderic W., Lieutenant, Medical Reserve Corps. Upon arrival in the United States will proceed to Fort Dade, Fla., and report in person to the commanding officer of that post for duty. **Dickenson,** Clarence F., Lieutenant, Medical Reserve Corps. Relieved from active duty in the Medical Reserve Corps on arrival at his home, Berkeley, Cal. **Drake,** P. G., Lieutenant, Medical Reserve Corps; ordered to Fort Andrews, Mass., for temporary duty, about June 16th. **Dunbar,** Lee R., Captain. Relieved from duty at the Letterman General Hospital, Presidio of San Francisco, Cal., and will proceed to Fort Leavenworth, Kansas, and report to the commandant, U. S. Military Prison, for temporary duty and on completion of this duty report to the commanding officer of Fort Leavenworth for duty. **Edwurzel,** G. M., Major. Granted ten days' leave of absence from June 26th. **Ferenbaugh,** Thomas L., Lieutenant. Relieved from further treatment at the Walter Reed General Hospital, District of Columbia, and from duty at Fort Sill, Okla., in time to comply with this order, and will sail from Seattle, Wash., on or about July 10th for Fort St. Michael, Alaska, for duty, relieving First Lieutenant Clemens W. **McMillan,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **Hall,** William E., Lieutenant. Relieved from duty at Fort Winfield Scott, Cal., to take effect upon the arrival at that post of Captain Ernest G. Bingham, and will then proceed to the Letterman General Hospital, the Presidio of San Francisco, Cal., and report in person to the commanding officer of that hospital for duty. **Hill,** Eben C., Captain. Will report to Brigadier General Albert L. Mills, president of the army retiring board at Washington, D. C., at such time as he may designate for examination by the board; upon completion of his examination, will return to the place of receipt by him of this order. **Kraker,** David A., Lieutenant. Medical Reserve Corps. Ordered to active duty for a period from June 28th to July 10, 1913, and will proceed to Gettysburg, Pa., for duty with the provisional field hospital to be established at that place. **Lambie,** John S., Jr., Captain. Relieved from duty at Fort Myer, Va., to take effect at such time as will enable him to comply with this order and will proceed to Fort William H. Seward, Alaska, sailing from Seattle, Wash., about July 10, 1913, for duty, relieving Captain Ralph S. **Porter,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **Meister,** William B., Lieutenant, relieved from further temporary duty at Texas City, Texas, and from duty at Fort Benjamin Harrison, Indiana, in time to comply with this order, and will proceed to Fort Davis, Alaska, sailing from Seattle, Wash., on or about July 10, 1913, and report in person to the commanding officer of that post for duty and by letter to the commanding general, Western Department, relieving First Lieutenant Horace M. **Reberson,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **McMillan,** Clemens W., Lieutenant. Granted leave of absence for one month on arrival in United States. **Page,** Henry, Major. Granted leave of absence for four months on surgeon's certificate of disability, with permission to go beyond the sea; upon the expiration of this sick leave of absence, will proceed to the Walter Reed General Hospital, District of Columbia, and report to the commanding officer for further observation. **Richardson,** W. H., Captain. Detailed as inspector instructor with California Militia July 5th to 19th at Fort Winfield Scott, California. **Snow,** Corydon G., Captain. Upon arrival in the United States will proceed to the Letterman General Hospital at the Presidio of San Francisco, Cal., and report in person to the commanding officer of that hospital for duty. **Snyder,** Craig R., Captain. Upon arrival in the United States will proceed to Columbus Barracks, Ohio, for duty. **Truby,** W. F., Major. Sick leave already granted extended three months. **Waring,** J. B. H., Captain. Granted leave of absence for two months on surgeon's certificate of disability.

By direction of the President, Colonel Charles Richard and Captain William A. Wickline are detailed as members of the army retiring board, appointed to meet at Washington, D. C., by paragraph 14, Special Orders No. 14, January 17, 1913, War Department, vice Colonel Louis A. LaGarde, retired, and Captain Louis C. Duncan, hereby relieved.

A board to consist of Major Bailey K. Ashford, Medical Corps, is appointed for the purpose of studying tropical diseases as they exist in Porto Rico, and will be governed in the investigations by such instructions as may be received from the Surgeon General of the Army. Major Ashford is relieved from duty with troops at San Juan, P. R., and will take station at that place for the purpose indicated.

Each of the following named officers of the Medical Reserve Corps, recently appointed, is ordered to active duty in the service of the United States on account of an existing emergency and will proceed to the post specified after his name for duty: First Lieutenant Coleridge L. Beaven, Fort Howard, Md., and First Lieutenant William W. Vaughan, Fort Myer, Va.

Each of the following named officers upon arrival in the United States will proceed to the post specified after his name and report in person to the commanding officer thereof for duty and by letter to the commanding general, Western Department: Captain Ernest G. Bingham, Medical Corps, Fort Winfield Scott, Cal.; Captain Orville G. Brown, Medical Corps, Fort Worden, Wash.; Lieutenant Charles H. Stearns, Medical Reserve Corps, Fort Ward, Wash.; and Captain Haywood S. Hansell, Medical Corps, who will report in person to the commanding general, Western Department, for assignment to duty as attending surgeon and medical superintendent, Army Transport Service, San Francisco, Cal.

Births, Marriages, and Deaths.

Married.

Babcock—Losee.—In Adams Centre, N. Y., on Wednesday, June 4th, Dr. Earl Erret Babcock and Miss Lena Belle Losee. **Carmelia—Brownback.**—In Washington, D. C., on Thursday, May 8th, Dr. Francis Albion Carmelia and Miss Sara Ellis Brownback. **Guy—Price.**—In Pittsburgh, Pa., on Wednesday, June 4th, Dr. William Harvey Guy and Miss Mary Emma Price. **Kendig—Yates.**—In Kenbridge, Va., on Thursday, June 5th, Dr. Walter D. Kendig and Miss Helen Murray Yates. **Killips—Coon.**—In Lyons, N. Y., on Wednesday, June 4th, Dr. Thomas A. Killips and Miss Mary Louise Coon. **Laslie—Cobb.**—In Montgomery, Ala., on Wednesday, June 4th, Dr. Carney Graham Laslie and Miss Isabel Cobb. **Lockwood—Dobel.**—In Montreal, Canada, on Thursday, June 5th, Dr. George Roe Lockwood, Jr., of New York, and Miss Louisa Anne Dobel. **Norton—Hendrickson.**—In New York, on Saturday, June 7th, Dr. Rupert Norton, of Baltimore, and Miss Cecelia Hendrickson. **Stewart—Raiche.**—In Minneapolis, on Wednesday, June 4th, Dr. J. Clark Stewart and Miss Isabelle Raiche.

Died.

Adams.—In Crewe, Va., on Saturday, June 7th, Dr. E. T. Adams, aged seventy-five years. **Baltzer.**—In Hickman, Ky., on Sunday, June 8th, Dr. L. P. Baltzer. **Bolton.**—In El Paso, Tex., on Tuesday, June 3d, Dr. William Stroud Bolton, aged fifty-four years. **Evans.**—In Pittsburgh, Pa., on Friday, June 6th, Dr. Roscoe Evans, aged thirty-eight years. **Finney.**—In Cape Giradeau, Mo., on Sunday, June 1st, Dr. J. M. Finney, aged sixty-one years. **Laverne.**—In Senatobia, Miss., no Thursday, June 5th, Dr. Don C. Laverne. **McFarland.**—In Irondale, Mo., on Friday, June 6th, Dr. William E. McFarland, aged forty-seven years. **McPhee.**—In Anthony, Kansas, on Sunday, June 8th, Dr. W. D. McPhee, aged forty-five years. **Miller.**—In Lancaster, Pa., on Sunday, June 1st, Dr. Amos B. Miller, aged sixty-nine years. **Neff.**—In Baltimore, on Thursday, June 5th, Dr. John Neff, aged eighty-one years. **Smith.**—In Reading, Pa., on Tuesday, June 3d, Dr. A. S. Smith, aged seventy-three years. **Snow.**—In Belmar, N. J., on Thursday, June 12th, Dr. Harry E. Snow, aged fifty-five years.—**Snyder.**—In Louisville, Ky., on Thursday, June 5th, Dr. Nicholas S. Snyder, aged sixty-two years.

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Original Communications.

GENERAL PRINCIPLES OF THE SURGICAL TREATMENT OF CANCER.*

By JOHN A. HARTWELL, M. D.,
New York,
Surgeon to Bellevue Hospital; Assistant Surgeon to Presbyterian Hospital, etc.

The experimental studies on cancer which are being so extensively conducted in nearly every medical centre of the world give rise to the hope that at some time there may be a means other than surgical excision for treating the disease. This hope, however, must not obscure the fact that at the present time the only treatment which is effective is an operative procedure. The degree of effectiveness which this treatment yields is based on well defined principles, and it is with these that we are immediately concerned.

The fact of prime importance is, that in its incipiency cancer is a local lesion. Whatever may prove to be the predisposing or exciting causes which lead to the uncontrolled and lawless growth of cells, which is typical of cancer, these causes always primarily act on a localized area, and are neither generally nor widely distributed, as is the pathogenic factor in so many diseases. In the early stages, too, the growth is entirely by continuity. Hence there must be a time in its life history when every cancer is amenable to complete eradication, unless it is placed in such a region that its inaccessibility renders this technically impossible. Since, however, the growth is uncontrolled and lawless, it follows that sooner or later the disease ceases to be a localized lesion, and at that stage its complete eradication is not a possibility. This statement ignores the rare instances in which the cancer cells seem to find a host sufficiently resistant to destroy them. Such instances are of vast importance to the investigator who is striving for some means, other than mechanical, for the treatment of the disease, but their rarity deprives them of any practical bearing on the question of the principles of surgical treatment. Fortunately, cancer attacks with the greatest frequency the stomach, the uterus, the rectum, and the large and small intestine, the female breast, and the structures in and around the mouth, about in the order named. It is comparatively rare, as a primary lesion, in the pancreas, the liver, the brain, and the lung. From this it is seen that in a majority of cases cancer occurs in an accessible region, and patients suffering from it in every one of these regions have been successfully and permanently cured by the surgeon. It is beyond question that surgery does afford a cure for cancer in a very large number of cases, and yet the death rate from this disease is enormous, and apparently on the increase. There are four reasons for this deplorable state of affairs. First, the carelessness and ignorance of the medical profession; second, the carelessness and ignorance of the laity; third, the inherent difficulties in diagnosticating many cancers in the early stage, even by the greatest care on the part of the most trained observer, and fourth, the fact that surgery has yet much to learn concerning the overcoming of the difficulties which surround the complete eradication of the disease, even in the early stage. Failure here is by no means a rarity.

That the first two factors, carelessness of the profession and the public, are important, is proved beyond dispute by the following figures. The Pennsylvania Cancer Commission, in an investigation of 400 cases reported from individual physicians and surgeons throughout the State, found that superficial cancer had been apparent on an average of eighteen months before the patient came to the surgeon. Eleven months had elapsed between the time a physician had been consulted and the date of operation. In deep cancers this time was one year. In about one case in thirty of breast cancers, the patient was not even examined by the first physician consulted, and in one case six, salves, ointments, etc., were prescribed with advice to temporize. Sixty-eight per cent. only, of the cases of superficial cancer were operable when they were seen by the surgeon. The figures in stomach cancer and uterine cancer were even more emphatic in their condemnation. Only forty-eight per cent. of deep seated cancers were operable when first seen by the surgeon. The following data show that our own community is equally open to criticism. The records of one of the large hospitals in New York city, for the period from 1905 to 1910, show that sixty patients suffering from pyloric carcinoma were admitted to the surgical division. Ten of these had been in some hospital previously for the same condition; seventeen had been suffering from well pronounced gastric symptoms for one year or more, and six others for six months. Of these sixty cases, forty-five were operated in with the following results: Thirty-eight, or over sixty-three per cent., were found totally inoperable, so far as removing the growth was concerned. Only seven were deemed

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*Read before the Medical Society of the County of New York, March 23, 1913.

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suitable cases in which to attempt the removal of the disease by a partial gastrectomy, and in favor of these the lesion had advanced so far that death resulted. Eight were considered inoperable from the clinical examination. Four patients refused operation, and two in whom the diagnosis seemed certain improved sufficiently under hospital treatment to be discharged without establishing a positive diagnosis by an exploration. In other words, only three patients out of fifty-four (we exclude the patients refusing operation and those in whom the diagnosis was in doubt) were really proper subjects for the application of the only curative treatment for cancer which is at present known. There were admitted to the medical wards fifty-three patients in whom a diagnosis of carcinoma of the pylorus had been made. Eight of these were included among the surgical cases, having been transferred to that division, and at operation in only one case was the growth found to be sufficiently limited to warrant a radical removal. The remaining forty-five patients were not operated upon. Nineteen of these died in the hospital, thirteen were discharged unimproved (presumably considered inoperable), eleven were discharged improved, and two were discharged as cured, that is, the symptoms were not in evidence and the diagnosis was in doubt. There were, therefore, one hundred and two patients suffering from pyloric cancer admitted to the hospital during a period of five years, and only three were successfully treated by the radical removal of the disease, and, what is worse, only ten were in condition for such treatment to be attempted. On the other hand, fifteen patients were admitted with the diagnosis of gastric cancer, and were discharged without any treatment other than routine hospital care, under which they improved. The outcome of these cases we have not been able to ascertain, but from the fact that of the advanced cases, ten patients had previously been in a hospital and discharged improved, it is fair to assume that many of these fifteen went the same way. The following case will illustrate this:

A man sixty-two years of age was admitted to the medical wards showing evidence of advanced pyloric obstruction. Under palliative treatment he improved markedly and his discharge was contemplated. He, however, asked to be operated upon. He said he had been in various hospitals eight times in six years, suffering from the same condition, and that each time he had been apparently cured, only to relapse later. Operation was performed, and a large indurated mass was found involving the pylorus, suggesting the diagnosis of cancer, secondary to an ulcer. A radical operation was performed, marked adhesions making it a very difficult procedure, and the result was death. This man, through neglect, had been deprived of the benefit of a needed operation for some years. Had he been operated upon earlier, the outcome might readily have been successful.

An illustration from personal experience may be found in the case of a patient who was under the care of an excellent physician, by whom he was referred to a prominent gastrologist. The symptoms of serious gastric disturbance, with loss of weight, were assigned to a gastric neurosis due to overwork. He was advised to take a long rest, preferably traveling abroad. Less than a week later, and just prior to his expected sailing, he was attacked with acute abdominal symptoms, for which an immediate operation was necessary. An inoperable carcinoma of the pylorus was found. There is no justification in our thus temporizing with a disease that inevitably proves fatal if left alone; it is done in violation of every therapeutical principle. Every patient which presents symptoms which make the diagnosis of a deep seated cancer seriously to be considered, is entitled to, and should have urged upon him, the exploratory operation. The time may arrive when laboratory tests, the use of the gastroscope, the x ray and other methods will make the suspected but not determined cases much less numerous than at present. Until this time arrives an actual inspection is necessary.

If my audience is in doubt as to the possibilities of a cure of gastric cancer, by any means, and under any conditions, I would refer you to the following statistics, tabulated by Dr. Charles Martin, in *Osler's Practice*. Gastrectomy was first successfully performed by Billroth in 1881, when a partial operation was done, while the complete removal of the stomach was first attempted in 1883 by Connor, of Cincinnati, who, although unsuccessful, paved the way for the later good results of Schlatter, who, in 1897, performed a complete gastrectomy with recovery. H. J. Paterson collected some statistics on gastrectomy up to 1905: twenty-seven cases had been operated in for complete removal; ten of these patients were alive and well at varying periods up to eight years after operation (eight, seven, five, four and three quarters years respectively, and two others for a somewhat shorter time). Ten others had died, of whom three had lived more than one year (i. e., mortality thirty-six per cent.). Twenty other cases were recorded, in which subtotal gastrectomy (i. e., leaving a portion of the fundus) was performed, and of these patients only six had died (mortality thirty per cent.), while all the others had lived, and nine of them had survived the operation for from two to eleven years. Paterson's statistics include, further, fifty-five cases of partial gastrectomy (i. e., removal of the pylorus and usually the lesser curvature). Of these, fourteen per cent. of the patients have been cured, having survived the operation without recurrence (one fourteen years, one seven and a half years, two six years, one five years, two four years, all well; one four and one half years, but with suspicion of recurrence). Mayo quoted MacDonald as having found forty-three undoubted cures from operation. Kocher, in May, 1907, reported ninety-five cases, in which thirteen of the patients were well, and four others, although cured of cancer, had died later from other diseases, i. e., a total of seventeen (19.3 per cent.) cured. Le Riche has recently tabulated cases in which eighty-nine cancers with gastrectomies were cured for a period varying from five to sixteen years. Of these, one patient had survived sixteen years, thirty-four from five to ten years, and five at least ten years. These cases include all kinds of cancers anatomically, mostly from the pyloric region, but one of them at the cardia. In a total of thirteen hundred and sixty-six collected gastrectomies for gastric cancer, the mortality was twenty-five per cent. Peterson and Colmers recorded thirty cases, with twenty per cent. of cures (Lisbon Congress), adding that all these patients were then in good condition, "performing ordinary daily work with no gastric complaints, with an easy digestion, and that even the distaste for fats and meats had disappeared."

With results such as those mentioned above actually accomplished, it is little less than criminal that in this city of the patients with gastric cancer, admitted to a general hospital, only one out of thirty reached the surgeon's care early enough to allow of his being permanently helped. What causes are at work to produce such a state of affairs? Difficulties in diagnosis are responsible for a part of it. Carelessness and a spirit of *laissez faire,* which, translated, means laziness and possibly ignorance, are more potent, however. Difficulty in diagnosis is not a sin; it is a misfortune. On the other hand, carelessness, laziness, and ignorance are sins, and it is appalling that we should allow ourselves to be guilty of them. It is hard to believe that any medical student can get through the routine of a medical education and not thoroughly *know* the danger of cancer, and the insidious way in which it fastens itself on an otherwise healthy individual. He may, however, readily find insurmountable difficulties in making an early diagnosis in deep seated cancer, and for this some excuse is possible. But when a patient tells a physician or surgeon that she has a lump in the breast, and he does not examine it, or, examining it, fails to take measures to positively diagnosticate it, he is guilty of criminal carelessness. If a man presents himself with a chronic ulcer on the lip, which has proved itself obstinate to home remedies, and the doctor cauterizes it, or prescribes irritating salves, this doctor is equally culpable. We have no right to be cautious in our self criticism for such things. Let us come out frankly and acknowledge our weak spot. A knowledge of it will be the first step toward remedying it. The campaign inaugurated by the surgical congress at its recent meeting in this city, for education on the subject of cancer, is a step already taken. It is only a few years ago that the general ignorance of tuberculosis was collossal. An educational campaign relative to this disease has resulted in a great dissemination of knowledge concerning it, and now no physician would dare to neglect a physical examination when a patient consulted him because "consumption" was feared. We may hope for similar results so far as cancer is concerned, but the campaign must be energetic and continuous, and must be primarily directed toward an improved condition of affairs in our own ranks. You may feel that we are departing from our subject, the principles of the surgical treatment of cancer; reflection, however, will show that this is not true, for the principle of all importance is based on the fact that cancer is at first a local disease, and is then curable, while later it is neither. Therefore, we make this emphatic appeal for the exercise of every diagnostic aid, including exploratory operation if need be, for its early recognition.

A second principle, of hardly less importance, rests on the fact that certain lesions may be transformed from a benign into a malignant character. The Pennsylvania Commission found that thirty-nine per cent. of superficial cancer, and forty per cent. of the deep seated, could be so considered. Notable examples of these are seen in the leucoplakia of the tongue, the chronic ulcer on the lip, the pigmented mole, the chronic pyloric ulcer, the colonic diverticulum, and possibly most important of all, the chronic cystic mastitis or abnormal involution of the breast. Abundant experience has proved to the satisfaction of every surgeon and pathologist that every one of these conditions has changed from a benign to a malignant growth. Why, then, are they persistently treated as the former until the latter has developed? Because the physician temporizes, and the patient dreads a surgical procedure. If, however, the physician will learn this pathological lesson, and explain to the patient that surgery in a much more dreadful form is the outcome of a waiting policy, we venture to affirm that a much larger number than at present will elect to have the early operation. There have come under my personal observation, within the past few weeks, four hopelessly inoperable cancers of the face and mouth, which had been neglected, and all of which apparently started from insignificant lesions. One patient, at least, was in a large hospital, for another condition, when he first noted a small lump on the inside of the cheek. One of the house staff examined it, and advised him that it was of no importance. He accepted this advice, and when next seen the whole cheek and floor of the mouth were involved with tubular carcinoma. Within the month I have done a colostomy for inoperable cancerous obstruction of the rectum on a patient who has been in the hospital three times since 1909 for a so called ischiorectal abscess. A third case has recently come to my notice in which a woman was referred to a "leading" consultant internist because she recognized symptoms which she thought indicated a rectal cancer. She was assured that no possibility of such existed. Four months later she returned to learn that the rectum was the seat of an inoperable cancer. In none of these cases can the blame be placed anywhere than with ourselves, and in two of them, at least, a recognition of the possibility of a precancerous condition might have averted disaster.

We desire to make a plea that the word precancerous should find as constant a use in the vocabulary of the clinician as it has in that of the pathologist. The latter has recognized its import and its importance for many years. It signifies that change which takes place in the tissues as the earliest manifestation of a beginning epithelioma or carcinoma. It is precancerous because cancer in its general clinical meaning is not yet present, but will inevitably follow if nothing is done to stop it. Ribbert describes it exhaustively, in his book on human cancer, as being demonstrable in all cases of cancer of the skin under the term *beginnende Haut Karzinome,* and illustrates the changes which he conceives as belonging to it, namely, a round celled infiltration of the subcutis prior to the lawless breaking out of the epithelial proliferation. Similarly in the stomach cancer he describes a very early change which cannot be properly diagnosticated as carcinoma, but which is certainly destined to become such. Ziegler says:

> A predisposition to the development of carcinoma is found in regenerative processes following the destruction of surface epithelium and glandular tissue, and these occur most frequently in old inflammatory processes that have led to the destruction of tissue. In the first place, the regenerative proliferation following the tissue injury may form the basis for an atypical malignant proliferation. In

addition, an important rôle is played by the snaring off and misplacement of epithelial cells into the neighboring altered connective tissue, a phenomenon of frequent occurrence in the healing of ulcers, the growth of epithelium over granulation tissue in tuberculosis, and in other chronic infectious granulomata in the mucous membranes, the skin, and in glands.

Adami says there are all grades of transition from the typical forms to the atypical forms, the former being benign, and the latter malignant. Bland Sutton in *Keen's Surgery,* devotes considerable space to precancerous conditions, and defines the term as being applied to "certain local conditions which clinical observation has shown to precede cancer"—a definition corresponding closely to that found in Gould's and in Stedman's dictionaries, though the latter qualifies it as "an assumed period." A recent paper by Dr. B. J. Lee, read before the New York Surgical Society and soon to appear in the *Annals of Surgery,* under the title of Epithelial Changes in Chronic Mastitis and Their Relation to the Development of Mammary Carcinoma, very ably discusses the subject of precancerous changes, using several cases as the text. He very faithfully describes the microscopical changes by which the benign grades into the malignant, and shows excellent photomicrographs demonstrating them. It may be objected that the term precancerous is badly descriptive because the condition meant is already malignant, or if not, it does not *necessarily* become so, and this position was to some extent assumed by some of those taking part in a recent discussion, who demanded to know if the tumor being described—a pyloric lesion—was or was not cancer; implying a hard and fast line of difference which could not be mistaken. This objection is not valid because no such line exists. The term precancerous is already widely used in the literature, particularly that of the pathologists, and it seems unwise to discard it for any other, as on analysis it is seen to describe a well recognized condition which cannot yet be called cancer in the clinical term, but which in nearly all cases will later become cancer. The need is not for a new name, but for a full grasp, particularly by the clinician, of the import of the one now in use. In this way many neoplasms and inflammatory conditions will be cured before they have reached the stage where a serious operation will be required, or, worse still, where even a serious extended operation will fail to cure.

The operative principles which must guide the surgeon in the management of cancer are based, first, on the fact that growth from the original focus of the tumor follows, in individual localities, definite lines, and, second, on the fact that cancer cells have an inherent vitality which makes them capable of independent growth when planted in a favorable environment. To attempt in detail, even briefly, the lines of extension in cancerous growth, as manifested in different localities and organs, would lead us on far too extensive a description. These are facts of anatomy and pathology with which the operator must minutely acquaint himself from the voluminous literature on the subject. He must then bring well considered judgment to bear on each individual case, in determining how far that particular lesion has extended along the lines of selection. There are no gross pathological changes to guide him. Active cancer cells may have readily extended far along lymphatics or fascial planes, without producing any alteration visible to the naked eye. Experience has taught in general what directions will be taken, but there is still a great dearth of knowledge as to which type of tumor is the most active in rapid and wide dissemination. We know the squamous celled epithelioma of the face is usually localized within narrow limits, and that the tubular carcinoma of the buccal cavity rapidly proliferates cells which may reach so far that even an early radical operation fails to remove them all. Between these two extremes, however, there are all grades, an exact knowledge of which is lacking. The result is that often needlessly mutilating operations are done, or, more to be regretted, an insufficient removal is followed by rapid recurrence. We must look to our surgical pathological laboratories to furnish the data which will make us more able to cope with this situation. Only a very careful correlation of the clinical history, the operative procedure, the exact morphology of the tumor, and the ultimate outcome of the individual case will ever solve this problem. Bloodgood, in Baltimore, has made a start in breast cancer. Every surgeon should see to it that his clinic is organized along similar lines. By so doing a period of five years will be sufficient to collect data that will go far toward establishing the relative malignancy of carcinomata on a foundation that would add greatly to rational methods of exact operative interference. The enormous material at our disposal in this city is being largely wasted.

The fact that cancer cells possess the power of independent growth, when favorable transplanted, has one very important bearing on our operative technic. Having decided in the individual case what must be the extent of the operation, it is imperative that the removal begin at the most distant points, and proceed in an orderly manner toward the most advanced point, always avoiding any exposure of parts already involved. Moreover, rough handling must be guarded against to prevent the mechanical extension of cells to new fields. Bearing on this point, too, is the care that should be observed in making examinations, removing fragments for microscopical study, and so forth. In short, a cancer should receive the same respectful consideration for its potential evils, when roughly handled, as does a swollen gangrenous appendix, or a strangulated hernia.

We may then sum up our consideration of the principles governing the surgical treatment of cancer by emphasizing the facts, first, that cancer can be cured if operated upon early, though at present there is a frightful discrepancy, owing to needless, and often culpable, delay, between what can be done, and what is done; second, in many instances a precancerous condition exists, and the term, with a definite knowledge of its significance, should become one in general daily use by the clinician; third, the knowledge of the relative malignancy of different cancers is meagre, and this paucity could be remedied by properly organized study; and fourth, cancer cells are active entities with great potential evil, and hence should be treated in such a way as to limit their extent when once they have found a place in the human body.

27 East Sixty-third Street.

THE TREATMENT OF INFECTED AND UNUNITED FRACTURE OF THE SHAFT OF THE FEMUR.

By Raymond C. Turck, M. D.,
Jacksonville, Fla.,
Surgeon to St. Luke's Hospital

The treatment of infected, ununited fracture of the femur presents certain features not found in ordinary closed fracture, nor in fracture where clean operative work has been done or in infected compound fractures; the essential differences being that in old infected cases we have to deal with septic sinuses, bone necrosis, usually a spreading osteomyelitis, and, what is perhaps of greater importance, confinement in bed for periods covering months instead of weeks. It is perhaps needless to comment upon the serious complications engendered by long continued recumbency with traction, splints, or casts. In children and in the aged, in addition to malnutrition, muscular atrophy and contraction, decubitus, secondary anemia, anorexia, autotoxemia, etc., there is the ever present possibility of a fatal hypostatic pneumonia.

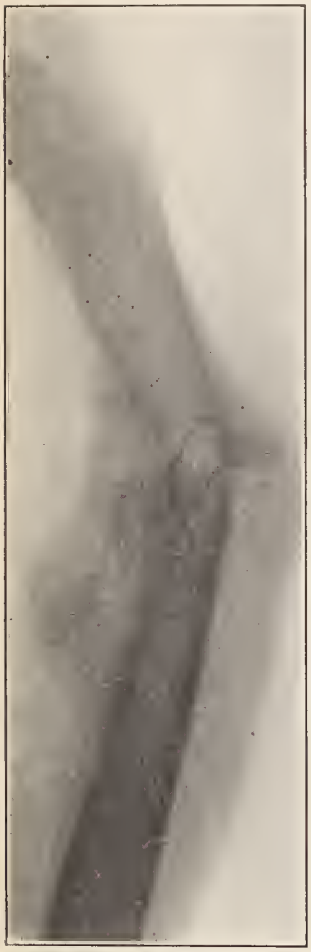

Fig. 1.—Case E. W. Ununited, infected fracture of right femur, showing inadequate silver wiring; heavy callus on internal aspect of shaft surrounds a small gauze sponge, which was forgotten and left at time of wiring operation.

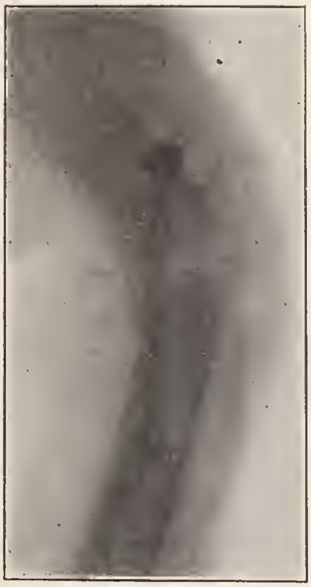

Fig. 2.—Case E. W. Non-union and deformity resulting from attempting to use the Lane plate in presence of infection; necrosis about ends of bone and extending along shafts; screws loosened.

It is a sordid truth that we are beginning to have to deal with cases of primarily clean, closed fractures which have been converted into infected compound fractures by elective operation. The brilliant results obtained by clean, capable surgeons with clamps, Lane plates, medullary plugs, bone grafts, nails, wire, staples, etc., are unfortunately productive of imitation by incompetent or unclean operators, or by men who do not realize that bone and joint surgery demands a far greater nicety of technic and an infinitely greater degree of rigid asepsis than any operation in a clean abdomen, or, indeed, than in any work in the whole field of surgery with the possible exception of operations on the brain or spinal cord. Cases such as are herein presented are becoming all too frequent and are beginning to interest the legal as well as the medical profession.

Royal Whitman has beautifully brought out the reason for the final deformity in fracture of the neck of the femur and has emphasized the necessity for fixation in abduction. In fracture of the upper third of the femur the necessity for fixation or traction in abduction is practically as great as in fracture of the neck, since the powerful fibres of the gluteus medius and gluteus minimis readily overcome the upper fibres of the abductors; the result being that the upper fragment is always in abduction and cannot be drawn down to a straight line by an amount of direct traction upon the lower limb that can be borne by the patient for a long period of time. Indeed, a moment's consideration of the musculature of the thigh should convince one that a direct pull downward on the lower limb scarcely affects the position of the upper fragment, since the bulk of the resistance to the direct pull is borne by the hamstring muscles, the abductor longus, and the rectus femoris, all having their origin from the pelvis, not from the upper fragment. That portion of the quadriceps attached to both upper and lower fragments is entirely insufficient to neutralize the powerful outward pull of the abductors. If the principle of fixation or traction in abduction were more generally followed we should have less of shortening and outward deformity following the treatment of femoral fracture by the closed method, and there would be fewer cases demanding opera-

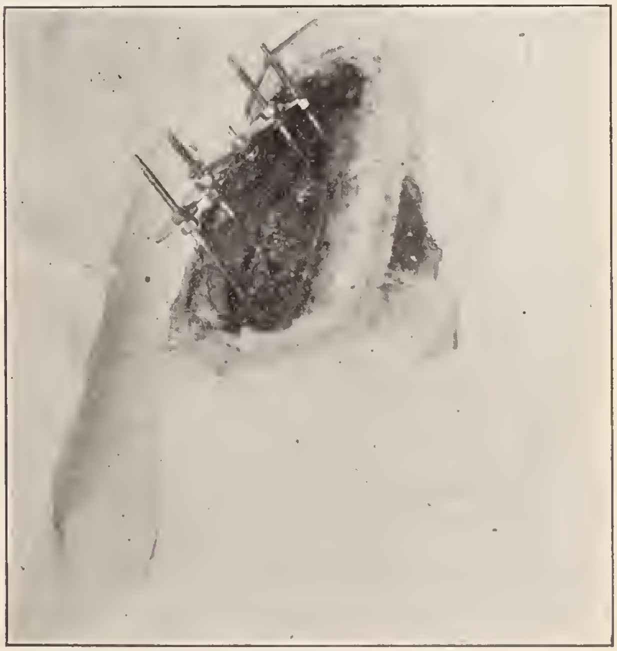

Fig. 3.—Case E. W. Thigh laid open nearly the whole length, wound packed to heal from bottom up; bone exposed and held in place by Parkhill clamp. New granulation tissue and callus may be observed along femoral shaft.

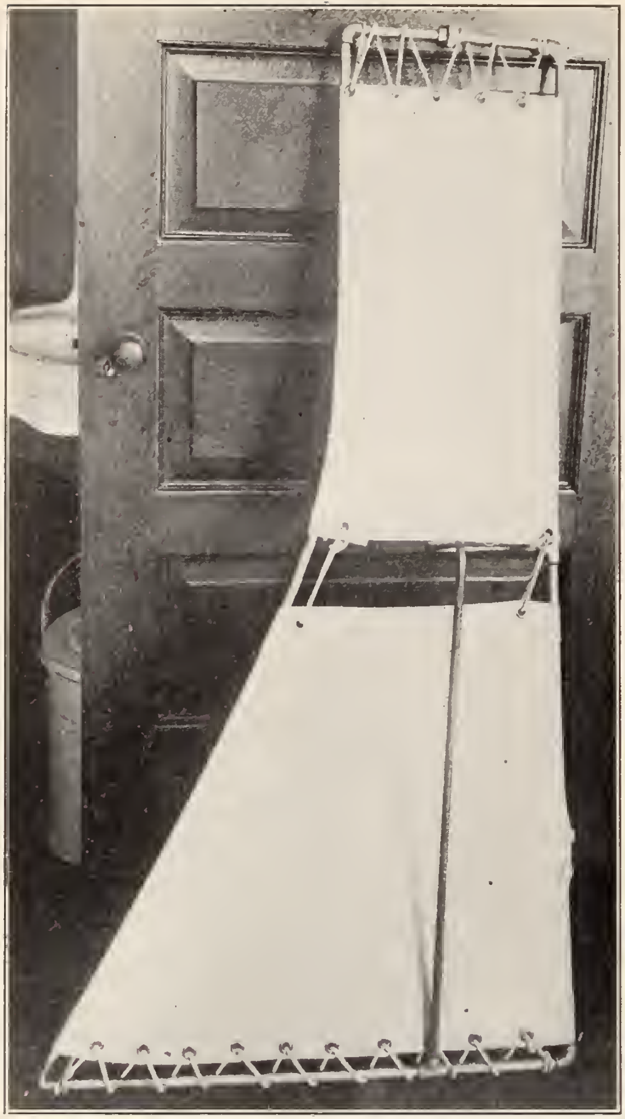

Fig. 4.—Case E. W. Showing Bradford-Whitman-Turck frame to provide traction, fixation, abduction, transportation, and the upright position; opening in canvas cover to provide for use of bed pan without moving patient.

tive correction with the possibility of adding infection to deformity.

The cases herein reported present practically all of the problems involved in the treatment of old, infected, ununited fracture, and hence are considered in detail.

Case I. E. W., a white boy, five years of age, in May, 1911, sustained a simple fracture in the upper third of his right femur. He was treated for four weeks with straight Buck's extension and a straight plaster spica. The limb was not held in abduction. Good sound union resulted, but with the outward bowing of the femur and the consequent deformity and shortening usually found in cases treated by this method. The mother of the boy, naturally, was not satisfied with the result obtained, and was persuaded by a "pseudosurgeon" that corrective work was necessary. This surgeon, not being in good standing, and not having access to a hospital, did an operation in his office with a problematical degree of asepsis. The result is shown in Figure 1. The bone evidently had been rebroken and the fragments held with a single strand of silver wire, a procedure which worked out well in the construction of an old time flail, but seems scarcely applicable to fractures in the upper third of the femur. As an additional precaution against union the wound was infected, and to complete the work, a sponge was carefully secreted behind the bone. The sponge may be noted in Figure 1 as a light area in the centre of the very unusually large and long callus. The resulting suppurating sinus was treated until the patient's money was exhausted, when the case was turned over to the Associated Charities. The wound was dressed for some months by the visiting nurse and was referred to the writer in October, 1911, and admitted to St. Luke's Hospital under the care of The Cummer Fund for Ruptured and Crippled Children. The boy entered the hospital with a suppurating sinus leading down to an ununited, infected fracture at the junction of the upper and middle thirds of the right femur. (Figure 1.)

First operation, October 26, 1911. Under ether, the sinus was dissected out, bone exposed, and the silver wire removed. The necrotic bone was curetted and the wound filled with iodoform emulsion, and packed, to insure free drainage. Later, Beck's bismuth paste was used, the plan being to subdue the infection, then correct the deformity by clean operation. The wound refused to heal and continued to suppurate.

Second operation, December 12, 1911. Under ether, opened widely and thoroughly curetted necrotic bone areas which by this time had extended in all directions; packed wound; no result.

Third operation, January 12, 1912. Nitrous oxide and oxygen anesthesia; opened widely, curetted. and made counter drainage opening in thigh posteriorly, establishing through and through drainage. Following this operation the infection extended rapidly down thigh, necessitating another operation.

Fourth operation, January 24, 1912. Ether anesthesia; split thigh anteriorly, thoroughly exposed femur, elevated bone ends through wound, cut away all of old callus, and found a foul, partly disintegrated gauze sponge imbedded in the bony callus posterior to and below the fracture; curetted all visible necrotic bone and freshened ends; four screw Lane plate applied simply as a forlorn hope; drained. Severe infection resulted promptly; Lane plate screws sloughed out quickly, throwing bone again in an-

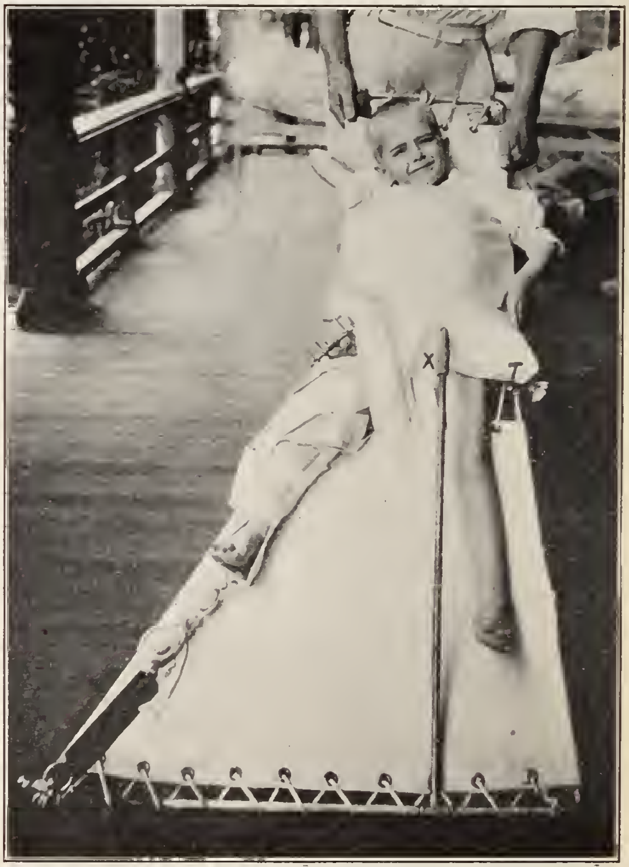

Fig. 5.—E. W. Patient in upright position on frame, with abduction and traction, traction provided (after Gwilym Davis) by fish scale and cord and pulleys; Parkhill clamp still in place.

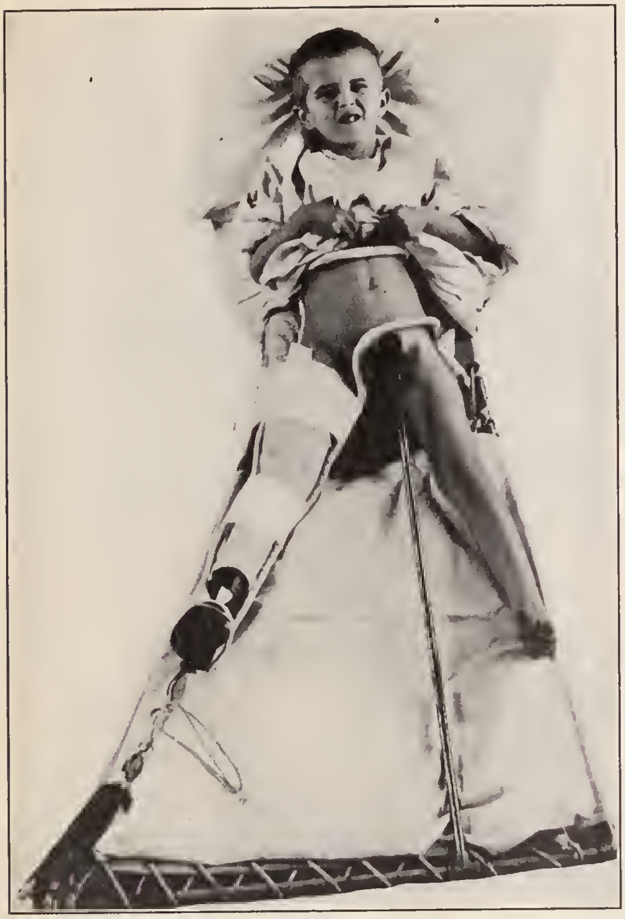

Fig. 6.—Case E. W. Patient on frame, now fitted with removal bicycle saddle for greater comfort when upright; Parkhill clamp removed, wound nearly healed, abduction and traction still maintained. Fixation provided by molded telegraph wire splint. Adhesive traction straps removed, cord fastened to screw eye in heel of an ordinary shoe.

gular deformity (Figure 2); wound laid open and packed without anesthesia; osteomyelitis extending almost entire length of femur; pus broke through popliteal space.

Fifth operation, March 18, 1912. Nitrous oxide-oxygen-ether anesthesia; split thigh anteriorly nearly whole length; removed loose plate and screws, curetted, freshened ends, straightened thigh and applied a Parkhill clamp. Drained opening in popliteal space; anterior wound packed widely open with iodoform gauze; limb placed in iron reinforced abduction plaster spica with windows for dressings (Figure 3). Daily dressings and repacking until April 15, 1912, when the wound and bone were beginning to cover with clean, healthy granulations. The posterior opening had closed. The boy's general condition, however, was very bad; anemic; hemoglobin fifty; heart dilated; children's service reported probable beginning amyloid degeneration of liver and kidneys. Necessity for change of position, open air, and other hygienic measures being apparent, the frame shown in Figure 4 was devised. As may be seen, the frame is of the ordinary Bradford-Whitman type, except that the abduction feature is added. The iron perineal bar was divided as shown at X in Figure 5, and the ends held by a short pipe large enough to readily slip up and down the supporting bar. The perineal support was padded and used to prevent the child sliding down the frame when in the upright position or when traction was applied, and was fitted with a T on the side bar, so that the upper padded portion could be swung down and out of the way to facilitate the use of a bed pan (Figure 7). Later, at the suggestion of Miss Mary A. Baker, superintendent of St. Luke's Hospital, a child's bicycle saddle was placed on the upright perineal bar, instead of padding, to provide a greater degree of comfort when upright (Figure 6). Traction was applied after the method of Dr. Gwilym Davis by cord and pulleys. the amount of traction being regulated by an ordinary fish scale (Figure 5). The adhesive straps from which the traction pull was taken proving intensely irritating, Dr. J. Knox Simpson, at the time house surgeon of St. Luke's Hospital, suggested the use of an ordinary laced shoe with a screw eye fastened in the heel. This proved to be very satisfactory—much more comfortable than the adhesive strapping and equally as efficient (Figure 6). With open air, sunshine, and frequent change of position and scene, the child improved rapidly. The Parkhill clamp was removed May 10, 1912, and fixation of the thigh, foot, leg, and body provided with a molded adhesive covered wire splint, as shown in Figure 6. This splint, by foot fixation, also satisfactorily prevented outward rotation. The bone at this time was in apparent soft union. The wound was filling in and the bone was covered by healthy granulation. In July, 1912, the child was seized with a severe attack of measles and was sent to isolation. Daily dressings were continued until November 1, 1912, when the wound had entirely filled in and healed—bony union apparently sound. Boy was given crutches and discharged from hospital.

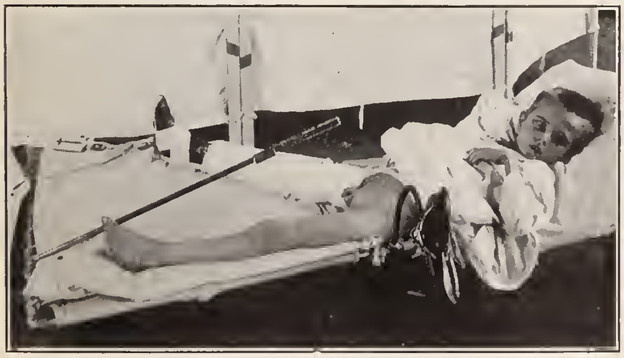

Fig. 7.—Case E. W. Showing bicycle saddle swung out of the way of the bed pan.

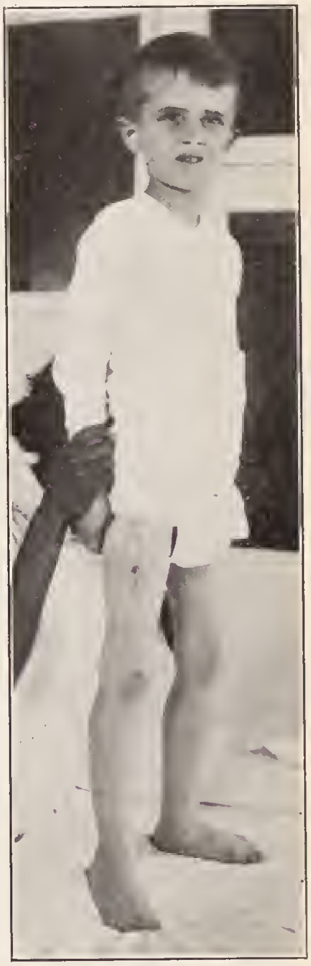

Fig. 8.—Case E. W. Final result; wound healed, bony union sound, one and a quarter inch shortening, function complete, knee action normal.

The final result is shown in Figure 8, taken January, 1913. Wound healed—bony union sound, but with some outward bowing of the femur due probably to too early unsupported walking It is likely that, at the time of discharge from the hospital bony union was but apparently, not actually sound. There is shortening of 1¼ inches. The function of the knee joint has been entirely regained. The child plays, runs, and jumps as well as any boy.

The teachings from this case were applied to the following similar case (C. B.), with the result that the total time required to effect sound bony union and a healed wound was but three and a half months, as against twelve months in the case of E. W. But one operation was required in the second case, as against five in the first. The single operation, however, was radical; the thigh was split widely, the bone was thoroughly cleaned, a Parkhill clamp was immediately applied, no suturing was done either internally or externally, the wound was left entirely open and kept so by efficient packing, and drainage was absolutely free—in a word, the case was treated from the beginning rather as an osteomyelitis than as a fracture. Healing took place from the bottom with no opportunity for the imprisonment of septic foci.

Case II. C. B., a white boy ten years of age, sustained a compound fracture of his left femur in June, 1912. A temporary splint was applied—primary dressing not known. Operation was performed the following day by a capable surgeon in Alabama. There was a great deal of injury to the soft tissues with overriding of fragments and interposition of muscle. A four screw Lane plate was applied, the wound closed with gauze drain, and the limb placed in a plaster hip spica. Four days later infection appeared, cultures of which proved to be staphylocci. Infection had evidently occurred at the time of primary injury. An x ray picture showed fragments in good position, screws apparently holding. Two weeks later the screws had loosened and the bone had become displaced. At the second operation the surgeon removed the plate and drew the bone ends together by kangaroo tendon. Severe staphyloccus and pyocyanus infection followed. The bones again overlapped, no union resulted, and the wound would not heal.

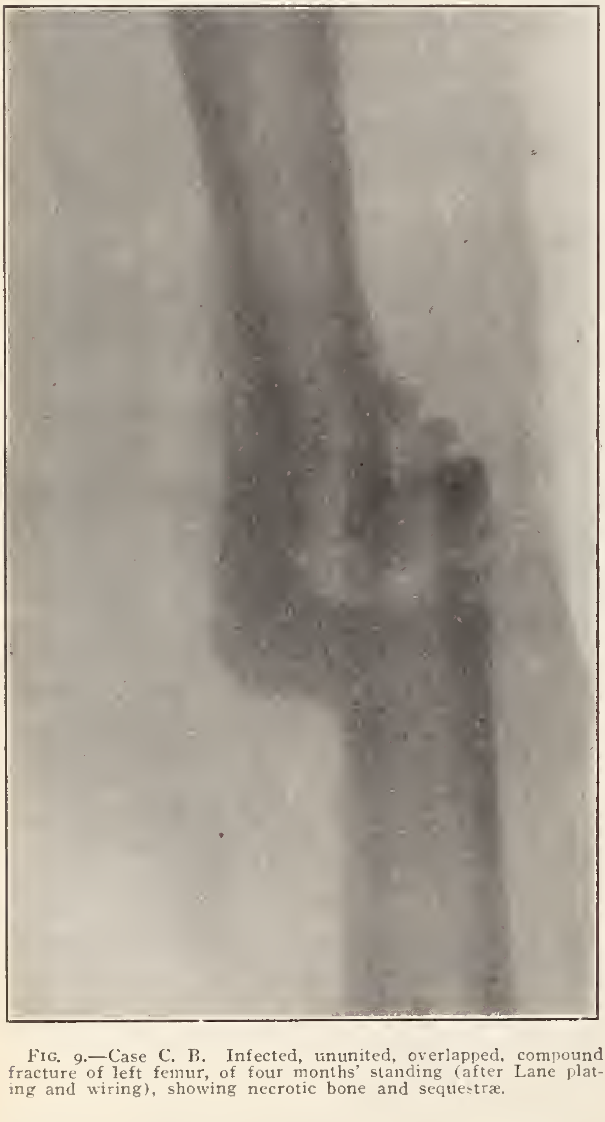

Fig. 9.—Case C. B. Infected, ununited, overlapped, compound fracture of left femur, of four months' standing (after Lane plating and wiring), showing necrotic bone and sequestræ.

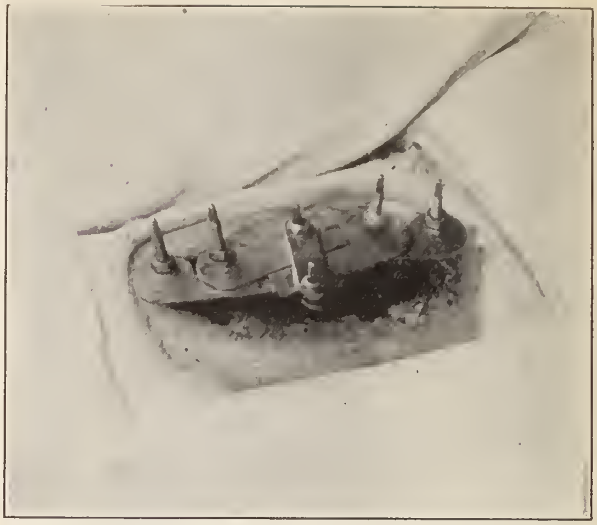

Fig. 10.—Case C. B. Wound in soft tissues opened widely for packing, Parkhill clamp approximating bone ends after resection and removal of necrotic areas.

The boy was referred to the writer in October, 1912, and was sent to St. Luke's Hospital under the care of the State of Florida Fund for Crippled Children, with a suppurating sinus leading down to an infected ununited overlapping fracture. A radiograph showed in addition, bone neurosis and sequestræ (Figure 9). Operation, October 29, 1912. Under ether, dissected out the old suppurating sinus, thoroughly exposed the bone, curetted and freshened ends, removed a piece of dead bone an inch and a half in length, carefully approximated the bone ends and held them in position with a four screw Parkhill clamp. The wound was left wide open and packed with iodoform gauze. The limb was placed in a heavily padded plaster hip spica in moderate abduction; a window being cut in the cast for dressings (Figure 10).

By December 1, 1912, the infection had practically subsided, the wound was filling by granulation under daily dressings of balsam of Peru and packing. A radiograph taken December 20th showed that the upper screws of the Parkhill clamp had loosened and that there was outward bowing of the bone. At this time the infection had disappeared, callus formation had begun, and the external wound had nearly filled in. The Parkhill clamp was removed, the bone gently straightened without anesthesia, and the limb placed in an abduction cast. The child was discharged from the hospital, February 13, 1913, with sound bony union—wound thoroughly healed. A radiograph at this time showed good approximation, with very slight outward bowing (Figure 11). The final result is shown in Figure 12.

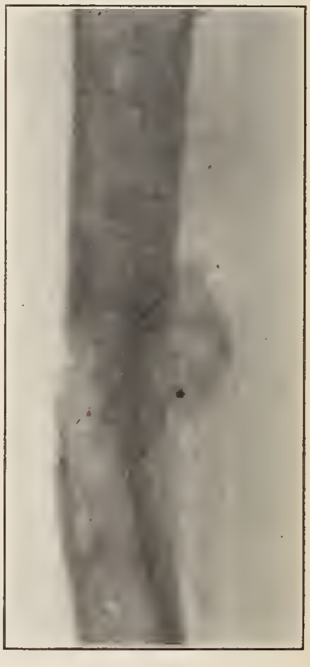

Fig. 11.—Case C. B. Bony union sound, wound entirely healed, four months after operation.

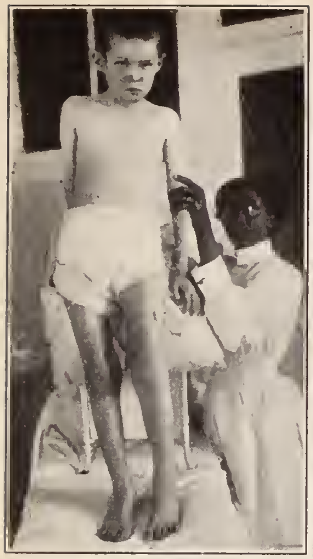

Fig. 12.—Case C. B. Four months after operation; no apparent outward bowing, limb sound, three quarters of an inch shortening, wound healed.

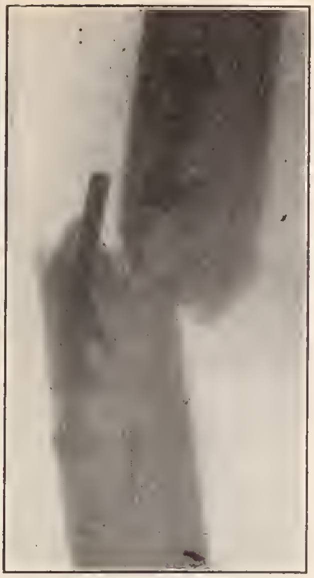

Fig. 13—Broken Lane plate, second week after operation, screws holding.

Function has been completely restored, and there is but three fourths of an inch shortening.

The necessity for adequate fixation after plating in fracture of the femoral shaft is well illustrated in the following case.

Case III. This was a compound fracture of the femur in a powerful negro fifty-two years of age. The wound was thoroughly saturated with tincture of iodine, and immediately plated. The limb was immobilized in a long lateral heel to axilla splint. The external wound healed by first intention. During the second week the man rolled out of his bed with the result shown in Figure 13.

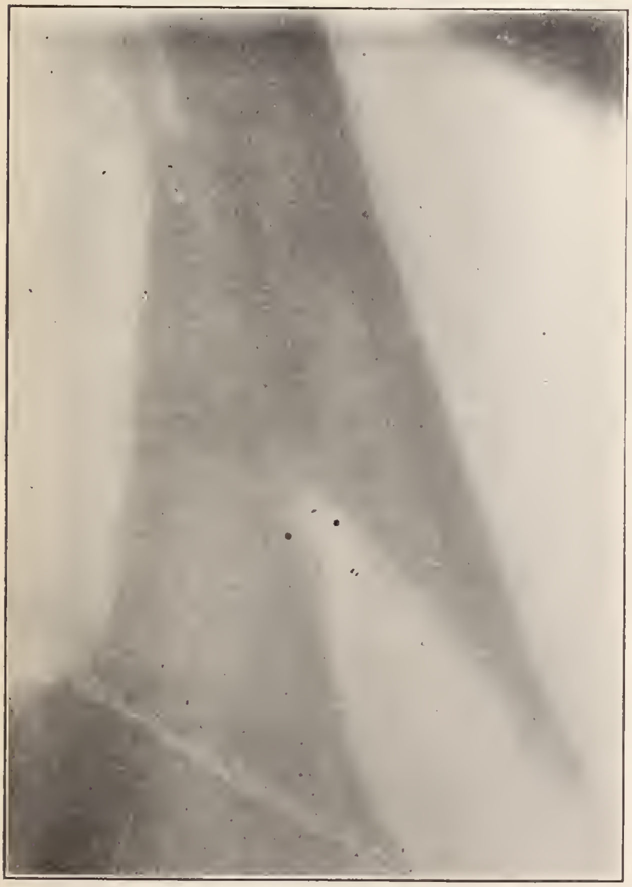

Fig. 14.—Ununited fracture of left femur of two months' standing, in a man sixty-eight years of age.

While such cases illustrate Mr. Lane's contention that in the first weeks, in clean cases, the plate will break before the screws give way, and are a strong argument in favor of the use of Doctor Sherman's vanadium plates, yet final x ray pictures frequently show clearly that even the vanadium plate may be inadequate if unsupported by proper fixation of the limb in abduction. Healing may be prompt and clean, but the screws may loosen before bony union is sound, the natural consequence being that the straight splint is insufficient to prevent the abductors from displacing the upper fragment with inevitable deformity and shortening.

The following case is appended as of interest in demonstrating typical deformity, nonunion, and complete loss of function following the employment of straight splints and straight Buck's extension in high femoral fracture. It is also instructive in that it shows what may be done with fracture in a patient sixty-eight years of age by clean Lane plating and fixation in abduction.

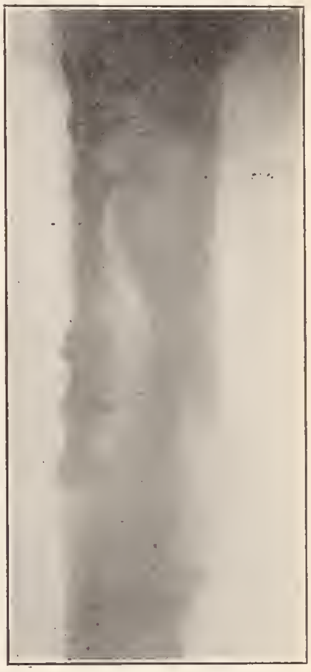

Fig. 15.—Same as Fig. 16, three months after Lane plating operation and fixation in a Whitman abduction cast; wound healed, bony union complete, function restored.

Case IV. M. G., a poorly nourished white male, sixty-eight years of age, sustained a fracture in the upper third of his left femur in October, 1911. The limb was immobilized for nearly two months; Buck's extension in a straight line was first used, then the double inclined plane, then a straight plaster spica. A radiograph after two months showed great displacement, no union, and no callus (Figure 14). There was three inches shortening.

Operation, December 18, 1911. Ether anesthesia; an external longitudinal incision was made, and the fragments separated and everted; there was no semblance of union or callus. The bone ends were sealed over; the ends were smoothly freshened by sawing well into healthy bone; a double block and tackle were fastened to the ankle, and the patient fixed by passing a folded sheet around the groin on the injured side and tying the ends to the operating table. Traction downward drew the fractured bone into good approximation without difficulty; a Lane plate was applied, and the external wound sutured with silkworm gut. The limb was placed in a plaster spica in abduction, a window was cut in the cast, and the wound dressed on the seventh day—primary union. January 8, 1912, no pain, patient sitting up. January 18, 1912, put on new cast; bone in correct position; wound thoroughly healed. February 7, 1912, walking with crutches. February 25, 1912, union sound; strong callus; limb straight—three fourths of an inch shortening. Discharged with function restored; patient walking without cast, splint, or crutches (Figure 15).

SURGICAL LUCK.*

By J. Dawson Whitall, M. D.,
Philadelphia.

How often we hear that one surgeon is lucky; that everything he attempts has a favorable termination. Let it be said at the beginning that this article is merely a strong denial of any such thing as luck. It is only that results are watched; that the tortuous rough path by which the thing was accomplished was not seen; that diagnostic skill, the elimination of needless surgical risk, careful postoperative care, were forgotten. In short, "the stable door was locked before the horse was stolen." The constant aim of the surgeon should be the conservation of the patient's bodily resources, to increase their natural resistance. Will the risk of operation be greater than the benefit derived, is a most vital question that must be answered. He will be called upon to decide (all elements considered) if a case is operable or inoperable. Such are a few of the more important factors which must be kept in mind if one would acquire "surgical luck."

All operations may be classified under two headings—those of *election* and those of *necessity*. Under the first heading the patient may have the full benefit of a thorough preparation. The heart muscle may be brought to its highest point of efficiency with tonic doses of digitalis or strychnine. Where anemia exists, some preparation of iron may be administered, as well as eggs and milk to the point of forced feeding; thereby bringing up the vital resistance to such a pitch that there will be a rapid recovery following the operation. The kidney function may be studied, the skin and bowels made active. The operative field is prepared by scrubbing with tincture of green soap and water; it is shaved, washed with alcohol, and a sterile dressing applied. Twelve hours later the same procedure is repeated. On the day preceding the operation a calomel course is administered and enemas are given the following morning. A third scrubbing is given on the table.

On the other hand, we have in the operations of necessity no such chance for a complete preparation. The case is urgent; we have to accept greater risks; no opportunity is given to bring up the patient's vital resistance; the kidneys may be impaired, the heart muscle badly damaged; a tuberculosis may exist. Under such heading would come a perforating gastric, duodenal, or typhoid ulcer; a diffuse peritonitis from an appendicular or tubal origin; intestinal obstruction from any cause; ruptured tubal pregnancy; gallstones; empyema or gangrene of the gallbladder; acute pancreatitis.

In the operations of election the surgeon may proceed in a more or less leisurely manner—the element of time not seriously affecting the ultimate recovery of the patient. How different in the acute abdominal crises. Here, ofttimes in the presence of apparently insurmountable obstacles, one is called upon to make a rapid but careful search for an obscure lesion, which may be masked by a secondary peritonitis. Here will a man's surgical judgment be more momentous than ever before, and, as some one has said, "the test of a surgeon's ability is not so much measured by his handling of the cases of election as by his imperative surgery." Here we have no time to give two preparations to the operative field, and the tincture of iodine stands without a peer. No scrubbing is done; the surface being merely swabbed with the full strength solution, while sterile sheets surround the patient. Dressings, utensils, instruments, catgut, and gloves must be made aseptic by the usual methods and carefully protected from contamination until required for the operation. There should be two nurses whose hands and clothing have been sterilized, one at the ligature table and the other to keep accurate record of the sponges used, which must be accounted for at the conclusion of the operation.

Preparation of the hands. The most important part is the mechanical scrubbing with tincture of green soap and *running* water for fifteen minutes. Next alcohol, ninety-five per cent. strength, thoroughly rubbed in; then rubber gloves complete this very important procedure. It will be noticed that no mention is made of either mercuric chloride or carbolic acid, it having been shown conclusively and repeatedly that in the strength used their germicidal ability is very inefficient if not nil. If the wound cavity needs flushing, only normal salt solution is used.

Assistants. A surgeon should have a first assistant who understands just what he is endeavoring to accomplish—in short, who can anticipate his next move, and who will not get in his way. He must be an additional pair of hands to the surgeon. It is, of course, only by assisting the same man for months that cooperation and coordination of thought and action become automatic, thus enabling more rapid and thorough work to be done.

Anesthesia. Let it first be said that the anesthetist must be a trained man who understands the art (for it is truly an art) of giving an anesthetic. His importance at every operation is only second to that of the surgeon. Above all, the operator must have absolute confidence in the anesthetist, for then and then only, untrammeled by the thought of how the patient is taking the ether, can the best work be done. The choice of the anesthetic is not nearly so important as the choice of the man who gives it. However, for the average patient the nitrous oxide ether sequence should be used, there being less unpleasant aftereffects from this. Cases of advanced kidney involvement, high arterial tension, and arteriosclerosis are contraindications to its use. Here chloroform is the drug of choice, though it is a much more dangerous anesthetic than the former, for the boundaries of "safe anesthesia" are much narrower than in the case of ether. Chloroform is a direct depressant to all tissue, while ether is a stimulant. We often hear the warning, "Now, be careful with the ether; the patient has a heart murmur"; yet these patients usually do well under the stimulating effects of the ether. The dangerous cases are those of myocardial involvement, fatty infiltration of the heart muscle, irregular pulse. This is the type which demands the fullest and closest attention of the anesthetist. The patient should be kept as near the "edge" as is possible, never being completely "knocked out," as evidenced by wide and fixed pupils, lost reflexes, stertorous respirations, and cyanosis. "A minimum of ether for the maximum effect."

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*Read before the April meeting of the Northwestern General Hospital Society, Philadelphia.

Use of drugs. Morphine is used extensively before operation by a number of surgeons, and, while it certainly does quiet the nervousness, the great disadvantage is that it masks the pupillary reflex, causing doubt in the anesthetist's mind as to just how deep the anesthesia is. Likewise, paresis of the gut following the operation must not be lost sight of, so that the temporary benefit derived is more than offset by the ill effect of the drug. Atropine, in 1/100 grain doses, should be used when there is much mucus. Where stimulation is needed, as is shown by a rapid, thready, compressible pulse, aseptic ergot, epinephrin or pituitrin is first administered, thereby raising the vascular tension. Next we may employ strychnine or digitalis, which will now have some effect. If there has been much shock or hemorrhage, salt solution is given intravenously; autotransfusion is practised, while the patient is surrounded with hot water bottles. While it is important to know what to do in the *treatment* of shock, it is doubly important to know what to do to *prevent* shock. 1. The patient must be well protected from draughts and kept warm with blankets. 2. As small an amount of anesthetic as possible. 3. Absolute control of hemorrhage. 4. Avoidance of traumatism such as may result from undue roughness in handling and in making traction upon gut or any vital structure. In other words, "cultivation of a wholesome respect for sensitive tissue." 5. A fair degree of rapidity consistent with careful work. Any patient who is badly shocked stands a most excellent chance for infection. Avoidance of infection may be briefly summed up in the following: 1. Thoroughness in sterilization of hands, operative field, utensils, dressings, gloves, instruments, and catgut or other suture material; 2, complete wound dryness; 3, avoidance of massed ligatures; 4, avoidance of tension in sutures; 5, avoidance of trauma.

Postoperative treatment may be said to consist of giving the patient a chance to get well; nothing being done or given unless definitely indicated. When the ether has been prolonged over an hour, lavage of the stomach is practised while the patient is still on the table. The Murphy treatment is given for from sixteen to twenty-four hours after operation, as it allays thirst and increases the kidney action, and also promotes good free drainage. Hot water (no ice) is given by mouth, in drachm doses, every fifteen minutes, six hours after operation, provided no vomiting has occurred. Morphine is given only if the patient has unbearable pain which simple remedies fail to relieve. Frequent changing of the patient's position is advised, letting him pick out the most comfortable position. It will be found that in the majority of cases a large percentage of postoperative pain is due to distention of the gut, which increases the intraabdominal pressure and thus causes increased tension of the incision. It follows that on the relief of the distention the pain disappears. There is nothing quite so effective as an alum enema, one half ounce to the quart of warm water. How strongly we are the slaves of custom is shown when on the second day a calomel course is given. But when we stop to think, with the thorough preparation and the small amount of nourishment given the first few days, there is little if any use of disturbing an otherwise perfectly normal convalescence. How often do we find that vomiting, distention and pain are all aggravated and the patient made worse by purgation. There seems almost a hysteria on the subject of moving the bowels by the third day. At any time we may give a triplex enema with good results if we find the patient beginning to absorb from the gut. Vomiting (persistent) and postoperative dilatation of the stomach are best controlled by lavage repeated as often as is necessary until these most distressing and serious symptoms are controlled. In these cases enemas (alum and triplex) are used, and with telling advantage. Where paresis of the gut is profound, hormone of the spleen is given hypodermically with good results.

Diet. As soon as the patient is able to retain water, albumen water is given every two hours; broths are gradually added, and then soft and modified soft food, unless there is some contraindication; full diet being given usually by the tenth day, when the patient is also out of bed. The patient is discharged from the hospital on about the sixteenth day.

Use of belts. Unless there has been drainage or a deep infection of the abdominal wound, no support is used. It would seem that the prescribing of belts following a clean case implies a lack of confidence in the work we have done. After a fracture has united would we use a splint for months following? Decidedly not, on account of the resultant atrophy of the muscles. Then why use a splint to the abdomen when healing has taken place? Here also would we have atrophy of the muscles following the use of belts, thereby predisposing to the very condition we seek to prevent, hernia. If a fascia has been approximated properly, and no infection has occurred, there will be no hernia. It is very necessary to keep the patient under observation for at least from six months to a year following operation, so that his general health can be brought to the highest point of efficiency. The operation is merely the first step on the long and tedious road to recovery.

In a brief article such as this (it being impossible to go into too much detail), only the more salient and vital points of the subject are brought out. In conclusion, I would say that surgical luck, *per se,* does not exist. It may, however, be acquired by returning to the fundamentals, the simplest things being often the best. Acquire the small details of asepsis; exercise common "horse sense"; work with the same assistants; eliminate needless risk; prevent shock; rule out unnecessary postoperative meddling; thereby giving the patient a *chance* to get well.

2025 CHESTNUT STREET.

Treatment of Cutaneous Fissures.—Steffen, in *Quinzaine thérapeutique* for December 10, 1912, is credited with the following ointment for use where the skin is fissured, as in "chapped" hands:

℞ Phenylis salicylatis, ...gr. xxx (2 grammes);
Mentholis, ...gr. xv (1 gramme);
Olei olivæ, ...♏xxx (2 grammes);
Adipis lanæ hydrosi, ...℥iss (50 grammes).
Fiat unguentum.

PREVENTIVE MEDICINE IN RELATION TO PSYCHIATRY.*

By J. G. Fitzgerald, M. D.,
Berkeley, Cal.,
Associate Professor of Bacteriology, University of California; Formerly Clinical Assistant, Sheppard and Enoch Pratt Hospital, Baltimore, Md.

An earlier communication[1] noted the fact that psychiatry was unusually fortunate in the amount of research material of very great value that was constantly being accumulated by the careful routine work of medical men in institutions for the care and treatment of the insane. At first sight this may not seem peculiar to psychiatry; further consideration, however, will lend support to the view. An analysis of many of the recent significant contributions to clinical psychiatry, and to the neuropathological conditions associated with mental diseases, will reveal the fact that such studies would have been impossible without the accumulated data of those engaged in routine ward and laboratory work. The material utilized by Kraepelin in his epoch making advances in the psychiatric viewpoint was available because intelligent observations, carefully recorded, had been made over long periods of time, and were available for analysis and compilation. Similar valuable studies in the neuropathological field have been made by Southard, through comprehensive and searching analysis of much accumulated material in the Massachusetts State hospitals. Likewise mention might be made of the work of Mott, of the London County Council's Asylum Board, who also grasped a similar opportunity.

The purpose of the present communication is not to review at great length past contributions to psychiatry, but to endeavor, if possible, to suggest a scheme whereby more valuable work may be done by a proper utilization of the available psychiatric organizations. As a preface to this, we must mention one other important contribution made by adequate investigation and by the application of the latest methods of immunity and bacteriology to the study of mental disease. Noguchi and Moore[2] have recently shown that the *Treponema pallidum* can be demonstrated in the brain in a considerable percentage of cases of paresis. This adds what we may regard as almost conclusive proof of the etiological relationship of syphilis to paresis. Thus the clinical view of Kraepelin is substantiated, and the conception of Dunlap and others that paresis and brain syphilis, though differing anatomically, are essentially one and the same process, is confirmed. This I wish to emphasize, for the reason that we all recognize the important rôle of syphilis as a fruitful source of insanity production. We have sound scientific proof of the fact that from ten to fifteen per cent. of the patients entering hospitals for the insane do so because they have had syphilis. And, further, of these patients less than one per cent. will ever recover, and in no case of paresis will the patient recover. This is a concise statement of what is believed to be true with reference to the relation of one infectious disease to psychiatry. Our knowledge of alcohol as an etiological agent is less definite, but we have more than suspicions, and, in many cases, some clinical evidences of its harmfulness. Nearly all other causative factors are not available for critical analysis, with the possible exception of heredity.

It is only through a sound knolwedge of etiology and a general diffusion of this knowledge that prevention is possible. Precise information as to the causal factors of certain mental diseases we already possess. How is it possible to obtain additional light on the subject? For this must, of course, be available before any great good can result. It is the idea of the author that a possible means of obtaining and applying such information is at hand, and in many instances already adequately organized, as will be pointed out.

While just recently committees for the study of mental hygiene have been formed, it is certain that in the past more attention has been paid to curative, than to preventive efforts, in mental diseases. Also, emphasis has not infrequently been laid on aftercare associations, when what was really required was an organization to minimize, as far as possible, the necessity for the existence of such aftercare societies. If seventy-five of every one hundred patients entering asylums and insane hospitals are doomed to remain there, then too large a proportion will never require the aid of any aftercare association. While no one questions the value of psychiatric institutes and clinics, their number is so small that, however well intentioned their efforts, much work must be left to other institutions. The recently established psychopathic hospital of the Boston State Hospital is a notable exception. There the out patient department, for example, is concerned with the study of children who are regarded as possible insane hospital inmates in their later years. Another admirable feature of this clinic is the activity of the director in the study of the problems of eugenics. Studies of this sort are most necessary, and much of the work already done has been difficult of correlation. Since the elaborate system of State hospitals, with the still more elaborate systems of history taking exist, why is it not possible to introduce the idea of prevention in conjunction with treatment? How can this be done?

Obviously, it is too late for the majority of patients who reach the hospital, but what about other members of a patient's family? Are there other possible patients in the family connection? If so, why not strive to prevent the development of such cases rather than be satisfied with the decision that there is "insanity in the family"? Often the most minute facts bearing on heredity are obtained, but how seldom they do more than help to make a complete history. If the staff of every institution for the cure of the insane in the United States and Canada were made to realize that each patient admitted, having a family history of insanity, presented a dual rather than a single problem, what good might we not accomplish! The first step would be the care and treatment of the patient already suffering from the disease, and the second, and equally or more important duty, would be the endeavor to prevent a second case of insanity developing in that same family or connection. When an infectious disease, such as diphtheria, occurs in a family, the modern physician is as much concerned with prophylaxis as with treatment. He endeavors to cure the patient, but he also takes every precaution to prevent the spread of the infection. Why is it not possible to apply the same principle in psychiatry?

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*Read at the Sixtieth Anniversary of the Granting of the Charter to the Sheppard and Enoch Pratt Hospital, Baltimore, Md., May 9, 1913.

[1] Fitzgerald: *American Journal of Insanity*, xvii, No. 4, April, 1911, pp 687-703.

[2] Noguchi and Moore: *Journal of Experimental Medicine*, xvii. No. 2, February, 1913. pp. 232-238.

Preventive medicine should and does include all branches. The place of psychiatry is already reserved, but what activities in this direction are to her credit? The greatest possible opportunity for the application of this method in psychiatry is desirable. The elaboration of any cumbersome organization is not necessary, if those already engaged in the treatment of the insane will turn their attention to the matter. Each large community is, to-day, served by one or more hospitals. Let these hospitals be responsible for the mental health of their own community, as well as providing care and treatment for the cases of insanity that exist. Each institution, in this way, becomes, also, an institution of mental public health, and serves a more useful purpose than is possible as a curative institution alone. It is the belief of those who advocate the establishment of psychiatric hospitals that by early treatment many more cures are recorded than is possible where older methods prevail. If this is true, can we not go one step further and prevent the case developing at all? Not one of us can deny the possibility. How can we determine whether it is feasible? Simply by experiment. And I would suggest the following concrete method of obtaining experimental results:

Let it be a guiding rule for each hospital for the insane that educational work along the lines here indicated is just as important a function as the care of its patients.

Determine in the case of each new admission the facts with reference to other members of the patient's family and connection.

Ascertain whether other cases of insanity may possibly arise from this focus, and if so, undertake at once a campaign of prevention.

These endeavors partake, also, of the nature of social service, and each hospital should have a visiting nurse, who could carry into the home the doctrines enunciated by the physicians interested in psychiatry.

It is individual treatment that is of value, and such treatment along the lines indicated is only possible with the cooperation of each institution working in its own constituency.

The exercise of this new function should result in the accumulation of much valuable data which would serve to show whether these facts are really of any value in the elucidation of the problems of psychiatry. If it can be shown, for example, that even a broad educational campaign, aimed at removing possible etiological factors, actually results in no diminution in the number of cases of insanity, what possible good can result from further work along these lines? Therefore this work should serve more than its main purpose. If the time spent in gathering facts of personal and family history has no value whatever in preventive medicine, and the patient whose family history has been obtained is himself incurably insane, is it not possible that too much time is being spent in a futile fashion?

Methods in clinical psychiatry, as in other branches of medicine, quickly tend to become stereotyped, and whether any actual value can therein be shown after a period of years is often not ascertained. It is not suggested that with a better individual knowledge of each patient we are not making headway in psychiatry, because undoubtedly we are. The question is, are we making all possible progress in the direction of mental hygiene? If we are, and if psychiatrists generally are satisfied on this point, then no further effort is necessary. If, on the other hand, more work can be done; if there is still room for a broad and well developed attempt at prevention by medical men in every public and private hospital for the insane, let us seize the opportunity now. To restate the case briefly, the protocol should read something like this:

Each hospital should concern itself with the mental health of its local community.

Public lectures on methods to prevent the development of mental disease should be given.

The factors underlying the development of insanity should be explained, if possible, to the friends and relatives of patients, in the hope that further cases may not arise from the same source.

Explanation of the importance of syphilis, alcohol, and hereditary taint in the production of insanity should be offered.

The tide should be turned back as far as possible, in just the same manner as in the infectious diseases. Preventive medicine in psychiatry is as necessary as in any other field. The requisite effort can be made only by an intelligent utilization of the machinery already at our disposal.

Let us initiate the campaign, and there will be many to ascertain the results. The proposal here outlined is not entirely novel, but its wide and general application may possibly be productive of novel results, and this is the sincere hope of the writer.

HALLUCINATIONS IN PARESIS.*

By Francis M. Barnes, Jr., M. D.,
Washington, D. C.

Occurring as manifestations of mental disorder, hallucinations may be grouped in three general classes, according to their frequency, prominence, and character as connoted with the type of psychotic state of which they are symptomatic. Thus, we may find them dominating the symptomatology, as in certain of the alcoholic psychoses; again, they may occur but sporadically, irregularly, and in a minor rôle, as in the manic depressive psychosis; and, lastly, they are to be noted with varying frequency and prominence in psychoses associated with certain organic brain diseases, such as senile dementia and paresis. It is with the hallucinations occurring in association with general paralysis that this paper will have to deal.

The doubts which, in the past, have been thrown about the occurrence of fallacious sensory preceptions in the paretic have given rise to considerable disputation and question, with the result that a literature of large extent has already accumulated. And yet activities in this direction have been patently less intense since the advent of the aid which the laboratory offers in arriving at the diagnosis of this disease. As with the application of the x ray, the surgeon came to deem a more careful manual examination of a fractured bone of lesser importance than formerly, so with the coming of the Wassermann and Noguchi reactions and spinal puncture, the psychiatrist, in an analogous manner, became prone to overlook the importance of thorough symptomatological examinations in cases where the laboratory findings had made indubitable a diagnosis of general paralysis. Looking over the literature, one is impressed especially with the extremely discordant opinions which have been expressed relative to the frequency of the occurrence of hallucinations in paresis. However, without going into great detail, these widely variant opinions have been fairly accurately grouped under four headings.

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First, paresis never gives rise to hallucinations. It is exceptional that this extreme view is taken, the majority of observers in this class contenting themselves by stating that hallucinations, although they possibly may occur, are quite exceptional and even doubtful.

Second, hallucinations encountered in the paretic occur as the result of other causes coexistent with the paresis. Of these causes, alcoholism is given first place. As we shall see later, alcohol may play an important part in the production of hallucinations in a proportion of cases, but by no means is it an exogenous agent of the importance indicated by this group of opinions.

Third, hallucinations are rare in paresis. Of the clinical types of paresis it is believed that the rare cases of the hallucinated patients will be found to occur more frequently in the depressive type of the disease than in any of the others, but that even here they are of no more than slight importance and of transient duration. Kraepelin is in accord with the opinion that hallucinations are rare in paresis, and says that sense deception plays a slight rôle in the symptomatology of the disease.

Fourth, hallucinations are frequent in paresis. This latter opinion is supported by some of the more recent writers. Tanzi believes the classical form of progressive paralysis not incompatible with hallucinations of any kind. According to Ziehen, hallucinations and illusions can be demonstrated with certainty in about a fourth of all paretic cases, for the most part, however, occurring disconnectedly and generally possessing the character of accessory symptoms.

Various other writers state that hallucinations occur in from 10.3 per cent. (Obersteiner) to 56.1 per cent. (Saury) of all cases of paresis. What explanations may be found for such divergent opinions? In the first instance, the question arises as to whether all the patients in the cases studied have been actual paretics. It is justifiable to assume a negative answer to this, because, in view of our recent knowledge, it is recognized that mistaken diagnoses of paresis have been all too frequent in the past, and difficulties associated with the recognition of some cases are still insurmountable, even in the laboratory. A second source of error may be expected in the limitation of the meaning of the term hallucination. When we get into the realm of tactile, kinesthetic, and vestibular hallucinations, and include here the hallucinatory organ perceptions, many obvious difficulties are to be met with. It is too often impossible to determine in a demented patient whether one is not merely dealing with delusional interpretations in the absence of veridical hallucinations. It does not seem probable that the stage of progression or the type of the disease could have altered the value of the general results. Also, statistical discrepancies cannot be explained as due to difference in class, sex, etc. That race may exert a most decided effect is to be made evident later in this paper.

There is also question as to which type of hallucination is more frequently met with in paresis. According to Ziehen, those of tactile sense are more often encountered, although he later admits that if these, at times rather vaguely determinable hallucinations are left out of consideration, fallacious sensory perceptions in the auditory field are most frequently to be observed. Tanzi, Ducoste, and Kraepelin agree that the auditory hallucinations are the more frequent, and such has been found to be the case in those paretics used in this study. Hallucinations of several senses may be present at the same time, most frequently those of the auditory type combined with one or more others. It has often been stated that when hallucinations are particularly prominent they owe their existence to causes other than paresis, and especially to alcoholic intoxication. As has been stated previously, it is believed that such a statement must be made with considerable reservation and cannot be accepted as a general truth.

In selecting the cases to be used in this study particular care was taken to certify the diagnosis in every instance. Aside from the fact that the patient exhibited clinically the symptomatology of paresis, only such cases have been chosen where there was a positive Wassermann reaction in both the blood and spinal fluid, together with a positive Noguchi test and pleocytosis in the latter, or cases where the diagnosis had been confirmed anatomically post mortem. In this study the clinical records have been gone over in 288 cases in which a diagnosis of paresis has been made. Of these, 190 conformed to the requirements set forth above, and these have been examined with reference to hallucinatory tendencies. Among these were 173 males, of whom forty-seven were colored, and seventeen females, of whom eleven were colored. The unusually small proportion of females is due primarily to the fact that the female population of this hospital is about one quarter of the total, and, secondarily, to the manner in which these cases were selected, in proportionately fewer females spinal fluid examinations and autopsies are made. The average duration of the disease on admission was 3.8 months. In twenty-two of the forty-six cases with hallucinations, seizures occurred, but it could not be determined that these had any direct bearing on the occurrence of perceptual disturbances.

When we look to see what proportion of paretics are hallucinated it is found that of the 190 cases, a total of forty-six presented hallucinatory disturbances of one or more senses, i. e., 24.2 per cent. This accords closely with the experience of Ziehen, but the figure is somewhat lower than the average (thirty-six per cent.) as given by Ducoste.

As to the relative frequency of the sense involved in the hallucinatory disturbance, the auditory is by far the most frequent, hallucinations of this sense being present in every case. In twelve cases, auditory hallucinations coexisted with those of one other sense, in ten instances the second being visual, and in the other two, tactile. In four cases, three senses were involved—auditory, visual, and tactile in one; auditory, olfactory, and kinesthetic in a second; auditory, visual, and gustatory in a third; and auditory, tactile, and hallucinatory organ sense in a fourth. Of the ten instances where visual hallucinations alone were associated with the auditory, four only were very decidedly alcoholic, two cases having been admitted suffering from delirium tremens. In other instances the possible rôle of alcohol in the production of the hallucinations seems negligible, and in the two where its effect is undoubted, it is noticeable that the acute hallucinatory disturbances characteristic of the alcoholic soon gave way to a typical picture of paresis with a residue of occasional auditory hallucinations of a type seen in other paretics.

As to the clinical type of the disease and the relative frequency of hallucinations in each, fallacious sensory perceptions were found present as follows: Demential type, twenty-three cases; agitated type, thirteen cases; expansive type, eight cases; depressed and mixed types, each one case. This does not correspond with the figures of Ducoste, who found more than half of his hallucinated paretics of the sensorial (agitated) type. The question really is of little interest or importance, because the delimitation of the different types in many cases is little more than an arbitrary classification. It would appear that the general assumption that hallucinations, if they occur at all, are more apt to be present in the comparatively early stages of paresis, is to a degree warranted, and, also, that with the progression of the dementia they become less frequent and prominent, or at least because of the patient's condition are less precisely determinable and assumed through necessity and custom to be absent.

The most important feature to be brought out in this communication is the markedly disproportionate frequency of hallucinations in the white and the negro. Although among the 190 cases studied, 132 patients were white and only fifty-eight colored (negro), we found that among the latter race a total of twenty-three patients were hallucinated, or 39.6 per cent., whereas the same total number among the white patients gave only 17.3 per cent. hallucinated. Among the white patients were to be found natives of France, Denmark, Ireland, Italy, Canada, Sweden, Germany, Holland, Norway, England, and Spain, the majority, 161, of course, being natives of the United States. An entirely satisfactory explanation for this observation is not yet at hand. If it is true, as assumed by some, that the demential type of paresis is relatively more frequent in the negro than the white, one might at first glance suppose that this might offer a partial explanation of the findings. And yet when we examine the racial proportion in the different types we find of the total twenty-three of the demential type, twelve negroes; of the thirteen of the agitated type, six negroes; of the eight of the expansive type, four negroes; whereas the one mixed type was white. In other words, it is easily seen that of the different types, the racial proportion is practically one to one. Perhaps it is unfortunate that the gross findings of those cases in this series autopsied are not recorded with sufficient precision to make possible any determination of value relative to the localization and intensity grade of the paretic destructive process in the different cortical areas, and therefore one is unable to say whether in these cases, or in the paretic negro brain, as a rule, the sensory or motor areas, in part or whole, are more prone to the attack of metasyphilis. If such were the case, it would only add one more link in the explanatory chain, and leave us to deal with the assumption of some fundamental structural or functional difference in the negro brain as compared with that of the white. That there is a fundamental difference in mental development in the negro and white is recognized. The negro reaction is more controlled by feeling than intellectual effort. In the stage of development the race occupies a lower level, is nearer, it may be said, the perceptual life of a primitive people. Therefore, when disease disrupts acquired characteristics one might expect a ready return to this lower level with its more primitive tendencies. It might be noted in this connection that sex and other similar factors exert no influence upon this noted disproportion between the white and black.

Hallucinations having been noted to occur with such comparative frequency in paretics, the question arose as to whether or not this class of patients was particularly susceptible to fallacious sensory perceptual disturbances, and whether such tendency might be demonstrated experimentally. In carrying out any such experimentation with patients suffering from mental disorder, especially those in whom dementia is present, as in paresis, certain difficulties are to be expected, in that careful observation and cooperation cannot be anticipated. Therefore, the experiment must be as simple as possible, the directions brief and concise. Owing to differences in the patients, also, slight modifications must occasionally be made in the technical routine in order to cope with individual peculiarities. These few remarks will be sufficient to show that the results have not been obtained as in the psychological laboratory working with controlled and trained observers. This, however, does not vitiate the findings, and the general results are of interest.

If we adhere to the old definition of hallucination and illusion as given by Esquirol, it will be seen that these experiments have to do mostly with illusory rather than hallucinatory trends. However, it is quite generally admitted that practically this differentiation is often but vaguely possible and in many cases not at all so. Therefore, in this work no particular effort is made to distinguish hallucinations from illusions, although if this were desirable it may be seen easily that we have dealt almost exclusively with the latter. Seashore has stated that it is difficult to produce hallucinations of sound experimentally in normal life because it is almost impossible to separate the required sound from other external sounds and from subjective or entotic sounds, and also because it is difficult to induce a firm expectation of the sound by circumstantial suggestion. Yet he found that of sixty attempts to produce hallucinations experimentally, thirty-four were successful, and he believed that this success was due largely to a concentration on the part of the observer of expectant attention upon the desired result.

My experiments were made with thirty-eight individuals suffering from various mental disorders, of which fourteen were paretics, and five normal individuals by way of control. These experiments were made as a preliminary measure, so that some idea of the methods to be used might be obtained for more extended observations, and there will be taken up here only the experiments dealing with sound.

In conducting these auditory experiments, a tuning fork and an Edison commercial phonograph were used. The observations were made in nearly all instances during the quiet evening hours, when extraneous sounds were at a minimum. The patient was brought into the room by the nurse and seated about twelve feet from the fork, and without being given any intimation of the object of the visit the experiment was begun. The electric fork, of fifty vibrations a second, was concealed in a desk and controlled by a rheostat, so that a steady humming sound was produced. On the phonograph cylinder were recorded in several sections sounds produced by the vibration of an induction coil, by the ringing of an electric bell, and by the tuning fork mentioned above, while at intervals blank sections were left on the cylinder; nothing to be heard on reproduction but the rubbing of the needle. The observers were in each instance seated immediately in front of the horn before the driving motor was started. Though most of the patients recognized the character and purpose of the machine, all were made to understand that it was a talking machine, a phonograph, graphophone, etc. During the experiment the observer was quite directly questioned, e. g., What do you hear? Describe the sound. Are there any voices? Is it music? Is some one singing? What do the voices say? etc. Aside from this directly suggestive questioning, the phonograph itself was of course most suggestive. Attempts were made throughout to concentrate the observer's attention upon expected sounds and words. The details of such experimentation will not be reproduced here, as only sufficient data and comment to make intelligible the character of the results obtained seem desirable at this time.

Of the fourteen paretics with whom these experiments were attempted, two were so demented that the results were of no value. Of the remaining twelve, four gave undoubted clinical manifestation of hallucinatory disturbances, in three cases auditory only, and in one, auditory as well as tactile, and those of organic sense. Of these four patients, in three, positive results were obtained. Among the eight patients who did not show hallucinations clinically the same proportion, i. e, three out of four (seventy-five per cent.) gave positive results also. The results from the phonograph experiment were more definitely positive than those with the tuning fork. In five cases positive results were obtained with the fork experiment—these individuals hearing such sounds as music afar off, a song plainly but no words; voices more or less indistinct; unintelligible, too rapid; clearly enunciated words and sentences. In one instance clinically determinable auditory hallucinations were intensified or diminished synchronously with intensification of the fork or on listening at the phonograph. In this case, hallucinations coming from the ventilator found their source of origin changed to the fork or the phonograph whenever these instruments were started. With the phonograph, positive results were obtained in all eight cases tried, and in four of these individuals clearly enunciated isolated or sentence forming groups of words were heard; in three others it was thought that words were spoken, but were either too quick or in a foreign language, so that they were not understood. Two recognized the voice as male or female, and in the former instance the person was named. In the cases where articulate speech was not heard, in some, doubt was expressed as to there being a voice, and most observers characterized the sensation perceived as music, singing, a lot of people all talking at once, a chorus of people singing in a foreign language, etc.

It is, of course, difficult to determine with any exactness what effect the degree of dementia may have had in the production of these results. A casual study of the clinical records in these cases indicates that the more evident the dementia, the more likely are the perceptual disorders to be produced experimentally. In the less demented, for instance, one finds more regularly, if any at all, the perceptual disturbances for elementary sounds; whereas, in the more demented, phonemes and connected discourse are to be heard. This may all be looked upon as but evidence of the grade of damage to the powers of criticism and judgment, preeminent demential tokens in paresis. As a corollary to this assumption we might suppose that this weakening of critical ability had led to a greater efficacy of suggestibility in the paretic mental processes, and, therefore, the direct form of questioning experimentation, as used in this work, would be calculated to emphasize any such possible hypersuggestibility. However, are we not as fully justified in concluding that these positive results are but evidence on the surface of an underlying loss of capacity to withstand resistance, the paretic in his mental life following along the path of least effort, accepting material presented to the senses without that normal degree of criticism which tends to render perceptual disturbances minimal in amount? We know from clinical experience that in a large portion of our paretics we may obtain almost any desired answer in accordance with the framing of the question, that a patient will from moment to moment make absolutely contradictory statements with the greatest facility and nonchalance. Such reactions must have led many to the impression that the discordant responses in such instances were due to carelessness, lack of effort, etc., because often enough by proper questioning with sufficient stimulus concordant replies may be obtained from the same patient. At least, that the degree of dementia plays a prominent rôle in the reactions appears in part substantiated by the reactions obtained from other patients not suffering from paresis and from normal controls by the same plan of experimentation. Besides the normal, experiments were made with cases of præcox, cerebral syphilis, manic depressive insanity (both depressed and excited phases), involutional melancholia, senile psychosis, alcoholic hallucinosis, defective with epilepsy, and tabes without psychosis—twenty-nine observations in all. It is significant that of these, only four, two of these præcox and two cerebral syphilis (one of the latter long looked upon as a paretic), show a positive hallucinatory reaction. In the cases of senile psychosis the dementia had progressed to such a marked grade that the cases were hardly satisfactory for the experimental investigation.

These experiments tend to show that in paresis there is an easily demonstrable tendency toward auditory perceptual disturbance and that this tendency is more pronounced under similar experimental conditions in paretics than in normal individuals or in those suffering from other mental disorders than paresis.

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UNIVERSITY CLUB.

MANAGEMENT AND TREATMENT OF FUNCTIONAL NERVOUS CONDITIONS.*

By L. Gibbons Smart, M. D.,

Lutherville, Md.

The great difficulty encountered by every physician in the classification of functional nervous diseases is accepted by all, but it is the intention of this paper to include all those nervous disorders that lie, as Doctor Barker states, between the broad borderland of mental health and outspoken mental disease (insanity). In dealing with the hysterical, neurasthenic, and psychasthenic states, I am deeply mindful of the fact that many grave and organic diseases commence with such nervous and mental symptoms, and the physician who undertakes the management of what he believes a functional nervous state should be, and must be, a skilled diagnostician, and exhaust the refinements of diagnosis in the study of his case. Most of the patients admitted to Creighton Sanatorium have been received from hospitals and physicians in Baltimore who have made exhaustive and painstaking examinations with negative results as to organic disease, and it is of these patients who are mentally sick (not insane) that I wish to speak.

The characteristic of all these cases (the hysterical, the neurasthenic, the psychasthenic) is the patient's mentality. The functional disorders which he experiences are about the same as in normal persons—it is his exaggerated feeling toward them which distinguishes him. A mole hill assumes the proportions of a mountain in his eyes. He is sensitive and emotional, but the chief thing about him is his sense of fatigue. If he does not sleep he regards his condition as physical, but will easily recognize the psychic origin of his fears and worries and distressing memories when pointed out to him. We all get tired and we all have worries and annoyances, but we try to make the best of them, but a nervous patient looks at these annoyances through a magnifying glass and each appears a catastrophe. A person is not neurasthenic in the same way as he is phthisical, uremic, or cardiopathic, but he is neurasthenic just as he is lazy, undecided, timid, irritable and susceptible. A patient will often present a wonderful contrast in his healthy physical condition—the perfect animal—while the mind is altogether sick. When the question comes up between temper and disease, how is it to be decided? A very fine line runs between the two, and one will qualify the other. It is a difficult thing for these patients to recover in the midst of friends and home surroundings. This seems strange, yet we can easily see that the diseased mind must be removed from familiar reminders of worry and pain. Loving, sympathizing friends keep many an invalid in their nervous condition. To be judiciously let alone is sometimes very beneficial, but the physician will succeed where the family fails, because he holds a certain moral authority and uses gentle persuasion. The relatives have no longer this suggestive influence. The patient knows their qualities, also their faults, and he takes their advice in the wrong way.

Of all the recent, marvelous discoveries in science and medicine, there is nothing more wonderful than the realization of the power the mind wields over the physical well being of humanity. Human nature is prone to evils of many kinds, but the fears or phobias which are deep in the inmost recesses of all hearts and minds are what must be rooted out and brought to the light of day and the sunshine of faith and trust. Above all else, treatment must be psychic. Yes, there are other methods, and a vast deal of science, but above all else the soul must be reached. In the words of Professor William James, "in summing it up, it is simply the want of will to do." The object of the treatment should be to make the patient master of *himself*. The means to this end is the education of the will, or, more exactly, of the reason. Whether he wishes to or not, the physician must be a psychologist, a lover of human nature; he must feel a deep sympathy for his fellow man. His faith must be true and strong—he must have confidence in himself to get the confidence of his patient, with an endless amount of patience and perseverance. He will find that this knowledge of the human heart is more useful than his ability in questions of normal or pathological physiology. Humanity is realizing more and more that the hidden things are the real things. Electricity, the most marvelous power, is only seen in its results. Our hidden thoughts are the powers that guide our wills and deeds. As the plant springs from the seed, so every act springs from the hidden seed of thought. "As a man thinketh in his heart, so is he, and out of the abundance of the heart the mouth speaketh."

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*Read at the Sixtieth Anniversary of the Granting of the Charter to the Sheppard and Enoch Pratt Hospital, Baltimore, Md., May 8, 1913.

Every heart has its deep longing for love. In youth it may be satisfied by human affection, but should this fail or prove to be an empty dream, the heart must have other consolation or else become a burden to itself and to friends and relatives. These unsatisfied longings indicate a soul reaching for its God—the only true source of happiness. If no wise friend points these persons in the right direction, if these feelings are crushed or bruised, the necessary consequence will follow—diseased mind and body. The nervous patient is on the path to recovery as soon as he believes he is going to be cured—he *is* cured on the day he believes himself cured. How to teach these people the faith and trust which are necessary to a calm adjustment of their lives is the great question. The physician knows all the secrets of the heart far better than any clergyman of the church. If he is not prepared to meet these heart questions, what is to become of the soul of his patient? The Universe itself is a sacrament ("an outward and visible sign of the inward and spiritual grace"). So our eyes should be open to learn the signs by which the Spirit of God manifests itself in Nature, first in the simplest beauty of the flower and bird. When such patients can begin to notice these wonders of Nature you have an open road to the heart, to show the love of God manifested in the most minute detail (the marvelous workmanship of the flower, the care of the tiniest bird), and how much more He cherishes and cares for his human creature, endowed with mental powers akin to the Divine Himself.

A synopsis of a few cases treated at Creighton Sanatorium will give an idea of what can be accomplished by reeducation:

CASE I. Miss O., aged forty-two years, admitted to Creighton, August, 1907. Previous history: Fifteen years an invalid, for past two years bedridden. On admission, was in most depressed state, absolutely hopeless herself, would not smile or even open her eyes. A careful and thorough examination revealed no organic disease. Sympathetic relatives had trained her mind to complete invalidism, and it seemed a desperate case and one requiring desperate measures. Mild and gentle persuasion was used with no apparent effect. Dainty trays with tempting meals, set off with a beautiful rose, all had no effect, but in time the rose was missing; it was asked for, and this seemed to be a step in advance. After much perseverance and patience she was made to get up and make her bed; the next day a walk in the room and halls; a day or two later, down stairs and out on the lawn to a hammock. When the time came that she must return to her room she declared she *could not*. The cows were calmly grazing in the pasture at a little distance. City people being somewhat afraid of cows, a suggestion as to letting the cows out had the desired effect, and she walked to the house alone. The point gained there was followed up by helpful and positive suggestions, and she has been walking ever since. Improvement was gradual and progressive. She gained the mastery of herself, and was discharged in the following November in good condition. At the present time she is doing the housekeeping at home, has regular appointments to read to two invalids, and wherever she goes brightness and sunshine are all around her.

CASE II. Mrs. R., referred by Dr. H. B. Thomas; admitted August, 1910. Age sixty-three; weight 117 pounds; nervous, fretful, unable to sleep, worried all the time by business cares and small details, at times emotional. Brother ill in hospital in Baltimore. A careful examination excluded organic disease. Her friends thought it impossible to change the mental attitude of a person of that age, but not so. After months of a normal quiet life in the country, with patience, perseverance, and suggestions, reeducation of the will has been so well accomplished that to-day she is a bright, energetic, active woman, walking five miles a day; she sleeps eight to nine hours at night and pays almost daily visits to her brother, who is a hopeless invalid. A few lines of a letter received from her only a few days ago, will convince anyone what a bright, happy, useful woman she is now. "I wish to tell you of some of the things I have been absorbed by. My friend, Mrs. P., is at the Woman's Hospital for a small operation. She has not had a special nurse, and I spent the whole day with her yesterday and went back at night for an hour; and still the world looks bright to me."

CASE III. Mrs. J., referred by Dr. L. F. Barker, who stated that there was no organic disease. Admitted March, 1911; age forty years; weight 130 pounds, but pale, anemic, complaining of general pains; extreme fatigue on least exertion. So extreme was her fatigue, in her own mind, that conversation could not be carried on for more than five minutes; then must come a long period of rest. The history of this case was extremely interesting from the fact that the patient was a woman of wonderful talent, an artist, writer, and musician, and the period of invalidism dated back eight years. Doctor Barker realized the unusual mentality in this patient, and advised me to go slowly. Progress was tedious, but after a while her confidence was gained, and the basis of all her trouble was found to be disappointments and unhappiness in her home. After months of patient teaching and training she told me that she realized the will to do had to originate in herself, instead of solely depending upon the doctor. Then she accepted life as it existed, and self mastery was established. She gained in weight, and weeks before her discharge was walking five miles a day. Pain and fatigue had disappeared. In a portion of a letter received from her at her home in Ohio one year after her discharge she said: "I have actually written at least the first draft of a play, and I feel that I have started on a habit of life for which I was born, and which, in spite of some bad days, I shall be able to maintain."

CASE IV. Mrs. B., also referred by Doctor Barker, was admitted October, 1910. Age sixty-three years, widow, professor of Latin in high school in one of the large cities of Kentucky. Previous history: Had a nervous affection of mouth for three years which interfered with talking. In repose her expression of face was peaceful and pleasing; when talking the chin would drop and various grimaces and distortions of the muscles of lower half of face would occur. She was sent to the Mayo brothers, of Rochester, Minn., for operation. After a thorough examination by the Mayos they declined to operate and referred her to Doctor Barker, who, in turn, referred her to me; and a note from Doctor Barker stated that there was no organic trouble, but in his opinion the trouble was psychic. Her treatment consisted of absolute rest (not allowed to speak for three weeks), cold packs, mild galvanic current to facial nerves; then she was allowed to talk slowly and only a few words. As time went on conversation was gradually enlarged until she gained control. A letter from her a few days ago stated that she was practically well.

Apropos of the line of treatment carried out with these patients, I wish to quote part of an address by Sir William Osler to the medical students of the University of Toronto on The Pursuit of Happiness, which expresses very forcibly the thought which dominates my work:

> You may learn to consume your own smoke. The atmosphere of life is darkened by the murmurings and whimperings of men and women over the nonessentials, the trifles that are inevitably incident to the hurly burly of the day's routine. Things cannot always go your way. Learn to accept in silence the minor aggravations, cultivate the gift of taciturnity and consume your own smoke with an extra draught of hard work, so that those about

you may not be annoyed with the dust and soot of your complaints. More than others the practitioner of medicine may illustrate the second great lesson, that we are here not to get all we can out of life for ourselves, but to try to make the lives of others happier. This is the lesson of that oft repeated admonition of Christ, "He that findeth his life shall lose it, and he that loseth his life for my sake shall find it," on which hard saying if the children of this generation would only lay hold, there would be less misery and discontent in the world. It is not possible for anyone to have better opportunities to live this lesson than you will enjoy. The practice of medicine is an art, not a trade, a calling, not a business; a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. To you, as the trusted family physician, the father will come with his anxieties, the mother with her hidden grief, the daughter with her trials, and the son with his follies. Fully one third of the work you do will be entered in other books than yours. Courage and cheerfulness will not only carry you over the rough places of life, but will enable you to bring comfort and help to the weak hearted, and will console you in the sad hours, when, like Uncle Toby, you have "to whistle that you may not weep."

The writer fully realizes that there have been no new ideas advanced along the line of treatment of these unfortunates, but it is intended to show what has been done and what can be done in legitimate medicine. The doctor is, and must be, the medium, or living substance of faith to human need. May this be a plea to the medical profession to rescue from the quack and charlatan, the Christian Scientist and other faddist, what rightly and properly belongs to the domain of the true and earnest physician. *For it is a work well worth while.*

WHAT IS SLEEP?*

By Aaron Barlow, M. D.
Philadelphia.

It is said that we cannot fully appreciate the sweetness of life until we have tasted some of its bitterness. Whether this is true or not about life in general, it is undoubtedly true about that particular phase of life which we call sleep. No one can appreciate the sweetness of sleep; no one can fully realize what a blessing sleep is to mankind, until he has been deprived of this most wonderful, most mysterious restorative of life—sleep. The tremendous importance of this subject first dawned upon me when, on one occasion, I was a victim of insomnia. I spent a most miserable night. For four long hours, which seemed like four years, I was courting Morpheus without success. I tried all the well known devices in order to lull myself to sleep. Thus, like Robert Southey, in *The Doctor*, "I listened to the river and to the ticking of my watch; I thought of all sleepy sounds and of all soporific things—the flow of water, the humming of bees, the motion of a boat, the waving of a field of corn, the opera, Mr. Humdrum's conversations, Mr. Proser's poems, Mr. Laxative's speeches, Mr. Lengthy's sermons;" but all in vain. Sleep, sweet sleep would not come. It was still night, only the noise of a passing trolley interrupted the stillness from time to time. As I lay on my bed in torture and misery, I recalled to my mind the thrilling soliloquy of Henry IV:

"O Sleep, O gentle Sleep,
Nature's soft nurse, how have I frighted thee,
That thou no more wilt weigh my eyelids down,
Nor steep my senses in forgetfulness."

One hour out of every three, eight hours out of every twenty-four, three months out of every year, and twenty-three years out of every three score and ten, or one third of our lives we spend in sleep. Thus, taken in the aggregate, every one of us is a Rip Van Winkle. There are men of science who spend time and effort studying how to prolong life. But "why try to prolong life if so much of it is to be spent asleep?" is a question long since asked by the great German philosopher Immanuel Kant.

What, then, is sleep? This is a question more easily propounded than answered. When we turn to the scientific literature on the subject we find comparatively little definite information, and the most striking thing is that we do not seem to care how much or how little we do know about the subject. I often wonder why it is that such a mysterious and highly interesting subject as sleep should occupy our attention so little. It is probably because, as Dr. William H. Thomson in his work *Brain and Personality* well remarks: "The marvel of sleep is lost upon us owing to the unfortunate peculiarity that our ability to wonder is soon abolished by mere repetition. Because the recurrence of sleep is as certain and regular as sunset itself, it does not occur to us to wonder at it, or to ask what it all means." Sleep may be defined as the intermediate state between wakefulness and death—wakefulness being regarded as the active state of all animal and intellectual functions, and death their total suspension. Complete sleep is a temporary intellectual death. It is a condition of unconsciousness where all the senses are at rest. Yet, there still remains the question, What causes the actual lapse into unconsciousness?

Let us first see what are the phenomena of sleep, what are the differences between the waking and the sleeping states. When we fall asleep the eyelids are lowered over the eyeballs, the pupils contract, and all the voluntary muscles are relaxed, so that the whole body, and especially the face, presents a picture of complete repose. Respiration becomes slower. The pulse slackens. The blood pressure falls, the vessels of the brain contract, and the quantity of blood to the brain is diminished. The observations of many investigators have shown that the brain contracts and grows pale while asleep, and, on the contrary, takes on a rosy hue and expands at the moment of awaking. When we sleep the lower half of the body weighs more than the upper half. The brain is lighter and the legs are heavier. Experiments have shown that if a man goes to sleep on a bed suspended exactly at the middle point of his weight his head begins to tip slowly up and his feet to go down. This is due to the fact that when we sleep the blood in the brain goes off to the other parts of the body. The moment the brain wakes to life again it draws the blood back. All these facts clearly show that there is an intimate association between sleep and cerebral anemia. The action of the sweat glands and the functions of the skin are increased during sleep. This, in part, explains why the atmosphere of our bedrooms becomes impure so rapidly. All the internal organs remain quite active during sleep. The whole peripheral nervous system also preserves during sleep some power of action. This is why, when we wish to sleep we instinctively seek a quiet place sheltered from all external disturbing influences, and we lower our eyelids over our eyes to prevent light falling on the sensitive optic nerve.

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We thus see that during sleep nothing is asleep within us except the brain. But does the whole of the brain sleep? A moment's reflection will convince us that it does not. Let us consider, for instance, the phenomena of dreams. In our dreams we may experience the most varied emotions and passions. Our dreams are as variable as the clouds that drift upon the currents of the air. We dream of great wealth, fame, or success. We are great actors in great spectacular and romantic dramas. We dream of great ideas, and we accomplish most wonderful things in our dreams. If our dreams were but real, the achievements of the Wright brothers, Shakespeare, or Napoleon, would dwindle into insignificance. Or, again, let us consider such phenomena as walking or talking during sleep. A man may walk, talk, sing, or solve mathematical problems, and yet at the same time be safely in the land of nod. Dr. William H. Thomson narrates several interesting cases. One is the case of a college student named Childs, who one night working at a difficult problem in mathematics until a late hour and failing to solve it, put out the light and retired to bed in much vexation. About three o'clock his roommate was awakened by a light, when he saw Childs in his night clothes, busy with the problem. He called to Childs to desist from such untimely work, but not receiving any answer, turned over to sleep. The next morning while both were dressing, Childs complained that his night's rest had not refreshed him. "I am not surprised," replied his friend, "when you got up about three o'clock and went at that problem again!" Childs answered that he had done nothing of the kind, when, glancing at the table, he was astonished to find the problem all correctly worked out. Cleghorn mentions the case of a man in an exhausted condition who awoke from sleep, took his share of supper with his comrades, sang some songs with them, and went to bed again, without being able to recall any of these events in the morning. How are these things to be explained? Facts of this order clearly show that some parts of the brain remain quite active during sleep. We thus see that even the brain is not wholly asleep, but only some of its elements. What is it, then, that sleeps in the brain? This leads us to the theories of sleep, which we will now briefly review. The principal of these are the vasomotor, the chemical, the histological, the psychological, and the biological.

The vasomotor theory. According to this theory sleep is due to changes in the cerebral circulation I have already referred to the direct proofs of cerebral anemia during sleep furnished by many investigators. Fleming, by deep compression of the carotid arteries, was able to produce prompt sleep. A well recognized cause of obstinate insomnia is high blood pressure. According to Sajous, sleep is brought about by the sympathetic centre in the posterior pituitary body sending constrictor impulses to the anterior pituitary, which governs the function of the thyroadrenal system; the effect is a diminution of the internal secretion of these glands, and thus a lowered metabolic activity, which permits general vasodilatation. The blood accumulates in the splanchnic area and the large trunks, cerebal anemia being one result.

The chemical theory explains sleep as the result of the accumulation in the organism of fatigue products. These poisonous substances, elaborated during the day as the result of muscular and nerve activity, are narcotic in action. They have a direct action upon the central nervous system, particularly the brain, and when they reach a certain amount drowsiness, and then sleep, results. During the night these toxic substances are eliminated, and when elimination is nearly complete a slight stimulus suffices to produce awakening.

The histological theory explains sleep by the recession of the dendrites. According to this theory, these nerve cell prolongations, the dendrites, which touch each other, and by means of which nerve currents are transmitted from one cell to another, are supposed to possess certain movements, which, like the pseudopods of an ameba, elongate and retract under various influences. When these dendrites are retracted, so that they no longer come into contact with one another, the nerve currents which are necessary for consciousness are broken, and sleep results. But this theory, a very fascinating one, to be sure, is largely hypothetical, and explains not so much the causes of sleep as its ultimate nervous mechanism.

As for the vasomotor theory, there seems to be no doubt that cerebral anemia is one of the factors in the causation of sleep. We cannot, however, say that this is the only and direct cause of sleep. With reference to the chemical theory, we must remember that mere boredom, or monotony, in the absence of all fatigue is sufficient to cause sleep. Then, again, this theory does not explain the power we possess of postponing sleep or of awaking at a fixed hour. Experiments conducted on a number of men and women showed that sixty per cent. of them were able to wake up in the morning at any time they had decided upon the night before. I well remember how, when a boy, my private teacher, who instructed me in matters of religion, told me of a sure method of awaking in the morning at any hour I might desire. This method consisted in reciting just before going to sleep, the following verse from the Psalms of David: "Awake, thou lute and harp; I myself will awake right early." I was to recite this seven times, at the same time—and this was strongly emphasized—having my attention concentrated upon the hour at which I desired to awake. I remember I practised this method for a number of years, and it almost never failed me. I am sure many of you have had the same experience. You have been able to awake at a certain time, if on going to sleep you resolved, you ordered yourselves, as it were, to awake at such and such an hour. The resolve seems to wind up something in the subconscious brain, and when the hour has arrived the clock gives in some mysterious way the alarm and the eyelids open. It is also interesting to observe how a mother awakes at the slightest movement of the infant she tenderly loves, although the loudest tempest may not have the effect of arousing her.

The psychological theories. According to Manaceine, sleep, from a psychic standpoint, is the resting time of consciousness. If this be so, then persons in whom consciousness is little developed should sleep more than persons whose "acute realization of the ego" is more pronounced. And when we investigate we find that this holds true. Children, in whom consciousness is feebly developed and becomes quickly exhausted, need more sleep than adults. Among adults we may also observe that the less energetic the state of a person's consciousness the more sleep does it require. The uneducated, savages, cretins, idiots, and so on, all sleep more than the average number of hours. In old age we again find that as senility approaches there is a more or less predominance of sleep. As we grow old, consciousness grows weaker and is quickly exhausted; hence the need of sleep is the same as with children. On the other hand, old men whose intellectual powers have been well preserved sleep little, and may even suffer from insomnia. This is because the conditions of life in old age are such that the causes of the exhaustion of consciousness are more or less removed, and consequently less rest is required. It is also a well known fact that persons with very marked personality and highly developed consciousness have relatively little need of sleep. Thus we know that Humboldt, Mirabeau, Schiller, Frederick the Great, and Napoleon slept very little. It is said that Thomas Edison, the great inventor, never sleeps more than four hours a day.

The biological theories. Claparède and Sidis, who have elaborated these theories, consider sleep from an evolutionary standpoint. "Sleep," says Claparède, "did not necessarily exist at all times; it is in fact a contingent phenomenon, and is not implied in the conception of life; the lower forms of animal life, microbes and infusoria do not manifest any sleep. If sleep has developed it is probably due to the fact that those animals whose activity was broken by periods of repose or of immobility have been favored in the struggle for existence, for they have been enabled, thanks to the accumulation of energy, during these periods of immobility, to manifest in consequence a more intense activity."

According to this theory sleep is a reaction of defense to protect the organism against fatigue, rather than the result of fatigue. It is an instinct, as much an instinct as sex or hunger. We sleep, not because our nervous system is poisoned or exhausted, but because we cannot help sleeping.

In conclusion, a word about the necessity of sleep. Is sleep necessary? It may sound strange that one should even doubt the necessity of sleep, yet such doubts have actually been raised. Girondeau declared sleep to be a useless, foolish, even hurtful habit. Thomas Edison declares sleep is only a bad habit the race has acquired, and Kant regarded the bed as the nest of diseases; but experiments have shown that we cannot live without sleep. The want of sleep is even more keenly felt by all animals than the want of food. Without sleep and without hope, says Kant, man would be the most unhappy creature in the world. Perhaps some day someone will discover the secret of how to live without sleep. In these days of wireless telegraphy, aeroplanes, and dictographs everything is possible. Until that day arrives, however, we must, if we wish to live and enjoy life, have the restorative and refreshing effect of sleep, for, in the language of Wordsworth,

"Without Thee what is all the morning's wealth,
Dear Mother of fresh thoughts and joyous health?"

1431 North Franklin Street.

ECZEMA DECEDENS.

By William P. Cunningham, M. D.,

New York,
Clinical Lecturer on Dermatology at Fordham University; Clinical Assistant at the New York Skin and Cancer Hospital; Assistant Physician to the Harlem Hospital, Dermatological Department.

We have so many definitions and qualifications of eczema, indicative of its etiology, appearance, location, duration, and other accidental circumstances, that the addition of one title will not seriously overburden the terminology. In point of fact the adjective herein suggested has for its object such a simplification of the whole subject that much redundant verbiage may be eliminated. To paraphrase the utterance of a celebrated Roman orator, "Eczema moriendo multa expurgabit inutilia verba."

Eczema is an unfortunate term to employ in describing the complex entity included thereunder. It is archaic, inexact, and misleading. In the original Greek it means simply a cutaneous eruption. It is evident that this blanket appellation covered a multitude of errors in the beginning, just as after a long series of eliminations it is still the refuge of much dermatological drivel. As our knowledge grows, the limitations of eczema contract. Walker, of Edinburgh, says: "Eczema is a term commonly applied to any wet or scaling inflammation of the skin of the cause or nature of which the observer is ignorant." It is applied to so many dissimilar conditions that it cannot properly attach to all. Certain diseases called eczema are admitted to be incorrectly named; yet the misnomer is perpetuated through deference to precedent and indifference to scientific precision. As an illustration, seborrheic eczema is conceded to be no eczema at all. It is a dermatitis due to the microbacillus of Sabouraud. It has been admittedly stricken from the category of the eczemas, yet to-day it is convertibly entitled seborrheic eczema and seborrheic dermatitis. Eczema marginatum is ringworm of the crotch, but we stupidly continue the palpable fraud. Intertriginous eczema is simply a dermatitis produced by the heat, moisture, and friction of opposing cutaneous surfaces. Erythematous eczema is nothing but a dry dermatitis. Styling it eczema only interjects an element of mystery and confusion. There is an indefinite something supposed to be added to its etiology by this alteration in its title. If we say dermatitis, that is simple. If we say eczema that strikes deeper. It is more complex. It begins to delve into constitutional causes and minimize the effect of the perfectly efficient east wind. If a washerwoman, bartender, baker, plasterer, dyer, furrier, tailor, or surgeon, has a dermatitis, resulting from irritations incident to occupation, we straightway dub it a trade eczema. We declare that there is a lessened resistance, in these individuals, to causes innocuous in others. That lessened resistance is the vague and weighty something upon which we hang our sage distinction between a plebeian dermatitis and the more resounding trade eczema. There is business here with intricate problems of metabolism, not to be lightly dealt with. Why has one dyer a trade eczema and another one not? I am sure I do not know, any more than I know why one person is attacked by influenza and another one not. Skins have their idiosyncrasies as well as noses. But the inquiry is of no earthly consequence, because you cannot alter the susceptibility in either case, and the only remedy is to remove the exciting cause. We have no vaccination against eczema, nor against influenza, as far as I know.

Of course, no one at all acquainted with the matter in hand will deny the influence of internal derangements in producing diseases of the skin. The so called infantile eczema, undeniably due to faulty feeding, is a case in point. Here we have our cutaneous irritant acting from within, aided and abetted in most cases by injudicious washing. The advocates of lessened resistance state this as a frank concession of the whole point at issue. On the contrary, it is an illustration, not of lessened resistance but of an active cause operating from within. You may treat assumed or demonstrated metabolic errors right to the end of the chapter, but if you do not take the dyer away from his dyes, the plasterer from his lime, and the bartender from his beer slops and rinsing water, you will not cure his eczema. Conversely, if you do remove these external irritations, you will most likely remove the eczema, whether or not you effect any change in the patient's metabolism. You can by no method of treatment within our present knowledge so fortify the patient's resistance as to make him proof against the assaults of the aforesaid irritants. In the moral law one must flee the occasions of sin, or he will fall, no matter how strongly he may be fortified by good resolution. In the physical law the victim of eczema must flee the occasions of eczema or he will itch, no matter how we may strive to bolster up his "lessened resistance." It is plain that eczema is nothing but a dermatitis aroused, in every instance, by an exciting cause, whether this be demonstrably external, supposedly internal, or confessedly unknown. It may be objected that nothing will be gained by replacing the word eczema with the word dermatitis, as we shall have to qualify the latter with just as many adjectives in order to distinguish its varieties. We shall be accused perhaps of making a fussy distinction between tweedledum and tweedledee. In point of fact, we are seeking to abolish that very distinction which is already in vicious operation. Making for simplicity, we would make for clarity. Dermatitis carries with it its own definition; it immediately presents the idea of inflammation and an exciting cause. Eczema, on the contrary, because of the inexactness, vagueness, and looseness of the term, suggests little or nothing. It is better to employ the term with the rational etymology than the one with the single dubious support of hoary usage. Infantile dermatitis will answer just as well as infantile eczema, and will not confound the inexpert with supposititious complexities. Parasitic dermatitis will answer as well as parasitic eczema to decribe the peculiar circular patches that somewhat resemble ringworm and which some day we shall catalogue as a distinct dermatosis. Dermatitis madidans will answer as well as eczema madidans to describe the weeping condition found on the legs of old people with enfeebled circulation. There is simply engorgement caused by gravity opposing a yielding heart. This progresses to a dermatitis with pronounced vesiculation and oozing. The cause here is purely dynamic, yet the lesion is ticketed with the same label as the one supposed to be caused by a parasite and the one actually caused by improper feeding. Impetiginous eczema is a dermatitis infected with pus germs. It is an impetigo implanted on a so called eczema; it is not, therefore, a particular phase of that protean enigma, but a combination of two common diseases of the skin. Intertrigo will serve our purpose quite as effectually as intertriginous eczema. Eczema tuberculatum is a shining example of the loose employment of this infelicitous term, for it is not an eczema at all, but a distinct clinical entity, with a fatal prognosis, known as mycosis fungoides.

Neurotic eczema is the more or less widespread diffusion of little vesicles, attributable to some vagary of the nervous system not as yet determined. Neurotic dermatitis would convey as clear a picture of this eruption as does neurotic eczema, and would have the additional advantage of suggesting the pathology, an inflammation of the skin. It is a dermatitis due to a trophoneurosis, like dermatitis herpetiformis. The limitation of the term neurotic to this particular form of eczema is arbitrary and irrational, because if one fact obtrudes itself with peculiar insistence it is the active participation of the trophic nerves in the production of all diseases o the skin. Even in the parasitic disseases it is the nervous system which determines the amount of inflammatory reaction. In this regard the supporters of the lessened resistance theory of eczema are assuredly in the right. But this gets us back to the question of individual susceptibility; one nervous system resisting irritations to which another will succumb. To this question we have no answer. We only know how to remove the irritation; we do not know how to influence the individual reaction to it. Correcting dietetic errors and meretricious habits can hardly be called influencing predisposition, because these practices are in reality active circulatory and nervous irritants. Predisposition antedates habit; it lies deep in the cell of the individual.

The argument for the erasure of the word eczema might be carried through with the entire list of the eczemata with equal conviction. It is too much to expect, however, that any argument can bring about the speedy relegation of eczema to the dust heap of discarded anachronisms, because it is so firmly fixed in our literature; but if we will constantly bear in mind the identity of this disease with plain ordinary dermatitis we will be on the alert to rescue from its suzerainty all such dermatoses as present distinct individuality and will thereby hasten the coming of the end. In the meanwhile awaiting that desirable result, what can we do to simplify the engorged phraseology and confused etiology of eczema decedens?

At the risk of being tiresome I shall reiterate the prime requirements: Do not forget that you are dealing with a dermatitis. Next, clip off all resonant synonyms for the simple description of the cutaneous lesion. A chronic cracked dermatitis of the palms, perfectly described by that homely phrase, is variously entitled "eczema craquale," "eczema fissum," "eczema rimosum," and "eczema rhagadiforme." This excess of epithets makes only for confusion. Next divide all the cases coming by convention under the terminology of eczema into acute and chronic, no matter what may be their other distinguishing characteristics. Give no heed in this primal investigation to conformation, location, or structure of the lesions. If you determine that it is an acute eczema, just mentally transpose it to an acute dermatitis. Now you will have much of your problem solved. You can proceed confidently to the removal of detectable exciting causes. You will not be confused by a bewildering choice of expedients if you are not confused by an alleged multiplicity of lesions. Brand them all acute eczema for a work out, and apply soothing remedies. Regulate habits as far as may be to eliminate irritation from within. You will find these measures successful in a surprisingly large number of cases. Having determined that you have to do with a chronic eczema, ignore for the moment the various subdivisions of this obstinate dermatitis, and proceed to stimulate with tar in some form. Remember, however, that chronic eczema may have acute exacerbations, for which emollients are indicated. Remember that internal irritants are to be sought for, just as in the acute condition. The key note to the successful management of eczema is this search for and removal of irritations, internal and external.

It may be safely asserted that eczema is proceeding slowly to honorable extinction. Its polymorphous being has yielded many offspring that have repudiated their lineage. A rational scrutiny of its remaining pretentions would leave it nothing but the sound of its former greatness.

315 West Fourteenth Street.

MYOMAS OF THE STOMACH,

*With Report of a Case Terminating Fatally by Hemorrhage.**

By Clifford B. Farr, M. D.,
Philadelphia.
Pathologist,
and
Robert A. Glenn, M. D.,
Philadelphia,
Resident Pathologist at the Presbyterian Hospital.

Benign neoplasms of the stomach, though rare, show a great variety of forms. Epithelial growths, adenomas, etc., are scantily represented, but connective tissue tumors of almost every type occur—lipomas, fibromas, myomas, and even chondromas and osteomas. Angiomas and cysts are found occasionally, but the latter in particular usually result from degenerative changes in myomas. Lymphomas occur in leucemia; lymphadenomas and endotheliomas are classed with malignant growths. Many of these benign tumors show a tendency to take the form of polyps—in some forms of chronic gastritis a general polypoid hypertrophy of the mucous membrane takes place, but the minute formations that result can hardly be classed as tumors from a practical standpoint. Myomas are the most important of the benign tumors with reference both to their frequency and to the symptoms to which they give rise. They are also important on account of their tendency to undergo sarcomatous degeneration. For these reasons, and on account of the comparative rarity of the condition, we have deemed the case observed by us worthy of report. We have added a list of reported cases including a number collected by ourselves, but have not analyzed them in detail, as this work was done with great thoroughness by Steiner in 1898 and by Hake as late as the present year. The frequency with which these growths have been found at operation, as noted in recent reports, indicates their increasing clinical importance. As far as I am aware, a diagnosis is yet to be made before operation or autopsy, though a sufficient symptomatology is at hand to make this quite possible under exceptionally favorable circumstances. We owe the privilege of reporting this case to the courtesy of Dr. Edward B. Hodge, the visiting surgeon.

Mrs. Emma M., a white woman, forty-nine years of age, was admitted to the surgical wards of the Presbyterian Hospital on April 30, and died May 17, 1912. The patient had been perfectly well, except for a slight failure of appetite in the mornings (for six months) and moderate dyspnea on exertion, until a few days before admission. After taking a dose of magnesium sulphate in the morning she had four dark tarry movements during the following night. Defecation was difficult on account of the sticky character of the stools. The morning after this occurrence she felt weak and faint, and the next day went to bed. In the evening before admission she vomited a quantity of bright red blood. She complained of increasing weakness and of pains in both iliac fossæ. The bowels were "torpid," though previously regular. She had never spat blood nor noticed blood in the stools prior to the present illness. She had had no cough. Her menses, regular until the previous year, were now scanty and irregular. Her appendix had been removed six years before. Otherwise her previous history presented nothing of interest. Her father had died of dropsy; one brother was subject to frequent nose bleed. There was no neoplastic history and no other records pointing to a hemorrhagic tendency. The patient was pallid, rather obese, with good bony and muscular development. Over the right thorax posteriorly there was a soft, movable, insensitive, subcutaneous tumor, evidently a lipoma. Otherwise the general examination and the examination of the special organs showed nothing noteworthy. The heart sounds were weak and the pulse somewhat rapid, but regular. The latter increased in frequency from 112 to 130 before death. The patient gradually lapsed into a stupor from which she could be aroused only with difficulty. Two injections of horse serum were given, but the bloody vomiting and the passage of blood by the stools continued. The laboratory findings follow: Urine, specific gravity, 1.023, acid, slight flocculent sediment, no albumin, no sugar, no indican; microscopically a few epithelial cells, occasional white blood corpuscles, no casts, no crystals. Stool (May 3, 1912): Liquid with black tarry lumps and much glairy mucus; intensely positive to the benzidine test for blood; microscopically, a few epithelial cells and much mucus, no ova and no parasites. Blood counts:

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*Read before the Section in General Medicine of the College of Physicians of Philadelphia, December 23, 1912.

	Hemoglobin.	Blood corpuscles:		
Date.	Per cent.	Reds.	Whites.	Differential.
April 30...	31	1,890,000	23,100	Polymorphonuclear cells, 78 per cent.; small lymphoid, 14 per cent.; large lymphoid and transitional, 7 per cent.; basophile, 0; eosinophile, 1 per cent.
May 6....	28	....	12,900	
May 11...	25	1,350,000	.....	
May 15...	23	1,120,000	.....	

A clinical diagnosis of gastric ulcer was made.

The autopsy findings will be very briefly stated. The subcutaneous tissues, mesentery, and omentum were heavily laden with fat. The appendix was absent, but there were dense adhesions between the ascending colon, ileum, and abdominal wall, while a firm band dragged the lower part of the ileum into the pelvis, attaching it to the fundus of the uterus. The pelvic organs were normal. The abdominal organs were pale in color but normal in position Both pleural cavities contained a small amount of free fluid; a few fine adhesions were found at the base of the right lung. Both lungs were anthracotic and emphysematous. There was well marked edema and hypostatic congestion (confirmed microscopically). The heart was heavily laden with fat (infiltration); the ventricular walls were thickened; there were no valvular lesions. Microscopical examination showed beginning atrophy of the heart muscle. The spleen was very soft and anemic The liver was pale and of a yellow color (fatty). Histologically, fatty infiltration and passive congestion were found. The gallbladder was normal; there were no stones. The pancreas also presented nothing worthy of note. The kidneys were soft and yellowish in color (fatty). On microscopical examination fatty infiltration and parenchymatous degeneration were found. Nothing was found in the intestines. At the fundus of the stomach a dumbbell shaped mass was discovered, projecting equally into the stomach and peritoneal cavity and presenting on the gastric surface two ulcerated areas. The tumor was on the greater curvature, five centimetres from the cardiac opening. The outer nodule was three by five and one half centimetres and was slightly irregular or lobulated. The intragastric portion was nearly symmetrical and measured four and one half by five centimetres. The latter presented a punched out, round ulcer, with almost perpendicular walls, twelve millimetres in diameter, and six millimetres deep The other area was larger (twenty-seven millimetres in diameter) and more superficial, denuded of epithelium, and with a rough or eroded surface. No exposed bloodvessels were discovered. Sections were taken from the outer nodule and from the inner portion near the large denuded area. Histological examination revealed a tumor made up largely of smooth muscle fibres with a moderate admixture of connective tissue. In the neighborhood of the ulcerated area there was dense, round cell infiltration. The diagnosis of myoma was confirmed by the clinical pathologist, Doctor Pfeiffer, and afterward by Prof. Allen J. Smith. Although this tumor cannot strictly be called either external or internal according to Steiner's classification, it should be classified under the latter heading on account of its associated clinical symptoms, which were characteristic of this type. Unfortunately, no examination was made of the tumor on the back which is mentioned in the clinical history. There is little or no doubt, however, but that it was a simple lipoma.

We have collected twelve cases in addition to our own (see appended tables), several of which present interesting points. Anitschkoff reports three museum specimens in which myomas were found at the junction of the cardia and esophagus; there seems to have been no history of esophageal obstruction in these or any other cases that we have seen reported. Bullock's cases were both seen at operation. One, in a colored female of sixty-three, was situated on the anterior wall of the stomach. The clinical diagnosis was omental cyst. The other, in a white woman of fifty-six, similarly situated, was diagnosticated as ovarian tumor, prior to operation. Ferguson's case we know only by title, Myoma at Cardia of Exceptional Size. Löwit, operating on a large abdominal cyst, was surprised to find that it sprang from the greater curvature of the stomach. It was a myoma with cystic degeneration. The patient made a good recovery. Nichols's case was associated with a carcinoma, as was also the case reported by Schilling (abstract only). The coincidence was in all probability accidental in both cases. Peugniez and Jullien have seen two cases at operation, in women of sixty-three and fifty-seven respectively. In both cases there were small nodules in the vicinity of the pylorus which caused symptoms attributed in the one case to cholecystitis and in the other to carcinoma of the stomach. Sherren's report refers to a man of fifty-seven who had an external polypoid tumor of the stomach weighing six and a half pounds. He lays great stress on the liability of these tumors to undergo malignant change. These cases, with those previously collected by Steiner, Deaver and Ashhurst, and Hake make a total of eighty-four reported to the end of 1912. A number of the cases, particularly those attributed to Cohen, are very scantily described or merely mentioned. Others, as those of Brodowski, Hansemann, Nichols, and Schilling, either underwent malignant change, gave rise to metastases (leiomyoma malignum), or were associated with malignant growths. If these cases were excluded the list would be considerably curtailed. For the sake of comparison it may be stated that sarcoma is at least half again as common as myoma of the stomach. In 1909 as many as 126 cases of the former condition had been reported. These two types of tumors are the most important noncancerous growths attacking the stomach. Hake found that a trifle more than fifty per cent. of gastrointestinal myomas were in the stomach. They were more common in females, and all but a few were in persons over thirty. Steiner, following Virchow, classified myomas into internal and external; Hake finds that these varieties occur with equal frequency.

Internal myomas occur at the pylorus, at the cardia, and in the body of the stomach, one region being as commonly affected as the other. When situated at or near the pylorus they are liable to cause symptoms of an obstructive type; at the cardia they rarely or never do. This is hard to understand, because growths completely encircling the cardiac orifice have been described. Perhaps this cause may explain some of the obscure cases of benign stenosis in this situation. When situated in the body of the stomach, these tumors usually give rise to no symptoms except when complicated by ulceration and hemorrhage. The ulceration may be similar to the ordinary round ulcer or result from tension of the overstretched mucous membrane, or may be due to the rupture of a degenerative cyst. Internal myomas do not attain a great size. External myomas are frequently of considerable size, the largest we have seen reported weighing 6,000 grammes, or thirteen pounds. These tumors usually have a long pedicle and are characterized by great mobility. They may be sessile, as was the outer portion of the tumor in our case. They have been mistaken for kidneys, tumors or cysts of the mesentery and omentum, uterine or ovarian growths, etc. They are generally situated on the greater curvature, often near the cardia, less commonly on the anterior wall or lesser curvature, more rarely elsewhere.

The etiology is uncertain. They have been attributed, without much evidence, to irritation. Conheim's theory of congenital *Anlage*, aroused to activity by some unknown factor, has received the most support. The fact that they are generally found in advanced life does not negative this hypothesis because of their latent, benign character. Myomas of the gastrointestinal canal have been associated occasionally with uterine myomas, as well as with tumors of a different type, such as carcinoma, and therefore efforts have been made, though with scant success, to trace some etiological connection. Myomas arise from the muscular layer of the stomach as a rule, but in one case at least a myoma seemed to develop from the muscular coat of a small artery.

The symptomatology is not extensive. In the internal variety vague epigastric pain and, as in our case, loss of appetite may be noticed. The only test meal that we have seen referred to gave normal findings. If the diagnosis of carcinoma was in question this might be a suggestive point, though carcinomas with normal or increased acidity are probably more common than myomas. The duration of the case would be the most important point for differentiation. Aside from ulcerative cases, severe symptoms only occur when the pylorus is affected. Usually obstruction of varying degree with retention and dilatation are the consequences of the lesion. If a tumor is palpable, cancer is the natural diagnosis; if not, cholecystitis or cholelithiasis, gastric or duodenal ulcer, will be thought to be present. Cases have been reported in which vomiting soon after eating was the only symptom. The cases characterized by hematemesis and melena could only be distinguished from ulcer of the stomach or esophageal varix by the presence of a palpable tumor and the absence of signs characteristic of those conditions. Inflammatory tumors are not unknown in gastric ulcer or after gastric operations. In our case the tumor was clearly inaccessible to palpation. External myomas of the stomach may be distinguished from movable kidney, renal tumors, splenic tumor, and particularly retroperitoneal growths, by their greater mobility. This will not suffice, however, to separate them from intestinal and omental tumors or cysts which are equally movable. Vaginal examination may exclude growths of the uterus and annexa (Deaver and Ashhurst).

Severe and persistent hemorrhage, as in our case, provided the condition of the patient warrants it, and definite pyloric obstruction call for operation irrespective of the precise diagnosis. Although these tumors are benign, their tendency to malignant degeneration, and the difficulty of distinguishing them from sarcomas would in most cases suggest as wide a resection as possible. The results from operative interference, except in the early days of abdominal surgery, have been excellent. There is, of course, no medical treatment. In one case a polyp was strangulated, presumably in the pylorus, and vomited. We are indebted for most of the facts stated to Steiner, Deaver and Ashhurst, or Hake.

LIST OF REPORTED CASES OF MYOMA OF THE STOMACH.

Collected by Steiner (1898).

Original No.	Year.	Reporter.	Remarks.	Serial No.
2	1896	Steiner (Eppinger)	Died after operation	1
4	1762	Morgani	Found at autopsy	2
5	1845	Vogel	Found at autopsy	3
7	1858	Förster	Found at autopsy	4
9	1860	Sangalli	Found at autopsy	5
10	1863	Virchow	Found at autopsy	6
11	1863	Virchow	Found at autopsy	7
12	1858	Virchow	Found at autopsy	8
17	1876	Brodowski	Found at autopsy (Sarcomatous degeneration)	9
18	1879	Laboulbène	Found at autopsy	10
23	1883	Picenti	Found at autopsy; two nodules present	11
31	1890	Kunze	Operation, death after pneumonia	12
32	1890	Niemeyer	Death from hemorrhage, autopsy	13
36	1890	Pernice	Death from pyloric obstruction, autopsy	14
39	1894	Erlach	Operation, recovery	15
44	1895	Hansemann	Found at autopsy, metastasis	16
46	1897	V. Eselsberg	Operation, recovery	17
48	1898	Steiner	Museum specimens	18
49	1808	Steiner	Museum specimens	19
50	1898	Steiner	Museum specimens	20
			Supplementary Cases.	
3	1897	Kemke	Fatal hemorrhage, autopsy	21
5	1898	Herhold	Operation, recovery	22
?	?	?	Attributed to Steiner, not identified	23
			Collected by Hake (1912).	
1	1912	Hake	Internal myoma	24
2	1901	Noll	Internal myoma	25
3	1903	Cohn	Internal myoma	26
4	1912	Hake	Internal myoma	27
6	1903	Miodowski	Internal myoma	28
7	1906	Borrmann	Internal myoma	29
8	1899	Cohen	Internal myoma	30
9	1904	Samter	Internal myoma	31
10	1902	Poirier	Internal myoma	32
11	1899	Cohen	Internal myoma	33
12	1903	Caminiti	Internal myoma	34
14	1899	Cohen	Internal myoma	35
18	1903	Cohn	External myoma	36
19	1912	Hake	External myoma	37
20	1906	Fisher-Löwenstein.	External myoma	38
21	1906	Borrmann	External myoma	39
22	1906	Borrmann	External myoma	40
23	1903	Moser	External myoma	41
24	1903	Moser	External myoma	42
25	1903	Moser	External myoma	43
26	1907	Goebel	External myoma	44
44-56	1903	Cohen	No details given	45-57

Cases Collected by Deaver and Ashhurst, Not Included in Lists Given Above.

Year.	Reporter.	Remarks.	Serial No.
1893	Bouveret	....	58
1898	Capello and Capello	....	59
1902	Cernezzi	....	60
1879	Cutler	....	61
1904	Gouilloud	....	62
1875	Jean	....	63
1883	Kidd	....	64
....	Magnus-Auslehen	Adenomyomas	65-69
1901	Monro	....	70
1906	Yates	....	71

Two other cases (Ehrenberg's and Perls and Nelson's) listed by Deaver and Ashhurst are probably the same as those credited to Cohn.

Collected hy Farr and Glenn.

Year.	Reporter.	Remarks.	Serial No.
1912	Anitschkoff	Museum specimens	72 to 74
1912	Bullock	Operation, recovery	75 and 76
1910	Ferguson	"Exceptional size"	77
1912	Löwit	Operation, recovery	78
1903	Nichols	Associated with a cancer, but independent of it	79
1910	Peugniez and Jullien.	Operation, recovery	80 and 81
1911	Schilling	Accidental association with cancer of stomach	82
1911	Sherren	External myoma	83
1912	Farr and Glenn	Case reported in paper	84

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JULLIEN: *Revue de gynécologie et de chirurgie abdominal*, xv, 1910. SCHILLING: Abstract, *Journal of American Medical Association*, lvii, 1911, p. 1174. SHERREN: *British Medical Journal*, 1911, ii, p. 593.

117 South Twenty-second Street.
Presbyterian Hospital.

TEETHING IN CHILDREN.

By Julius Sidney Heller, M. D.,
New York,
Assistant Physician, Mount Sinai and Har Moriah Dispensaries.

About sixty per cent. of children cut their teeth with little or no discomfort, but the remaining forty per cent. are extremely ill and give rise to a great deal of anxiety on the part of the parents and the physician. Their troubles also frequently occasion errors in diagnosis, unless no diagnosis is made until the child is well again, when the diagnosis becomes evident. I have one case particularly in mind:

F. C., Brooklyn, baby girl, twenty-two months old, was brought to my office with a cough and moderate fever. She had had several chills and occasional periods of perspiration. The child was also very irritable and would start in its sleep. I found that she had enlarged tonsils, while the throat was somewhat inflamed and the tongue red except for an irregular white coating on its posterior portion. Several days later another physician made a diagnosis of pneumonia complicated with malaria, and advised that the blood and urine be examined. I saw the child several times after this physician, and found that since I had last seen her she had had a very irregular temperature, varying from subnormal to 104° F. At times she had also had very rapid respirations and pulse rate, simulating the pulse respiration ratio of pneumonia. The child had lost her appetite, had fissured and bleeding lips, and was vomiting frequently, while her bowels were irregular in action. She also had a tense, tympanitic abdomen and showed an extensive erythema and eczema on her legs. The blood and urine both proved to be negative in every respect and all the symptoms and signs disappeared rather suddenly with the appearance of the four canine teeth.

704 East Sixth Street.

Therapeutic Notes.

Prophylaxis of Cerebrospinal Meningitis.—A. E. Thayer, in the *Southern Medical Journal* for February, 1913, recounting his experiences with this disease in the Dallas epidemic of 1912, emphasizes the necessity, in the case of carriers, proved by laboratory methods to harbor meningococci in their upper air passages, of requiring the thorough and frequent use of a spray in order to prevent spreading of the disease. The spray he has found of greatest value for this purpose is:

℞ Camphoræ,
Thymolis,
Metholis, } ....āā gr. iii (0.3 gramme);
Tere bene simul et solve in
Petrolatum liquidum, ...℥i (30 grammes).
Sig.: "Throat spray"; use freely four or five times a day.

(It is important that the three solids be first well rubbed together until a fluid results.)

As for the specific treatment of established meningitis, the author advises that not only antimeningococcus serum be given at intervals into the spinal canal, but also meningococcus vaccine administered hypodermically, every five to ten days, in doses of 500 million. The latter measure can be employed to great advantage from the outset, both to combat the systemic intoxication and to lessen proliferation of the cocci in the upper passages; this is accomplished very promptly, thus diminishing the danger of transmission and also of reinfection. Later in the disease the vaccine has proved valuable, in the author's hands, in shortening convalescence and decreasing the liability to complications and sequelæ.

Dry Treatment of Dermatoses.—C. J. White, in the *Journal of Cutaneous Diseases* for December, 1912, recommends that in exfoliative dermatitis and in pemphigus the patient be required to lie naked in bed, with the bedclothes supported on a frame, until moist areas have practically or entirely ceased to appear. The local treatment advocated consists exclusively in the free application of borated talc, which should be constantly kept in sufficient amount both above, around, and below the patient to absorb immediately any moisture that may appear. No contact between the extremities or the extremities and body should be allowed, the former being spread out and freely dusted with the powder.

Occasionally a moist place fails to dry up, but a crust develops with pus underneath. In such an event the crust should be removed, the drying powder applied, and if suppuration should happen to occur again, an antiseptic lotion, such as black wash, should be temporarily used; black wash is the lotis nigra recognized in the N. F. and is made up as follows:

℞ Hydrargyri chloridi mitis,..gr. xiii (0.88 gramme);
Aquæ, ...ʒi (4 grammes);
Liquoris calcis, q. s. ad........℥iii (100 grammes).
M. Sig.: For external use. Shake well before using.

To relieve the patient of the discomfort in the nose, ears, mouth, and eyes, caused when the air is dry by the abundance of powder with which he is surrounded, cotton plugs, demulcent gargles, and lozenges and eye washes may be used.

A point of importance in the treatment is to have the patient constantly in the reclining position, even while eating, and attending to the emunctories. Water in abundance should be given by mouth, but the diet restricted to soft solids. Bathing is not to be allowed, as it would interfere with the drying process.

Treatment of Gastric Ulcer.—E. Quintard, in the *Post-Graduate* for February, 1913, states that no drugs should be given during the first week after a hemorrhage with the possible exception of strychnine hypodermically as a tonic, and codeine to quiet pain if it should persist. The codeine, or opium if it is required, may be combined with belladonna in a suppository:

℞ Codinæ,................gr. ss-i (0.03-0.06 gramme);
Extracti belladonnæ foliorum,....(gr. 1/8-1/4 (0.008-0.015 gramme);
Extracti hyoscyamí...........gr. ii (0.12 gramme).
Fiat suppositorium unum.
Sig: One suppository to be used every night, morning and night, or every six hours.

If local tenderness should happen to persist in spite of appropriate dietetic treatment and Priessnitz dressings, small blisters may be applied to the affected area. If it be deemed advisable, bismuth subcarbonate in twenty grain to one drachm (1.3 to 4 grammes) doses may be given two or three times daily before meals.

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THE GENERAL PRACTITIONER AS THE FAMILY HYGIENIST.

In an interesting and suggestive address at the American Medical Association session, last week, Dr. Walter S. Cornell, of Philadelphia, enumerated the defects usually met with in children in the course of official medical inspections. Among these are mentioned as especially frequent: Eye strain, carious teeth, defective nutrition, flat chest, nasal obstructive disorders, defective hearing, inherited disorders of various kinds, and mental retardation. As a remedy he urges that medical textbooks give greater attention to these various subjects in their relations to school children, and that the work of the general practitioner should include their consideration with the same end in view, besides such subjects as home, school, and personal hygiene; the latter including ventilation, house cleanliness, physical culture, sex hygiene, and dietetics. Calling attention to the fact that the knowledge of the practising physician is now practically limited to the action of drugs, Doctor Cornell pleads for greater attention to health problems and for the adoption of the family physician as the adviser in all matters pertaining to the hygiene of the home.

Not only do we endorse Doctor Cornell's attitude—his position being especially weighty in view of his position as director of Medical Inspection of Public Schools of Philadelphia—but an early application of his recommendation seems to us of vast importance. Of all means of livelihood, medicine is the only one—and an exclusive title of nobility has the medical profession earned through it—which is steadily undermining its own interests for the sake of public welfare. That the average earning power of the physician is steadily decreasing all know. No nobler perpetuation of his good work and no purer motive for just compensation could be devised than that endorsed by Doctor Cornell. Of course, the public itself will require much training to be able to realize the beneficent results of such a plan, but the profession should at once begin to familiarize itself with new duties so truly in keeping with its highest aims.

BENZOL IN THE TREATMENT OF LEUCEMIA.

Practically the only treatment of leucemia that may be regarded as specific is the application of the x rays. There is no drug that is of any great value—at least there was none until last year, when Doctor Korányi, of Buda-Pest, reported on the curative effect of benzol on leucemia. Since then a number of clinicians, in this country and abroad, have employed this new remedy with results which are in the main very satisfactory and which indicate that benzol is equal if not superior to the Röntgen rays. In a recent number of *Roussky Vratch* (March 16, 1913) there appear four contributions on the treatment of leucemia with benzol. They are of interest not only because of the great importance of the subject, but on account of the remarkable unanimity as to the value of this drug in a disease generally regarded as hopeless from a therapeutic standpoint, in which the rôle of the physician, as stated by one of the authors, has been confined to a simple observation of the fatal progress. Dr. I. Ia. Ljachovsky, of the University of Moscow, reports a case of myelogenic leucemia in a woman, fifty-four years old, who was cured by forty-one days' treatment with benzol. At the end of the treatment the leucocytes were reduced from 400,000 to 4,000, with a corresponding increase of the erythrocytes and hemoglobin. The spleen also became almost normal. This, despite a pulmonary tuberculosis and a nephritis, both of which improved under the treatment. C. A. Moltchanoff, of the University of Kazan, reports three cases of myelogenetic leucemia, two in men, forty-two and thirty years respectively, and one in a woman, twenty-nine years of age; and two cases of lymphogenous leucemia, one that of a woman, fifty-one years old, the other in a man, fifty years of age. These five patients were treated with benzol with favorable results in each case. Dr. A. I. Demidoff, of the Military Medical Academy of St. Petersburg, reports a case of leucemia in a man of twenty-nine, successfully treated with benzol. N. I. Lutchevsky, of the Bachrushin Hospital in Moscow, also reports a case of leucemia in a woman, fifty years old, on whom apparently the benzol treatment made little impression after one month's administration; on the contrary, the appearance of phenol in the urine and severe gastrointestinal disturbances necessitated the discontinuance of the treatment; however, following the discontinuance of the benzol, the leucocytes continued to diminish, reaching normal in one month. Several interesting points appear in these observations. First, there is generally an initial rise in the leucocytosis following the administration of benzol. Second, the effect of benzol is more prompt in cases previously treated with the x rays. Third, the drug should be administered cautiously, as it may produce severe gastrointestinal disturbance and even cause death. The dose, as originally suggested by Királyfi, is 0.5 gramme each of chemically pure benzol and olive oil, put up in gelatin capsules, and from two to ten taken after meals, the doses being gradually raised until five grammes are taken daily. This is continued for six or more weeks, depending on the progress of the case, the latter being determined by a frequent study of the blood, as well as the clinical manifestations. It seems advisable to discontinue the treatment before a normal leucocyte count is reached, as the drug is destructive to the white blood cells, and the destructive process of the normal cells may go on unless the drug is stopped.

While further clinical and pharmacological studies should be made before definite conclusions are reached, there is ample evidence from the favorable reports published thus far that we have acquired a wonderfully effective therapeutic agent in the treatment of one of the gravest diseases of the blood.

AN INTERNATIONAL PHARMACOPEIA.

Physicians who have studied abroad, or who follow the foreign medical literature, even through the medium of abstracts, often feel the inconvenience of the differences between the national pharmacopeias not only as to nomenclature, but as to the strength or composition of preparations having the same name. Hence, any efforts to bring about a greater degree of uniformity in these matters will be welcomed by the profession. The first, and up to the present the only noteworthy, step in this direction was taken at the Brussels Conference on the Unification of Formulas of Potent Drugs in 1902; the recommendations of this conference have been for the most part accepted by the pharmacopeias of the leading nations, so that the galenical preparations of the most potent drugs are now of fairly uniform strength throughout the various countries.

Tschirch (*Schweizerische Wochenschrift für Chemie und Pharmazie,* April 19, 1913) thinks that the time has arrived for the nations to take another step in the same direction; he suggests that the various nations establish (perhaps in Bern) an International Pharmacopeia Bureau, one of the first functions of which shall be the preparation and publication of a work along the lines already followed by what he calls the "practical Americans" in the *Digest of Comments on the United States Pharmacopeia* published by the Division of Pharmacology of the United States Bureau of Public Health. Tschirch would also have the international bureau establish a laboratory where the various methods for testing and assaying drugs could be worked out for all the pharmacopeias. As the author remarks, each of a dozen or more countries are now doing this for themselves, and consolidation of this work in one central laboratory would not only result in a great economy of time and energy, but also in a much greater uniformity.

Although the *United States Pharmacopœia* is upon a different basis from that of most countries, being essentially a private undertaking, whereas the pharmacopeias of the other countries are owned by the governments, it should be possible for the United States to take part in this work; for not only has the federal government adopted the pharmacopeia as the official standard, but it is already expending a considerable amount of money in the preparation of the above mentioned digest, which already has an international character, and also in other work connected with the pharmacopeia.

THE EXPERT AND THE SPECIALIST.

There are two words that are heard a good deal in discussions and which, curiously enough, are used interchangeably without any attempt at definition. These two words are "specialist" and "expert."

There has been much talk of late years in medical bodies on the regulation of expert testimony, and whenever any matter of great importance is to be decided it is customary to employ an expert. In medicine the term expert ordinarily comes up in connection with legal work, while in relation to sickness and sick people the term specialist is generally used. Closer consideration might lead to the acceptance of the following definitions: The *expert* is one who, on account of intensive study, mental capacity, and experience, is able to give an opinion which is presumably as good as any other opinion that can be obtained on the particular subject. It implies a familiarity with the literature, technic, and general relations of the subject. The same man, on account of his unusual capacity and intensive study, may be an expert in a number of different departments of knowledge or divisions of his particular profession. The *specialist* is one who, throwing aside other subjects, devotes himself exclusively to the development of a particular art or department of science, except in so far as such other subjects are necessary for the intelligent consideration of his own department. He is a specialist from the time he assumes this attitude toward his work. Presumably, in a reasonable length of time he becomes an expert.

From these definitions it is very evident that the expert is not necessarily a specialist, and the specialist not necessarily, at first, an expert. Looking over the field of medicine, which is the one that interests us most, we find that this works out in an interesting manner. Those who attain to the position of general medical consultant and general medical counsel are experts in all the important departments of medicine, particularly in the matter of diagnosis, prognosis, and a knowledge of the accepted modes of treatment. They fulfill a very important office in supplying by consultations to the general practitioner technical information as to his patients that, through youth, lack of ability, or lack of opportunity, he does not possess. The matured specialist in his own particular department can supply this same technical knowledge.

Now, wherein lies the difference? If medicine were a pure and exact science, there would be no difference. But medicine is an art, and, as far as the patient is concerned, the treatment is the most important outcome of it. In the art of treatment the general practitioner is often better than the general consultant, and gets along very well with the expert knowledge supplied by the consultant. But the matured specialist is better equipped still, because, in addition to expert knowledge in his own department, he has had time and opportunity to cultivate the art of treatment, and there is an assurance of the best possible results when he has the care of a patient; and he makes the best possible associate for the general practitioner when that seems best.

In a dim way all this is recognized in the modern movement toward specialism; but the relation between the general expert and the specialist, as outlined above, has not been clearly recognized.

OX BILE IN TREATMENT OF GASTRIC AND DUODENAL ULCER.

Francis W. Palfrey reminds us in the *American Journal of the Medical Sciences*, June, 1913, that the most frequent form of dyspepsia appearing before the clinician is that characterized by "sour stomach" and "heart burn," or pain after eating. These are usually regarded as cases of overacidity, but while many of these patients show an excess of acid in the test breakfast withdrawn after an hour, in many others the contents are normal. It has been demonstrated that many of the more severe of these cases are caused by gastric or duodenal ulcers, but this cannot be said truly of all, and an uncertain diagnosis of overacidity or ulcer is the usual routine practice. The patient is given suitable directions and diet, and an alkali to be taken as a palliative when necessary; but in many cases improvement does not follow. The writer suggests that in overacidity and in gastric and duodenal ulcer the symptoms are due, in part at least, to delay in the neutralization of the acid contents discharged into the duodenum. Theoretically the administration of ox bile pills (salol coated) should correct this fault. Empirically they seem to relieve the pyrosis and pain after eating; in cases of gastric and of duodenal ulcer their use has been followed by improvement. This method of medication is a practical application of the teachings of Cannon and of Pfaff, to whom the writer accords all credit.

Obituary.

FRANK HARTLEY, M. D.,

New York.

Dr. Frank Hartley died on June 19th, at his residence, 66 West Forty-ninth Street. Born on June 10, 1856, he received his education at Princeton University and the College of Physicians and Surgeons (Columbia University), graduating as M. D. in 1880. He then served as interne at Bellevue Hospital. From 1882 to 1884 he took a post-graduate course in Vienna, and returning to New York, commenced practising here. Doctor Hartley was connected with several hospitals, and had been professor of clinical surgery at the College of Physicians and Surgeons (Columbia University) since 1900. He contributed largely to the medical journals of this country, and was well known as the originator of the intercranial method for the cure of trigeminal neuralgia. The JOURNAL loses a highly esteemed contributor.

News Items.

South Dakota State Medical Association.—At the recent annual meeting of this association, held in Vermillion, S. D., the following officers were elected: President, Dr. Frederick A. Spafford, of Flandreau; first vice-president, Dr. Fred Treon, of Chamberlain; second vice-president, Dr. J. B. Vaughn, of Castlewood; secretary-treasurer, Dr. Robert D. Alway, of Aberdeen.

Maine Homeopathic Medical Society.—At the annual meeting of this society, held in Rockland on June 10th, the following officers were elected: President, Dr. George H. Rand, of Livermore Falls; vice-presidents, Dr. H. H. Plummer, of Union, and Dr. L. A. Brown, of Portland; recording secretary, Dr. J. H. Haywood, of Biddeford; corresponding secretary, Dr. Carrie Newton, of Brewer; treasurer, Dr. William S. Thompson, of Augusta.

Southwestern Virginia Medical Society.—The annual meeting of this society was held in Roanoke on Tuesday and Wednesday, June 3d and 4th, under the presidency of Dr. J. T. Graham. The following officers were elected: President, Dr. John A. Tipton, of Hillsville; first vice-president, Dr. R. H. Wooling, of Pulaski; second vice-president, Dr. A. F. Horne, of Glade Springs; secretary and treasurer, Dr. A. B. Greiner, of Rural Retreat. Marion was unanimously selected as the place of the next meeting.

New Officers of the American Medical Editors' Association.—At the annual meeting of this association, held in Minneapolis on June 16th, the following officers were elected for 1913-1914: President, Dr. E. A. Van der Veer, *Albany Medical Annals;* first vice-president, Dr. H. Edwin Lewis, *American Medicine;* second vice-president, Dr. Seale Harris, *Southern Medicine;* secretary and treasurer, Dr. Joseph MacDonald, Jr., *American Journal of Surgery;* executive committee, Dr. C. F. Taylor, Dr. D. O. English, and Dr. W. C. Abbott; publication committee, Dr. H. Edwin Lewis, Dr. Charles Wood Fassett, Dr. A. S. Burdick, Dr. James P. Warbasse, and Dr. J. MacDonald, Jr.

Right of Health Department to Confiscate Milk.—The right of the Department of Health to destroy or confiscate milk without notification of the owner, and without giving him an opportunity to defend the purity of his product has never been tested legally, although it has at times been the subject of comment and discussion. A decision, handed down May 12, 1913, by the Supreme Court of the State of Wisconsin, upholds the Department of Health in such confiscation when milk is adulterated or below standard. As a matter of fact, at the present time the department confiscates and destroys only when milk is above a certain temperature or when it contains visible dirt, these two points being capable of immediate and satisfactory demonstration. In cases where adulteration is suspected, samples are taken and submitted to chemical analysis and, upon proof of adulteration, the dealer is prosecuted. The opinion of the Milwaukee court was delivered by Mr. Justice McKenna and affirmed the judgment of the Circuit Court for Milwaukee County, from which the plaintiff had appealed.

Division of Infectious Diseases of the Department of Health.—For a number of years the supervision exercised by the Department of Health over scarlet fever, diphtheria, measles, and other contagious diseases of serious importance was conducted through the Division of Contagious Diseases. When, however, in 1905, the department decided to exercise a more thorough control over tuberculosis, a new division, styled the Division of Communicable Diseases, was organized, and to this was later assigned the supervision of typhoid fever, venereal diseases, and some others of communicable nature. It will thus be seen that for several years work quite similar in character was performed by two divisions, and it was finally decided at the meeting of the Board of Health, held March 25th, to combine them and thus create a new division, to be known as that of infectious diseases. At a meeting of the board of health of the Department of Health, held May 6, 1913, a resolution was adopted in accordance with that of March 25th, establishing a Division of Infectious Diseases, and detailing Dr. John S. Billings as director of the new division, and on May 21st an executive order of the Commissioner defined the duties of the officials and employees of the new division.

Personal.—Dr. Elias Potter Lyon, dean of the medical department of the St. Louis University, has been elected dean of the medical department of the University of Minnesota, Minneapolis, to fill the vacancy caused by the recent resignation of Dr. F. F. Wesbrook, who is leaving Minneapolis to become president of the new University of British Columbia, which is being established in Victoria.

Dr. William Palmer Lucas, clinical instructor of pediatrics at the Harvard Medical School, has been appointed professor of pediatrics in the medical department of the University of California.

Dr. F. A. Kraft, health commissioner of Milwaukee, Wis., was reelected president of the Wisconsin State Eclectic Medical Society, at the annual meeting of the society held in Milwaukee on June 11th.

Dr. B. M. Allen, assistant professor of anatomy in the University of Wisconsin, has been elected head of the department of zoology in the University of Kansas, to succeed Professor C. E. McClung, who a year ago became head of the department of zoology in the University of Pennsylvania.

Dr. A. C. Abbott, Pepper professor of hygiene and bacteriology, University of Pennsylvania, has been appointed a delegate to the Fourth International Congress of School Hygiene, to be held in Buffalo, N. Y., August 25th to 30th next.

International Congress for Neurology, Psychiatry, and Psychology.—Announcement is made by the Neurological Society of Switzerland that a meeting of the International Congress for Neurology, Psychiatry, and Psychology will take place in Berne, from September 7 to 12, 1914. The organizing committee in Berne is very desirous of assuring a high scientific value to this meeting, and to this end it appeals to the scholars of all the countries working in the fields of neurology, psychiatry, and psychology for their support and collaboration. At this congress psychology as a science indispensable to every neurologist will be considered, but it will not include discussions on the treatment of the insane, as that branch of psychiatry will be discussed at special congresses of psychiatry, one of which is to be held in Moscow this year. The committee will at a later date communicate its final arrangements concerning the organization of the congress of 1914, the composition of the national committe of patronage, of the international committee of propaganda, and also the list of questions to be submitted. The officers of the committee are: Prof. Dr. Dubois, of Berne, president; Prof. Dr. von Monakow, of Zürich, and Dr. P. L. Ladame, of Geneva, vice-presidents; Dr. R. Bing, of Basle, substitute; Dr. L. Schnyder, of Berne, and Dr. O. Veraguth, of Zürich, secretaries.

Medical Interne, Government Hospital for the Insane.—The United States Civil Service Commission announces an open competitive examination for medical interne, for both men and women, on July 2, 1913, at various places in the United States, and from the register of eligible persons resulting from this examination, certification will be made to fill a vacancy in this position in the Government Hospital for the Insane, Washington, D. C., at $900 per annum, with maintenance, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The positions are tenable for one year, and pay $75 a month and maintenance. At the end of six months, however, during which time a postgraduate course in mental and neurological diagnostic methods, etc., is given, an examination will be held, and promotions to the next grade, junior assistant physician, made. Beyond this there is regular advancement for men whose services are satisfactory. The Government Hospital for the Insane has over 2,900 patients and about 750 employees to care for. In addition to the general medical practice offered, the scientific opportunities are excellent and the clinical opportunities in neurology and psychiatry are unsurpassed. Both men and women will be admitted to this examination. Applicants must be unmarried, and twenty years of age, or over, on the date of examination. The examination is open to all persons who are citizens of or owe allegiance to the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply to the United States Civil Service Commission, Washington, D. C., for application and examination Form 1312.

The American Medical Association, Sixty-fourth Annual Meeting,

MINNEAPOLIS, JUNE 16 TO JUNE 20, 1913.

(Continued)

The House of Delegates.

(Concluded.)

MONDAY, JUNE 19TH.

After the roll call the minutes of the last meeting read and approved.

Election of Officers.—The following nominations for president were made and seconded: A. B. Ellis, of California; W. N. Wishart, of Indiana; W. L. Rodman, of Pennsylvania; V. C. Vaughan, of Michigan; J. D. Devor, of Pennsylvania.

The first ballot resulted as follows: Wishart, 32; Devor, 15; Ellis, 17; Vaughan, 24; Rodman, 25.

Doctor Devor drops out.

Second ballot: Wishart, 39; Ellis, 17; Vaughan, 27; Rodman, 33.

Doctor Ellis drops out.

Third ballot: Wishart, 40; Vaughan, 40; Rodman, 36.

Doctor Rodman drops out.

Fourth ballot: Wishart, 53; Vaughan, 63.

Doctor Vaughan declared elected.

Dr. Walter Conway, of New Jersey, was unanimously elected first vice-president.

Dr. T. B. Coleman, of Georgia; Dr. S. G. Kahn, of Utah; Dr. F. C. Todd, of Minnesota, were nominated for second vice-president. The first two withdrew in favor of Doctor Todd, who was declared elected.

Dr. S. G. Kahn, of Utah; Dr. Lillian South, of Kentucky, nominated for third vice-president. Doctor Kahn's name was withdrawn and Doctor South was declared elected.

Dr. S. G. Kahn, of Utah, was unanimously elected fourth vice-president.

Dr. Alexander R. Craig, of Chicago, was reelected secretary.

Dr. William A. Pusey, of Chicago, was reelected.

Dr. W. W. Grant, of Denver, was elected to succeed himself on the board of trustees.

Dr. F. J. Lutz, of St. Louis, was elected to succeed himself on the board of trustees.

Dr. C. E. Cantrell, of Greenville, Texas, and Oscar Dowling, of Shreveport, La., were nominated to succeed C. E. Cantrell on the board. The vote by ballot resulted: Cantrell, 51; Dowling, 60.

Doctor Dowling declared elected.

To succeed the late Dr. C. A. Daugherty, of South Bend, Ind., H. L. Elsner, of Syracuse, N. Y.; Thomas McDavitt, of St. Paul; S. D. Fairchild, of Iowa; J. R. Eastman, of Indianapolis, were nominated. The first ballot resulted: Elsner, 21; McDavitt, 35; Fairchild, 23; Eastman, 28.

Doctor Elsner drops out.

Second ballot: McDavitt, 54; Fairchild, 19; Eastman, 34.

Doctor McDavitt was declared elected.

The president, Doctor Witherspoon, appointed Dr. A. B. Cooke, of Nashville, Tenn., to succeed himself on the judicial council, and the House of Delegates ratified this action.

The president appointed Dr. W. S. Rankin, of North Carolina, to succeed Dr. J. N. McCormack, of Nashville, on the Council of Health and Public Instruction. Ratified.

The president appointed Dr. H. D. Arnold, of Boston, to succeed Dr. V. C. Vaughan on the Council on Medical Education. Ratified.

Doctor Cullen, of Baltimore, asked for a few minutes for Samuel Hopkins Adams, who was received with much enthusiasm. He spoke on quack advertising, and said that the patent medicine business was one tenth medicine and nine tenths advertising. The newspapers were almost ready to throw out medical advertising, and he hoped that every member of the American Medical Association would exert all his moral influence to accomplish this end.

Proposed Monument in Honor of Heroes of Preventive Medicine.—The board of trustees offered a resolution, which was adopted, that a monument be erected by popular subscription to commemorate the services of Gorgas and others, who risked their lives for the cause of preventive medicine.

Admission of Porto Rico Physicians.—Doctor Lambert, of New York, offered a resolution, which was adopted, that the physicians of Porto Rico be admitted to the American Medical Association as members of constituent societies.

Gold Medal Awarded.—The Committee on Awards announced that the University of Tulane's exhibit of malarial plasmodia was the winner of the gold medal.

Place of Next Meeting.—The Committee on Transportation and Place of Session announced invitations from Atlanta, Ga., Atlantic City, Chicago, Louisville, New Orleans, New York and Washington.

Doctor Pope, of Louisville, made an eloquent appeal on behalf of that city.

The committee recommended Atlantic City as the most desirable meeting place, and the report with this recommendation. was adopted.

Report of Sections.

SECTION IN PRACTICE OF MEDICINE.

TUESDAY, JUNE 17TH.

Chronic Arthritis.—Dr. Leonard W. Ely, of Denver, believes that as there are no accepted measures in the present treatment of chronic arthritis, the condition will ultimately come into the domain of the internist. There is no distinctive train of symptoms belonging to any one group

A. W. HEWLETT, M.D.,
of Ann Arbor, Mich., chairman of the Section in Pathology and Physiology.

of the chronic arthritides, and the exact diagnosis must therefore depend upon the demonstration of the individual etiological factor. The pathological changes in most chronic joint conditions is, the author believes, very similar, resulting in proliferation of the synovia, followed by atrophy of the cartilage and bone, and finally by their destruction. Clinically, mere examination of the affected joint alone cannot suffice for a diagnosis, but all relating factors must be taken into account. In that great group of arthritides referred to as "metabolic" the cause is not yet known, and they may all prove to be infectious in origin. He considers syphilitic arthritis by no means rare. In his hands mercury and salvarsan have given better results than potassium iodide in this group. Chronic progressive polyarthritis furnishes a field for much patient study. The great thing here is to seek out the primary focus. This is frequently the tonsils, but may also be the ear or the sinuses, the appendix or the intestinal tract. So important a part do the tonsils play that their removal in any obscure case of chronic arthritis may well be recommended as a routine measure.

In the course of the discussion Dr. Richard Cabot, of Boston, stated that he personally had not seen any of these cases cured by removal of the original foci of infection and that he was very anxious to see some.

Dr. J. L. Miller, of Chicago, believed that foci of infection in the future are going to prove to be *the* great cause of joint troubles. He begged to inform Doctor Cabot that he had seen excellent results in the joint condition follow tonsillectomy.

Remote Effects of Lesions of the Prostate and Deep Urethra.—Dr. Thomas McCrae, of Philadelphia, holds that both functional and organic symptoms may follow to a far reaching degree lesions of the prostate and deep urethra. Under the first, the so called "neurasthenic state" is by no means rare. Referred pains, most varied in character, are not infrequent. Among such are: 1. Pain in the kidney region simulating renal calculus; 2, pain in the back; 3, pain in the abdomen. In one patient with attacks of severe abdominal pain lasting from fifteen to thirty minutes and accompanied almost by collapse, the cause was found to be a swollen and inflamed verumontanum; 4, pain in the hip joint or transmitted down the sciatic nerve; 5, pruritis ani. Under organic conditions, arthritis, and particularly spondylitis, is often secondary. Whether lesions of the prostate may not affect the myocardium is seriously to be considered, as the writer, with Dr. Hugh Young, of Baltimore, has frequently seen the condition of the heart improve following operations upon the prostate. Cardiac arrhythmias with anginal pains and "anxiety neuroses" may be caused by prostatic and urethral lesions. He desires in particular to draw attention to the frequency with which local lesions may cause general symptoms in no way suggestive of the prostate and deep urethra, so that these possible sites of infection must always be borne in mind.

Dr. Hugh Young in discussing Dr. McCrea's paper wished to emphasize the necessity of more frequent and more careful rectal examinations with particular reference to the prostate. The prostate just as much as the tonsils and intestinal tract deserved attention as a cause of referred and absorptive conditions. A much larger number of men than is generally supposed have chronic inflammation of the prostate.

Dr. J. M. Anders, of Philadelphia, stated that in the absence of symptoms and history of gonorrheal infection it did not do to exclude diseased conditions of the prostate and deep urethra, as it has been shown that the colon bacillus and the streptococcus may be causes as well as the gonococcus.

Studies in Uric Acid in the Blood and Urine, with Special Reference to the Influence of Atophan.—Dr. James S. McLester, of Birmingham, Ala., believes that atophan causes a decrease of uric acid in the blood, with an increase on the other hand, of this substance in the urine, together with a decided increase in the total quantity of the urine output. He advocates, therefore, the employment of atophan in gouty and "uric acid" states

In the discussion, Dr. W. S. Thayer, of Baltimore, stated that undoubtedly gout was more common in the United States than was ordinarily believed, and that a rapid method of estimating the uric acid in the blood should prove to be of considerable value.

Clinical Notes on Patients from the Middle West Affected with Entamebæ.—Dr. H. Z. Giffin, of Rochester, Minn., has found that these organisms were relatively common in persons living in the Middle West. Infection with *Entamœba tetragena* more common than *Entamœba histolytica.* Among the symptoms dependent on their presence are diarrhea, bloody stools, abdominal pains, and nausea. The eosinophile count is low as a rule. The entamebæ are easily found by routine examinations of the stools, and their presence in any individual is distinctly detrimental to the general health. Results of treatment are difficult to state, but in severe cases enemas of coal oil (kerosene) had been attended with very good results.

Value of Tuberculin in the Early Diagnosis of Tuberculosis.—Dr. V. C. Vaughan, Jr., of Detroit, believes that the interpretation of the results from the use of

HOWELL T. PERSHING, M. D.,
of Denver, Col.; chairman of the Section in Nervous and Mental Diseases.

tuberculosis is most important. That certain patients do not react to its injection or the ophthalmo reaction is explained as a lack of sensitization. Therefore a negative reaction at first injection is of no value in diagnosis. The ophthalmo reaction has not given any ill results, and is used in many cases. Sensitization is brought about by a preliminary tuberculin instillation and secondary reaction is often found to be positive in previous negative tests. In thirty-five suspicious cases with a negative first examination, thirteen gave a positive test on second instillation and twenty-one failed to give a positive reaction on either first or second trials. Of these twenty-one thirteen are now known to be positively tuberculous. Radiographs were shown of a number of cases, both normal and tuberculous where the patients failed to give a reaction at the first or second attempts. The speaker concluded: 1. The ophthalmo reaction, when positive, is strong confirmatory evidence. 2. A negative ophthalmo reaction is of no value. 3. A negative result on first instillation and a secondary positive reaction is strong evidence against an active lesion. 4. A negative result on first and second trials is of no value.

Dr. R. Cabot, of Boston, condemns the use of the ophthalmo reaction. A von Pirquet is of value in children only; possibly a negative result may be serviceable in some adult cases. He would make use of a von Pirquet test directly over a diseased joint, as a knee. He condemns the term of "calcified glands" in chest radiographs and recommends the use of such an expression as the "x ray brings out a shadow."

Dr. C. L. Minor, of Asheville, N. C., thinks the von Pirquet reaction should be used in pediatrics only. He would not employ the Calmette test.

Dr. F. M. Pottenger, of Monrovia, Cal., believes that the subcutaneous tuberculin reaction may be of value in demonstrating an active or old lesion. He has found that active cases give a prompt and more decided disturbance. He urges the combination of all the available methods in making a diagnosis of tuberculosis, cautioning against a positive opinion in any single positive tuberculin test.

Doctor Dunham, of Cincinnati, maintains that the radiograph is often the means of early definite diagnosis of pulmonary lesions.

Doctor Vaughan, in closing, defends the ophthalmo reaction, stating that he has had no ill results, and advising the most careful sterilization of material.

Artificial Pneumothorax for Advanced Pulmonary Tuberculosis.—Dr. C. L. Minor, of Asheville, N. C., has used the "operation" of injection of nitrogen in twenty desperate cases. Of these he states that three have been benefited sufficiently to bring them out of the hopeless to the hopeful class. One case he expects to cure. His failures he ascribes to dense adhesions, puncturing old abscesses, the lighting up of lesions in the opposite lung, or circumstances which for any reason make a continuation of the treatment impossible.

HENRY D. CHAPIN, M. D.,
of New York; chairman of the Section in Diseases of Children.

W. JARVIS BARLOW, M.D.,
of Los Angeles, Cal.; chairman of the Section in Practice of Medicine.

Of the three cases so much improved one has had no treatment for six months, and the others for three and two months respectively. The last case has had persistent hemorrhages, which are controlled by this method.

Dr. S. A. Knopf, of New York, has used the operation in a large number of cases, and in one of his series twenty-five per cent. of the patients showed improvement. He believes that only certain cases should be subjected to the injections, and those where one has absolute control of the case for a long time. Oxygen is preferred as the agent employed, and all patients are warned beforehand that accidents may happen.

Doctor Collins, of Denver, recommends radiographs before and after the treatment, and does not believe that lesions in the opposite lung are a contraindication.

Doctor Dunham always wants to ascertain, if possible, whether the pleura can be entered, and whether the other lung will do the work required. He advises stereoradiographs before and after the operation, for one reason, that it is difficult to interpret the physical findings after collapse. He cautions the employment of too much gas.

Dr. Mary E. Lapham, of Highlands, N. C., would use oxygen in all cases and has seen very good results in four cases.

Blood Pressure Studies in Tuberculosis in Great Altitudes.—Dr. LeRoy S. Peters and Dr. E. S. Bullock, of Silver City, N. Mex., present observations covering six years, and 600 cases are reviewed. The observations have been of uniform character. There is a fall in pressure on first arrival and a decided raise after continued residence. This is true of healthy as well as tuberculous persons. They believe this rise to be a therapeutic asset, and the study of blood pressure to be valuable in prognosis. They conclude: 1. Blood pressure increases in great altitudes. 2. This tendency is to increase up to a certain point in all individuals. 3. Degree of involvement has no relation to the blood pressure. 4. There is a distinct relation between the blood pressure and the amount of toxemia.

Dr. J. Ritter, of Chicago, believes that blood pressure readings are often a great aid in doubtful cases, and that in early cases a low pressure is the rule.

Dr. R. L. Barns, of Salt Lake City, in examining a large number of students at sea level and an altitude of

A. F. JONAS, M. D.,
of Omaha, Neb.; chairman of the Section in Surgery.

4,500 feet has found no increase in pressure in the latter circumstances.

Rest and Repair in Pulmonary Tuberculosis.—Dr. J. W. Flinn, of Prescott, Ariz., advises strongly in favor of rest in bed for one month or more for every case of tuberculosis, whether there is an increased temperature or not. In every case specific instructions regarding the exact degree of rest to be maintained should be given, according to the individual requirements of the patient. The pulmonary infection being a systemic intoxication, the later cases he puts to bed for six months or more. He stoutly upheld his theory.

WEDNESDAY, JUNE 18TH.

A Comparison between Jacquet's Sphygmograph and Crehore's Micrograph in Cardiac Tracings.—Dr. Alexander Lambert, of New York, shows numerous tracings taken with the two instruments and concludes that the Crehore micrograph is both more accurate and delicate than the Jacquet sphygmograph.

Clinical Aspects of Overtension.—Dr. Joseph L. Miller, of Chicago, considers renal changes the chief factor. Marked renal changes may occur with apparently normal urine. Nervous influences are also a definite factor.

Clinical Significance of High and Low Auscultatory Pulse Pressures.—Dr. Willard J. Stone, of Toledo, Ohio, explains that the pulse pressure is the difference between the systolic and the diastolic pressures. He has found in sixty-one normal individuals the average systolic blood pressure to be 120 and the diastolic pressure eighty. He emphasizes the importance of determining the diastolic pressure in cases of excessive tension and states that a continued diastolic pressure of from 100 to 110 is of more significance in showing the ability of the myocardium to carry its "load" than is a systolic pressure of 160. He further believes that the combination method by palpation and auscultation is much to be preferred in the determination of blood pressure to the palpation method alone.

Perpetual Arrhythmia.—Dr. H. A. Freund, of Detroit, discusses certain anatomical and clinical features of perpetual arrhythmia and demonstrates electrocardiographic tracings. The slow forms of arrhythmia without cardiac compensation require no treatment, but in other forms rest in bed with digitalis are of great importance.

Dr. L. M. Warfield emphasizes the need of more attention to the diastolic pressure. A gradually ascending or a continuous high diastolic pressure, as it measures peripheral resistance, he believes to be more important in the prognosis of excessive tension than a continued high systolic pressure. It is to be noted that in taking the diastolic pressure by the auscultatory method it is not where the sound is completely lost which should be regarded as the index, but where the change from a clear to a dull tone occurs, or, in other words, where the third tone suddenly becomes dull.

Doctor Elsner thinks the saying of Stokes that "the key of the heart rests in the heart muscle" is just as true to-day as it ever was. It cases of moderate overtension without albuminuria what the patient needs chiefly is to be reassured, but in high pressures (190-210), whether albumin and casts are present or not, the patient requires the closest watching on the part of the physician. He believes that the iodides, given over long periods of time, are sometimes of value in excessive tension. The nitrites relieve the subjective symptoms to some extent, but have no lasting effect on the increased tension itself.

Dr. W. S. Thayer gives a note of warning as to the overuse of the nitrites in cases of marked overtension attended with decided renal changes. In such cases, he believes, uremia may be brought on by their excessive use.

Diseases of Porto Rico.—Dr. Elmer F. Otis, of Penuelas, Porto Rico, mentions a considerable number of diseases occurring in Porto Rico, and refers particularly to the hookworm disease and the excellent results which follow energetic treatment.

Study of a Case of Congenital Hemolytic Jaundice.—Dr. E. T. F. Richards and Dr. W. C. Johnson, of Detroit, report this case In a woman of twenty-three years jaundice has been present since birth, but is not accompanied by itching, bradycardia, or clay colored stools. There is marked splenomegaly, urobilinuria, and an anemia with characteristic blood changes. The writers draw especial attention to the changes in the erythrocytes: Marked microcythemia, anisocytosis, anisochromia, Howell-Jolly bodies, large coarse basophile granules, and the "granular corpuscles" of Chauffard. The test of the osmotic resistance of the erythrocytes is a most important point in the diagnosis of hemolytic jaundice. In the present case the red cells show marked fragility, hemolysis beginning in 0.7 to 0.8 per cent. sodium chloride, as compared with normal red cells, in which hemolysis does not take place until 0.425

HUGH H. YOUNG, M. D.,
of Baltimore, Md.; chairman of the Section in Genitourinary Diseases.

per cent. or 0.45 per cent. of sodium chloride. Attention is directed to the remarkable results following splenectomy in three or four cases of the acquired type reported by Banti and others, but the wisdom of advocating such a measure in the congenital form is to be considered an open question.

Joint Meeting with the Section in Pharmacology and Therapeutics.

Symposium on Serums, and Vaccines—Federal Control over the Manufacture of Serums and Vaccines.—Dr. John F. Anderson, of Washington, D. C., states that since the Public Health Service has maintained its strict supervision over the manufacture and use of such products, a marked improvement has taken place in the vaccines put on the market. Diphtheria antitoxines are now of higher potency, and serum reactions are comparatively rare. A set standard for antitetanic serum has been also established. The Public Health Service has furthered the use of antirabic virus. It is no longer necessary for a patient to go to a Pasteur laboratory for treatment, for the virus, as now prepared, may be shipped long distances. After a firm has been licensed to manufacture and sell serums and vaccines, the Hygienic Laboratory frequently examines the products as they are obtained on the market, and if such do not conform to all the requirements of the law, the manufacturer can be compelled to withdraw them from the market. If the condition is not then corrected, the license can be suspended or even revoked. The writer makes a special plea that all efforts should be made to obtain legislation which would give to the Public Health Service the power to test by experimental work the therapeutic value of all such products. At the present time the government gives no guarantee of the therapeutic value of a product, but simply states that it has been examined as to potency, impurities, bacterial contamination, etc.

Treatment of Pneumonia by Specific Serums.—Dr. Rufus I. Cole, of New York, classifies pneumococci into four groups. Against two of these (Groups I and II) there is experimental evidence to show that active sera have been obtained. In Groups III and IV this is not yet the case. The serum to be effective in pneumonia must be given 1, in large amounts, 2, early in the disease, and 3, it must be the appropriate serum against the special type of pneumococcus present; which latter is determined in the Rockefeller Institute by cultures from the sputum and blood. In 13 cases of pneumonia in humans infected with Type I, only one patient died in the course of thorough treatment with the serum. The author believes that his experimental work justifies great hopes for the future treatment of pneumonia with appropriate serums.

GUY L. KIEFER, M. D.,
of Detroit, Mich.; chairman of the Section in Preventive Medicine and Public Health.

R. L. WILBUR, M. D.,
of San Francisco, Cal.; chairman of the Section in Pharmacology and Therapeutics.

Antistreptococcus Serum.—Dr. G. H. Weaver, of Chicago, states that the opsonins are taken to be the potent portion of the serum. In order to be most effective the antibodies or opsonins especially in this serum must come in contact with the streptococci in large quantities, and in a short time. Much larger doses than formerly are now recommended, from fifty to 100 c. c. rather than ten c. c. etc., as before. Intravenous and intramuscular rather than subcutaneous administration is also recommended. Results are seen at once after intravenous, and in about three hours after intramuscular injection. On the other hand, twenty-four hours is the usual interval for subcutaneous injections to show reactions. A drop of the opsonic index or a persistent high white cell count are taken to point to the need of a renewal of the injections. Persistence in the use of the serum is necessary, and it is, of course, also essential that an active serum should be employed. The fact that the opsonins are the active portion of the serum allows a very accurate method of testing the activity of any given serum. This treatment should be given only in definite cases; the diagnosis being based on bacteriological analysis alone. The technic of administrations is difficult, and as yet not practicable outside of a hospital and then only where there is a good laboratory in connection.

The Treatment of Lobar Pneumonia with Partially Autolyzed Pneumococci and Pneumococcus Extracts.—Dr. E. C. Rosenow, Chicago, says that in the work of the last four years a strain of pneumococci of high virulence has been obtained by suspending the dead bacteria in salt solution and autolyzing in a centrifuge. Autolyzed or detoxicated pneumococci given in immense doses (billions rather than millions) to early pneumonia patients produced considerable benefit clinically, but in later cases the effect was doubtful. In the last three years fifty cases have been treated each year. Of these, seventy-five patients, or twenty-two per cent., died, while forty per cent. of control cases (untreated with serum) died. The method now used is to give one dose of large number of the detoxicated bacteria, and not daily small doses, as previously.

Typhoid Vaccination in the Army in 1912.—Dr. F. F. Russell, Washington, D. C., states that in 1912 this vaccination was compulsory throughout the entire army.

HIRAM WOODS, M. D.,
of Baltimore, Md.; chairman of the Section in Ophthalmology.

A single strain of especially adapted typhoid organisms is used for the troops. Iodine is employed for sterilizing the skin of the arm and from two to three injections are made at intervals. One injection is not considered sufficient. Ninety-seven per cent. of the men do not have "troublesome" reactions; three per cent. being relieved from duty for usually only short periods. The length of the immunity is not known, and statistics must later demonstrate the time limit. Vaccination for smallpox is done at the same time and the recommendation is made that both be repeated in four years. After vaccination it is absolutely necessary that the diagnosis of typhoid fever be made by blood cultures only.

THURSDAY, JUNE 19TH.

Gastroscopy, with Demonstration.—Dr. Henry H. Janeway, of New York, demonstrates a gastroscope with rigid tube on a patient under local anesthesia, the instrument affording a good view of the various portions of the cardiac end of the stomach. In connection with the demonstration, he speaks of the advantages of stomach examinations, especially as regards the cardia, where the bismuth radiographs are of little value. To avoid risk to the patient great care should be observed in employing gastroscopy. Colored lantern slides are shown of the several views necessary for a thorough search of the cardia.

The Water Trap Stomach; Symptomatology, Diagnosis, and Treatment.—Dr. G. Reese Satterlee and Dr. L. F. Le Wald, of New York, consider this condition as a definite clinical and morbid entity, and not merely a phase of the gastroptotic or neurasthenic type. The essential point in the differentiation is that radiography shows the greater and lesser curvature to be below the umbilicus, while the pylorus proper is found more or less in its normal situation. The symptomatology of secondary importance corresponds closely with the usually accepted symptom complex of a gastroptosis. The treatment of these cases is surgical and consists in gastroplication to bring the portions of the greater and lesser curvatures up to a point above the midabdominal line. Illustrative lantern slides show that in this condition there is not the usual picture of general abdominal relaxation. There is always a large bismuth residue at the expiration of six hours, and the water trap stomach is not a particularly dilated stomach. Normal stomachs often show the greater curvature below the umbilicus, but not the lesser curve also.

Points to Be Derived from Roentgenoscopy of the Gastrointestinal Tract.—Dr. R. Walter Mills, of St. Louis, demonstrates lantern slides which are reproductions of x ray plates. Among the conditions shown is esophageal obstruction from diverticuli, carcinoma, cardiospasm, and aneurysm. The stomachs radiographed illustrate the fact that each individual has a contour and make up of stomach best suited to his needs.

The diagnosis of seventy-five per cent. of gastric ulcers can be aided by x ray pictures, which for the most part show definite changes in contour and motility. Radiographs also assist in diagnosticating tender spots in the gastroduodenal tract. The most aid, however, is afforded in the diagnosis of early and late carcinoma. In duodenal ulcer the diagnosis is not helped so much by the x ray. More study along these lines is needed, and conservatism should be exercised in the interpretation of the findings.

Dr. C. Jackson, of Pittsburgh, says that gastroscopy is as yet on a truly practical basis only in hospitals. The difficulties met with are, first, instrumental, and, second, technical and in the way of interpretation. Doctor Janeway has, in his perfected instrument, largely overcome the first difficulty. Experience and more than ordinary mechanical skill are required in the use of gastroscopy.

Doctor Draper, of New York, believes that the water trap stomach originates in some congenital defect. The chief factor in causing the symptomatology is much the same as in a condition of partial intestinal obstruction and is no doubt a disturbance of the enzymes. The relief of constipation so marked in cases of water trap stomach after operation is brought about by the passage of hormones, etc., through the intestinal canal in a normal way.

Dr. J. G. Cole, of New York, says that gastroscopy, properly performed, is one of the greatest aids in gastric diagnosis, and the findings with it so admirably complement those of the radiographer that the combination of the two methods excels all other means employed.

Dr. M. L. Graves, of Galveston, advises the greatest possible conservatism in x ray readings and believes that in every case all available modes of investigation should be employed. He recalls from his experience many cases of operation where any single factor, as the x ray or the clinical findings, would have missed the correct diagnosis.

Cause and Treatment of Diarrhea.—Dr. R. C. Cabot, of Boston, and Dr. Haven Emerson, of New York, base their conclusions on a study of autopsies each at the Massachusetts General Hospital and Bellevue Hospital, New York, and 750 clinical cases observed in the former hospital. The following cases were excluded: Below sixteen years of age—typhoid fever, tropical diarrhea, epidemic cases. Two main points were kept in mind: 1. What are the pathological lesions? 2. What the causative factors? It was found difficult to differentiate acute and chronic cases,

VIRGIL LOEB, M. D.,
of St. Louis, Mo.; chairman of the Section in Stomatology.

JOSEPH ZEISLER, M. D.,
of Chicago, Ill.; chairman of the Section in Dermatology.

and also that food as a factor is greatly overestimated. Ptomaine poisoning, while a very popular and fashionable cause of diarrhea, cannot be truthfully blamed, except very rarely. No cases of ptomaine poisoning were met with by them. There was usually some underlying, unrecognized cause, as obstruction, acute pancreatitis, etc.

The chart of causes brought out the interesting fact that in all the cases of actual tuberculous enteritis only about thirty per cent. of the patients complained of diarrhea. The frequency of diarrhea in achylia gastrica, its infrequence in mucous colitis, were striking. The investigation of the etiology of any diarrhea, the writers say, must include a good history and stool examination, especially for blood or pus, and not so much attention must need be given in trying to discover a faulty food. Rest in bed is a necessity in first investigation. As to the treatment, rest in bed often cures a diarrhea. Twenty-four hours' starvation and the usual purgation at the onset are advisable. Later, only introgenous diet, adding carbohydrates and fats as the case warrants. Daily normal saline flushing is of benefit. Silver nitrate is to be employed only if at a first trial this shows benefit. Emetin may be in amebic form and at times bismuth and salicylates are found efficacious. Possibly, cecostomy may be tried.

ROBERT LEVY, M. D.,
of Denver, Col.; chairman of the Section in Laryngology, Otology, and Rhinology.

Cerebrospinal Fluid in the Diagnosis and Treatment of Syphilis.—Dr. W. V. Brews, of Los Angeles, has found examination of the cerebrospinal fluid important in 1, preventing infection of the central nervous system; 2, in determining infection in this locality before parasyphilitic manifestations; 3, in eradicating syphilis and determining the final freedom of the system from the disease. Seventy patients were closely followed and the cerebrospinal fluid used for these purposes. It was found that this fluid often gave a positive Wassermann after repeated negative results from the blood. From three to thirteen salvarsan injections were given and a combination with mercury, rather than any other drug, was thought best. Further investigations along this line will be carried out.

Symposium on Leprosy— Dermatological Aspects of Leprosy.—Dr. Isadore Dyer, of New Orleans, describes the cutaneous lesions of leprosy and their differentiation from other skin conditions which they may sometimes resemble. Among the latter are lupus, syphilis, psoriasis and hypertrophic acne rosacea.

NEWTON M. SCHAFFER, M. D.,
of New York; chairman of the Section in Orthopedic Surgery.

Clinical Aspects.—Dr. E. Boeckmann, of St. Paul, relates his experience with leprosy during twelve years in Norway, referring particularly to the symptoms dependent upon nerve involvement.

Bacteriology and Specific Therapy.—Dr. C. Duval, of New Orleans, contributes a scientific presentation of the cultivation and characteristics of the *Bacillus lepræ*.

Public Health Aspects of Leprosy in the United States.—Dr. Rupert Blue, of Washington, D. C., states that the collected statistics show leprosy to be on the increase. Some years ago a bill was introduced in Congress to provide a national leper hospital and it passed the Senate but not the House. The need of such an institution is even more acute to-day. Leprosy is more of a menace to the United States than is generally supposed. Because of our possessions and the intercourse between them and this country by soldiers, sailors, and civilians, and because of the long period of incubation in this disease, the introduction of a case of leprosy is fairly easy. In a number of the States leprosy is still not a specifically noticeable disease. The surgeon-general, therefore, because of these and other reasons, makes an urgent plea for the establishment of a national leper hospitla.

Election of Officers.—Dr. Charles Lyman Greene, of St. Paul, was elected chairman of the section for the ensuing year, and Dr. Roger S. Morris, of Clifton Springs, N. Y., was reëlected secretary.

SECTION IN OBSTETRICS, GYNECOLOGY, AND ABDOMINAL SURGERY.

TUESDAY, JUNE 17TH.

Chairman's Address: Right Sided Overtension with Occasional Cardiac Dilatation as a Postoperative Complication.—Dr. F. F. Simpson, of Pittsburgh, Pa., calls attention to the greater operative risk of the patient whose heart muscle is weakened by various causes, such as hyperthyroidism, various toxines, anemia, etc. There is a possibility of such a heart being dilated by prolonged anesthesia; in which case the Trendelenburg position is to be resorted to and intravenous saline injections practised. He recognizes two groups: 1. Persistency of circulatory disturbance after operation, possibly followed by death. 2. Development of such disturbance in from twelve to eighteen hours after operation. Signs of such disturbance are rapid and sudden development of cardiac weakness, shown by rapid pulse, cyanosis and enlargment of right cardiac border. Parallel observations are to be made on cases with routine examination of heart and circulation in patients before and after operation, supplemented by the x ray. He has conducted experiments on dogs, both normal and thyroidectomized. The latter showed heart disturbances from the causes mentioned above, while normal dogs showed little change and rapid recovery. Doctor Simpson studied seventy-five patients with the x ray, before and after operation. There was increase of the vascular measurement in fifty-eight instances. Dilatation was found to begin usually in the large veins. His conclusion was that if the vascular measurements are not relatively greater than of the heart, there is no circulatory disturbance. Of twelve cases, twenty-four per cent. had circulatory disturbance when the vascular enlargment exceeded the cardiac. Right sided overtension is rarely serious as a post operative complication. It should be treated by elevation of the head of the bed and through judicious use of morphine.

Some Newer Methods of Reducing the Mortality of Operations on the Pelvic Organs.—Dr. G. W. Crile, of Cleveland, O., holds that while in the plain, uncomplicated operation for fibroid, chronic pyosalpinx, benign ovarian tumor, etc., the technic has been standardized and the results are everywhere good, operations are still formidable, which are performed on patients having a too high or too low blood pressure, the result of infection, hemorrhage, or other cause. The mortality rate would indeed be high were it based on such operations only. The experienced surgeon has learned to select his patient according to what he knows he is able to do; the handicapped patient, therefore, is often turned aside because, for want of method, the operation cannot be performed safely. It is the purpose of his paper to show that nearly all of these cases may be reclaimed, and patients safely operated upon. The clinical basis for this work is an analysis of the records of 8,962 abdominal operations. The dangers from high blood pressure are embolism, thrombosis, angina pectoris, and pneumonia. Low blood pressure, occurring from shock, anemia, or hemorrhage is more easily controlled. The factors in its production may be either physical or psychic. Ether is especially dangerous to such patients as it may dissolve the lipoids of the brain cells and also affect the red blood cells. Nitrous oxide should be used in preference, as it inhibits oxidation and conserves cells. Doctor Crile also advocates the use of anoci anesthesia by injection of 1-400 nôvocaine solution into the skin, fascia, and peritoneum, to block nervous impulses to the brain. In addition he advises the use of morphine, and even scopolamine. Tables showing graphically the effects of ether, nitrous oxide, and anoci anesthesia give a much lower pulse rate and less disturbance of the temperature and respiration with the latter. The mortality is also lower.

Postoperative Renal Infection.—Dr. H. D. Dawson, of New York, believes that this occurs more frequently than is generally supposed, and that it explains many otherwise unaccountable increased temperatures and cystic symptoms after operations. Renal infection is most frequent after those upon the intestinal tract, and the constipation of patients lying in bed, or the catharsis practised to overcome this, probably accounts for many of the colon bacillus infections. These renal injections are often very insidious, and usually there are but few urinary findings early. Three types of infection are recognized: 1. Hemotogenous, 2, lymphogenous, 3, ascending. The first and last are more common. The hematogenous variety probably arises from preexisting infection somewhere in the body.

Final Results Following Operations for Ectopic Pregnancy.—Dr. R. R. Smith, of Grand Rapids, Mich., reports the subsequent course of a considerable number of such cases in which the patients were operated upon over five years previously, special note being taken as to whether these women have borne children, or have had a repetition of their ectopic pregnancy. He questions whether the prevailing custom of leaving the opposite tube, if it be healthy, is a rational one. In his opinion, the age of the patient, her social condition, and the number of children she has already borne, together with certain other factors should determine whether the opposite tube should be left or removed. Of 193 patients, 141 were reported as having excellent, good, or fair health. Fifty-two of these patients had been made sterile at the time of operation, they must be excluded. Of the 141, forty-four had subsequent normal uterine pregnancies, and twenty-one had a second ectopic pregnancy. Of those above the age of thirty years, eighteen had children and fifteen repeated ectopic gestations.

The Movable Kidney.—Dr. J. H. Carstens, of Detroit, finds that various degrees of motility all produce symptoms to a greater or less extent, and that these are often referred to the stomach and nervous system. The condition is frequently found with a poor physique. It is sometimes caused by improper training or wrong mode of living at the time of puberty, and is caused also by accidents, heavy lifting, or falls. It is often found associated with general abdominal ptosis; when the rôle of the kidney in the train of symptoms is difficult to differentiate. The symptoms do not depend upon the amount of mobility of the kidney itself. Treatment by mechanical supports is of some benefit, but permanent relief can be received only by surgical fixation. A definite diagnosis must be made, and we must be sure that the symptoms present are due to the kidney condition and not to a general ptosis. In the operation the kidney must be freed of all adhesions to the peritoneum or intestine. He describes in detail the technic of the procedure. A lumbar incision is made, the fibrous capsule split upon the greater curvature of the kidney, and flap sutured under the lumbar muscles.

Further Points in the Sterility of Women.—Dr. Edward Reynolds, of Boston, believes that sterility is dependent on extremely small changes in the organs, on perversions of function, which are independent of the gross pathologies which create ill health. Sterilities may be divided into, 1, those dependent upon conditions of the secretions which render them hostile to the life or motility of the spermatozoon; 2, ovarian conditions which result in a failure in the release of the ovum. In the first group there may be altered conditions of the mucous membranes, altered conditions in the vagina, in the cervical relations, in the uterine and tubal mucous membranes. In the treatment, which consists in careful correction of the abnormal secretions, he emphasizes the importance of a minute diagnosis, and also of complete drainage. In the second, we may have alterations of the ovaries, such as thickened capsule, multiple retention cysts, and persistent corpora lutea; and a differential diagnosis must be made. In this connection he cites seven cases of persistent enlarged ovary, due to the presence of pathological corpora lutea; where the removal of the latter was followed by pregnancy. Various surgical procedures may be called for in the different conditions met with, and any anatomical defects observed should, of course, be corrected, if possible. In the several classes of sterility sexual perversions are quite common, and these should also be corrected.

Membranous Dysmenorrhea.—Dr. K. I. Saney, of Pittsburgh, regards the term "menstrual membrane" as a much better designation, from the pathological standpoint, than "membranous dysmenorrhea." Certain changes always take place in the endometrial stroma during the degenerative stage of the menstrual cycle. Structurally the menstrual membrane is not distinctive, and it seems probable that it is only a phase of normal menstruation. It occurs much more frequently than is generally supposed, but only the severe cases associated with pain are recognized as the membranous dysmenorrhea" of the textbooks. In certain species of monkeys menstrual membrane is the usual physiological occurrence. He concludes that in human females it is relatively common, is not inflammatory, and is not attended by a high ratio of sterility.

WEDNESDAY, JUNE 18TH.

Prolapse of Uterus: Its Surgical Treatment.—Dr. FRANKLIN H. MARTIN, of Chicago, regards the Wertheim-Watkins operation as ideal for the treatment of prolapse in woman after the menopause, but thinks it not applicable during the childbearing period. In younger women he advocates the shortening, by the anterior vaginal route, of the vesicocervical bands and crossing them, thus joining a new support for the bladder, which is pushed back into the peritoneal cavity. The sacrouterine ligaments are then isolated and by means of an artery clamp, which is passed through the base of the broad ligaments, the ligaments are grasped and brought through the perforations and fastened to the anterior portion of the cervix. A proper perineorrhaphy must be done. He lengthens the posterior vaginal wall to release tension upon the cervix and the muscles between the rectum and vagina are restored. The levator ani must be completely restored to produce satisfactory results. Amputation of the cervix is avoided because it aids in preventing the uterus paralleling the vagina by acting as a lever upon a fulcrum.

Vaginouterine Prolapse and Its Effective Treatment.—Dr. E. E. MONTGOMERY, of Philadelphia, states that this is the form of prolapse where there is a hernia through the vaginal outlet, accompanied by the uterus, or the fundus may stay in position with elongation and thinning of the supravaginal portion of the cervix. In the majority of cases late in life the uterus may be removed by the vaginal route, the bladder and rectum widely separated, and the broad and round ligaments united in the median line to form a septum and floor for the bladder. Rectocele is prevented by rectovaginal interposition of the levator ani muscle. This operation has the following advantages: 1. Greater comfort to patient; 2, the bladder and rectum are brought into proper position and fixed. He does not advocate vaginal hysterectomy for all cases, but only for those specially seleeted cases where reposition of the uterus is useless, difficult, or dangerous.

Anatomy and Surgical Utility of the Sacrouterine Ligaments.—Dr. GEORGE B. SOMERS, of San Francisco, says that the ligaments of the uterus have been thoroughly studied in various animals and it is found that only those animals of upright position have uterosacral ligaments or their homologue. In the human female sacrouterine ligaments are anatomically made up of (a) musculofibrous peritoneum; (b) a fibroelastic layer; (c) a musculofascicular layer, passing from the peritoneum outward. The sacrouterine ligament is attached to the pelvic fascia, and when put upon the stretch forms folds in a direction toward the uterus. A few fibres also pass to the wall of the superior vaginal vault and tend to pull it upward. The writer pleases to call this sacrouterine ligament a "potential ligament," as it is transformed into a true, visible ligament when tension is placed upon it. The function of this ligament is to elevate and support. The lateral fibres upon contraction raise the uterus and they might be called the "levator uteri." The ligaments may be demonstrated by pulling the cervix downward and anteriorly. The writer then demonstrates by lantern slides his method of exposing these ligaments and of suturing them to the front of cervix. In this way the cervix is pulled backward and assists in keeping the corpus uteri in an anterior position.

A Study of the End Results of the Webster-Baldy Operation.—Dr. JOHN OSBORN POLAK, of Brooklyn, reports the result of 400 cases of Webster-Baldy operation, from January 1, 1908, to January 1, 1913, which have been kept under observation for from five months to five years. Twenty-four of the patients could not be traced. Of the remaining 376 women, 202 show anatomically normal pelves. Of these, 160 have had complete relief from symptoms, while thirty-nine show nothing upon examination but complain of pain, especially at the menstrual period. Two patients have died from other causes. Of the remaining 174 cases, fourteen patients had secondary operations. In some there was lateral deviation of the uterus, which may be due to faulty development or to faulty technic, as torsion of the ligament. When the ligaments are attached too low, the ovaries fall forward and downward and become adherent; or if attached too high they become adherent posteriorly to the uterus. Thirty two cases showed relapse, thirty women wore pessaries, eighteen received no benefit, ten had lateral deviation, sixteen, prolapse; two, anterior ovaries, and twenty-six thrombosis. Twenty bore normal children; thirty aborted. None had complications in labor, and only four had relapse following parturition. The success of the operation depends upon having to deal with a small uterus, cervix pointing backward, equal development of the ligaments, and upon careful technic. He concludes that the operation is indicated only when these conditions are present in selected cases. It should be avoided in those women who have varicose veins of the broad ligament, as there is great risk of causing thrombosis.

Tuberculous Salpingitis.—Dr. P. E. TRUESDALE, of Fall River, Mass., states that in 1,500 collected laparotomies, of which 600 were gynecological, there were sixteen patients with tuberculous salpingitis. The oldest was fifty-two; the youngest, sixteen. This affection is most common from twenty to thirty years of age. It is very frequently primary, there being no other demonstrable tuberculous focus. He advises removal of tubes unless there is a fibrous condition. This is the only form of salpingitis which does not seal the fimbriated end of the tube. It calls for conservative surgery without drainage, followed by the proper hygienic and dietary treatment. Results in sixteen cases: One patient died after operation from miliary tuberculosis; one died of secondary hemorrhage from wound; one died of pulmonary tuberculosis; two are in poor health. The others are apparently in good condition.

Infections in the Pelvis from a General Surgeon's Point of View.—Dr. JOHN B. MURPHY, of Chicago, considers only the postparturient infections. These should be regarded as any ordinary wound infection. The lesion may be at any part of the genital tract. The infection may spread by contiguity through the lymphatics, producing a lymphangitis, or the large blood sinuses may become the site of a septic thrombosis, with its sequelæ. Exudation may be with or without abcess formation. Peritonitis may result. These types may be distinguished by the character of the onset, and clinical course. Treatment should be based on the principles governing that of the same conditions in other portions of the body. We should not curette and loosen a septic thrombus, nor make new wounds which may become infected. Abscesses should be opened as soon as they form.

Cancer of the Stomach.—Dr. WILLIAM J. MAYO, of Rochester, Minn., considers this a curable disease. He compared the findings in 1,000 cases of carcinoma of the stomach with 1,000 of gastric ulcer, finding low acidity and absence of free hydrochloric acid in the former, and relatively high in the latter. Seventy-five per cent. of gastric carcinoma are located at the pyloric end, and ten per cent. in the cardia. Nearly all give a history pointing to antecedent ulcer or other stomach lesion. There is a definite history of ulcer in fifty per cent. An absolute diagnosis is not always possible, but we should suspect this condition early, so that operation may be of benefit. Two facts should be remembered as important for diagnosis: 1. The presence of a tumor; 2, remnants of food in the stomach ten or twelve hours after a test meal of half cooked rice and raisins. He gives the following results of operation: Mortality from exploratory operation, 0.6 per cent.; mortality from radical operation, ten per cent. in all cases; in early cases, about five per cent. Cures for five years have been twenty-five per cent., and for three years, thirty-eight per cent. In operating, a portion of the pancreas, if this is affected, may be removed and the closed duodenum sutured in this place. Moderate involvement of the pancreas does not necessarily preclude operation. Palliative operations also have a field of usefulness.

Cancer of the Uterus: Some Points to be Emphasized in the Early Diagnosis.—Dr. RUFUS B. HALL, of Cincinnati, urges that in a woman, say from thirty-seven to forty-seven years of age, any symptom referrable to a pelvic organ should be thoroughly investigated. The early symptoms of carcinoma are frequently overlooked, such as 1 a slight watery discharge; 2, irritable bladder; 3, a drop or two of blood. The last is really not an early symptom, but, like the discharge with disagreeable odor, is one of the later symptoms. Pruritus frequently accompanies the discharge, even in the earliest stages. Early diagnosis of cancer in the body of the uterus is often neglected. There is a slight watery discharge and slight bleeding. The uterus is larger than normal, freely movable, and slightly tender. The slightest manipulation with the uterine probe causes bleeding. The curette should not be used for diagnosis unless absolutely necessary, and then the examiner, if possible, should be prepared for an immediate operation.

Theoretical and Practical Foundations of a Radical Operation for Carcinoma of the Cervix.—Dr. Emil Ries, of Chicago, reviewed fundamental points to be observed in the removal of any malignant growth; especially the importance of removing all malignant tissue in one mass if possible. Theoretically, one should know all of the metastases in a given case. Practically this is not possible. He advocates the radical operation as originally described by him, which is practically the Wertheim operation. He is now considering making the operation still more extensive. It is possible to get infection at operation from tearing through the cervix or from infected lymphatic vessels or glands, even though the technic may be otherwise excellent.

Heat in the Treatment of Inoperable Cancer of the Vagina and Uterus: Method and Results.—Dr. J. F. Percy, of Galesburg, Ill., advocates the use of the cautery in the treatment of inoperable cases of the uterus and thinks the method may even be extended to certain cases which are not inoperable. For the last six years he has opened the abdomen to control the amount of heat applied. The thermometer may be used in the bladder, rectum, the peritoneal cavity. He employs water cooled specula to protect parts not to be cauterized. In six years he has had thirteen cases which he treated by cauterization with the abdomen opened. These were all inoperable cases. The results were death in four, apparent good health in seven, and two of the patients are about to die.

Experimental Transplantation of Intestine after Resection of the Sigmoid, with Special Reference to Resection for Malignant Diseases of the Pelvis.—Dr. J. Shelton Horsley, of Richmond, Va., states that upon dogs two methods of transplantation of bowel were attempted: 1. By first severing the blood supply and wrapping omentum about the bowel. 2. By transplanting segments from the small intestine with its attached mesentery. By the first method the results were uniformly poor, but by the latter method and by special technic unique with himself, dogs have lived as long as sixty-three days, when they were killed by chloroform for the purpose of examination. This method, he believes, might be especially applicable in malignant conditions involving the bowel, thus preventing the necessity of forming an artificial anus.

THURSDAY, JUNE 19TH.

Election of Officers.—The following officers were elected for the ensuing year: Chairman, Dr. E. Gustav Zinke, of Cincinnati; vice-chairman, Dr. A. E. Benjamin, of Minneapolis; secretary, Dr. Brooke M. Anspach, of Philadelphia.

Report of Committee on the Question: "Should the Puerperal Uterus be Emptied of Ovular Remains in the Presence of Infection, and If So, When?"—Dr. Joseph B. De Lee, of Chicago, reports that the questions given below were sent to 400 professors and assistant professors of obstetrics and gynecology in medical schools, of classes A and B in the United States and Canada; 200 to assistant professors and professors of surgery; sixty to authorities abroad; and for the general profession, the questions were printed in the *Journal of the American Medical Association.*

Question I: A primapara with septic abortion, at three months, fever two days, the hemorrhage negligible, the ovum intact retained: What would you do? Of 189 obstetricians and gynecologists replying, 139 cleaned out the uterus, thirty-two used expectant treatment, and eighteen treated with mild antiseptics and waited. Of fifty-one surgeons, forty-two cleaned out uterus immediately; four did nothing, and five used antiseptics and expectant treatment. Of thirty-seven Europeans, thirty-two immediately cleaned out the uterus, while five used antiseptics and expectant treatment. Of fourteen general practitioners, eleven cleaned out the uterus and three used the antiseptic and expectant treatment. The majority of those who cleaned out the uterus thought the sharp curette was dangerous and used either the finger or a dull curette. A large number packed the uterus with gauze and treated expectantly.

Question II: A primapara, with septic abortion, at three months, fever two days, hemorrhage negligible, the fetus expelled, placenta retained: What would you do? The answers were in general the same as for question No. 1.

Question III: A primapara, fourth day after full term delivery, positive evidences of uterine injection, no hemorrhage, retention of ovular remnants suspected: What would you do? Of 183 obstetricians and gyneologists, 136 cleaned out the uterus immediately, thirty-four treated expectantly, and thirty-three used antiseptics and expectant treatment. Of fifty-two surgeons, thirty-six removed the remnants, four used expectant treatment, and twelve used antiseptics and expectant treatment. Of Europeans, twenty-seven used the first method, four the second, and seven used antiseptics. Of thirteen general practitioners, eight removed the remnants and five used antiseptics and expectant treatment.

Question IV: If you believe in active interference: (a) When do you do it? Of 154 obstetricians and gynecologists, 128 treated immediately, eight within twenty-four hours, and eighteen acted later; surgeons, forty-two at once and nine later; Europeans, twenty-four at once, seven within twenty-four hours, and more later.

(b) How do you do it? Of those who answered 113 used curette, seventy a dull curette, nineteen a sharp curette, twenty-four did not specify, 127 obstetricians and gynecologists used the finger with or without it being covered with gauze, thirty-nine used tampon.

Question V: What do you do when hemorrhage complicates sepsis? Treatment varied. Many used tampon, others used curette or finger to remove remains.

Question VI: If you believe in trusting to nature when ovular remnants are retained, how long do you wait before operating? Nobody would answer this question.

Question VII: Do you try to distinguish between sapremic and bacteriemic states before operating? About fifty per cent. thought they could determine.

Question VIII: Do you make any distinction between the treatment of sepsis after abortions and that after full term, or near full term delivery? Fifty-seven gynecologists and obstetricians made some difference, ninety did not, but fifty-three were more active in abortion. Of the Europeans, nine were more active in abortion, thirteen less active.

Doctor De Lee concludes by giving his own ideas in answering the questions. *Question I:* Try to learn if there is a perforating injury of the uterus which if present indicates an immediate laparotomy. If no perforation, the uterus may be packed with iodized gauze, and again on the following day. If uterus does not expel fetus, may use finger. *Question II:* Use same treatment. May very rarely use large half sharp curette. *Question III:* Do not invade the uterus. *Question IV:* Wait a few days to see if nature expels. Then may use iodized gauze if necessary. *Question V:* Tampon, and repeat once or twice if necessary. *Question VI:* Trust to nature for a few days. *Question VII:* Cannot absolutely determine. *Question VIII:* In septic abortion invade with finger or curette with dull curette. He says that he is becoming more and more conservative, and inclined to give nature a chance.

Biochemical Factors in the Causation of Uterine Hemorrhage.—Dr. J. Riddle Goffe, of New York, says that experiments conducted under his direction show that the systemic blood does not change during menstruation. It is the menstrual blood that has changed and lost its powers of coagulation; probably it is affected in some way by the endometrium. This blood will inhibit the coagulation of normal blood. He concludes that there is an antiferment in the menstrual blood. There are some uterine hemorrhages which cannot be explained on anatomical grounds. These may be explained on the biochemical basis as designated above.

Treatment of Hemorrhage from Nonpregnant Uterus.—Dr. John B. Deaver, of Philadelphia, treats the subject in a general way, giving etiology, symptoms, and treatment of the various types. He emphasizes the point that any underlying cause must be discovered and does not favor the routine use of the curette. In a few obscure cases, and after exhaustive examination has been made to find the cause, a hysterotomy is advised if it can be undertaken by an experienced surgeon.

Intraabdominal Adhesions.—Dr. R. C. Coffey, of Portland, Ore., has made an exhaustive study of the formation of abdomenal adhesions in experiments upon hogs and dogs and clinical observation in operative cases. He believes there is an inverse ratio between the danger of sepsis and the tendency to formation of adhesions. In those cases operated upon repeatedly for abdominal adhesions it is rare to find general sepsis. Ordinary care in technic should always be practised, such as asepsis, careful handling of viscera and adequate protection. Several general rules of treatment are emphasized, each to be applied to suit the case: 1. May cover all denuded areas with peritoneum when possible. 2. May roll denuded intestine in its mesentery. 3. May split the mesentery of the gut and use the flaps, which is very difficult. 4. May use omentum, especially in the region of the gall bladder. 5. In some cases may fold peritoneum. 6. May suture sigmoid over denuded areas in pelvis. 7. May hold an organ away from location of denuded area—applied in treatment for Lane's kink; or in ptosis of the stomach with adhesions holding it down and thus producing severe symptoms, it may be sutured to the abdominal wall and the lesser omentum shortened. 8. In cases of diffuse adhesions of the bowel lateral anastomosis may be made without severing the adhesions. 9. In recurrent increasing adhesions where patient has had one or several previous operations, several wicks of gauze protected with rubber tissue should be used to keep bowels away from denuded area. He emphasizes the point that as large an amount of gauze should pass through the abdominal wound as there is in the abdomen. This drainage is not to be removed for at least a week. He explains the good results of this treatment by (a) complete drainage of the serum abundant in these cases, (b) a double line of granulation tissue which prevents adhesions.

Care of the Umbilical Stump: A Bacteriological Study.—Dr. Fred L. Adair, of Minneapolis, states that the basis of this paper is a bacteriologic study of material removed from the umbilical cord and surrounding skin immediately after birth. Sixty-five cases were studied with unsatisfactory cultures in three, no growth on agar plates in seventeen, nonpathogenic organisms in thirty-three and pathogens in twelve (staphylococci in eight and coli group in four). This is supplemented with a study of the clinical courses of 244 cases. Fifty-eight were treated by close ligation and the use of alcohol. One hundred and eighty-six were treated with tincture of iodine (one half strength) in addition. About twenty-four per cent. of the former had fever of 100° F. or over thirteen per cent. were jaundiced, of which four hed fever. The average loss of weight was 246 grammes. There was slight local evidence of infection of the navel in five cases, none of which had fever. The cord came off in five and one half days on an average. In the latter series 22.58 per cent. had fever and eight per cent. were jaundiced, five of which had fever. The average maximum weight loss was 228 grammes. There was slight local evidence of infection in ten, of which three had fever. The cord came off in seven and a quarter days on an average. The conclusions are as follows: 1. The cord is contaminated with pathogenic or nonpathogenic organisms at or immediately after birth in a large percentage of cases. 2. It is possible to quite effectively combat serious umbilical infections by comparatively simple methods; as shown by this report of over 200 cases with no mortality from this cause. 3. There seems to be little choice between the two methods used in these cases. 4. That jaundice in the newborn is quite frequently associated with fever. It would not be illogical to suspect that this might originate by some agent introduced through the umbilical vein or lymphatics. 5. Febrile reactions are common in the newborn and are associated with other disturbances, such as a high primary weight loss and jaundice. They are due no doubt to many causes, but we as obstetricians should see that those due to infections entering at the umbilicus are reduced to a very small minimum.

The Serodiagnosis of Pregnancy and Its Place in Practical Obstetrics.—Dr. Henry Schwarz, of St. Louis, has used the dialysization method of Abderhalden and finds the anhydrin more reliable than the biuret reaction. The optical method is technically more difficult and he has not tried it as yet, though it is more accurate. In twenty-one cases known to be pregnant it was positive. In four puerperal patients it was positive. These observations extended from twelve days after the first period which was missed to fourteen days post partum. It was correct in eight cases where it was the only means of making a differential diagnosis. While it is an important means of diagnosis, there are sources of error of which we do not at present know. There are much greater possibilities in opening up new methods of study of the various toxemias of pregnancy. This means of study may give us ultimately valuable means of treating these conditions.

Dr. Losee, of New York, reported observations at the New York Lying In Hospital on 563 cases, 193 of which were nonpregnant, and 370 pregnant. There was faulty technic in some of these; so he reports only the last 150 cases. Of these, ninety-seven were pregnant, and 91.4 per cent. gave positive reaction; there were fifty-three nonpregnant, of which ninety-five per cent. gave negative reactions. It is important to control with nonpregnant women. There were four carcinoma cases with negative results.

Doctor Heaney, of Chicago, reports thirty cases with uncertain results. He doubts the specificity of the reaction.

Doctor Echols, of Milwaukee, reports satisfactory results in a few cases.

The Essentials of Sanatorium Treatment of Tuberculous Gravidæ and Puerperæ and Their Children.—Dr. Charles S. Bacon, of Chicago, says that each year there are 32,000 women with tuberculosis pregnant in the United States. One fourth of all women dying of tuberculosis in the child bearing period are gravidæ. One third of tuberculous gravidæ die within one year after labor. Three fourths of children under five years old who die of tuberculosis are born of tuberculous mothers. Special provision should be made for sanatorium treatment of tuberculous women who are pregnant. There are about 10,000 such women who need treatment each year in the United States. Such women should remain in sanatoriums and be more or less isolated from their children for about three months. Mother's milk should be used as far as possible in feeding the infants.

The Value of Abdominal Measurements in Pregnancy: A Statistical Study.—Dr. Alfred B. Spalding, of San Francisco, has studied the height of the fundus uteri, and tried to find some method of determining the period of gestation. In 167 of 300 cases the labor began when the height of the fundus was between thirty-four and thirty-seven centimetres above the pubes. In these cases the weight of the infants was from 3,275 to 3,395 grammes. In 411 cases measurements were taken at different weeks of gestation. From these measurements he deduces the following rules: In the seventh month two added to the height of the fundus in centimetres gives the week of gestation. In the eighth month add three, four in the ninth, and five in the tenth. He thinks this is of value in estimating the period of gestation in three quarters of the cases. It may also be of value in determining the size of the child.

Local and Spinal Anesthesia in Gynecology and Obstetrics.—Dr. George Gellhorn, of St. Louis, states that cervical operations, such as amputation, dilatation, and curretage of the uterus, may be successfully undertaken with novocaine used for local anesthesia, either by infiltration or nerve blocking. He repairs vesicovaginal fistulæ by injecting a weak novocaine solution into the bladder. Spinal anesthesia with novocaine has its definite place in selected cases, especially those where general anesthesia is contraindicated, but definite details of technic must be followed. Especially is spinal anesthesia applicable to gynecological operations. The writer reports sixty-three cases in patients whose ages varied from seventeen to sixty-four years. In one the anesthesia was not complete, six patients required a few whiffs of ether, one patient showed collapse. Vomiting was a frequent occurrence. No deaths occurred.

Spinal Anesthesia in Gynecology, Obstetrics, and Abdominal Surgery.—Dr. W. Wayne Babcock, of Philadelphia, has investigated the specific gravity of the spinal fluid in 100 cases and found it to be constant within one point at 1,065. The direction of the flow of the fluid injected into the spinal canal may be controlled by the position of the patient and the specific gravity of the fluid. The rate of diffusion is very slow. Spinal anesthesia is virtually a nerve root anesthesia and makes the most efficient nerve block. The conducting paths of the cord are not impaired. Spinal anesthesia affects the vasomotor system. It is dangerous in persons with low tension. It is correspondingly safer in those with overtension. He has used this method in 3,759 operations on 3,000 patients. He reports two deaths in cases of operation in the upper abdomen. He considers the method more dangerous in these operations, but thinks it is well adapted to surgery of the urinary tract, as the urinary findings were usually negative following these operations. Dr. Babcock considers ether a safer anesthetic for general use. Spinal anesthesia should be especially avoided in cases of myocarditis and low tension.

The Thyroid Gland and Its Degeneration in Relation to Obstetrics and Gynecology.—Dr. Channing W. Barrett, of Chicago, believes there are other etiological factors than sex relations in the development of goitre. These may operate in combination or independently. There is a close relationship between the physiology and the pathology of the genitalia and the thyroid, especially in the female. Pregnancy is often associated with and aggravates disease of the thyroid, which in turn may be a serious complication of pregnancy and labor. It may enlarge after each pregnancy. Fortunately, advanced cases of hyperthyroidium do not often become pregnant. He advises that the developing girl should receive more attention and be treated by appropriate measures.

SECTION IN PATHOLOGY AND PHYSIOLOGY.

TUESDAY, JUNE 17TH.

Relation of Internal Medicine to Pathological Physiology.—Dr. A. W. Hewlett remarks that direct causative therapy is employed in only a few diseases. Treatment is, however, usually directed to disturbed function. Study of pathological physiology in the clinic is difficult because condition cannot be created, and complicating factors cannot be eliminated. Animal experimentation is much more certain. The burden of the work in pathological physiology must be upon the clinician. Specialists in laboratory sciences should assist in every possible way Limitation of private practice is desirable. Well trained assistants are necessary.

Symposium on Diplococcus and Streptococcus Infections.

Epidemics of Streptococcus Sore Throat.—Dr. J. A. Capps discusses the three epidemics in Boston, Baltimore, and Chicago. Most striking difference from ordinary sore throat is the occurrence, in fatal cases, of a peritonitis without evidence of rupture from any viscus. There is frequent complications, as pleurisy, endocarditis, etc. Relation to milk supply is certain in each epidemic. Proportion of contact cases is small. In the Chicago epidemic streptococci were found in the milk, and a streptococcic mastitis was found in the cows. There was also considerable sore throat among the employees and milkers. Doctor Davis has shown experimentally that streptococcic mastitis may be produced in cows from streptococci on the milker's hands. A caked udder is not a necessary accompaniment of this condition, therefore mastitis may have been overlooked in the Boston and Baltimore epidemics. An ultimate origin of the infection from streptococcic mastitis of human origin gives the best explanation of the observed facts. Whether specific bovine mastitis may become virulent for man is unknown.

The Relation of Streptococci to Arthritis.—Dr. D. J. Davis observes that varieties of arthritis may be distinguished by their etiology when this is known, as gonococcic, traumatic, etc. Septic sore throat is often followed by arthritis. *Streptococcus rheumaticus, Streptococcus mucosus,* and hemolytic streptococci frequently attack the joints; *Streptococcus viridans* rarely does. He gives a report of forty-two cases of arthritis in which the tonsils were removed. In thirty-eight cases streptococci were obtained in practically pure culture from the deeper tissues of the tonsils; surface cultures are contaminated. Blood cultures are negative in the majority of cases. Fluid from the joints often is sterile. After removal of the tonsils there is always marked improvement, often a complete cure. Autovaccines often seem to hasten cure; sometimes act as a specific. They never do any harm. A hemolytic streptococcus was found in nearly all cases. Injection intravenously in rabbits (about 200 animals) invariably produces multiple arthritis. Symptoms usually appear a few days after inoculation and continue from one to three weeks. The proliferative changes may lead to marked deformity and cripple the animal badly. In ten per cent. of the animals an endocarditis developed.

Articular and Muscular Rheumatism.—Dr. E. C. Rosenow states that there is a general agreement that rheumatism is an infectious disease, but there is a difference of opinion as to the exact etiological factor. Negative results have usually been obtained from blood cultures and cultures from the joint fluid. By inoculating in agar (thus producing a partial anaerobic condition) Rosenow obtained streptococci from the joint fluid in thirteen out of fifteen cases of acute articular rheumatism, and from the blood in four out of six cultures. Organisms isolated from man in the acute stage reproduced a similar disease in animals. The name *Strepococcus rheumaticus* is suggested by Rosenow for the organism producing acute articular rheumatism.

Classification of Pneumococci by Immunity Reactions.—Dr. A. R. Dochez and Dr. L. P. Gillespie say that their object of research was to obtain a specific therapy for lobar pneumonia. White mice were employed. The protective serum and the culture were mixed and injected intraperitoneally. From sixty-two cases of human lobar pneumonia four groups of organisms were recognized by the protective test. Agglutinative tests are of some assistance. The groups are highly specific. They do not give cross reactions. A specific therapy seems possible.

WEDNESDAY, JUNE 18TH.

Physiology of the Stomach in Man and in Dogs.—Dr. A. J. Carlson reports experiments on a man fed through a gastric fistula. The esophagus was completely closed as the result of a burn sixteen years before. Records were made by introducing a delicate balloon into the stomach and connecting it with a manometer. Patient feels moderate hunger at the beginning of a contraction and strong hunger at the apex of the contraction. Strong hunger is felt during a tetanic contraction. No hunger sensations are felt when the stomach is quiescent. An irritation causing a contraction of the stomach produces a hunger sensation. With some possible exceptions, the sight or smell of food does not influence stomach movements in man. Inhibition of movements is produced by tasting and chewing of food, by acidity, by tea, coffee, beer, wine, etc. In the dog any excitation produces inhibition. After section of sphlanchnics and vagi inhibition is lessened but still persists. Movements of the empty stomach also persist after section of all the nerves.

Movements of Empty Stomach in Dogs during Pancreatic Diabetes.—Dr. A. B. Luckhardt (reported by Dr. Carlson). Contractions of the stomach occurred throughout the course of the disease, even when the animal was greatly emaciated.

Fat Absorption by the Mammalian Stomach.—Dr. C. W. Greene and Dr. W. F. Skaer state that some fat is present in the epithelium of the normal stomach. There is a great increase in the fat content of the epithelium after feeding with olive oil. Normal condition is again reached about twenty-four to thirty hours after feeding. The droplets of fat are much larger in young than in adult salmon. Fat absorption from the stomach was found also in fishes, frogs, and snakes.

Physiology of Stomach and Duodenum Observed Radiographically.—Dr. L. G. Cole made observations on the human stomach. The first part of the duodenum acts with the stomach. The author calls this segment the pilleus ventriculi, or "cap." The function of the cap is that of a reservoir to receive the chyme at the end of the gastric systole. There is no periodic opening and closing of the pylorus. Some of the gastric contents escape into the cap at each systole. The pylorus is narrow at first but remains fairly widely open in the later stages of digestion. There is no propulsive peristalsis in the duodenum as in the stomach. Numerous radiographs were shown illustrating the movements of the stomach and the appearances of the pilleus ventriculi, or cap. What the author means by systole and diastole was not entirely clear.

Physiological Properties of Diaphragm Muscle.—Dr. F. S. Lee and Dr. A. E. Guenther remark that the diaphragm muscle of cat is more nearly related to red than to pale muscle. Pale muscle shows a rapid contraction and a slower relaxation; red muscle shows a shorter contraction curve and a much slower relaxation. Red muscle survives much longer than pale muscle and is capable of doing much more work.

Functional Renal Tests.—Dr. J. H. Agnew gives a comparison of the results of phenolsulphonephthalein elimination and the retention of nitrogenous substances in the blood. The hypobromite method gives a fair index of the urea content of the blood.

Clinical Study of Hypercholesteremia.—Dr. H. B. Schmidt says that the amount of cholesterin in the blood of normal individuals is constant. It is, however, affected by the amount taken in the food; it falls on a protein diet. There is a definite increase in the blood in diabetes, which is of clinical interest in that xanthoma may occur in this disease. These tumors contain large amounts of cholesterin. There is also an increase in the blood in jaundice, chronic interstitial nephritis, and arterio sclerosis. No reason is known for this increase of cholesterin.

Functional Activity and Depression in Nerve Cells.—Dr. D. H. Dolley says that blood from fatigued animal, sarcolactic acid, and monopotassium phosphate do not produce the anatomical changes peculiar to functional activity. By prolonged administration, however, waste products produce the anatomical changes of functional depression. The chromatin is the source of energy in the nerve cell. The fatigue of excitation leads to exhaustion of the chromatin, this substance being used up faster than it is formed. Depression inhibits the formation of chromatin. The irritability of the cell is lowered in either case. The highly specialized cells of the cortex are exhausted in a few hours. Days or even weeks are required to exhaust the nerve cells of a crayfish. Nerve cells may be completely exhausted. Waste product fatigue is secondary to organic fatigue. Old age represents a final fatigue.

Isolation of Bacillus Fusiformis from the Blood.—Dr. W. P. Larson gives an extensive review of the literature. Report of case: Duration of illness, seven weeks. Symptoms, septic temperature, night sweats, pyorrhea alveolaris, etc. Extensive necrosis of superior maxillary bone was present. Smears from the necrotic area gave large numbers of spirilla and fusiform bacilli. Blood culture two days before death gave a pure culture of the organism. This is the first time that *Bacillus fusiformis* has been obtained from a blood culture. A pure growth was obtained by anaerobic incubation in acetic agar. Spirilla develop from the fusiform bacilli on culture media. Autopsy revealed extensive necrosis of the superior maxillary bone, marked enlargement of the spleen, etc.

THURSDAY, JUNE 19TH.

Experimental Nephritis Produced by Tartrates.—Dr. F. P. Underhill, Dr. S. Goldsmith, and Dr. H. G. Wells, administered sodium tartrate to the rabbit or dog which produces extensive and complete necrosis of the epithelium of the convoluted tubules and sometimes also of Henle's loops. The amount of urine excreted is greatly reduced and nitrogen elimination is markedly diminished or completely checked. The tartrate poisoned kidney is impermeable to urea injected in the vein of the ear, but sodium chloride is eliminated readily. The glomeruli must be concerned with the excretion of sodium chloride. This affords an excellent opportunity to study the function of different parts of the renal tubule. No other known substance has such a specific action on the convoluted tubules. Rochelle salts administered to man in doses considerably above therapeutic limits produce no albuminuria or other signs of nephritis. An animal with an alkaline urine may die of nephritis.

Pathology and Clinical Symptoms of Simple and Exophthalmic Goitre.—Dr. L. B. Wilson reports 1,200 cases of exophthalmic goitre and 2,400 cases of simple goitre. Clinically, we may distinguish acute and chronic types of goitre. The former have an average duration of nine months before coming to the clinic; the latter, fourteen years. Of exophthalmic goitres seventy-nine per cent. show hypertrophy and hyperplasia; eleven per cent. are of a regenerative type (new acini); ten per cent. are adenomas; 0.3 per cent. are of a diffuse colloid type. Clinically, we may distinguish toxic exophthalmic and toxic nonexophthalmic types The former show hypertrophy and hyperplasia. The clinical symptoms are always coordinate with the degree of hypertrophy and hyperplasia.

Iodine Content of Human Thyroid.—Dr. E. V. Smith analyzed 200 thyroids by Hunter's method. The average iodine content to the gramme of dried substance for the normal thyroid is 2.5 mg.; for colloid goitre, 1.5 mg.; for hyperplastic glands, 0.5 mg. to 1 mg. Glands showing marked hypertrophy and hyperplasia average 0.54 mg. Ligature of the bloodvessels of a hyperplastic thyroid apparently produces a slight decrease of the iodine content. Younger glands contain more iodine to the gramme of dried substance than older ones; larger glands less than smaller ones. As a rule, the denser the colloid the greater the iodine content. Pure fetal adenomas have a very low iodine content. Iodine poisoning produces symptoms resembling hyperthyroidism. Administration of iodides for hyperthyroidism is contraindicated.

Effects on Blood Pressure of Goitre Extracts, Goitre Serums, and Other Substances.—Dr. A. H. Sanford says that extracts of most tissues depress blood pressure and a tolerance may be established to subsequent injections. No tolerance to brain tissue extracts develops. Choline is probably the depressor substance. Extracts of hyperplastic thyroid (exophthalmic goitre) cause a marked fall of blood pressure, followed by tolerance. Extract of a sarcoma of the testis gives a similar reaction. Extracts of other tissues give less marked depression. The hyperplastic thyroid contains a powerful depressor substance.

Cloudy Swelling.—Dr. E. T. Bell states that the gross features of cloudy swelling may be present in the absence of the classical microscopic picture and vice versa. Edema and fatty metamorphosis play an important part in the production of the gross picture. The microscopic appearances are best judged in fresh unstained preparations without the addition of any fluid. Fixation or even freezing often causes the disappearance of the granules. Neither the Altmann granules nor those shown by intra vitam staining are identical to any considerable extent with those of cloudy swelling. Cloudy swelling in the kidney of the rabbit consists in an increase of the dark tubules—some dark tubules are present normally. The albuminous granules in the kidney cells of the rabbit are much larger than those in the human kidney. The term cloudy swelling should be employed only in gross description. A qualifying phrase may be added to designate the accompanying microscopic appearances.

Local Lesions from Salvarsan and Neosalvarsan.—Dr. H. E. Robertson experimented with intramuscular infections in dogs. After two hours there was found local hemorrhage, edema, and pigment from the drug. After two and three days there is extensive necrosis of muscle fibres and infiltration of polymorphonuclear leucocytes. The leucocytic infiltration is sometimes so great that the lesion is almost an abscess. Tissue proliferation begins in about one week. There is no essential difference in the lesions produced by salvarsan and neosalvarsan. The bichloride, succinimide, salicylate, and cyanide of mercury produce lesions resembling those of salvarsan. The lesions in two human cases resembled those produced in dogs.

Experimental Cirrhosis of Liver.—Dr. A. L. Grover gives a review of the methods of producing cirrhosis. All methods consist in producing repeated injuries to the liver cells. Author produced cirrhosis in rabbits by chloroform anesthesia forty minutes a day on three days, followed by intravenous injection of *Bacillus coli.* Cirrhosis was produced in one rabbit by administration of fifteen c. c. of forty per cent. alcohol daily for five months.

Relation of Acapnia to Shock.—Dr. H. H. Janeway says that shock may be produced by artifical respiration (sixty to sixty-five to the minute). The shock in these experiments is due to increased intrabronchial pressure and varies with the amount and time of application of this pressure. Rise of intrabronchial pressure causes a fall of blood pressure, probably because it delays the circulation of the blood. Shock is not due to decrease of carbon dioxide in the blood, since it occurs when provision is made against the loss of this substance. A dog in which extreme shock has been produced may be rapidly and completely resuscitated by the immediate transfusion of blood from a normal dog, therefore shock is not due to exhaustion of the nerve cells. If the blocking off of the nerves is of value in a surgical operation it is not because it prevents the exhaustion of the nerve cells.

(*To be continued.*)

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

May 6, 1913.

Influence of Digitalis on the Recovery of the Heart after Physical Work.—E. Bernouilli states that as the result of experiments during rest there is more or less slowing of the pulse, while at the same time it grows fuller, but there is no change in the form or rhythm. Fraenkel, who experimented with strophanthus on a large number of healthy subjects, found that this slowing of the pulse occurred almost regularly while the blood pressure remained unchanged. The recovering pulse curves show no very noticeable differences between the digitalis and the normal curve, after physical work. Digitalis is not a heart tonic in the ordinary sense of the word. A stronger action is not to be expected for healthy hearts, nor for failing hearts with good compensation. It is also not a prophylactic in those patients where postoperative pneumonia is to be feared, since the heart can immediately be brought under control with intravenous injections of digitalis at the first occurrence of heart disturbance. On the other hand, digitalis preparations are indicated in most of those hearts where we find beginning incompetence; but even in these we only await the opportunity for favorable action when absolute rest in bed is prescribed. Also, an incompetent heart will not become more resistant under digitalis. The heart cannot recover itself as long as the same work which caused loss of compensation is put upon it. The same is proved by the not infrequent observations in which, at first, digitalis proved to be completely ineffectual, whereas its good results are demonstrated by the second or third attempt after the heart has had rest, so that it can recover itself.

Severe Melena Neonatorum Cured by Defibrinated Human Blood.—A. Merckens questions how a newly born child suffering from melena apparently lost the normal fluidity of its blood from a scarcity of thrombin. This resulted in continuous bleedings of mucous membranes, especially those of the rectum. By the addition of healthy defibrinated human blood the organism received blood fluidity ferments, which either directly brought about fluidity of the blood or indirectly aided the formation of thrombin. The blood findings are interesting as regards the hemoglobin content and the count of the red blood corpuscles, which are just the reverse of the observations of Bennecke. While the latter formed a diminution of the hemogloblin content and the red blood corpuscles in immediate connection with the transfusion of defibrinated human blood in pernicious anemia, the author proved an increase in these, as is shown by the following figures: November 23, injection. November 25, hemoglobin, forty-six per cent.; red blood corpuscles, 1,150,000. November 29, hemoglobin fifty per cent.; red blood corpuscles, 2,390,000. December 21, hemoglobin, sixty per cent.; red blood corpuscles, 3,290,000. The white cells showed a marked oversupply of lymphocytes, especially marked in the last count, which exceeds the normal limit from fifteen to twenty per cent., and a corresponding decrease of neutrophile nucleated leucocytes. This result of injection of defibrinated human blood permits of the method being used for patients with a tendency to fatal hemorrhage, especially in melena, in which, perhaps, for the first time best results have here been obtained.

Direct Treatment of Tuberculous Peritonitis with Iodine Preparations.—A. Falkner gives a report of three patients, two with moist and one with dry peritonitis of tuberculous character, which shows results analogous to Hofmann's; a shorter time for cure and no injurious effects. Tincture of iodine was used in the moist peritonitis and iodovasogen in the dry aided also with iodipin enemata. In spite of the adverse opinion of Roving, the tincture of iodine is, according to Bier, positively accepted as curative in tuberculous tissues.

May 13, 1913.

Experimental Radiological Studies in the Physiology and Pathology of the Digestive Tract.—R. Lenk and F. Eisler state the results of their experiments carried out on a large number of healthy individuals who were free from gastric disturbances. Bismuth in solution was used as a meal to make possible the even distribution of the agent. As a result of their first series of experiments it was concluded that gastric disorders may be ascribed to the chemical processes in the stomach itself, especially the disorder of overacidity, and not to the motor disturbance. By future experiments they hope to prove which of these relations is the more important.

Contribution to the Chemotherapy of Tuberculosis: Experiments with Borcholin (Enzytol).—H. Mehler and L. Ascher state that their observations are analgous to those of Werner Szecsi. They were never able to cure animals with the colloids alone, but this was effected with the cholin salts alone, without the addition of colloids. These favorable results with cholin salts were, however, considerably hastened by the addition of colloids. Moreover, the histological changes were the same in those animals treated with cholin alone as in those treated with cholin colloid mixture. The method remained the same, but the addition of colloids simply hastened the time of the reaction. The healing of tuberculous lesions in patients seems to have been hastened more by combining borcholin with copper; of course, sometimes with marked reactions.

May 20, 1913.

Local Therapeutic Experiments with Thorium Chloride in Carcinoma and Sarcoma in Animals.—A. Caan reports considerable success in the treatment of sarcoma rats and cancerous mice by the local injection of thorium chlorides. The remedy will next be employed intravenously, and should similar results be secured he believes that an advance of far reaching importance will have been made in the therapeutics of malignant tumors.

The Biological Diagnosis of Pregnancy.—B. Strange states that his experience with Abderhalden's dialysis method of demonstrating the existence of pregnancy biologically will, at least, permit of a brief report of his findings, atlhough he has not yet conclusively proved its value. At first he examined the serum of only positively pregnant women, and in seventy-three of these a positive reaction was obtained in every instance, or 100 per cent. Of those positively nonpregnant only five were at the author's disposal, so that he does not yet feel justified to express a final opinion concerning the test. In these few cases, however, where he could exclude all errors, Abderhalden's reaction was always negative.

Salvarsan Treatment of Anthrax.—Mokrzecki relates the treatment of a patient severely infected with anthrax. The man had a large swelling about the size of the fist on the right side of the throat and on it was a spot with a dark crust, surrounded by many pustules. There was also enlargement of the neighboring lymphatic glands. The pus was found to contain anthrax bacilli; morning temperature 100.8° F. The abscess was opened by means of the actual cautery, for which the characteristic tolerance of patients affected with anthrax was shown. An intravenous infusion of salvarsan was then given. After three hours the temperature had risen to 103.6° F., and at the end of eight hours it had dropped to 100.4° F. On the following morning the temperature was 97° F. and the patient's general condition was much improved. The swelling was greatly diminished. After six days the infiltration of the glands and skin had disappeared and on the tenth day the crust fell off. The patient felt well after the second day; temperature not higher than 98.7° F. No anthrax bacilli were found in blood withdrawn by hyperdermic needle. The author concludes that salvarsan was the principal factor bringing about the cure and that it is to be preferred to the usual method of sterilization by injections of carbolic acid around the carbuncle.

May 27, 1913.

Lymphacytosis of Asthenics and Neurasthenics and Its Clinical Value.—R. Hoesslin states that the lymphacytosis of patients affected with Basedow's disease is positively not a constitutional ailment, because aside from this disease such patients always have additional peculiarities. The blood of many who were formerly treated for seeming heart neurosis at first appeared normal, and a pronounced lymphacytosis with neutrophilic leucemia did not appear until the Basedow symptoms were manifest. The author states that of a group of seventy-four patients, among whom the exceptionally ill are without anatomical findings of importance, forty-four were found having leucopenia. One half of this group consisted of marked asthenics. They only felt well temporarily after long residence at the seashore, mountain, or summer resorts, and when again taking up the ordinary duties of life they soon became ill. One of the leading characteristics of this group was pallor (not due to anemia, chlorosis, or lack of hemoglobin or red blood corpuscles), and lymphacytosis was frequently found. There were also found ptoses of the stomach, kidney, and colon, combined with stenocardia of long standing. Prolonged absence of menstruation was noted, as was also a slight elevation of temperature.

LYON MÉDICAL.

May 18, 1913.

Primary Cutaneous Sarcomatosis Following a Punctured Wound.—M. Favre and P. Savy report the case of a cemetery guardian aged fifty-five years, who, while cleaning a vault, received a wound in the right popliteal space from a pointed piece of iron work. Three weeks later there appeared at the exact seat of the puncture a small red pimple, which grew rapidly larger, was cauterized without success and was soon followed by the appearance of other nodules on the forehead, in the right axilla, and after about eight months, over the entire body. An unusual feature of the affection was the degeneration of the nodules into ulcers, which finally became confluent over wide areas. A few days before death the nodules suddenly subsided and the ulcers lost their purplish limiting zone. No visceral lesions were found. Histologically, the tumors showed polymorphic, globose cells, including giant cells, and numerous karyokinetic figures.

Tuberculous Encephalitis.—L. Bériel reports a case illustrating clearly the fact that tuberculosis may sometimes involve very extensively the brain substance with but little disturbance of the meningeal coverings.

PRESSE MÉDICALE.

May 28, 1913.

Rational Treatment of Nasal Hydrorrhea.—Lermoyez looks upon nasal hydrorrhea as a manifestation, in most instances, of neuroarthritism. The pathogenetic triad of conditions accountable for the arthritic diathesis is always present, viz., excessively sedentary life, overeating, and excessive intellectual activity. Migraine, asthma, and hydrorrhea may be observed to alternate in succeeding generations of the same family, the nasal condition occurring chiefly in the female sex. Eliminating the exceptional cases of discharge of cerebrospinal fluid through the nose and of serous discharge from the antrum, nasal hydrorrhea is in general a vicarious eliminatory process, the renal function apparently being deficient in these patients. The rational treatment is therefore both to diminish toxic waste production and promote renal activity, and this the author accomplishes, with gratifying results, by ordering rest in bed and a milk diet. Local treatment should consist merely of hot air insufflations. Atropine and strychnine were formerly used with success by the author, but are now unnecessary. If these patients are sent to health resorts, the ones selected should be those suited for renal patients and not those for disease of the respiratory tract. Renal activity should be encouraged and kept under constant observation.

Suprapubic Cystotomy with the Bladder Empty.—F. Lastaria, in view of the fact that several deaths have followed distention of the bladder with air previous to cystotomy, the gas having been forced into the space of Retzius and entered venous channels, does away with distension altogether and operates on the empty organ. The bladder is first washed out through a Nelaton catheter, then thoroughly emptied by suprapubic pressure. The patient is then placed in the Trendelenburg posture, sometimes with only slight inclination, and the incision made. The intestines tending to sag toward the diaphragm, a species of aspiration is produced in the pelvis which causes the peritoneum to recede from the muscular layer and tends therefore to prevent injury to it from the surgeon's knife. By making pressure at the line of reflection of the peritoneum or, if this is not visible, behind the upper border of the pubis, the umbilicovesical fascia, which continues downward in the line of the parietal peritoneum after the reflexion of the latter backward, is broken through, and the operator can then freely retract the peritoneum from the bladder, which is easily recognized both through its anatomical position and its two parallel veins near the midline. The bladder is then opened. The author has carried out this procedure in about forty cases, including three infants and two men aged seventy, without the least difficulty.

SEMAINE MÉDICALE.

May 28, 1913.

Intermittence in Stammering.—Chervin points out that stammering is subject to intermittences, i. e., frequently disappears, not only for a few hours, but sometimes for one or more days, or even several weeks. Generally there are successive periods of increase and diminution of stammering in the same day. These variations are emotional in origin. Knowledge of this fact is of paramount importance in the treatment, which must include a process of training of the patient so that he may resist and conquer the tendency to emotional perturbation under even slight stress.

NOUVELLE ICONOGRAPHIE DE LA SALPÊTRIÈRE.

November-December, 1912.

Three Cases of Tumor of the Cerebellopontine Angle.—Moniz contributes a thorough and detailed clinical study of three cases of cerebellar tumor, one of which is also accompanied by a necropsy report. In none of the cases was an operation performed. In the summary of the symptoms present it may be noted that headache and somnolence occurred in each case, vomiting in two, and choked disk in only one. Lumbar puncture revealed overtension in one case, but lymphocytosis was absent from all cerebrospinal fluids. All of the patients were affected with vertigo, tending to fall to the side of the lesion (right sided in each case). Electrical vertigo (Babinski) was uniformly positive (vertigo appearing with less current with anode in ear on side of lesion than with cathode). Deafness was complete on side of lesion in two cases, incomplete in one. Diminished sensation in the distribution of the trigeminus, abolition of the corneal reflex (Oppenheim), and disturbances of the facial were localized on the side of the lesion in each case. As to symptoms distinctly cerebellar, may be mentioned dysmetria, adiadokokinesis, and cerebellar catalepsy, which were present in all. Neither asynergia or scanning speech was observed.

Acromegaly and Uremia.—E. Pallasse and J. Murard report a case of acromegaly which came under observation while the patient was comatose from uremia. Treatment, including renal decapsulation, was unavailing, and at necropsy a tumor of the hypophysis was found. On the basis of this observation, as well as references in literature in which the association of these two conditions has been noted, the authors speculate as to the possibility of a casual relationship between them.

Contribution to the Study of Obesity in Paresis.—A. Obregia, C. Parhon, and C. Urechia, having noted the special disturbances in paresis, as well as other mental diseases, the authors have studied four obese paretics (one with necropsy) with the aim of discovering some cause for the obesity. Their attention was particularly directed to the condition of the glands of internal secretion in the case examined post mortem, and are inclined to think that either overfunction or underfunction may conduce to formation of an excess of adipose tissue.

A Case of Adenolipomatosis.—M. Trénel and Fassou describe a case of adenolipomatosis affecting a man of fifty-eight years and alcoholic. The masses of new formation were very large and symmetrically distributed, invading the cervical region, anterior and posterior and the scapular, dorsal, and lumbar regions, as well as the epigastrium, groins, etc. The article is illustrated by excellent reproductions from photographs of the patient.

January-February, 1913.

The Nervous Form of a New Trypanosomiasis (Trypanosome Cruzi Inoculated with the Triatoma Magista) (Chagas's Disease).—Carlos Chagas, of Rio Janeiro, contributes a résumé of his observations in Brazil of the nervous manifestations of a recently discovered trypanosome. Aside from its predilection to invade other parts of the body, notably the thyroid gland, the organism frequently localizes itself in the central nervous system; so often is this the case that the author states that in localities where it is found it is the most frequent cause of organic affections of the central nervous system. In less than two years' work more than 2,000 cases of this infection have been observed, and of these about 200 involved the nervous system. The organism invades the nerve cell bodies, which are destroyed and surrounded by reactive infiltration. Clinically, the manifestations may be acute or chronic, the acute form characterized by symptoms of meningoencephalitis which is generally fatal. In the chronic form, which rarely may be a sequel of the acute, the involvement is usually diffuse and extensive, giving rise to conditions of diplegia, dementia, epilepsy, etc., as well as cerebellar and spinal cord types. In the chronic forms the mortality is low, and even old age may be attained.

Cervical Hypertrophic Meningitis.—J. Babiaski, J. Jumenté, and J. Jarkowski think that some of the common ideas regarding hypertrophies of the meninges in the cervical region should be revised, and to this end report in detail a case of this kind with necropsy findings. Clinically, the condition was progressive, evidencing incomplete compression of the cervical region of the spinal cord and the associated nerve roots. The Wassermann reaction was positive. Spastic paralysis and incontinence were prominent, but objective sensory changes were slight. On post mortem examination the most striking lesion was the thickening of the meninges of syphilitic origin, evidently primary and most extensive in the arachnoid, but also including the pia and dura. The spinal cord implicated mainly by the pressure exerted upon it, but there were no long tract degenerations. The authors call particular attention to the fact that the hypertrophy was not limited to, or even predominant in, the dura, therefore not a "pachymeningitis." Hence their designation of the condition as hypertrophic cervical meningitis.

Contribution to the Study of the Localization of Aphasia.—LaSalle Archambault, from the observation of two cases which are described clinically and pathologically, arrives at the following conclusions: 1. That a lesion of the third left frontal convolution in a right handed individual does not necessarily cause motor aphasia; and, 2, that a lesion of the left lenticular region in one who is right handed may suffice to produce a marked and permanent motor aphasia.

A Complete Supernumerary Lumbar Vertebra in an Egyptian Mummy of the Eleventh Dynasty; Radiographic Findings.—M. Bertolotti, when examining a number of Egyptian mummies by the x ray, came across one of a child of about six or eight years, in which there were six complete lumbar vertebræ, besides the usual twelve dorsal members. The number in the cervical and sacral regions was impossible to determine. The description is accompanied by an excellent reproduction of the radiograph.

REVISTA DE MEDICINA Y CIRUGIA PRACTICAS.

April 7, 1913.

Tracheoscopy in Trachial Stenosis.—Botella reports two cases of stenosis due respectively to aneurysm of the aorta and adenopathy of the mediastinum. He made the diagnosis by tracheoscopy and this was afterward confirmed by radiography. The intrinsic stenoses, the author says, which are produced by lesions which directly lessen the lumen of the trachea, are those caused by tracheal tumors and in general by all those affections that can produce ulcerations which give rise to consecutive retractions and cicatricial bridles, lessening the lumen of the trachea. Syphilis, diphtheria, tuberculosis, ozena, and foreign bodies are the more frequent causes of the stenosis.

Temporary Deviation of Urine by the Via Hypogastrica.—We know, Perez Arias says, that the hypertrophy of the prostate is a disease almost exclusively of the senile age and, therefore, the patient who has such an affection possesses an exhausted organism, not only on account of his advanced age, but by the partial retention of the urine, which produces great discomfort and certain chronic intoxications caused by the decomposition of permanent residuum which remain after each micturition. Although the hypertrophy of the prostate is a chronic affection, this sometimes grows more severe by the voluntary and prolongated rentention of the urine, efforts in defecation, long rides on horseback, chilliness which may act directly or by means of the congested influence. In these cases the prostate becomes the seat of an inflammatory process, with its corresponding congestion. The first thing the physician who has to treat a case of retention of the urine thinks of is to empty the bladder immediately; this can be done by two methods, the extraction of the urine by natural means, catheterism, or deviation by the via hypogastrica. Catheterism, in all these cases of acute retention, is attended by great inconveniences. Any organ when ill needs rest, and this rest cannot be afforded to an inflamed prostate if we place it in direct contact with the foreign body; hence we have no reason to be astonished if we see that the patient gets worse after the insertion of the catheter. The author, therefore, advises the temporary deviation of the urine, and he also says that the via hypogastrica should be preferred. Nevertheless, there are many cases in which we must first try to apply the catheter. This must be done very carefully, and if any resistance is found we must resort to the suprapubic puncture of the bladder; then, after an appropriate interval, the catheterism is tried again, and if no results are obtained suprapubic cystotomy must be performed under local anesthesia with ethyl chloride.

BRITISH MEDICAL JOURNAL.

June 7, 1913.

Radium in the Treatment of Malignant Disease.—Robert Knox is very conservative in his conclusions with regard to the value of radium in the treatment of this form of malady. He believes that: 1. In all cases of early cancer the operative method is undoubtedly the best; it is quicker, safer, and it offers the best prospect of cure. 2. Radium is a useful adjunct in the treatment of all cases, as a prophylactic after operation, or, failing operation, as the best method of treatment. It must be stated that in selected cases x rays are quite as useful as radium. 3. Radium is useful as a remedy in patients who refuse operation, or in such as are not suitable for operation. 4. In inoperable cases radium may help to render the condition operable and, failing in this, it is a powerful palliative measure. Knox calls attention to the fact that in certain cases the action of radium may well be to increase the rapidity of the growth of the neoplasm, rather than to bring about its destruction. Such conditions must, however, be rare, but the possibility must be borne in mind.

A Case of Complete Auriculoventricular Heart Block.—T. Wardrop Griffith and A. Mills Kennedy report the case of a patient in whom there was complete and permanent block of the impulses from the auricle in their transmission toward the ventricle, so that the auricles were beating at a rate rather less than double that of the ventricles. The rhythm of the ventricles was regular, while that of the auricles was not altogether so. The authors suggested, in a previous report of the same case, that there was possibly also a condition of sinoauricular block. A post mortem examination of the patient's heart showed marked involvement of the region of the auriculoventricular bundle, together with the almost complete occlusion of its circulation. In the sinus region of the auricles there were marked fatty and infiltrative changes, and apparently there was some destruction of the true nodal tissue in the sinoauricular node. This examination seems, therefore, to lend some support to the suggestion made during life to the effect that there was also a condition of sinoauricular block.

The Position and Form of the Normal Human Stomach.—A. Melville Paterson describes the normal organ as being composed of four distinct chambers: The cardia and fundus, connected by the pyloric vestibule with the pyloric antrum, and, beyond this, the pyloric canal. The constriction forming the pyloric vestibule may form a definite tubular canal, or it may be a deep V shaped notch in the greater curvature, producing often a typical hourglass contraction. The commonest variation is due to the repression of the pyloric antrum, so that the pyloric vestibule and the pyloric canal form one continuous tubular passage. The chief alterations in form of the stomach occur along the greater curvature and in the pyloric half. An hourglass contraction of the stomach is not necessarily pathological; it is, in fact, the form most often found in the dissecting room.

A Note on the Shape of the Normal Empty Stomach.—J. S. B. Stopford describes the condition as found in the course of an autopsy performed a few hours after death. The organ was tubular, except for one dilatation, which was roughly cone shaped and situated at the summit of the vertical cardiac portion. It obviously represented the fundus. The general shape of the organ as a whole was that of the letter J. The esophageal entrance is oblique, and there is a well marked incisura cardiaca between the esophagus and the fundus.

CHINA MEDICAL JOURNAL.

March, 1913.

The Use of Emetine Salts in the Treatment of Amebic Dysentery.—J. Preston Maxwell, following the suggestions of Rogers, of Calcutta, reports the successful use of emetine salts in the treatment of ten cases of amebic dysentery. The contentions of Rogers were proved by the writer, who states that the drug acts more surely on amebic dysentery than any heretofore used, and with a minimum of discomfort to the patient. Nausea was seldom produced by the equivalent of double the dose of ipecac, as formerly employed. The drug used was emetine hydrochloride. The powder (0.01 to 0.05 gramme) was dropped into the barrel of an all glass hypodermic syringe, dissolved in about 0.75 c. c. freshly boiled and cooled normal saline solution, and injected subcutaneously into the back of the forearm or upper arm; and the site of the injection gave no trouble. In every case the stool was examined before treatment, and the presence of amebæ ascertained. In every case but one the type present was *Ameba histolytica;* the exceptional case contained both the coli and histolytica types, the former predominating. The more active the amebæ, the better the drug acted. The patients were also given a powder of bismuth and soda with, in some cases, a little quinine; in one case where there was active ulceration of the bowel, enemata of quinine were also given. The microscope showed that the amebæ were rapidly killed by the treatment.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 12, 1913.

The Diagnostic Evidence Obtained by X Rays from the Lateral Aspect of the Skull, with Especial Reference to the Base and Its Annexa.—Percy Brown presents thirty-nine plates that show some of the evidences which can be obtained from a lateral projection, and that it is erroneous to think that little can be learned from the lateral projection of the base of the skull. Acute and chronic inflammations of the anterior accessory sinuses of the nose are most easily recognized by x rays in the occipitofrontal projection, and lateral projections give little more information, except as to the depth of the frontal sinus, but when structural changes are present the lateral aspect of the skull base is valuable. In the posterior ethmoidal region certain morbid states, like empyema, can be recognized only from the lateral projection. He believes that the sphenoidal region can be examined properly only from all angles, and that its clinical relation of the sphenoid to the pituitary region can be interpreted only from the lateral projection.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 14, 1913.

The Cutaneous Reaction in Syphilis.—Julian M. Wolfsohn makes a second report on this question and concludes that the results of his observations and also those of all previous workers with the luetin test, demonstrate the specificity of the luetin reaction for syphilis when properly performed. Intensive antisyphilitic treatment in the later stages of syphilis may cause a negative luetin reaction which, after an interruption of treatment, may become positive. Positive luetin reactions are usually obtained in treated case of congenital and secondary syphilis. In parasyphilis and in tertiary and latent syphilis the luetin reaction is especially valuable. Finally, in any case of suspected syphilis, whether previousy treated or not, a negative luetin reaction must be watched for at least four weeks so as not to miss a delayed reaction.

Gastric Dilatation; Its Treatment by Removal of Gastric Contents, Starvation, and Rest in Bed.—Anders Frick holds that a dilated stomach retains its contractility wonderfully well, no matter for how long a time or to what degree it has been dilated. He emphasizes the point that the chief purpose of the treatment of a gastric dilatation should be to give the dilated stomach every possible opportunity to contract, and this is best accomplished by the removal of the gastric contents, starvation, and rest in bed. These three measures should be viewed as a distinct method of treating gastric dilatation, indicated as soon as the diagnosis has been made, just as the starvation cure is considered a method of treating gastric ulcer. This method is indicated as a prepartory treatment in those cases of gastric dilatation in which a gastroenterostomy is to be made for the cause which has led to dilatation, as thereby the stomach will contract as far as possible and an eventual continuous gastric secretion will cease. As auxilliary remedies, intragastric or extragastric electricity, massage, cold compresses, or other hydrotherapeutic measures, abdominal supporters, rectal feeding, strychnine, antiseptic drugs and alkalies are valuable, but not strictly necessary in the treatment of this disorder.

Sexual Neurasthenia in Men.—Albert J. Underhill concludes from a study of this subject that sexual neurasthenia is always due to definite pathological conditions in the genitourinary tract, the lesions being found in any portion of this tract. This type of neurasthenia is most apt to arise from changes in the prostatic urethra, especially in the vicinity of the verumontanum, because of the exceptionally rich supply of sensory nerve endings in this part. The conditions give rise primarily to a local neuritis or neuralgia which is the intermediate cause of the neurasthenia. In certain instances there may be a toxic element, as in infections of the seminal vesicles or prostate, which impairs the resistance of the sympathetic nervous system. This condition is most often found in those of hereditary or acquired neuropathic disposition. The physical impotence resulting in many of these cases acquires a psychic element in the course of the disease, which must be treated as a separate factor after the primary cause has been removed.

The Staphylococcus Spray Treatment of Diphtheria Carriers.—A. M. Alden suggests the use in a spray of a composite culture of equal portions of three different strains of *Staphylococcus pyogenes aureus,* isolated from throat cultures, grown on agar, and afterward transferred to broth. He states that no patient who has had diphtheria should be released from quarantine until at least two negative cultures are obtained from both nose and throat and the ear if symptoms are present. Antitoxine will not free the patient from the carrier condition, but some local application is necessary to clear the throat and nose of *Bacillus diphtheriæ.* In fifteen out of sixteen cases the staphylococcus spray effectively cleared the throat of *Bacillus diphtheriæ* after other methods had failed, and that without harm to the patient.

MEDICAL RECORD.

June 14, 1913.

Observations of Results from Vaccination against Tuberculosis.—Charles A. Julian recalls the experiments of Karl von Ruck, who states to have discovered and perfected a method of prophylactic immunization, absolutely safe, uniformly efficient and simple in its application by a single dose (see this JOURNAL, September 14, 1912, page 550). It has been found that this method of protective vaccination is not only effectual in individuals free from infection, but in those with demonstrable tuberculous changes in the lymph glands, lungs, and other organs. In nontuberculous children no reaction to the vaccination is noticed; neither was there anything observed in their after-condition which was at all referable to it. The writer, associated with Silvio von Ruck, made a critical examination of those whose record showed the presence of tuberculous infection of the lungs, the lymph glands, and other tuberculous localizations, prior to their vaccination. These cases showed a complete disappearance of the physical signs, or at least a retrogression, and with few exceptions, a marked increase in bodily weight. In all but a few of the advanced cases the local and general improvement was so marked that an apparent recovery, or at least a complete arrest, could have been accepted. As an exception were three cases which, in addition to pulmonary infection, other tuberculous complications were present—tuberculous peritonitis which demanded a laparotomy for the evacuation of a purulent exudate; tuberculous disease of the right tibia requiring incision and drainage; Pott's disease—the patients were treated with the vaccine until they completely recovered. In the early stages, however, a single dose was sufficient to bring about a chemical cure.

Roentgenoscopic Examinations versus Clinical Methods in the Diagnosis of Gastric Disease.—John D. Dunham, basing his observations upon a study of ninety-four patients who complained of gastric or intestinal symptoms, concludes that bismuth is the most satisfactory contrast substance yet employed, because it leaves the stomach very slowly. In cases of clinical gastric ulcer the failure of the pyloric region of the stomach to assume its symmetrical contour with the Röntgen meal is strongly presumptive of stenosis. In determining the early steps of pyloric stenosis the emptying time of the Röntgen meal is of no value. Lavage at varying times after meals is the only test of this condition. The fluoroscopic method is the only reliable method of diagnosticating hourglass contraction of the stomach. Careful and prolonged study must be made if errors are to be avoided. In this differential diagnosis of motor insufficiency caused by atony and that produced by advanced pyloric stenosis, fluoroscopy offers great aid. Clinically, similar symptoms with a reduced hydrochloric acidity is found in both. By the present Röntgen method the degree of motor insufficiency and atony cannot be determined. Röntgenoscopy of the stomach gives no more exact results than percussion, as deductions must be made from shadows, but when employed by the clinician himself as one of his own clinical aids, the best results in gastric diagnosis will be attained.

Glycosuria and the Bulgarian Bacillus.—S. H. Blodgett reports three cases of glycosuria, all of the same type, all under treatment at the same time, and all receiving practically the same diet. Two of these received the Bulgarian bacillus (one in addition received daily doses of sodium bicarbonate) and one of these received the same diet, but no medicine. The two who received the Bulgarian bacillus died, although death was not probably due to the bacillus. However, the Bulgarian bacillus was apparently of no benefit.

The Present Status of the Tuberculin Tests.—Charles B. Slade bases his observations on the study of some thousand or eleven hundred cases in which the Calmette and von Pirquet tests were made at the Otisville Sanatorium. The Calmette test was used in about six hundred or seven hundred cases. The patients were all over five years of age. The writer concludes that the Morro test, from a clinical point of view, is so entirely unreliable that its application is a waste of time. The subcutaneous injection of tuberculin is, scientifically, the most reliable, although clinically it is not absolutely reliable, even when negative. In a considerable number of cases severe reactions are unavoidable. They may, and do in some cases, cause irretrievable harm, making this method unjustifiable as a diagnostic routine. The Calmette test, when applied with constant care in the choice of cases, is probably harmless, but since injury to the eye may result, and since it has no advantage over the von Pirquet test, it should not be employed as a diagnostic routine. The von Pirquet test is harmless and without objection as a diagnostic routine, although it is of very little practical value beyond the age of four years. The subcutaneous injection of tuberculin for diagnosis is justifiable where the diagnosis cannot be made by any other means, and yet, in the patient's interests, a certain diagnosis is imperative, especially applying to disease of the joints when the focal reaction can be more easily observed. Broad judgment should lead us to determine not so much whether or not a person has tuberculosis, but whether or not his tuberculosis has become a *disease* clinically.

ARCHIVES OF DIAGNOSIS.

April, 1913.

Chronic Appendicitis versus Duodenal Ulcer, and Their Association.—J. B. Deaver refers to the fact that where in chronic appendicitis pylorospasm exists and pain is referred to the epigastrium, this, together with the various attendant digestive disorders, makes a clinical distinction from duodenal ulcer almost impossible. The symptoms of indigestion, however, are never present to such an extent or are as constant in chronic appendicitis as in ulcer. In the former condition, moreover, constipation is usually present. The seats of tenderness and of muscular rigidity or resistance are also typically different, while in some cases of duodenal ulcer a mass may be palpated. In chronic appendicitis the blood picture does not vary much from the normal, while in ulcer, if hemorrhage has occurred, a fall in hemoglobin and erythrocyte count will be noted. On the whole, the laboratory tests do not assist to any extent in differentiating chronic appendicitis and a typical duodenal ulcer. Deaver has met with many cases of associated chronic appendicular disease and ulcer and concludes that infection transmitted by the blood or lymph streams is responsible for this association. The case of chronic appendicitis should be seen by the surgeon early, when appendectomy will give relief and probably sometimes prevent subsequent duodenal disease resulting in ulceration.

Auscultation at the Acromion Process.—R. Abrahams carefully adapts the bell of the stethoscope over the acromial end of the clavicle and frequently also over the acromion process, and proceeds with an investigation of the usual respiratory physical signs. Bearing in mind that, normally, the right apex is characterized in auscultation by bronchovesicular breathing, a distinctly heard spoken voice and a clear whispered sound, while the left apex yields vesicular breathing, an indistinct spoken voice and a muffled whisper, one finds that in case of a very early pathological infiltration at the right apex, acromial auscultation will yield an appreciable, prolonged expiratory sound, a louder spoken voice, and a slightly increased whisper. These changes may not be audible at all through direct auscultation over the apex at the time; the former procedure thus giving the first warning of disease. In incipiency at the left apex acromial auscultation will elicit markedly bronchovesicular breath sounds and an increase in voice and whispered sounds. First stage tuberculosis, upon acromial examination, yields signs which, when found over lung tissue, would indicate absolute consolidation. The method is thus useful for the early detection of tuberculosis. It is also especially valuable in the case of a tuberculous focus lodged under or behind a clavicle, and in revealing crepitant, subcrepitant, mucus, or sibilant râles when these either are missed when the stethoscope is held over the apices, or are indistinct.

Lymphuria.—H. Stern reports two cases of a condition he terms lymphuria, viz., an intermittent albuminuria due to the presence of lymph in the urine, without any evidence of structural renal disease, and which may be recognized by the absence of a demonstrable globulinuria and the presence of rather numerous young lymphocytes. The patients were, respectively, a young woman twenty-three years old and a man forty-four years old. Stern points out channels through which lymph may reach the urine. He believes the condition described results from an obstruction of colonic or mesenteric lymphatics through some faulty posture, lordosis, colonic atony, compression, or other mechanical factor. In the cases described there was slight intestinal disturbance and a tendency to constipation.

Simulation by Malaria of Acute Surgical Abdominal Disease.—W. M. Brickner calls attention to the possibility of treating by mistake as appendicitis a malarial seizure. He reports cases illustrating the fact that abdominal pain, localized in the right iliac region, with distinctly localized and marked tenderness, may occur in malaria. A case previously reported by Henson indicated that there may even be rigidity. The blood count is not diagnostic, since leucocytosis may be absent in appendicitis or, as in two of the author's cases, present in malaria. The plasmodia may be absent in malaria at the time of observation, or examination for them may be overlooked. Under these conditions the "sizing up" of a case in the light of experience—study of the facial and "abdominal expression" and evaluation of signs, symptoms and anamnesis—is the sole distinguishing feature.

Parapsoriasis.—W. S. Gottheil enumerates as the chief characteristics differentiating it from psoriasis, eczema, and seborrhea: 1. Appearance as sharply limited papules or larger patches of a pale pinkish color, entirely without infiltration, with no signs of inflammation in the form of acuminate papules or vesicles. and with a slight furfuraceous desquamation; 2, slow peripheric growth, without itching, and of extreme chronicity; 3, recalcitrance to all ordinary treatment for eczema, psoriasis, or seborrhea. In the treatment the author uses a three to eight per cent. betanaphthol ointment in simple cerate, or the liquor carbonis detergens of the *British Pharmacopœia*. The surfaces are also exposed to the x ray for short periods at frequent intervals.

Standard Color Test for Indican.—R. T. Edes advises that instead of using the terms "a little," "a small amount," or symbols such as o, +, ++, +++, to express the intensity of color resulting in the ordinary test for indican, a standard consisting of a solution of indigotin in definite dilutions be employed. The ten dilutions, ranging from 1 : 100,000 to 1 : 1,000,000, which will be the most used, may be marked Nos. 1, 2, 3, etc. The addition of liquor plumbi subacetatis to the urine before testing facilitates exact comparison with the finely graded standard.

Letters to the Editor.

ADRENAL PREPARATIONS IN SNAKE BITE.

San Antonio, Tex., *June 9, 1913.*

To the Editor:

Remembering what Sajous has to say in *Internal Secretions* concerning the secretion of the suprarenal capsules in immunity, I thought your readers would be interested in my experience in a case of rattlesnake bite.

The young man was brought from the country bitten by a large rattler and was in a condition of profound prostration, with rapid and feeble heart action, pulse somewhat irregular, temperature 96° F., vomiting frequently, restless, and delirious. I used adrenalin freely, and in a very short time was rewarded by a reaction. The pulse came down and grew stronger, blood pressure rose, temperature came up to the normal and a little above, the vomiting ceased, and altogether the general condition was such within two hours that I could see that the first results of the poison were under control. This was quite remarkable to me in the face of an extremely dangerous condition. Of course, there was the typical swelling and severe inflammation, but besides overcoming shock, the adrenalin seemed at once to arrest the poisonous action of the venom upon the organism at large.

I am wondering what the result would be of the hypodermic use of adrenalin directly into the poisoned parts, and certainly would use it if opportunity offered for immediate attention.

J. S. Lankford, M. D.

CORRECTION.

30 East Forty-second Street,
New York, *June 17, 1913.*

To the Editor:

In my article, "Gonorrhea from a Pathological Standpoint," published in your Journal of June 14, 1913, there is a typographical error. On page 1221, near the bottom of the first column, appears the following: "More than once has it been my pleasing experience to convince a patient (who though himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation."

The sentence should be, "More than once has it been my pleasing experience to convince a patient (who thought himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation."

Will you kindly let correction appear in the next issue?

Geo. A. Wyeth, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Psychological Origin of Mental Disorders. By Paul Dubois, M. D., Professor of Neuropathology in the University of Berne, etc. Authorized Translation by Edward G. Richards, M. B., A. M., Edinburgh. New York and London: Funk & Wagnalls Company, 1913. Pp. 87. (Price, 50 cents.)

The major part of this small volume is devoted to a historical review of the views of psychiatrists regarding the influence of psychic factors in the causation of mental disorders; the author's own conceptions of the subject are definitely stated only in the last few pages of the book. Accepting neither the somatic conception of psychoses, which would explain all insanities on the basis of deranged physical conditions, nor yet the psychological conception which regards only the psychogenic factors, Dubois looks upon the psychopathies as products of "the action of numerous factors, both physical and mental, operating, according to the case, either separately or in combination." But, as the most important prerequisite for their development, he assumes for each case a "primitive mentality" containing some inherent mental defect which may or may not cause a breakdown depending upon environmental conditions. In treating these psychopaths "we are urgently called upon," he says, "to consider, before everything, the *primitive mentality* of the subject and to correct it by a true *intellectual and moral education.*"

Nervous and Mental Diseases. For Students and Practitioners. By Charles S. Potts, M. D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia, Neurologist to the Philadelphia Hospital, etc. Third Edition, Revised and Enlarged. Illustrated with 141 Engravings and Six Plates. Philadelphia and New York: Lea & Febiger, 1913. Pp. viii-610. (Price, $2.75.)

The last edition of this popular manual of nervous and mental diseases not only includes all of the excellent features of the previous editions, but is notably enlarged and improved, insuring it the continued reputation of being one of the most concise and dependable books of its class available to the student and general practitioner.

Essays and Clinical Studies. By F. G. Crookshank, M. D., London. London: H. K. Lewis, 1911. Pp. vii-245.

For the admirer of Doctor Crookshank's writings this collection of some of his essays on various objects will be welcome. The articles bear witness to the large field of science which is covered by the broad mind of the author.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 18, 1913:

Foster, M. H., Surgeon. Granted one month's leave of absence from June 24, 1913. **Guiteras,** G. M., Surgeon. Granted one month's leave of absence from July 1, 1913. **Herrick,** A. W., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from June 15, 1913. **Lumsden,** L. L., Surgeon. Directed to attend a conference of State health officers at Lawrence, Kans., June 24th and 25th, and deliver addresses upon the epidemiology and prevention of typhoid fever. **Parker,** T. F., Acting Assistant Surgeon. Granted thirty days' leave of absence from June 1, 1913. **Schereschewsky,** J. W., Surgeon. Detailed in connection with investigations of trachoma in Tennessee to present a series of lectures on public health to teachers and educational workers in attendance at the University of Tennessee, Knoxville, Tenn.

Boards Convened.

Boards of medical officers convened for the physical examination of candidates for appointment to cadetships in the Revenue Cutter Service, to meet June 23, 1913, as follows: Bureau, Washington, D. C., Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon R. A. Kearny, recorder. Marine Hospital, Detroit, Mich., Senior Surgeon H. W. Austin, chairman; Surgeon M. J. White, recorder. Marine Hospital, Stapleton, N. Y., Senior Surgeon G. W. Stoner, chairman; Passed Assistant Surgeon W. M. Bryan, recorder. Marine Hospital, Chelsea, Mass., Senior Surgeon Fairfax Irwin, chairman; Surgeon H. W. Wickes, recorder. Marine Hospital, Baltimore, Md., Senior Surgeon H. R. Carter, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder. Marine Hospital, San Francisco, Cal., Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon J. R. Hurley, recorder. Marine Hospital, Chicago, Ill., Surgeon J. O. Cobb, chairman;

Passed Assistant Surgeon Hugh de Valin, recorder. Marine Hospital Office, 410 Chestnut Street, Philadelphia, Pa., Surgeon W. G. Stimpson, chairman; Passed Assistant Surgeon Norman Roberts, recorder. Marine Hospital, Savannah, Ga., Surgeon C. H. Lavinder, chairman; Passed Assistant Surgeon R. M. Grimm, recorder. Newbern, N. C., Acting Assistant Surgeon R. S. Primrose, chairman; Acting Assistant Surgeon R. D. Jones, recorder.

Board of medical officers convened to meet at the Marine Hospital, Detroit, Mich., at the call of the chairman, for the reexamination of an alien. Detail for the board: Surgeon M. J. White, chairman; Acting Assistant Surgeon K. L. Weber, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 21, 1913:

Ashburn, Percy M., Major. Relieved from further duty in the Philippine Department, and will proceed on the first available transport to San Francisco, thence to Ancon, Canal Zone, for the purpose of establishing a board of medical officers for the purpose of studying tropical diseases as they exist in Panama. **Bartlett,** William K., Captain. Relieved from duty at Fort Oglethorpe, Ga., to take effect on or about July 1, 1913, and will then proceed to Fort Ethan Allen, Vt., for duty. **Bevans,** James L., Major. Relieved from duty as medical superintendent, Army Transport Service, attending surgeon, San Francisco, and as surgeon, Fort Mason, Cal., and will report to the commanding general, Western Department, for duty with station at San Francisco, until further orders. **Brown,** Ira C., First Lieutenant, Medical Reserve Corps. Granted leave of absence foı four months. **Byrne,** John G., First Lieutenant, Medical Reserve Corps. Resignation of commission as an officer in the Medical Reserve Corps of the United States Army accepted by the President, to take effect June 12, 1913. **Card,** Daniel P., Captain. Relieved from duty at Fort Ethan Allen, Vt., to take effect on or about July 1, 1913, and will then proceed to West Point, N. Y., and report in person to the superintendent of the United States Military Academy for duty, relieving Captain Galvin D. **Cowles,** Jr., who, upon being thus relieved, will proceed to Fort Clark, Texas, and report to the commanding officer of that post for duty. **Darling,** Thomas, First Lieutenant, Medical Reserve Corps. Ordered to active duty at the encampment at Gettysburg, Pa., June 28 to July 10, 1913. **DeLaney,** Matthew A., Major. Relieved from duty as attending surgeon in Washington, D. C., and will comply with instructions contained in letter from the Adjutant General's office dated March 20, 1913, and upon the completion of this duty, will proceed to San Francisco, Cal., and take the first available transport from the Philippine Islands for duty. **Dunbar,** L. R., Captain. Reports sick in Letterman General Hospital, June 13th. (Under orders to United States Military Prison, Fort Leavenworth, Kansas.) **Ebert,** R. G., Colonel. Appointed an instructor at the militia camp, Santa Crux, California, July 6 to 16, 1913. **Fetterolf,** D. W., First Lieutenant, Medical Reserve Corps. Left medical supply depot, New York, on June 14th, on leave of absence for one month. **Hansell,** Haywood S., Captain. In addition to his other duties, will report to the commanding officer, Fort Mason, Cal., for duty as surgeon at that post. **Heysinger,** James D., Captain. Leave of absence heretofore granted is extended five days. **Kraker,** Davis A., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency for the period from June 28 to July 10, 1913; will proceed on or after June 28th to Gettysburg, Pa., and report for duty with the provisional field hospital at the camp to be established at that place, and will return to his home by July 10, 1913, and stand relieved from active duty in the Medical Reserve Corps. **Kilbourne,** Edwin D., Captain. Relieved from duty at Columbus Barracks, Ohio, to take effect upon the expiration of the leave of absence heretofore granted him, and will then proceed to Fort Oglethorpe, Ga., and report in person to the commanding officer of that post for duty. **Le Hardy,** Julius C., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Ward, Wash., to take effect upon the arrival at that post of First Lieutenant Charles H. Stearns, Medical Reserve Corps, and will then proceed to Benicia Arsenal, Benicia, Cal., and report in person to the commanding officer of that arsenal for duty. **Lyster,** Theodore C., Major. Leave of absence extended one month. **Meister,** William B., First Lieutenant. Will proceed to Fort Benjamin Harrison, Ind., for temporary duty, and after the completion thereof will proceed to Fort Davis, Alaska, as heretofore ordered. **Page,** Henry, Major. Left Fort Moultrie, S. C., June 14th, on four months' sick leave, with permission to go beyond the sea. **Poust,** Luther R., First Lieutenant. Paragraph 15, Special Orders No. 67, March 22, 1913, so amended as to relieve him from temporary duty in the Southern Department and from duty at Fort Riley, Kansas, to take effect upon the arrival of First Lieutenant Clarence R. Bell, Medical Reserve Corps. **Quade,** O. H., First Lieutenant. At expiration of sick leave will report at the United States Military Prison, Fort Leavenworth, Kansas, for duty **Ragan,** Charles A., Major. Relieved from duty at the Walter Reed General Hospital, District of Columbia, to take effect on or about July 1, 1913, and will proceed to Fort Oglethorpe, Ga., for duty. **Waring,** J. B. H., Captain. Left Army and Navy General Hospital, Hot Springs, Ark., June 10th, on sick leave of absence. **Whitham,** J. D., Lieutenant. Returned to Fort Monroe, Va., June 19th, from temporary duty at Fort Howard.

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Births, Marriages, and Deaths.

Married.

Bowers—Page.—In Newton, Mass., on Wednesday, June 18th, Dr. George Francis Haskell Bowers and Miss Irene Durant Page. **Closson—Ely.**—In Lambertville, N. J., on Wednesday, June 11th, Dr. Edward W. Closson and Miss Caroline Gertrude Ely. **Gill—Corsbie.**—In Hartsells, Ala., on Wednesday, June 11th, Dr. Joseph C. Gill and Miss Lucy A. Corsbie. **Harrington—Evans.**—In Bangor, Me., on Wednesday, June 11th, Dr. Daniel J. Harrington, of Dorchester, Mass., and Miss Madeline Keyes Evans. **Martin—Anderson.**—In Scranton, Pa., on Monday, June 9th, Dr. Thomas P. Martin, of Mayfield, Pa., and Miss Phoebe Anderson. **Pratt—MacKenzie.**—In Brookline, Mass., on Monday, June 16th, Dr. Edward L. Pratt, of New York, and Miss Annabel MacKenzie. **Tompkins—Killgore.**—In Flemington, N. J., on Tuesday, June 10th, Dr. Grenelle Bertram Tompkins and Miss Jane Dunham Killgore.

Died.

Brinkley.—In Savannah, Ga., on Monday, June 16th, Dr. Guy O. Brinkley, aged forty years. **Caverly.**—In Trenton, Ontario, on Sunday, June 8th, Dr. McLean L. Caverly, aged fifty-five years. **De Nike.**—In Clinton, N. Y., on Friday, June 13th, Dr. George H. De Nike. **Hartley.**—In New York, on Thursday, June 19th, Dr. Frank Hartley, aged fifty-six years. **Howe.**—In Stamford, Conn., on Thursday, June 12th, Dr. Harmon G. Howe, of Hartford, aged sixty-two years. **Jenkins.**—In Evanston, Ill., on Sunday, June 15th, Dr. J. R. Jenkins, aged seventy-one years. **Manchester.**—In Pittsburgh, Pa., on Friday, June 13th, Dr. Llewellyn C. Manchester, aged fifty years. **Meriwether.**—In Asheville, N. C., on Thursday, June 12th, Dr. Frank Tyron Meriwether, aged forty-seven years. **Mills.**—In Arcata, Cal., on Tuesday, June 10th, Dr. Charles Wesley Mills. **Phelps.**—In Glens Falls, N. Y., on Saturday, June 14th, Dr. Albert H. Phelps. **Scully.**—In Colorado Springs, Colo., on Monday, June 16th, Dr. Daniel J. Scully, of Brooklyn, N. Y., aged thirty-eight years. **Sellards.**—In Deerfield, Mich., on Friday, June 13th, Dr. George H. Sellards. **Smith.**—In Lebanon, Pa., on Sunday, June 8th, Dr. August Stoner Smith, aged seventy-three years. **Van Heusen.**—In New York, on Monday, June 16th, Dr. Richard Fletcher Van Heusen, aged forty-six years. **Williams.**—In Philadelphia, on Tuesday, June 17th, Dr. Wingo Williams, of Fort Worth, Texas.

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